Fuel Economy of Passenger Cars in the Global South:

A case of two steps forward, one step back as fuel economy improvements are reduced by increasing car power and weight

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By Sudhir Gota, Independent Consultant

June 2023

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Author

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Reviewer

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“Fuel Economy of Passenger Cars in the Global South: *A case of two steps forward, one step back as fuel economy improvements are reduced by increasing car power and weight”*

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Contents

1. Executive Summary

Transport is a major contributor to carbon dioxide and other harmful pollutants. A shift to cleaner and more efficient vehicles, including electric mobility, has been prioritized as a key solution to limiting transport emissions and saving on fuel consumption among other co-benefits. While there has been, generally, considerable progress in most of the Global North towards this shift, the Global South is largely lagging. The inclusion of the Global South is crucial to the achievement of international climate goals relating to cleaner mobility as the global vehicle growth is expected to shift to the Global South in the coming decades.

The Global Fuel Economy Initiative (GFEI) is the first leading global initiative to partner with the Global South to assess vehicle fuel economy and develop policies to improve efficiency. Formed in 2009 by six leading organisations – the United Nations Environment Programme (UNEP), the FIA Foundation, the International Energy Agency (IEA), the International Transport Forum (ITF), the International Council on Clean Transportation (ICCT) and UC Davis Institute of Transport Studies, the GFEI aimed at a doubling of passenger cars fuel efficiency by 2050 based on 2005 levels through the adoption of cleaner, more fuel-efficient vehicles. At the time of its formation, passenger cars represented the highest growing vehicle segment, with consumer choices towards better vehicle efficiency being easily influenced through better policies and incentives. In 2019, at its 10th anniversary, the GFEI updated its objectives to cover all road vehicles and promote zero carbon vehicles.

This report looks at fuel economy assessments for passenger cars carried out in 109 countries. Of these, 64 developing and transitional countries were supported by UNEP to carry out fuel economy baseline studies, with some of these countries also assisted to develop fuel economy policies. An additional 45 countries included in the analysis have their fuel economy data either publicly available or available through the IEA, a GFEI partner – see Annex 1 for the full list of the countries analysed.

The report is a first attempt at assessing the fuel economy in the Global South and has been carried out mainly through the financial support of the European Commission, FIA Foundation and UNEP. The report reviews cumulatively a total of 30 million light-duty vehicles, from 68 developing and transitional countries that were analysed from 2010 to 2019 from across different regions (64 countries supported by UNEP and an additional 4 countries supported by other GFEI partners). The remaining countries were included in the analysis for comparative reasons. A key finding from the analysis is that while the highest fuel economy progress was in high-income countries, the improvement is stagnating. In contrast, the rate of improvement in the Global South is intensifying. However, the fuel economy improvement has not fully translated into its potential benefits due to increased car weight, size and power, i.e., a case of two steps forward, one step back. Increased car weight, size and power together are a big step back for internal combustion engine vehicles, but higher efficiencies in the Global **South and an accelerating transition to electric vehicles are two bold steps forward.**

Key findings

- Since 2005, the average fuel efficiency of newly registered passenger cars sold in the Global South has improved from 8.4 Lge/100km in 2005 to 7.1 Lge/100km[1] in 2019. **While the rate of improvement has varied from year to year, the average rate of progress over the last fourteen years was 1.3%, illustrating that fuel economy policies and technological advancements had a measurable impact.**

- There is considerable diversity in the global fuel economy improvement rate. The annual fuel economy improvement rate between 2005 and 2019 was 1.8%, 1.2%, 1.4%, and 1.3% in High-income, Upper Middle-Income, Lower Middle-Income, and Low-Income economies respectively. **The average fuel economy ranged from 4.7 to 13 Lge/100km, reflecting almost a factor of three between the most efficient and least efficient markets.**

- The general hypothesis that emerging countries' fleets are less fuel-efficient or that advanced economies have more fuel-efficient fleets is not fully correct as some low- and middle- income countries have comparably better fuel economy than some advances economies.

- There has been significant changes in the growth rate of passenger cars among the regions, which has profoundly affected the

1 Litres of gasoline-equivalent per 100 kilometres - Lge/100km, Worldwide Harmonized Light Vehicles Test Cycles -WLTC

evolution of the global average fuel economy. **Since 2005, the passenger cars sales have reduced at an annual rate of -0.7% in high-income economies while they have expanded at an annual rate of 7.1% in low- and middle-income economies.** Thus, a shift in sales market share from countries with more energy-intensive cars to less energy-intensive cars has contributed significantly to the global improvement in fuel economy.

- **The average passenger car engine displacement across the Global South has not changed significantly over the past decade except in the Pacific Islands and some Latin American countries. However, the average power and kerb weight has grown by 3.3% and 1.3%. Thus, the potential fuel economy improvements in the Global South have not been fully realized due to increased car power and weight.**

- From the analysis, despite a deliberate move towards dieselisation of the fleet in recent years, **the increase in diesel cars did not create any net benefits for fuel economy.**

- Used car trade across the Global South plays a key role in increased vehicle growth, and the report finds that **close to 9 million cars or 37% of global used car sales occurred in the 68 sampled countries.**

- There is increasing consensus for better fuel economy in most countries in the Global South as evidenced in the policy documents. New climate strategies are emphasizing fuel efficiency and electrification of road transport across vehicle types. **Out of the 68 sampled countries, 50% of these countries prioritize "improving fuel economy", and 71% of the countries prioritize "electric vehicles" as part of their climate mitigation strategy.**

- **Overall, the analysis estimates a cumulative reduction of 826 million tonnes of CO_2 from 2010 to 2030 if GFEI targets are achieved.** However, delayed action by the Global South could have shrunk the potential benefits by one-third. **It is projected that in a business-as-usual scenario, incremental improvements in gasoline and diesel cars will never achieve the required greenhouse gas emissions reductions needed to fully meet the GFEI goals.**


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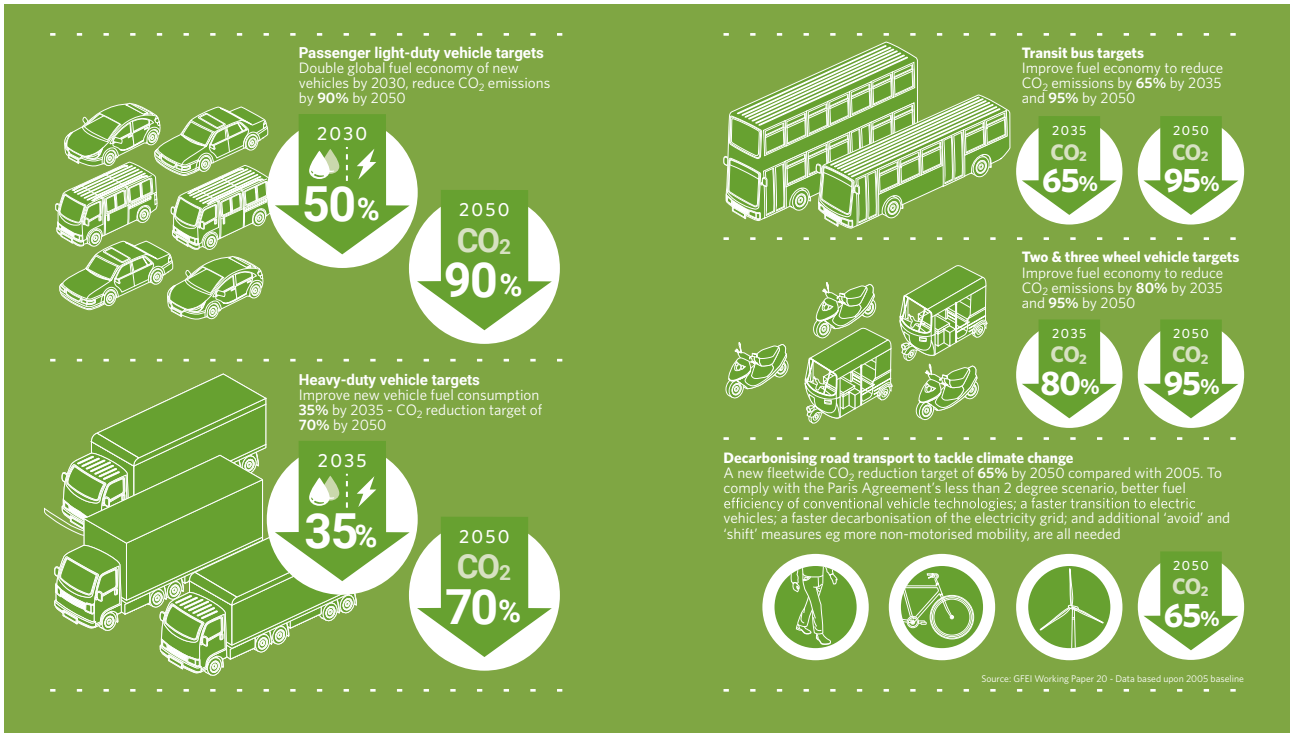
2. Introduction

Launched in 2009, the Global Fuel Economy Initiative (GFEI) aims at improving vehicle fuel economy in low- and middle-income countries to mitigate climate change, improve air quality and reduce fuel consumption. The GFEI is a partnership of six agencies namely UNEP, FIA Foundation, the International Energy Agency, the International Transport Forum, University of California Davis, and the International Council on Clean Transportation. The initial objective of the GFEI was to double the fuel economy of passenger cars in 2050 compared to 2005 levels. In 2019, on its tenth anniversary, the GFEI updated its primary purpose to promote zero carbon vehicles (GFEI 2.0). For GFEI 2.0, partners reaffirmed existing targets for new light- and heavy-duty vehicles in 2030 and 2035 respectively. In addition, they established more stringent 2050 targets for passenger cars, heavy-duty vehicles, 2&3 wheelers, and transit buses.

UNEP, one of the GFEI founding partners, has worked with national stakeholders in about 70 countries to date to better understand the fuel economy of their light-duty vehicle fleet (LDVs, passenger cars) through the development of fuel economy baselines. Establishing the fuel economy baselines became the pivot for developing tailored policy options for each country, based on results from these vehicle fleet assessments and national context. The policy options include setting fuel economy standards, e.g. CO_2g/km, or fuel consumption limits in L/100km; differentiated vehicle taxation and incentives; fuel tax; fuel economy labelling; and other fuel efficiency measures. A unique feature of UNEP's activities under the GFEI consortium is its commitment to improving the capacities of countries to understand the data challenges, opportunities, and barriers in trying to improve the fuel economy of the vehicle fleet. One of the recommendations of this work is the need for national governments to invest in data capture tools to enhance inclusion and reporting of fuel economy parameters at the time of new vehicle registrations, to develop national fuel economy databases.

This report builds on a series of GFEI publications investigating the fuel economy trends of newly registered passenger cars (or LDV) worldwide. However, this is the first comprehensive cross-national analysis of LDV fuel economy trends across the Global South. It is founded on the GFEI consortium's effort to develop a common approach to measure and report fuel economy and considered a sample size of close to 30 million vehicles from 68 low- and middle-income countries supported by UNEP and other GFEI partners across different regions. By including a broad country coverage across the Global South, it enhances the fuel economy debate often restricted to major automotive markets. However, the granularity of

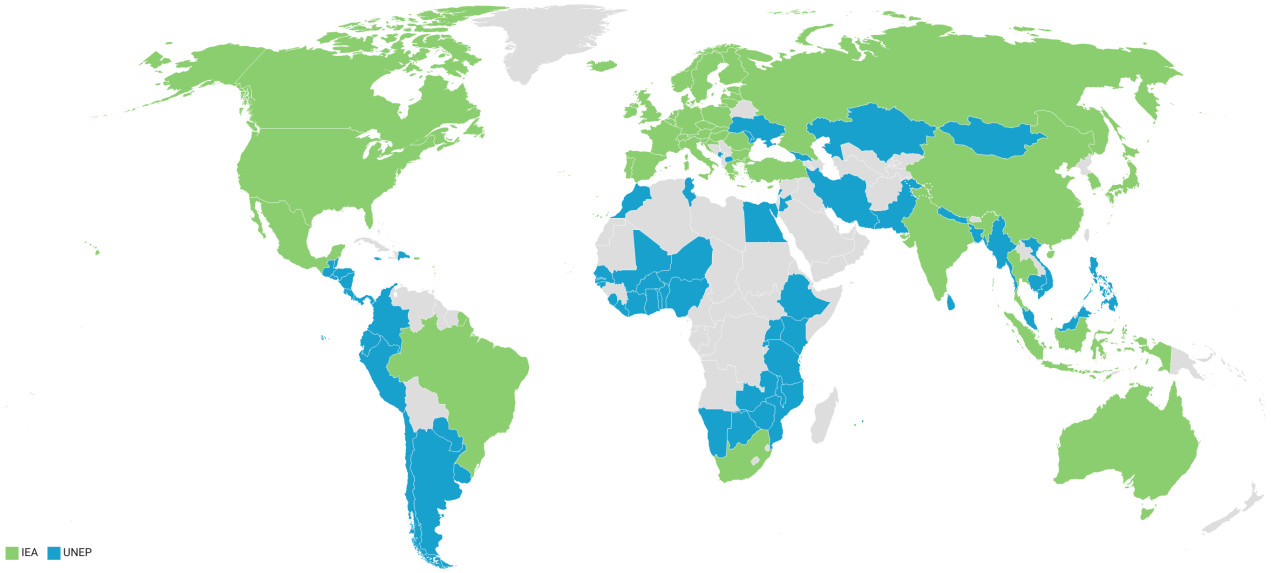


the data is not consistent in quality and magnitude. Not all variables are included for each country, and not all countries have comparable data quality. Therefore, the data from the 68 study countries was combined with the publicly available information from 45 additional countries published by the GFEI consortium to bridge existing data gaps and provide a more compelling narrative of fuel economy in the Global South.[2] Map 1 shows the countries included in the assessment.

This report is organized into three main parts as follows:

- The first part includes an assessment of LDV fuel economy progress up to 2019, measures the progress compared with the 2005 baseline, and connects the fuel economy trend with key vehicle characteristics over time.
- The second part estimates the impact of fuel economy improvements across 68 countries (Map 1).
- Finally, the third part includes 68 country reports on critical socio-economic indicators, fuel economy trends, brief outlines of the policy framework influencing vehicle fuel economy, and several graphs charting key vehicle characteristics over time. In addition, the assembled country factsheets include a range of other variables that may influence the fuel economy variable.

Map 1: Countries considered in the Fuel Economy Database/Analysis by GFEI partner conducting the analysis



2 https://www.globalfueleconomy.org/toolkit/resources

3. How is the Fuel Economy Baseline Determined?

The fuel economy baseline is the sales-weighted average fuel economy of all new light duty vehicles (including locally produced LDVs and imported new and used LDVs) registered during the baseline year (usually 2005). Thus, it is the average fuel economy of first-time LDVs entering the national market in a given year. Similarly, the average CO_2 emissions of the fleet is obtained for the baseline year as well as trends over specific years. Computation of the baseline depends on the model-specific vehicle sales data like vehicle make, fuel type, model production year, engine size, engine power, weight, and the corresponding specific certification values for fuel economy and GHG emissions. However, most countries in the Global South lack the rated fuel economy (Lge/100km) or specific carbon emissions per km (gCO2 per km) data as this is not captured during vehicle registration. Hence for many of the countries evaluated in this report, the fuel economy data was populated with the help of freely available data for tested fuel economy of these newly registered vehicles. Then, using the GFEI Toolkit guidelines, the fuel economy value was converted to Worldwide Harmonized Light-Duty Test Cycle (WLTC).

Keeping score on passenger car fuel economy - is not simply one of measuring baseline data accurately but untangling the components of changes over time. Thus, local partners manually extracted the detailed passenger car attribute data from either a set of official or renowned semi-official data sources. Nevertheless, the magnitude and quality of data were highly inconsistent with the GFEI Toolkit guidelines (for example minimum recommended sample size recommended was 85% of all newly registered vehicles in one year). The report collated attributes for about 30 million light-duty vehicles from 68 countries across different regions from 2010 to 2019. In many cases, instead of using engine displacement, engine power, and fuel type altogether, a combination of either engine displacement or engine power and the respective fuel type were considered sufficiently accurate to identify acceptable tested fuel economy values. The vehicle sales and subsequent analysis for the Global South were restricted to internal combustion engine vehicles.

Comprehensive discussions with stakeholders were carried out to understand the status quo, determine appropriate future fuel economy targets, and subsequent measurement of the weighted average fuel economy progress. In sum, UNEP organized national workshops in all the 64 countries it supported, and at regional level to improve capacity, share key findings and explore the most effective policy options, including the potential to support a transition to electric vehicles. This report documents the overall results and quantifies the potential impact of fuel economy improvements in 68 low- and middle-income countries.

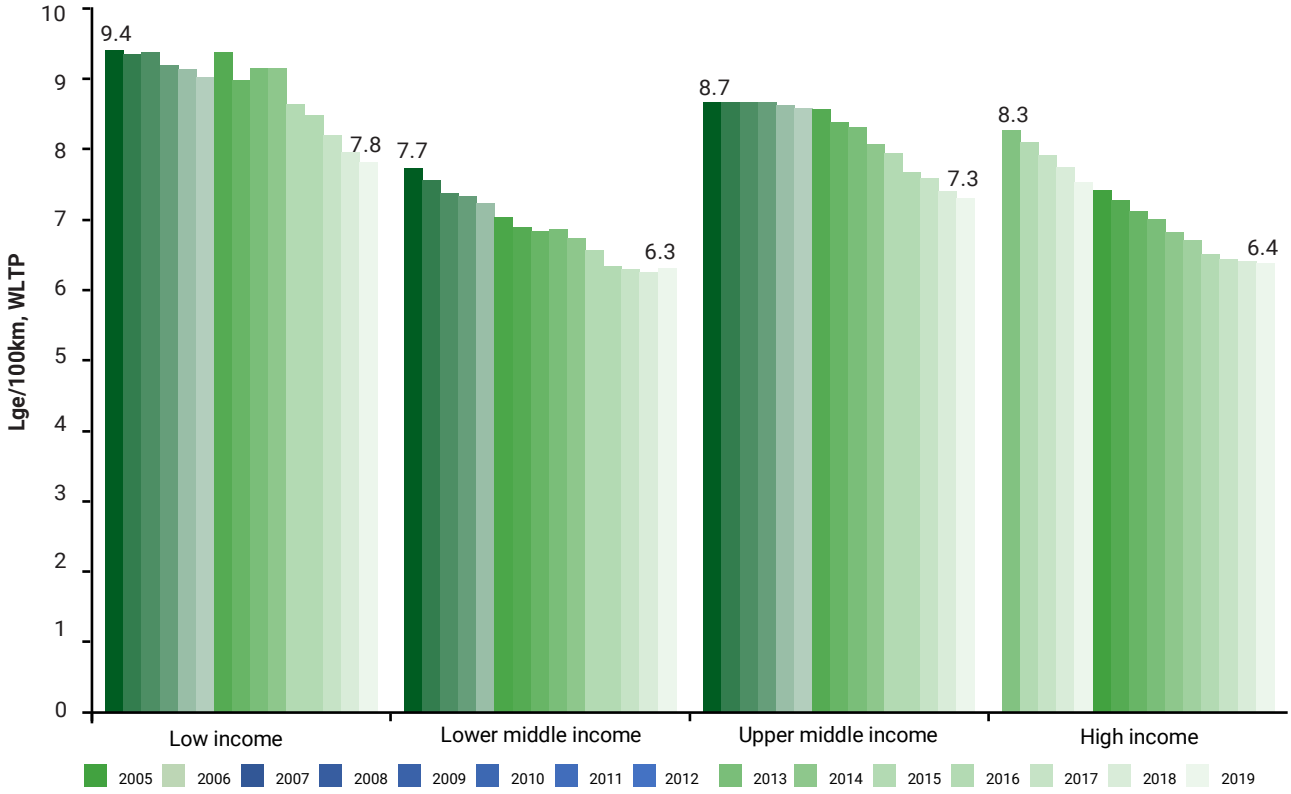
4. What is the Fuel Economy Status of the Passenger Cars in the Global South?

Since 2005, the average fuel economy of newly registered passenger cars sold in the Global South[3] (in terms of Lge/100km, WLTC) has improved from 8.4 in 2005 to 7.1 in 2019. While the rate of improvement has varied from year to year, the average rate of progress over the last fourteen years was 1.3%, illustrating that fuel economy policies and technological advancements had a measurable impact. If we consider all the 109 countries included in the report, the sales-weighted fuel economy in 2019 was 6.8 Lge/100km, which is close to the International Energy Agency's global estimate of 7.1 Lge/100km[4].

We find considerable diversity in the global fuel economy improvement rate (figure 1). The annual fuel economy improvement rate between 2005 and 2019 was 1.8%, 1.2%, 1.4%, and 1.3% in High-income, Upper Middle-Income, Lower Middle-Income, and Low-Income economies respectively. **While the highest progress (1.8%) is seen in high-income OECD countries, the net improvement is significantly lower than the 2.7% yearly fuel economy improvements needed to meet the GFEI target of halving the fuel consumption of new light-duty vehicles by 2030 relative to 2005**. In 2019, the estimated fuel economy of first-time registered LDVs was 6.4, 7.3, 6.3 and 7.8 Lge/100km (WLTC) respectively for High-income, Upper Middle-Income, Lower Middle-Income, and Low-Income economies. Compared to 2005, the sampled lower-middle-income countries had a significantly lower average fuel consumption than other countries. Yet, by 2019, the fuel economy in high-income countries had reached that of lower-middle-income countries.

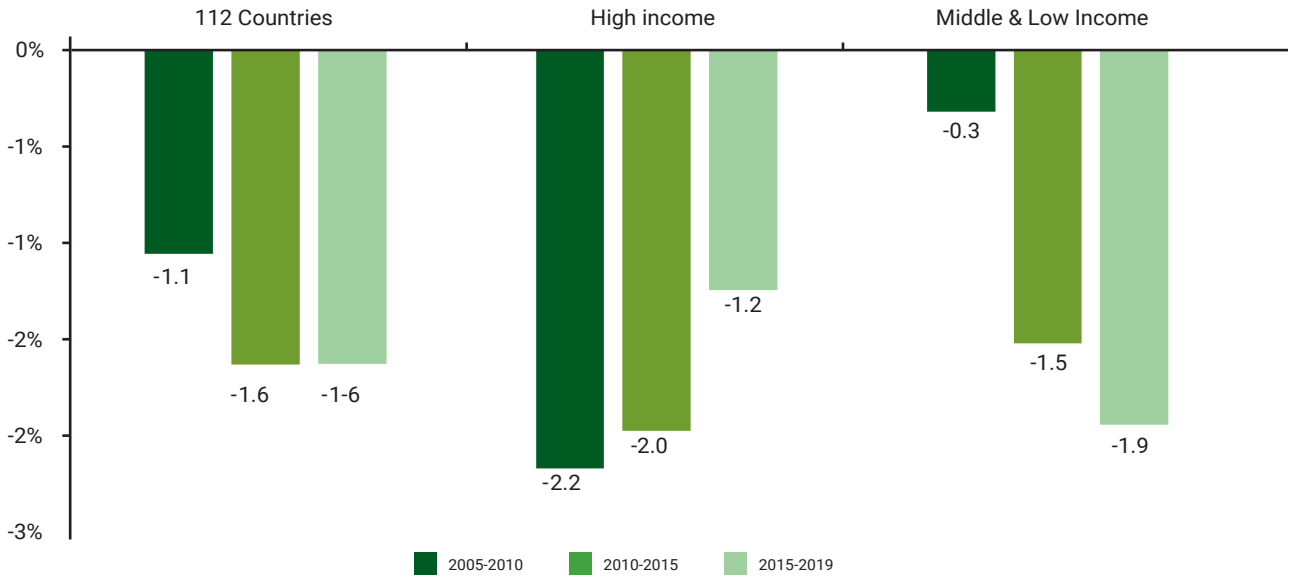
However, while the highest progress was seen in high-income countries, the improvement is stagnating. In contrast, the rate of improvement in the Global South is intensifying. Figure 2 indicates that the gaps between the introduction of fuel-efficient technologies in high-income countries and their first appearance in middle and low-income countries are getting shorter.

Figure 1 Fuel Economy Improvements in Low-, Middle- and High-Income Economies



3 67 UNEP countries with China and India
4 https://www.iea.org/reports/fuel-consumption-of-cars-and-vans#tracking-progress

Figure 2: Fuel Economy Improvement Rate 2005-2019



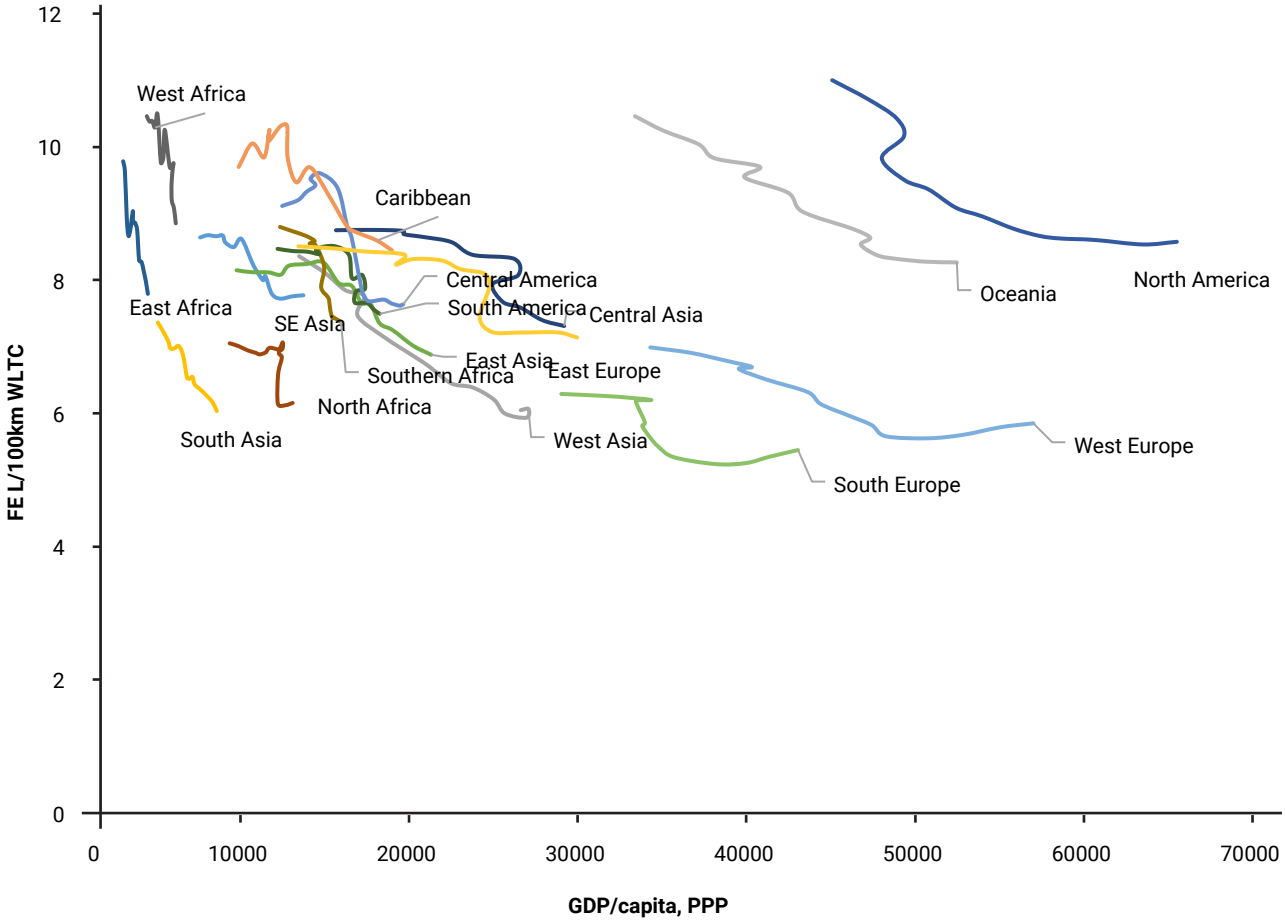
The sales-weighted fuel economy results across regions show some remarkable trends, as depicted in figure 3. In 2019, the average fuel economy of the 109 countries covered in this analysis ranged from 4.7 to 13 Lge/100km, reflecting almost a factor of three between the most efficient and least efficient markets. This gap has significant ramifications for policies discussions to boost fuel economy.

In high-income OECD economies, where the maximum progress has been achieved, the most efficient vehicles are registered in Southern and Western Europe. At the same time, the average fuel economy of passenger cars in Oceania and North America is worse than many countries in the Global South. Despite limited improvement in fuel economy in low and middle-income countries, we find the progress a step in the right direction, i.e., a case of the "glass half full". Not only does the fleet in regions like South Asia, West Asia, and North Africa have a comparatively better performance than several OECD economies at lower income levels, but the rate of fuel economy improvement is also comparable. **Any general hypothesis that emerging countries' fleets are less fuel-efficient or advanced economies have more fuel-efficient fleets is not true** (see Map 2). Countries at any stage of economic development can acquire a fuel-efficient LDV fleet.

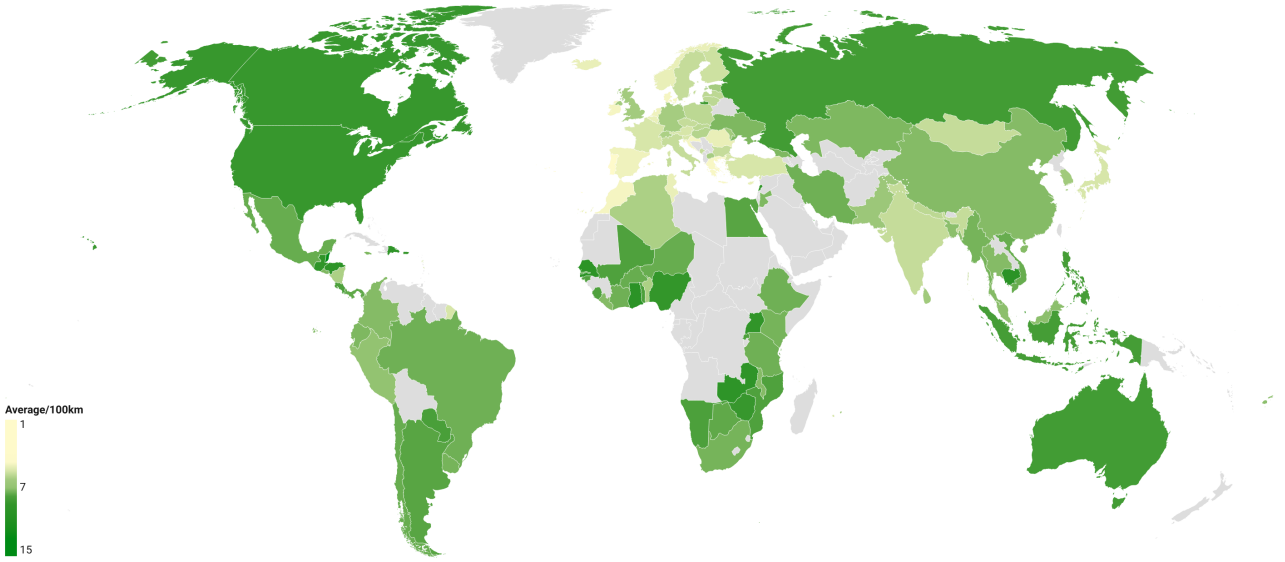
Since 2015, improvements in fuel economy have slowed in major automotive markets, primarily in the North, Central and South America, and European countries, and strengthened in developing countries across Asia and Africa. **Research by GFEI5 indicates stagnation of fuel efficiency improvements in high-income economies due to three main reasons: vehicles are becoming larger, heavier, and more powerful, while efficient engines have not been adopted quickly enough to compensate. At the same time, efficiency gains in conventional internal combustion engines are slowing down as their remaining efficiency potential becomes more expensive and challenging to exploit. In contrast, fuel economy progress in the Global South is intensifying despite countervailing trends in the growth of more powerful cars**. This worrisome trend is discussed later in the report.

5 https://www.globalfueleconomy.org/data-and-research/publications/gfei-working-paper-22

Figure 3: Fuel Economy Regional Trends (using 109 countries)



Map 2: 2019 Estimates of Passenger Car Fuel Economy



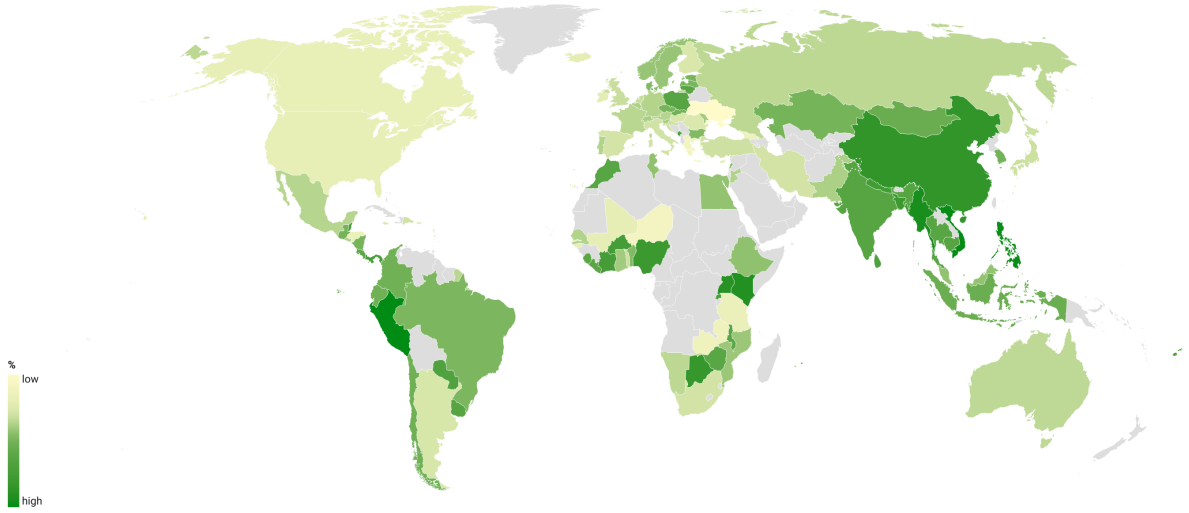
5. What is the Status of the Passenger Car Market?

The relative changes in the size of different car markets profoundly affect the evolution of the global average fuel economy. **Since 2005, passenger cars sales have reduced at an annual rate of -0.7% in high-income economies while they expanded at an annual rate of 7.1% in middle and low-income economies**. Among the sampled countries between 2005 to 2019, yearly sales of LDV stagnated or reduced in Europe, North America, and Oceania while growing marginally in Latin America and the Caribbean and Sub-Saharan Africa and increasing significantly in Asia resulting in a significant shift in the automotive market from OECD to non-OECD countries, especially the upper-middle and lower-middle-income economies6 (Map 3)

In the 68 sampled countries, a shift in the automotive market has improved average fuel economy values. For example, in 2005, 25% of LDV sales were in countries with fuel economies of between 7 to 8 Lge/100km. However, by 2019, 62% of the LDV sales were in the 7 to 8 Lge/100km segment (Figure 4). Thus, a shift in sales market share from countries with more energy-intensive cars to less energy-intensive cars has contributed significantly to the global improvement in fuel economy.

The 68 countries considered in our analysis constitute only about 10% of the total global car sales. Therefore, one could question the wisdom of focusing effort on 68 low and middle-income countries instead of prioritizing the action across major automotive markets. **However, our analysis indicates that the opportunity size is higher in the Global South (Figure 5). Therefore, fuel economy policies could yield a more profound impact in the Global South due to the growing market than equivalent standards in the Global North.**

Map 3: Passenger Car Sales Annual Growth (2005-2019)



6 Data is extracted from OICA, CarSalesBase and Local Automotive Sale statistics.

Figure 4 : Share of Passenger Car Sales with Fuel Economy Values

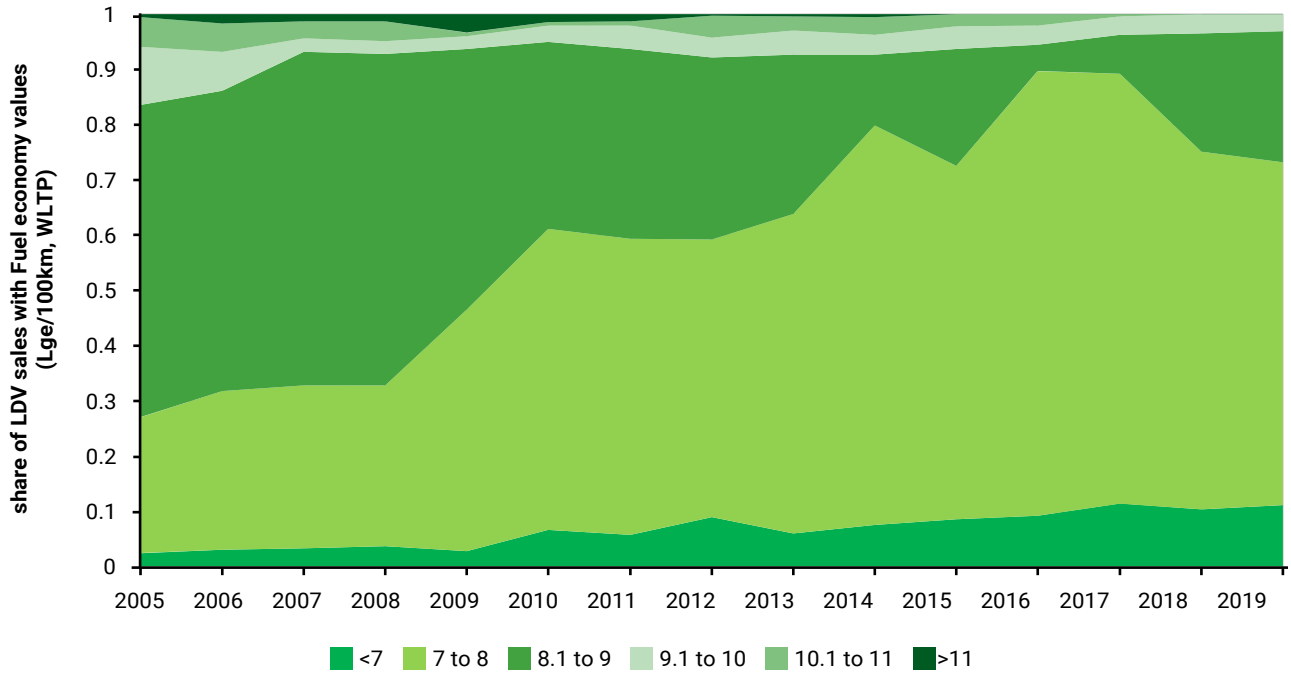
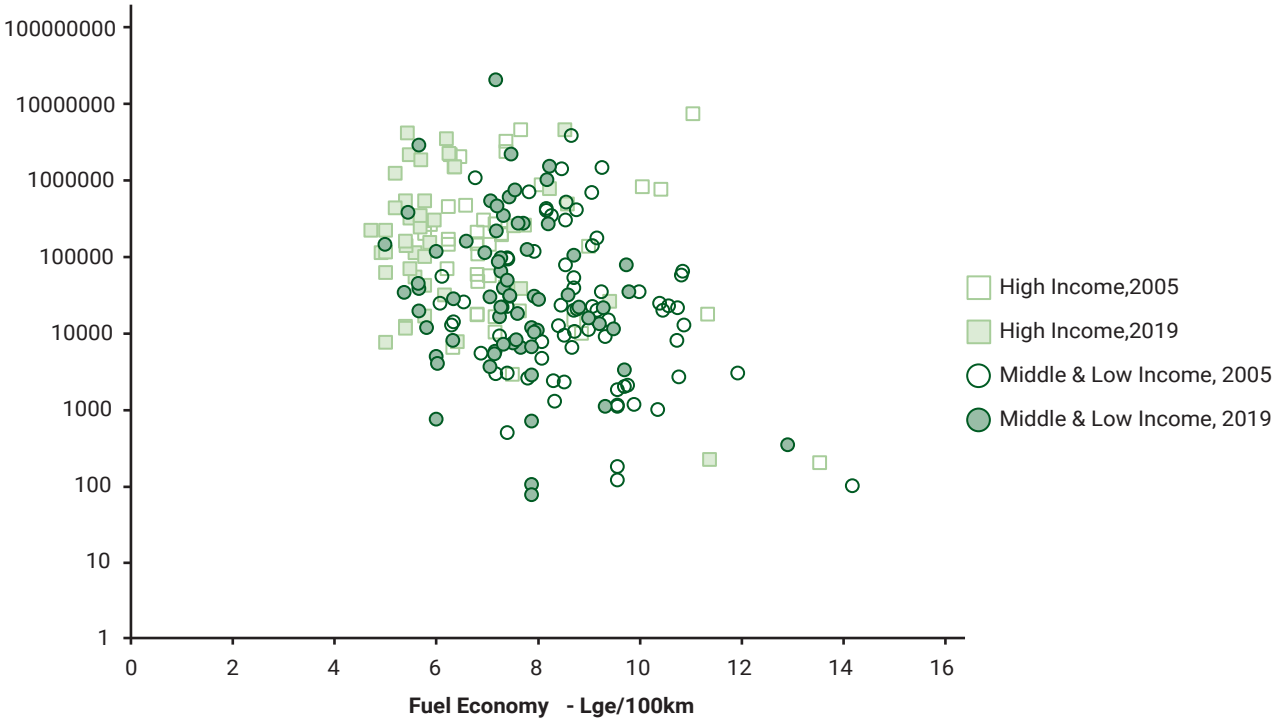


Figure 5: Passenger Car Sales with Fuel Economy Values & Income Typology



6. Drivers of Fuel Economy Trends in the Global South

The significant differences in vehicle fuel economy result from a complex interaction of various factors, including - manufacturers and consumers preferences for categories or types of cars, policies, and the intensity of penetration of fuel-efficient technologies, lower-emission fuels and associated costs. This section explores a few key drivers influencing passenger car fuel economy in the Global South.

a. Engine Displacement

Countries with lower average engine displacement tend to have a better fuel economy when compared with countries with significantly higher average internal combustion engine displacement. Across the Global South, the majority of first-time registered cars have medium-sized engines (~1700 cm³).

In contrast, most first registrations in Europe are about 1500-1600 cm³, while in the US, Canada, and Australia, the average is above 2500 cm³. The cars with the highest average engine displacement in the Global South are found in Belize, Botswana, Burkina Faso, Cambodia, Dominican Republic, Nigeria, North Macedonia, Nauru, Philippines & Honduras (Figure 6). In general, **the average light-duty vehicle engine displacement across the Global South has not changed significantly over the past decade except in the Pacific Islands and some Latin American countries.** There is however a clear trend toward global engine downsizing with marginal increase in engine size across Asia and Africa (Figure 7). Figure 8 shows some evidence of engine upsizing and downsizing.

Figure 6 - Passenger Car Engine Displacement with Fuel Economy

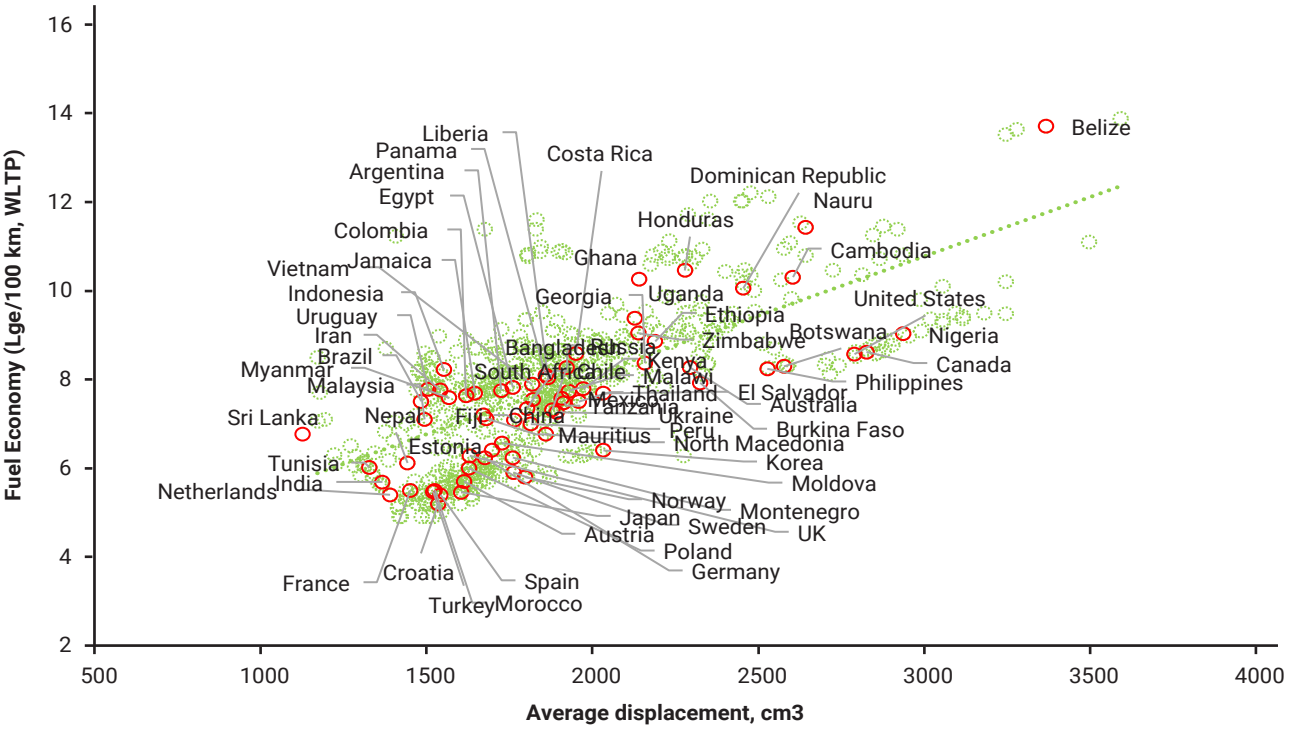


Figure 7: Regional Average Passenger Car Engine Displacement

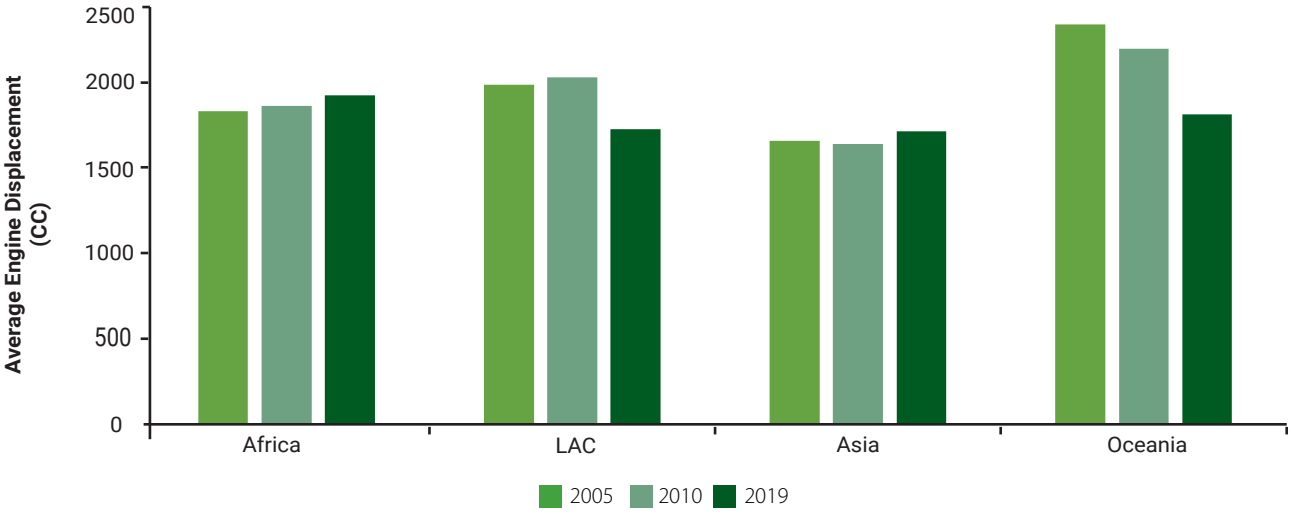
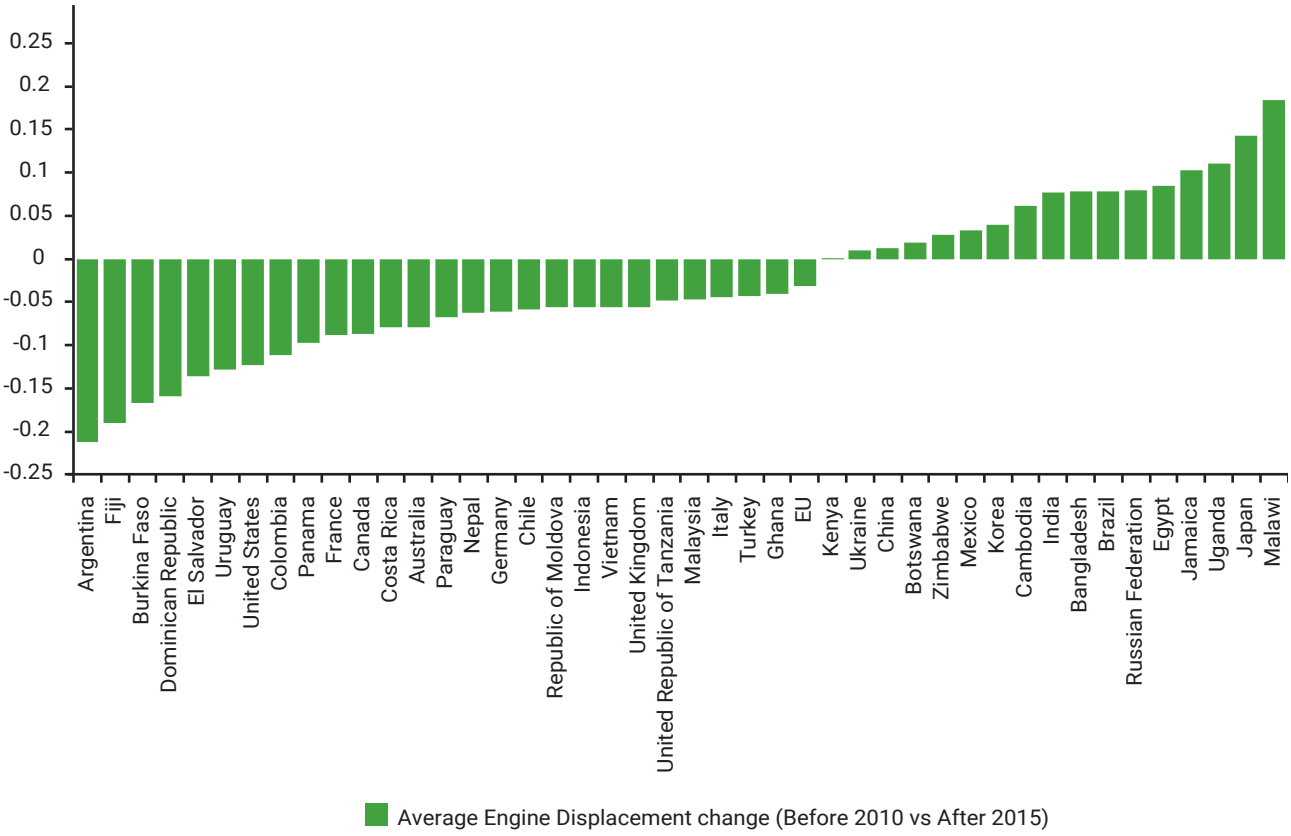


Figure 8: LDV Average Engine Displacement Change (Before 2010 vs After 2015)



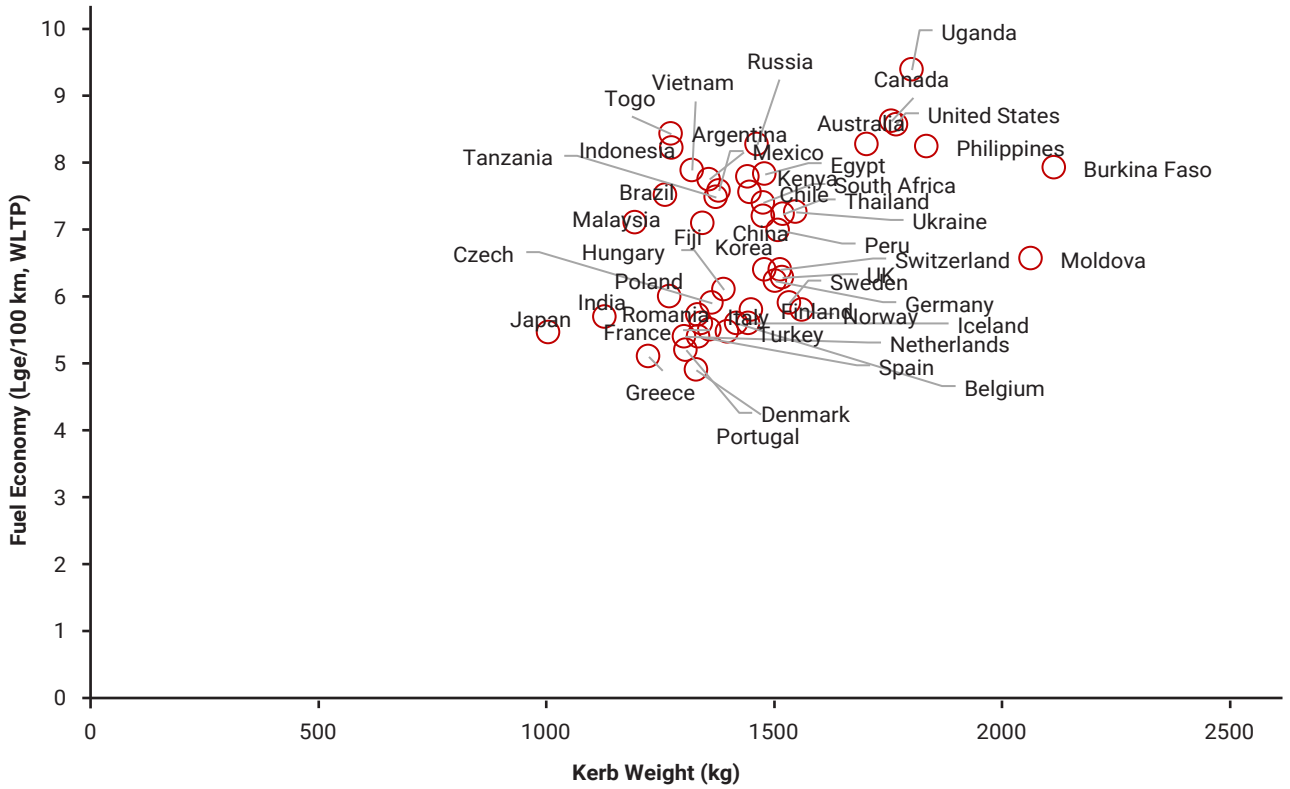
b. The Race for Weight and Power

The kerb weight of cars correlates with fuel consumption. Therefore, countries with cars with lower average weight are also likely to have more fuel-efficient vehicles. For example, countries like India, Fiji and Malaysia were among the car markets with the lowest average kerb weight and more fuel-efficient passenger cars. At the opposite end of the spectrum, countries like Bahrain, Uganda, Philippines, Moldova, and Burkina Faso have a significant share of cars with kerb weights above 1800 Kg. These markets also have a comparatively lower fuel economy (Figure 9). Map 4 provides the global snapshot of average passenger car kerb weight.

In contrast to the engine displacement trends, average light-duty vehicle weight has marginally increased over the past decade[7]. **Since 2005, the average sales-weighted kerb weight in the 68 sampled countries increased from 1200 to 1400 Kg.** This trend of a marginal increase in average vehicle weight is shared across all Global South light-duty regional vehicle markets. Interestingly, the marginal increase in car kerb weight in the Global South contrasts with the stable global average weight of LDVs. This contrast is mainly due to two offsetting trends, i.e., an increase in kerb weight in the Global South being countered by the increasing share of cars sold in the Global South and their lighter average net weight compared with the more advanced economies.

Higher vehicle power increases fuel consumption for LDVs of the same weight and footprint. For example, while the global average power rating of light-duty vehicles sold in 2019 reached 124 kW, the power rating of light-duty vehicles was 98 kW in the Global South (figure 10). **Since 2010, the power rating of light-duty cars has increased by 20% globally8 and 40% in the Global South.**

Figure 9 : Passenger Car Fuel Economy with Kerb Weight



7 https://www.globalfueleconomy.org/data-and-research/publications/gfei-working-paper-17
8 https://www.globalfueleconomy.org/data-and-research/publications/gfei-working-paper-22

Map 4: Current Status of Passenger Car Fuel Economy with Kerb Weight

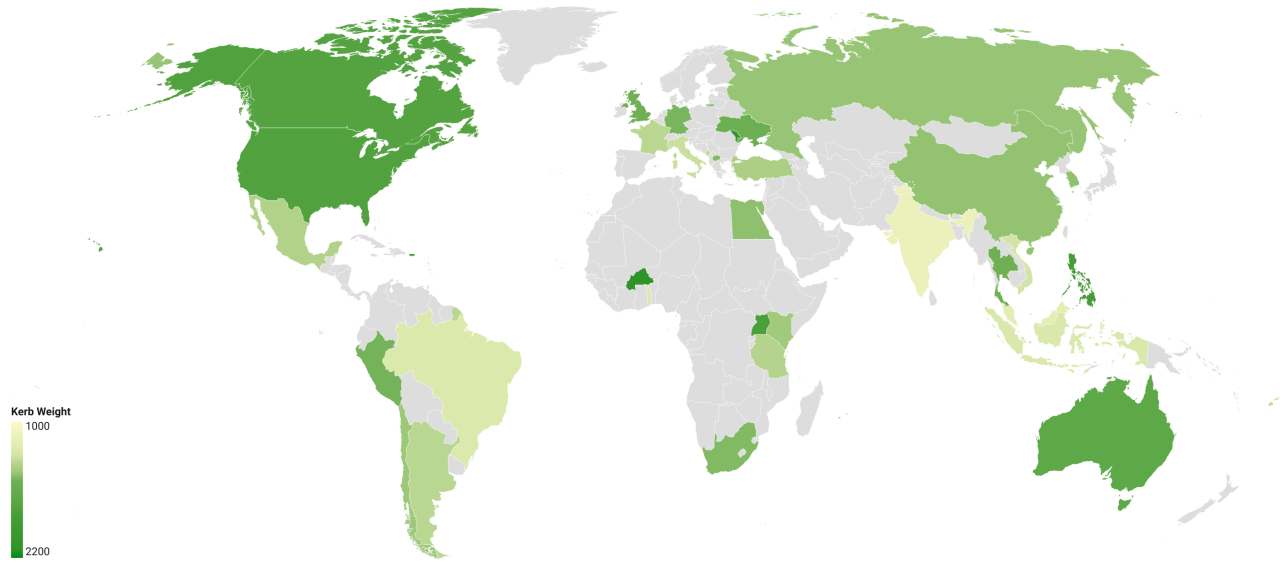


Figure 10 : Current Status of Passenger Car Fuel Economy and Power (kW)

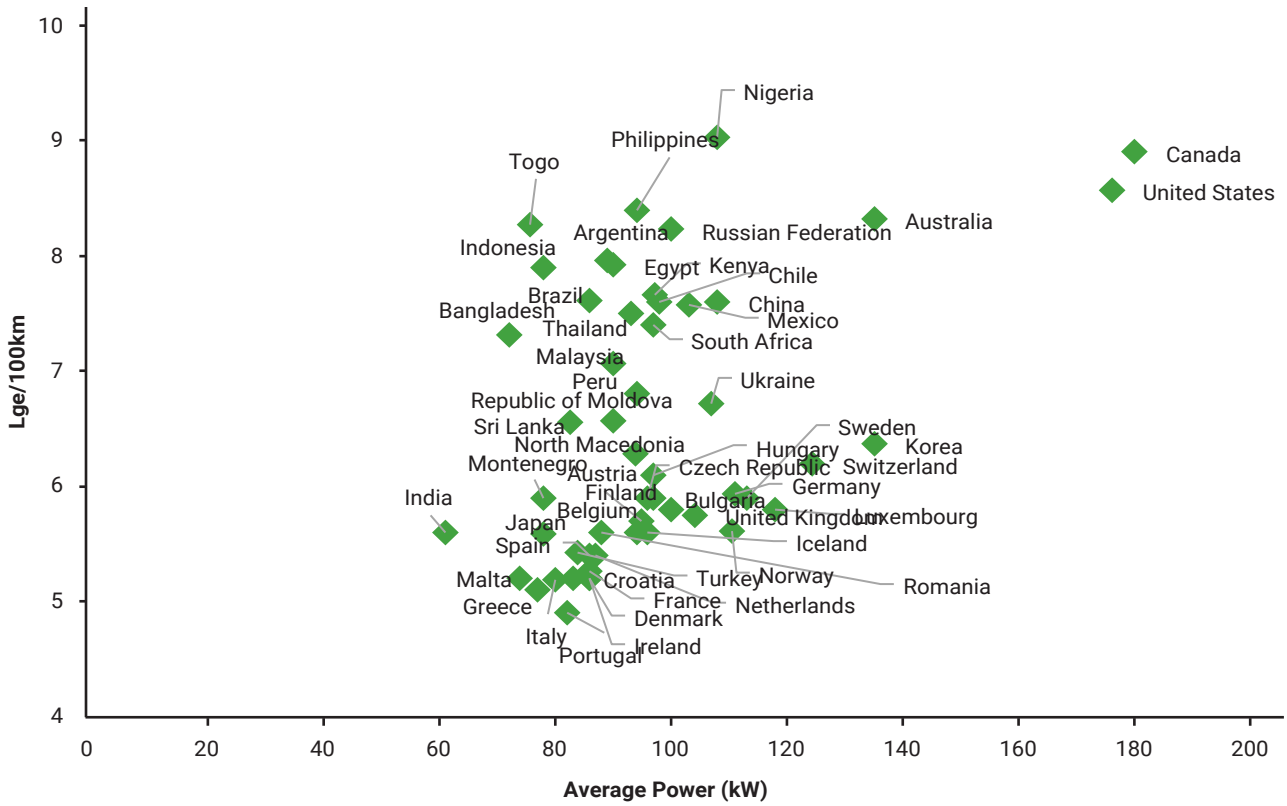
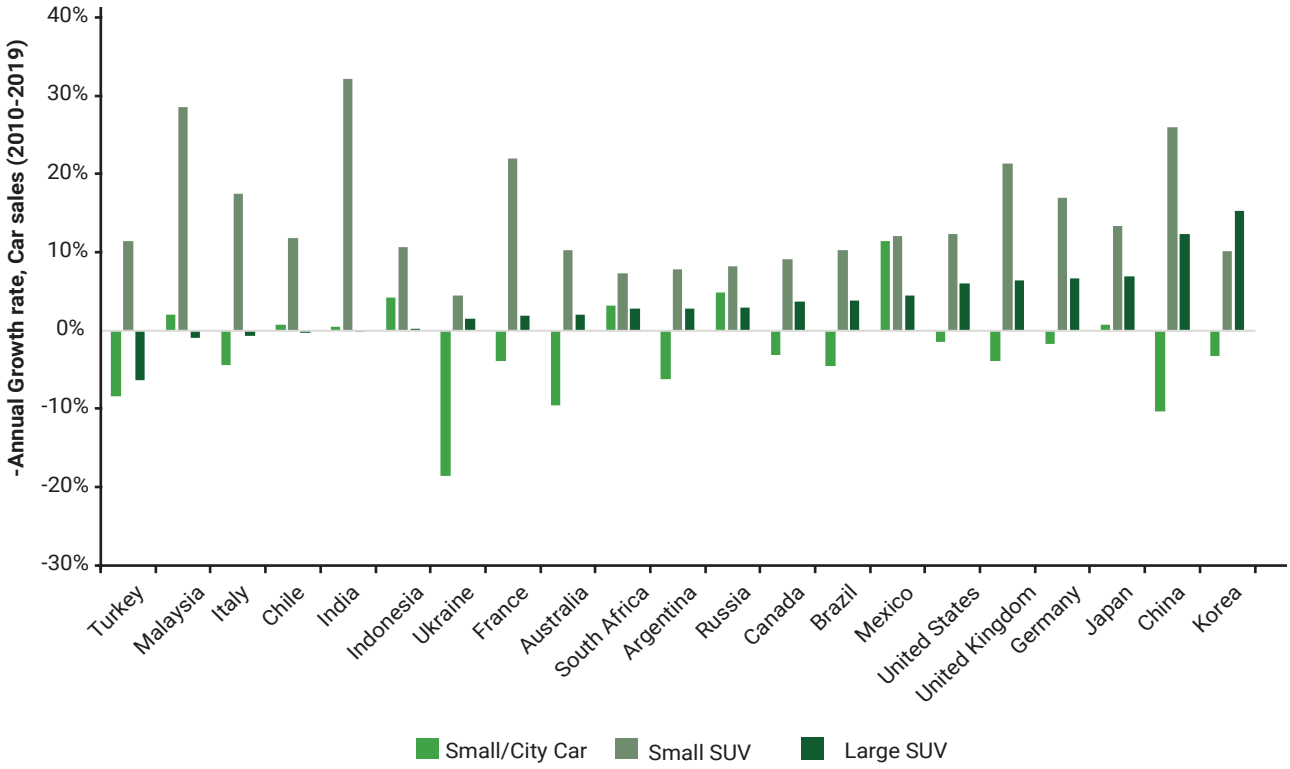


Figure 11 : Evolution by vehicle size in Major Markets

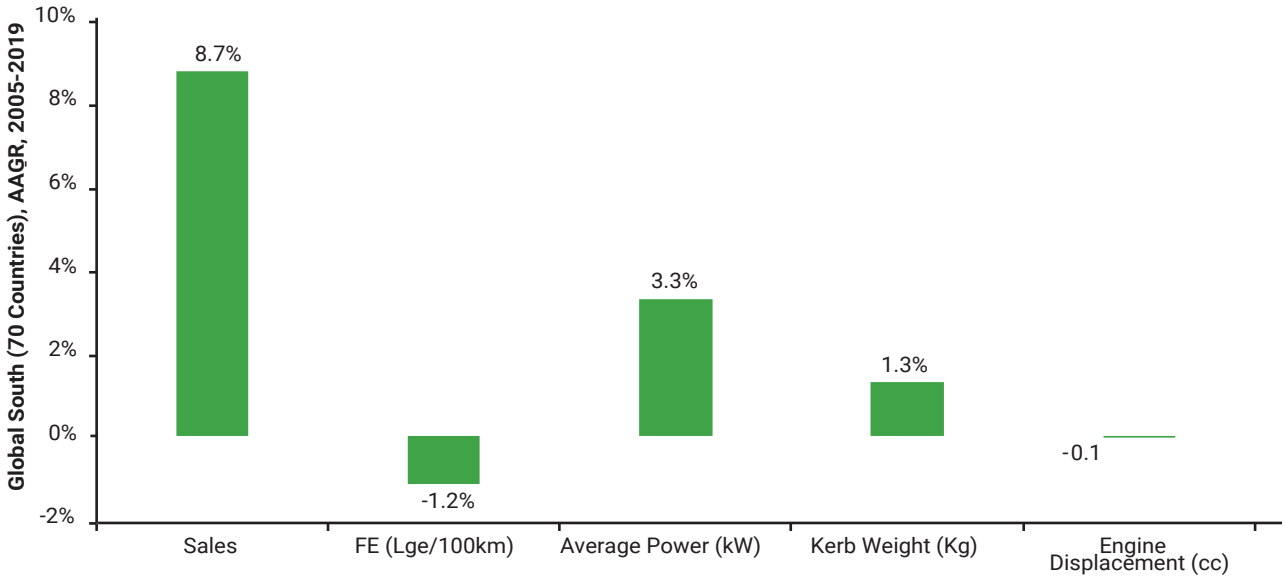


One of the main reasons for the increase in power and kerb weight is the evolution of vehicle size. **The International Energy Agency has estimated that the worldwide share of Sport Utility Vehicles (SUVs) in total passenger car sales increased from 22% in 2005 to 44% in 2019.** There is a clear trend in the shift from small cars to small SUVs in the Global South, as depicted in figure 11. SUV sales continued to rise globally, increasing the average weight, power and size[9].

Figure 12 below captures the overall LDV typology trend in the Global South (68 sampled countries). **Fuel economy improvement potential has not translated into actual improvements due to the increased power and weight of LDVs in the Global South.** The lesson learnt is that the growing segment of LDVs with more considerable power, weight and footprint stalls the impact of technological advancement.

9 https://www.iea.org/reports/global-fuel-economy-initiative-2021

Figure 12 : Change in Characteristics of Passenger Car in Global South (68 Countries)



c. Diesel Disappointment

Past fuel economy decisions in the Global North and their consequences have implications for fuel economy trends in the Global South. One of the earliest fuel economy improvement strategies in many advanced countries was to promote diesel cars[10] leading to the dieselisation phenomenon. Since 2010, diesel cars sales have increased higher than gasoline cars in many countries such as Argentina, Brazil, Chile, India, Russia, South Africa, and Ukraine. **In 2019, it is estimated that diesel share was about 14% of total passenger car sales in the sampled countries,** the same as the global average[11] (Map 5).

Over the last decade, many experts have extensively studied the impact of dieselisation in advanced economies. **The general conclusion is that the dieselisation of the fleet did not create any net benefits. A comprehensive analysis of fuel economy data from the Global South indicates that in most countries, the gasoline car fleet overall provides better fuel economy due to its comparatively smaller size when compared to diesel** (Figure 13). However, in countries where the diesel car fleet is marginally better, the minor savings are offset by significant increase in black carbon emissions of diesel cars[12].

10 http://aei.pitt.edu/4992/1/4992.pdf , http://www.indiaenvironmentportal.org.in/files/Vehicle_Fuel.pdf
11 https://theicct.org/sites/default/files/publications/ICCT%20Roadmap%20Energy%20Report.pdf
12 https://www.ccacoalition.org/en/resources/reducing-black-carbon-emissions-diesel-vehicles-impacts-control-strategies-and-cost-0

Map 5: Diesel LDV Share in Total LDV Sales/Sample (%), 2015-2019

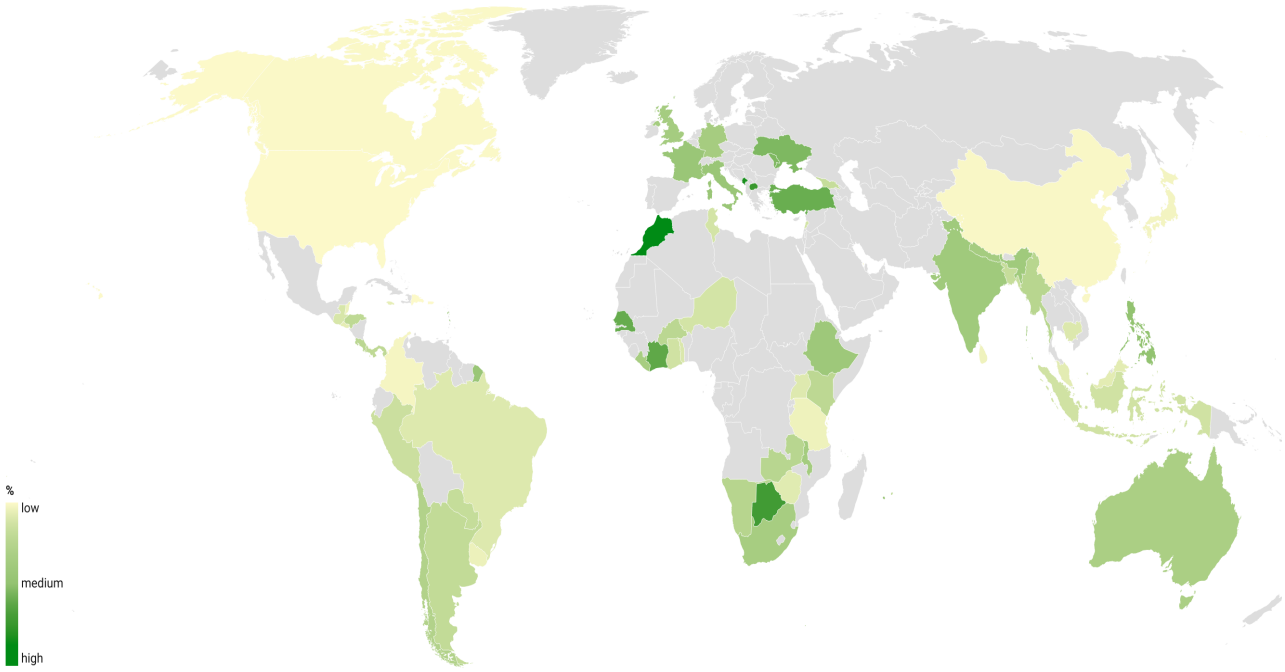


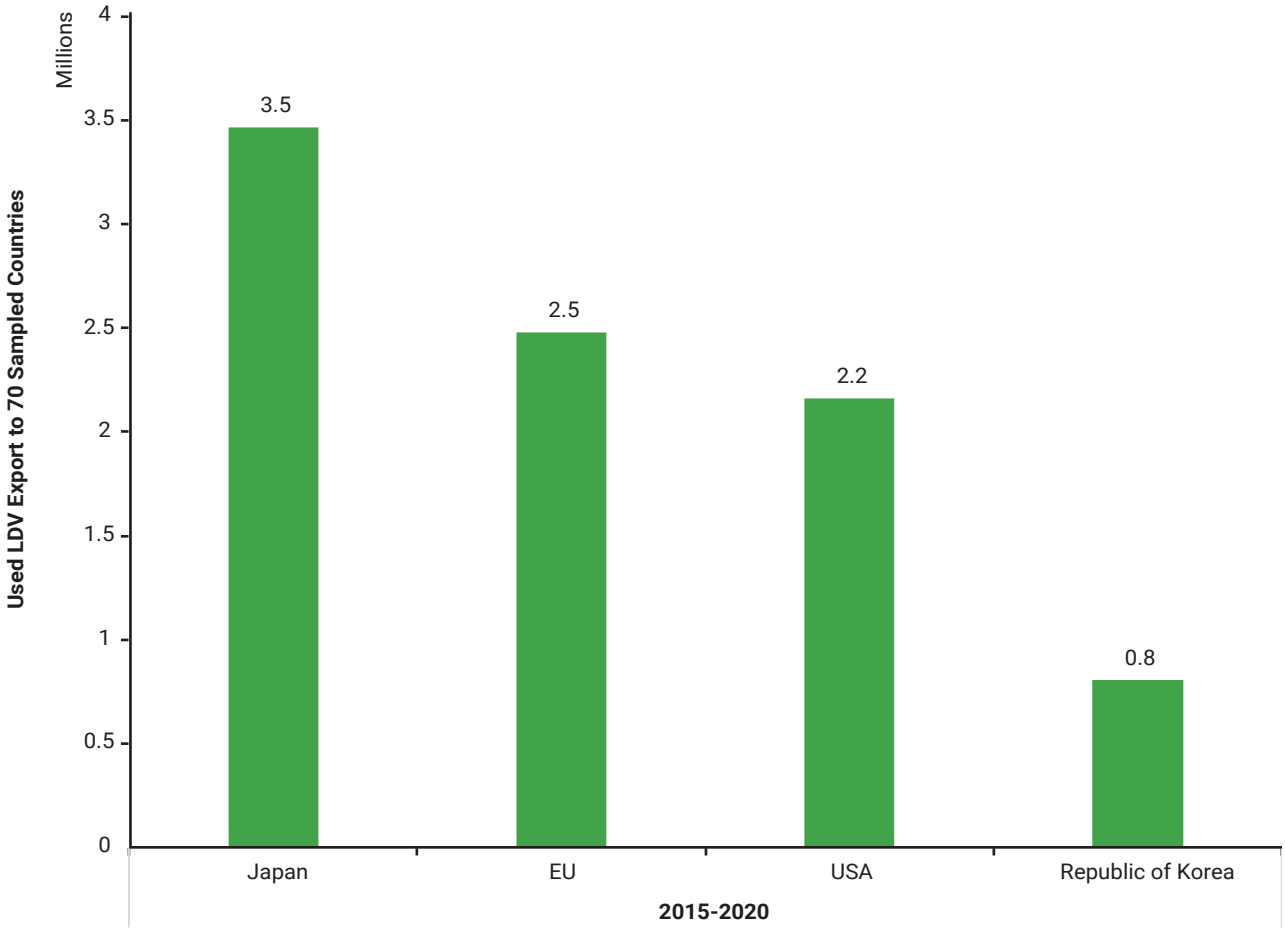
Figure 13 Fuel Economy Difference between Gasoline and Diesel Cars

d. What is the Spill Over Impact of Used LDV Trade?

From the trade flow data, it is estimate that in 2020, the 68 sampled countries imported close to US$33 billion worth of LDVs. For most countries considered in this assessment, used imported vehicles constitute a significant share of the total car sales. The four most prominent exporters of used cars, the European Union (EU), Japan, the United States of America (USA) and the Republic of Korea, exported 23 million used LDVs worldwide between 2015 and 2020[13]. Of these 23 million units, countries considered in this report imported close to 9 million units, i.e., about 37% (Figure 14). Considering that the sampled countries constitute only 10% of the automotive market, these figures demonstrate the significance of the used car trade across national borders. Further, most imports are from Japan and the EU, which have imposed fuel economy regulations for some years and have comparatively more efficient fleets when compared with other high-income economies.

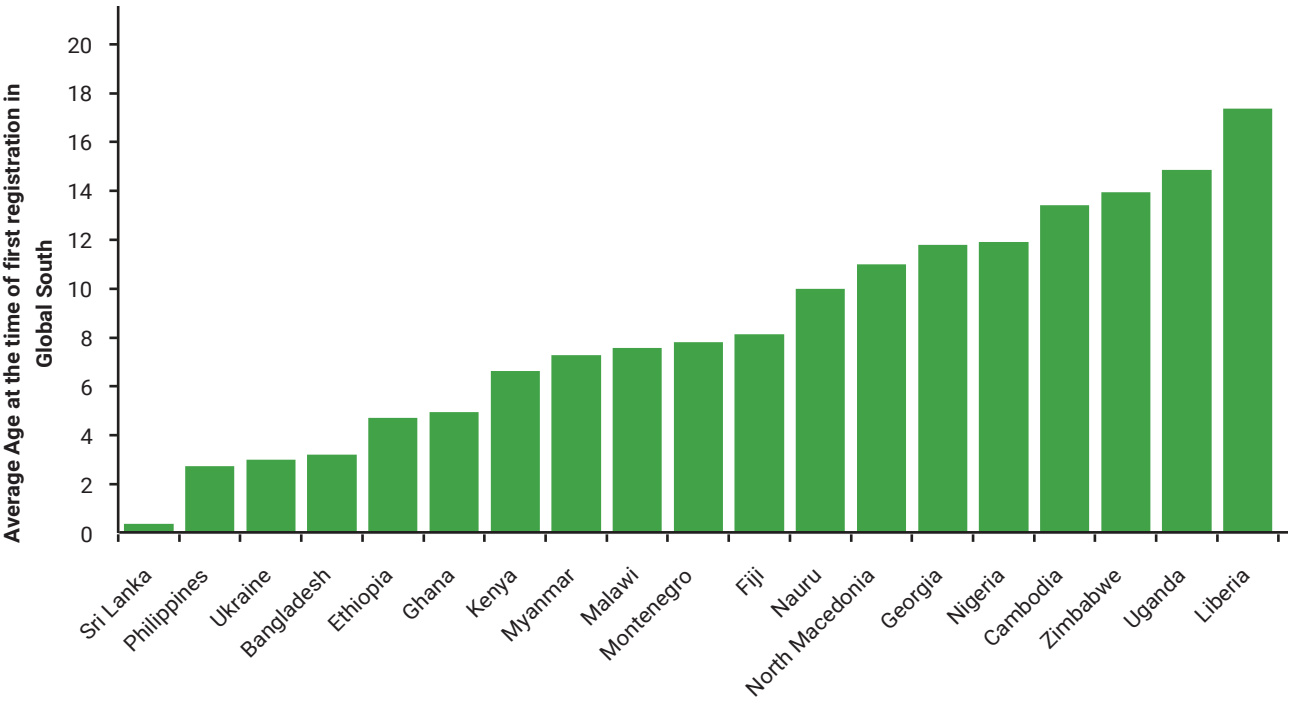
Most countries in the Global South have limited, or no regulations governing the quality of imported used cars and regulations that exist are often poorly enforced. Equally, few advanced countries have export restrictions on the quality of used LDVs. Limitations and restrictions can take many forms, from complete import bans to age restrictions, emission standard restrictions, fiscal incentives, labelling and awareness requirements. Of the sampled countries,

Figure 14 - Used LDV Export to 68 Sampled Countries



13 http://airqualityandmobility.org/usedvehicles/usedvehicles_updatereport2021.pdf

Figure 15 - Average Age of LDVs at the time of first registration in Global South



- 16% have eliminated the import of used LDVs
- 26% only allow used LDVs of age less than or equal to 5 years
- 17% impose age restrictions of 6 to 10 years, and
- 41% of countries do not enforce any age-based regulations or allow the import of LDVs above ten years.

It is difficult to conclude the average age of newly registered LDVs across the Global South due to limited data. However, evidence suggests that the average age of first-time reported LDVs is above five years in many countries (Figure 15).

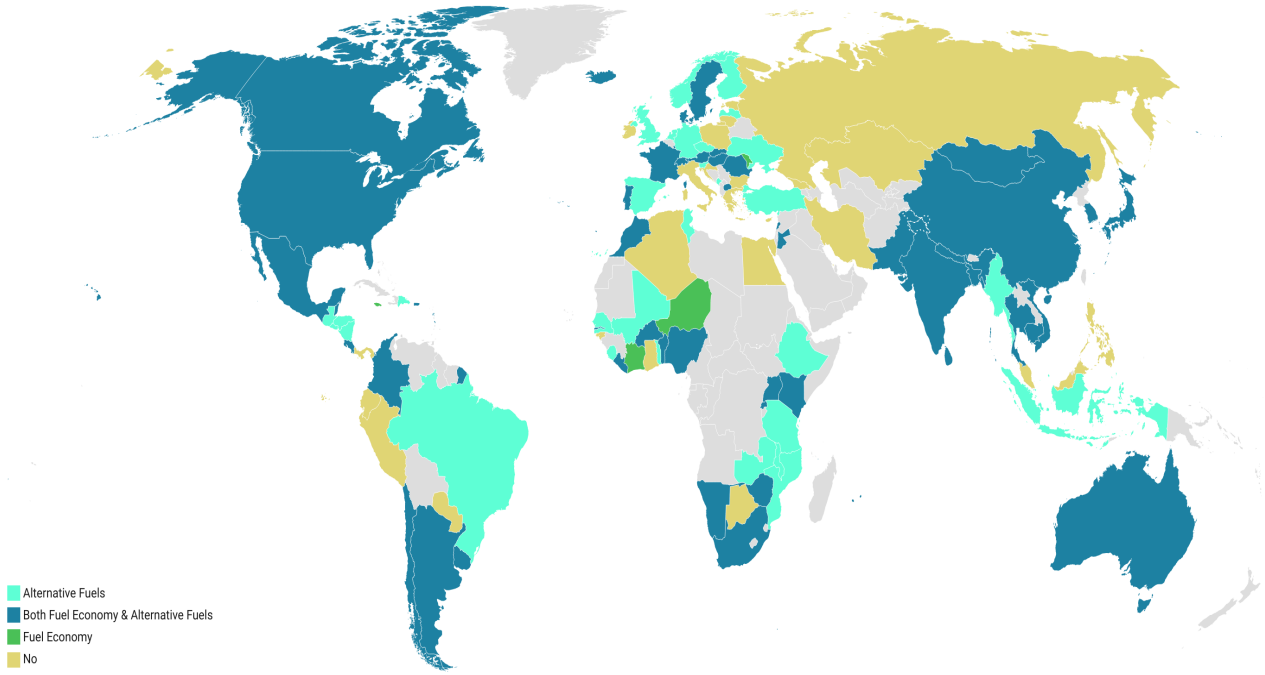
Banning imported used cars eliminates access to old and emission-intensive used cars from entering low- and middle-income countries, but they could also reduce the possibility of affordable access to advanced technologies – especially where new vehicles are imported or produced under weak vehicles standards and policy regimes. However, research establishes that the stricter an importing country regulates the import of used cars and associated technology, the more efficient the vehicle technology that is brought into the local market.14

Some countries have started providing incentives to import used hybrid electric (HEV) and electric vehicles (EV). While still modest in absolute numbers, i.e., about 6% of total car imports from 2017 to 2020, the export of these used vehicles is increasing rapidly. Currently, nearly all HEVs and EVs imported by the 68 sampled countries are exported by Japan (94%). For example, in Mongolia, a second-hand Prius shipped from Japan carries a price tag from around $2,000 to $6000 depending on the model year15, constituting 40% share of the used car import in Mongolia.

Of the 68 countries, 15 countries have imposed an emission standard regulation. However, the analysis could not find good examples of age-based import taxation among the sampled countries. Only Ghana, Kenya, Sierra Leone, Tunisia, and Uganda have some age-based taxation measures to encourage the imports of cleaner used vehicles. The review finds that about half of the countries surveyed (38 out of 68) have 'weak' or 'very weak' policies to regulate the import of used cars. With advanced countries incrementally moving forward with tightening regulations to improve passenger car fuel economy, there is a high potential of spillover effect in the Global South - strengthening of used LDVs regulations could guarantee the import of more efficient vehicles.

14 https://www.unep.org/resources/report/global-trade-used-vehicles-report
15 https://asia.nikkei.com/Business/Mongolians-love-their-Prius-hybrids

Map 6: Fuel Economy & Alternative Fuels in New climate strategies



e. Is Fuel Economy Getting Prioritised in Policies?

It is given that fuel economy policies will be strengthened in the long term because of incremental improvements in technology from manufacturers. However, the intensity and direction of such policies could differ based on a country's socio-economic development, institutional frameworks, and domestic priorities. Nevertheless, **we find increasing consensus for better fuel economy in the policy documents of the Global South.** New climate strategies, especially the Nationally Determined Contributions and long-term low GHG emission development strategies, are emphasizing fuel efficiency and electrification of road transport across most vehicle types. **Out of the 68 sampled countries, 50% of countries prioritize "improving fuel economy", and 71% of countries prioritize "electric vehicles" as a part of their climate mitigation strategy**[16] (Map 6).

Countries in the Global South have adopted a diverse set of instruments to improve the fuel economy of LDVs. These strategies could include and ideally combine the following instruments for better impact:

a. Improve the information on fuel consumption and CO2 emissions available to consumers.
b. Set regulatory standards for fuel consumption or CO2 emissions.
c. Differentiate vehicle taxes according to CO2 emissions or fuel economy to encourage consumers to prefer improved efficiency.
d. Provide incentives and set regulations for vehicle components outside current vehicle testing, incentive, and regulatory systems, and
e. Set optimal fuel taxes.

Many countries in the Global South also have set direct and indirect aspirational targets for fuel economy improvement. Some examples include:

- At the 24th ASEAN Transport Ministers Meeting on 8-9 Nov 2018, the ASEAN adopted the Fuel Economy Roadmap for Transport Sector 2018-2025 with Focus on Light-Duty Vehicles. The roadmap has set an aspirational target to reduce average fuel consumption per 100 km of new light-duty vehicles sold in the ASEAN by 26% between 2015 and 202517. In response to the roadmap proposal, Malaysia set its fuel economy target – "to meet the ASEAN target by 2026, and eventually, the Global Fuel Efficiency Initiatives (GFEI) by 2030[18]".

16 Analysis based on SLOCAT-GIZ NDC tracker: https://changing-transport.org/tracker/
17 https://www.globalfueleconomy.org/media/597458/04_asean_asean-fuel-economy-roadmap.pdf
18 Low Carbon Mobility Blueprint 2021-2030, https://www.kasa.gov.my/resources/alam-sekitar/Low-Carbon-Mobility-Blueprint-2021-2030.pdf

- In September 2020, the ECOWAS Council of Ministers adopted a regionally harmonized fuel economy roadmap for the 15 West African countries. The region targets 5 Lge/100km by 2025, and 4.2 Lge/100km by 2030 for newly imported or registered light-duty vehicles.
- In February 2021, Chile adopted the country's first Energy Efficiency Law. The Energy Efficiency Law[19] targets a reduction of the energy intensity by at least 10% by 2030 compared to 2019. In addition, the transport sector is identified as a priority sector with a recommendation of "setting of energy efficiency standards for the new vehicle fleet, considering light-, medium- and heavy-duty vehicles".
- Indonesia has implemented a program for Low-Cost Green Car (LCGC). Under this initiative, zero sales tax is considered for spark-ignition internal combustion engines with a cylinder capacity up to 1200 cc and fuel consumption of at least 20 kilometres per litre and cylinder capacity up to 1500 cc, and fuel consumption of at least 20 kilometres per litre for diesel or semi diesel cars[20].
- Iran has targeted the scrappage of old vehicles to improve fuel economy and reduce air pollution. Some targets include the retirement of 140,000 old gasoline-fueled taxis and 450,000 gasoline-fueled pickups[21].
- Fiji's unconditional target is to ensure that by 2030 - 80% of all cars and 60% of taxis sales will be hybrid electric vehicles[22].
- Cape Verde became the first African country to commit to a target to electrification of the entire vehicle fleet by 2050 at the COP26.

19 https://www.globalfueleconomy.org/blog/2021/april/vehicles-included-in-new-chile-energy-efficiency-law
20 https://www.iea.org/policies/6185-sales-tax-exemption-for-low-cost-green-cars
21 https://unfccc.int/sites/default/files/resource/Third%20National%20communication%20IRAN.pdf
22 https://unfccc.int/sites/default/files/resource/Fiji_Low%20Emission%20Development%20%20Strategy%202018%20-%202050.pdf

7. What are the Implications of the Current Fuel Economy Trends in the Global South?

a. Scenarios

To understand the consequences of continuing with the historical trends, some "what-if" scenarios are analyzed as follows:

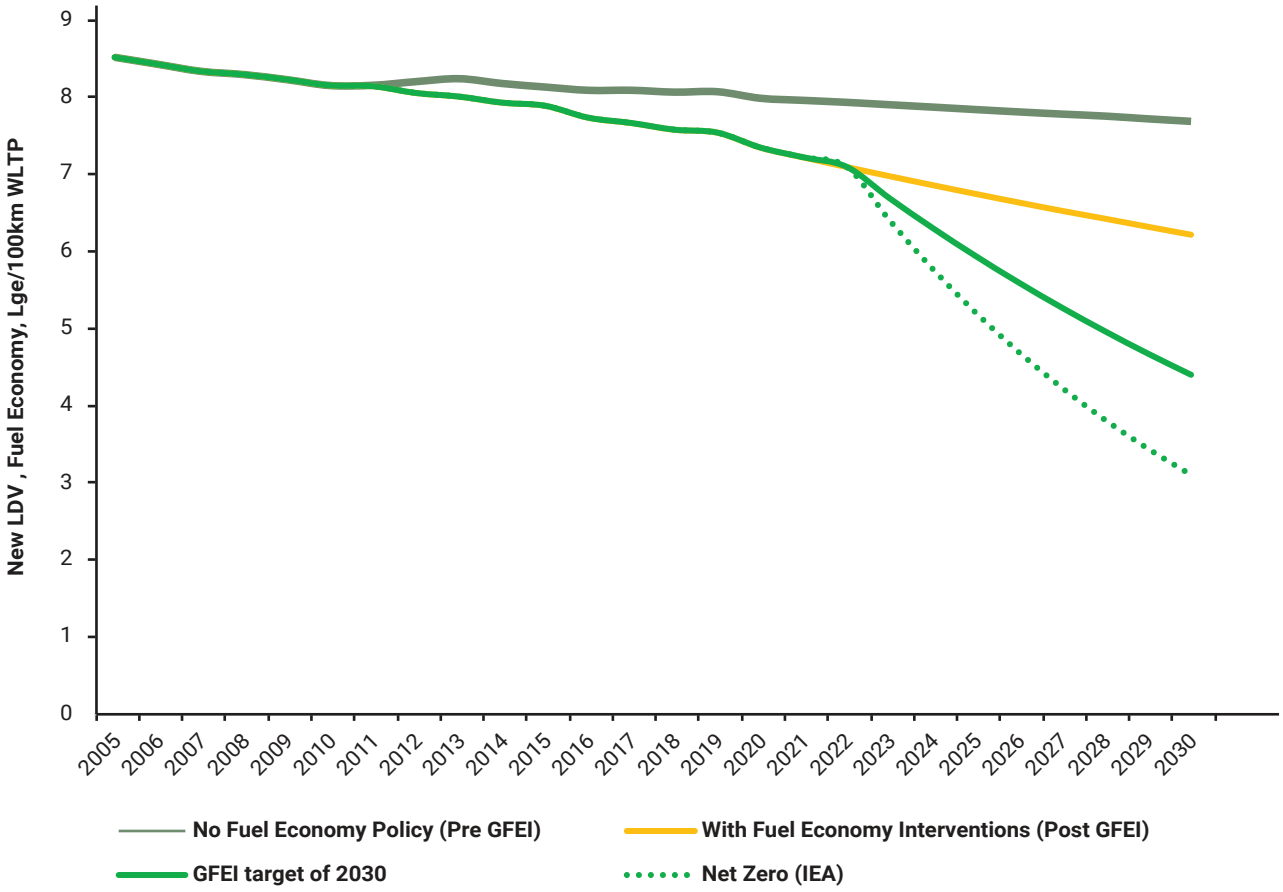
- What if there were no GFEI fuel economy interventions? This scenario assumes a pre-GFEI scenario where the historical trends between 2005 and 2010 would have continued until 2030.
- Post-GFEI scenario - With current policies in place (2010-2022), what would be the fuel economy of passenger car sales in 2030?
- The GFEI-target scenario considers the 2022-2030 trend based on a fuel economy target of 4.4 Lge/100km by 2030. In 2019, GFEI reconfirmed the current 2030 target of doubling the fuel economy of new passenger LDVs globally by 2030 (relative to 2005) through continued progress on combustion engine efficiency improvements plus the introduction of electric passenger vehicles. Therefore, for this investigation, a proportional reduction from 2022 to 2030 to reach the 2030 GFEI targets is assumed.

b. How the Scenarios Compare with the GFEI Target?

Figure 16 below compares these scenarios with the 2030 GFEI target and 2030 IEA Net Zero[23] ambitious target for fuel economy.

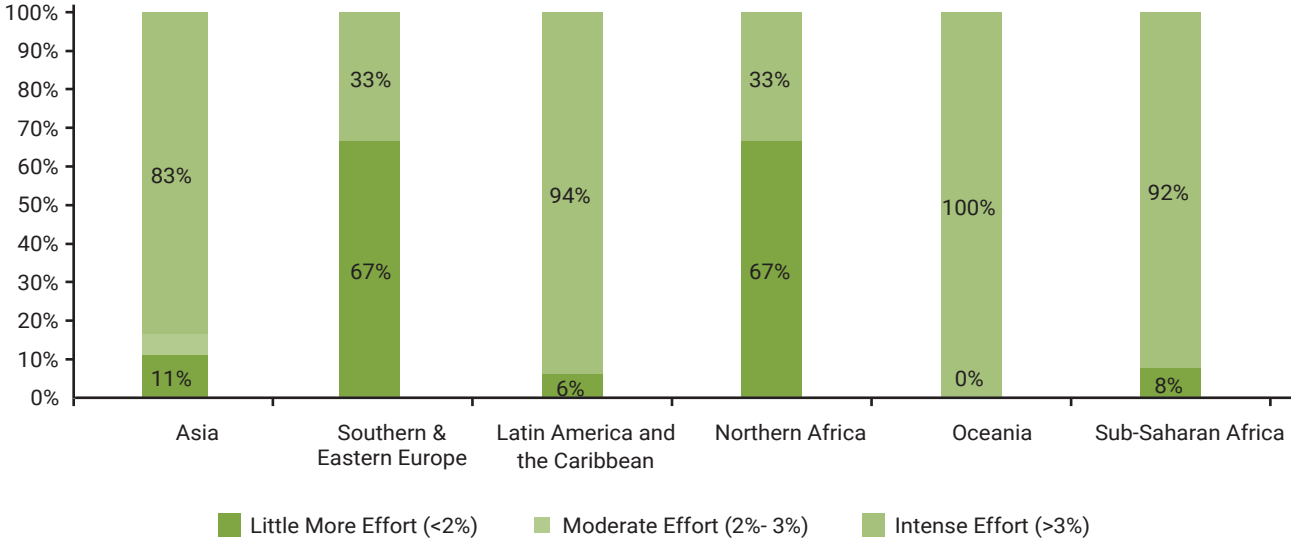
It is estimated that without GFEI interventions and subsequent country policies (pre-GFEI), by 2030, the fuel economy in the Global South could have improved marginally by 10% from 2005 levels due to technological advancements in cars. However, because of various fuel economy interventions

Figure 16 - Fuel Economy Trends and 2030 Targets



23 The 2030 GFEI target is little bit less ambitious than International Energy Agency's pathway of Net Zero Emissions by 2050. The International Energy Agency has estimated that for Net Zero Emissions by 2050, the global average fuel economy of new passenger cars in 2030 should be nearly half the 2019 global level, i.e., 3.1 Lge/100km. For our calculations, we base our findings based on 2030 GFEI target of 4.4 Lge/100km.

Figure 17- Magnitude of Effort Needed to reach 2030 Target



(post-GFEI scenario), the 2030 fuel economy in the Global South is assessed to be 27% better than 2005 levels. Our estimate of 27% improvement by 2030 is comparable to the ICCT estimate of 29% improvement due to adopted light-duty efficiency standards24. However, the progress is insufficient to meet the GFEI goal to halve the fuel consumption of new LDVs from 2005 to 2030. Therefore, a fundamental shift in the current trajectory is required from 2022 onwards to reach the GFEI goal of 4.4 Lge/100km by 2030 and move towards zero emissions by 2050.

The annual fuel economy improvement rate required in the 68 sampled countries is about 5.4% per year on average from 2022 to 2030 – meaning nearly five times increased efficiency from the current pace. Close to 80% of these countries need an annual improvement of above 3%. However, trends are less pessimistic for Southern and Eastern European and Northern African countries considered in the analysis as shown in Figure 17.

c. Overall Impact of Fuel Economy Interventions in the Global South

This paper estimated the GFEI fuel economy impact for first-time registered passenger cars in the Global South (68 countries) using the current fuel economy baselines, vehicle sales data, and some assumptions to bridge the gaps.

Quantifying the overall impact of fuel economy requires a straightforward bottom-up approach that considers new LDV fleet average fuel economy and CO2 emissions values, new vehicle sales, and average kilometers travelled. Historically, car ownership has responded proportionally to GDP. However, due to COVID, the GDP and LDV growth projections are highly uncertain. Hence, the predictions are illustrative, with continued historical trends on projected fuel economy savings, GDP growth and car ownership levels. Using the elasticity values from the UNEP's flagship e-mobility calculator, we estimate that post-COVID, car sales would increase in the Global South, with total sales reaching 11 million in 2030 (Figure 18). We estimated that about 180 million passenger cars could be registered for the first time between 2005 to 2030 in the Global South (68 countries). For each vehicle, across the scenarios, an average life usage of 180,000 vehicle km per car is assumed to be consistent with some international benchmarks.

Fuel economy policies in the Global South could have reduced about 1.2 million tonnes of CO2 emissions in 2019, i.e., about a 0.4% reduction in the transport sector CO2 emissions compared with no improvement scenario. While the magnitude of annual reductions could be considered marginal, the cumulative impact is significant.

In terms of cumulative impact, we estimate that policies in place (pre-GFEI vs Post GFEI) could reduce about 482 million tonnes of CO2 by 2030. Further, pursuing the GFEI 2030 goal of 4.4 lge/100km for first-time registered passenger cars in the 68 sampled countries could additionally

24 https://theicct.org/sites/default/files/publications/ICCT_StateOfCleanTransportPolicy_2014.pdf

Figure 18 - Passenger Car Sales Forecasts

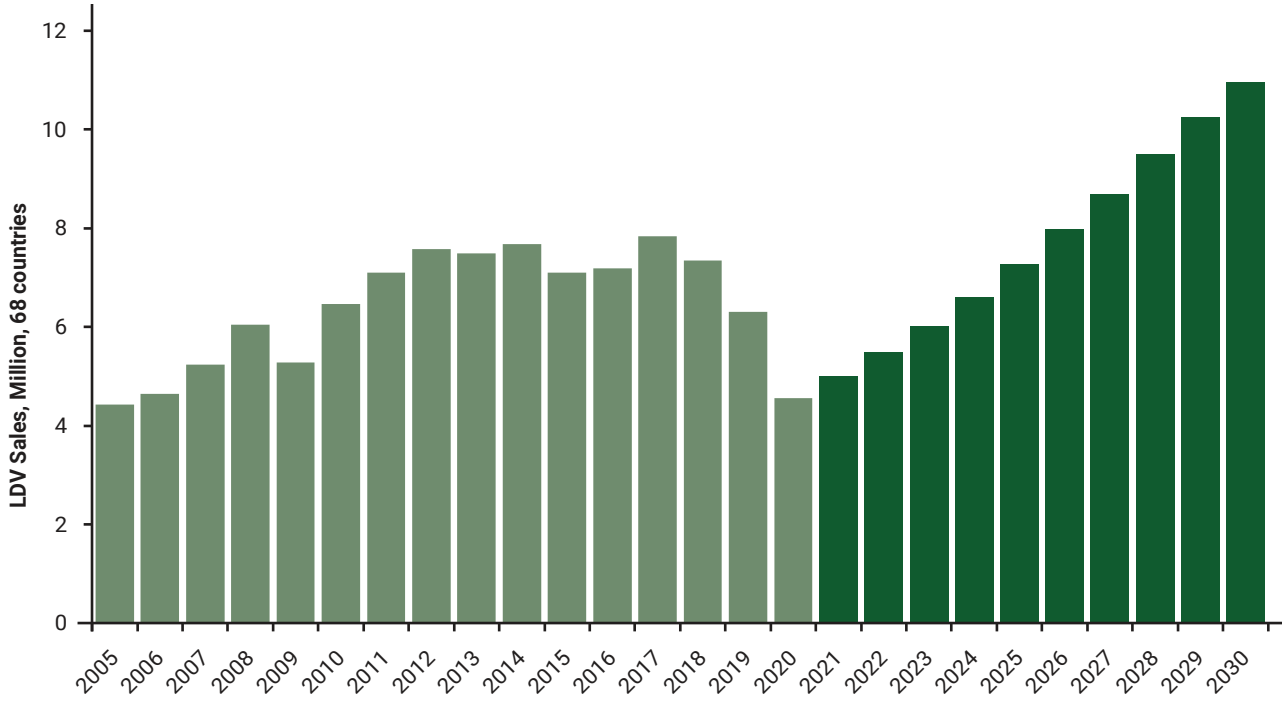
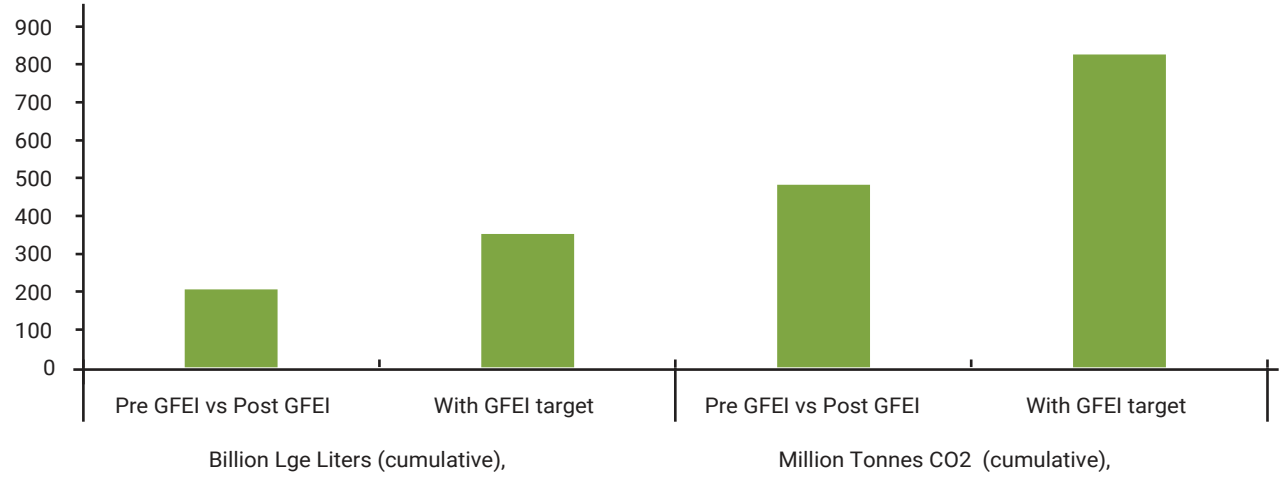


Figure 19 - Total Cumulative Savings (2010-2030)



lead to about 344 million tonnes of CO2 saving from 2022 to 2030. A cumulative reduction of 826 million tonnes of CO2 from 2010 to 2030 is significant from the 68 countries[25].

In terms of fuel savings, this translates into roughly about 350 billion litres in gasoline-equivalent terms (Figure 19).

25 Considering that the 68 countries assessed in our analysis are only about 10% of the total global LDV sales, our estimate of 0.8 Gt (0.74 over 2020-2030) is in range with other assessments of LDV fuel economy impact i.e., 2.7 Gt over 2020-2030 by New Climate Institute et al, 4 Gt over 2020-2030 by PBL Netherlands Environmental Assessment Agency and 11 to 18 Gt over 2020-2030 by ICCT. Read more: https://newclimateinstitute.files.wordpress.com/2016/05/discussion-paper-sbsta-final.pdf, https://www.pbl.nl/sites/default/files/downloads/pbl-2015-climate-action-outside-the-unfccc_01188_4.pdf, https://theicct.org/sites/default/files/publications/ICCT_StateOfCleanTransportPolicy_2014.pdf

8. Conclusion

One key outcome of this report is that delayed actions are not without consequences. For example, if countries in the Global South had aggressively implemented fuel economy policies starting in 2010 to reach the GFEI target by 2030, then the cumulative reduction of CO2 emissions could have been about 1.2 Gt. **Hence we estimate that delayed action by the Global South to implement fuel economy policies could have reduced the benefits accruing from improved efficiency by one-third**.

The quantified savings in our scenarios are highly speculative. However, historical trends do provide valuable lessons. **Despite the considerable differences across countries, continued incremental improvements in gasoline and diesel cars seen today will never yield the necessary CO2 reductions to reach GFEI 2030 targets. This calls for aggressive national policies and programs – particularly in the Global South - that will lead to a higher market share of electric cars, while at the same time shifting to more efficient internal combustion engine technologies, to improve the existing fleet.** However, the upward spiral of car size, weight, and power, as well as the import of inefficient used cars could nullify the potential impact of fuel economy policies in the Global South. **Therefore, it is essential to limit increases in the size and performance of passenger cars and move towards smaller and lighter electric cars.**

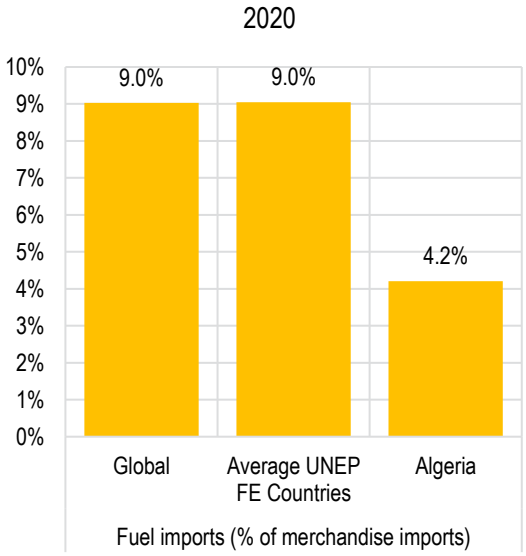
Ultimately, the quantified scenario savings are theoretical. In the absolute sense, fuel economy is about doing more with less. Overall fuel use and CO2 emissions depend not just on efficiency or fuel choice but also car use. Steady growth in car use could offset any potential gains from fuel economy, thereby increasing overall GHG emissions from the transportation sector.

Annex 1 – List of Countries Assessed in this Report

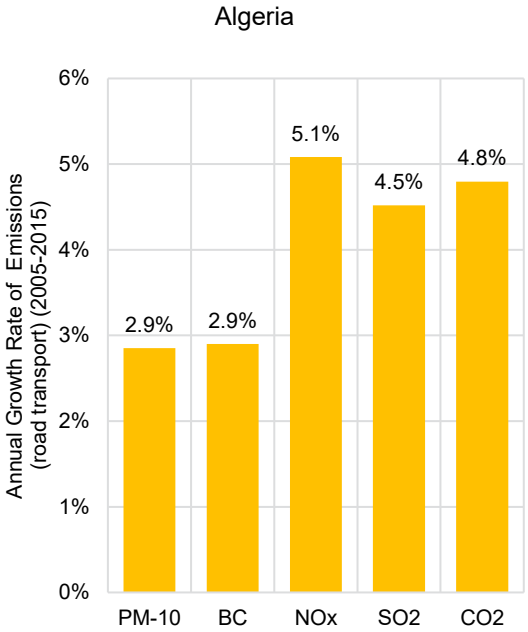
Countries directly supported by UNEP		Additional countries analyzed - information either publicly available or assessed by other GFEI partners (* countries included in the Global South country analysis)	
Algeria	Nauru	Australia	Turkey
Egypt	Nepal	Austria	United Kingdom
Argentina	Nicaragua	Belgium	United States of America
Bahrain	Niger	Brazil*	
Bangladesh	Nigeria	Bulgaria	
Belize	North Macedonia	Canada	
Benin	Panama	China	
Botswana	Paraguay	Croatia	
Burkina Faso	Peru	Cyprus	
Cambodia	Philippines	Czech Republic	
Chile	Rwanda	Denmark	
Colombia	Senegal	Estonia	
Costa Rica	Sierra Leone	Finland	
Côte D'Ivoire	Sri Lanka	France	
Dominican Republic	Tanzania	Germany	
Ecuador	Togo	Greece	
El Salvador	Tunisia	Hungary	
Ethiopia	Uganda	Iceland	
Fiji	Ukraine	India	
Georgia	Uruguay	Indonesia*	
Ghana	Vietnam	Ireland	
Guatemala	Zambia	Italy	
Honduras	Zimbabwe	Japan	
Iran		Latvia	
Jamaica		Lithuania	
Jordan		Luxembourg	
Kazakhstan		Malta	
Kenya		Mexico	
Lebanon		Netherlands	
Liberia		Norway	
Malawi		Poland	
Malaysia		Portugal	
Mali		Republic of Korea	
Mauritius		Romania	
Moldova		Russian Federation	
Mongolia		Slovak Republic	
Montenegro		Slovenia	
Morocco		South Africa*	
Mozambique		Spain	
Myanmar		Sweden	
Namibia		Switzerland	
		Thailand*	

Annex 2. Country Overviews

LDV FUEL ECONOMY COUNTRY REPORT FOR	ALGERIA	Year	Source
Population (million)	44	2020	7
Income Level Category	Lower middle income		7
GDP per Capita (PPP, Curent USD)	11320	2020	7
Motorisation (Cars/1000 population)	93	2020	10
Car Sales (000)	100	2020	6
Gasoline Price $/l	0.3	2020	2
Fossil Fuel Subsidy (Million $) 2019	5508	2019	4
Road Infrastructure Length/Capita (meters)	5.2	2018	13
Employment (Transport+,000)	740	2019	11
Fuel Economy (Lge/100 km, WLTP) -	#N/A	#N/A	1
Average CO2 emissions/kilometre (g/km, WLTP) -	#N/A	#N/A	1
Average displacement (cm3) -			1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	No	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.088	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.203	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	28.2	2019	8
Transport CO2 Emissions per Capita (tonnes) -	4.2	2019	14
Road Transport PM Emissions per Capita (grams) -	286.8	2015	14
Road Transport NOx Emissions per Capita (grams)-	6375.2	2015	14
Road Transport BC Emissions per Capita (grams)-	142.5	2015	14
LDV Emission Standards -	Euro 3	2019	1
Diesel Sulphur Levels (ppm) -	0	2019	1
Gasoline Sulphur Levels (ppm) -	0	2019	1
Annual rate of economy-wide energy intensity growth	1.2%	2000-18	16
Annual rate of transport energy consumption growth	4.3%	2000-18	16
LDV Import value (Million USD)	449	2020	3



Source : World Bank

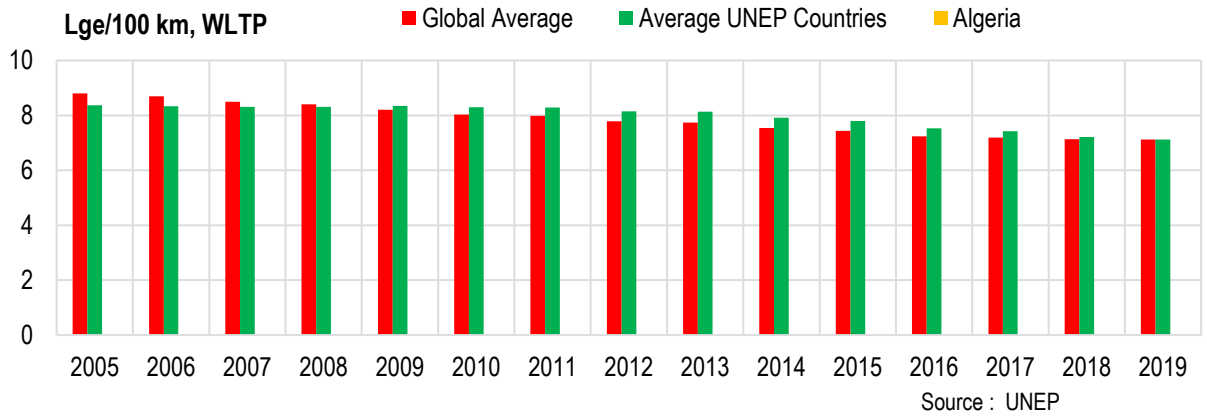


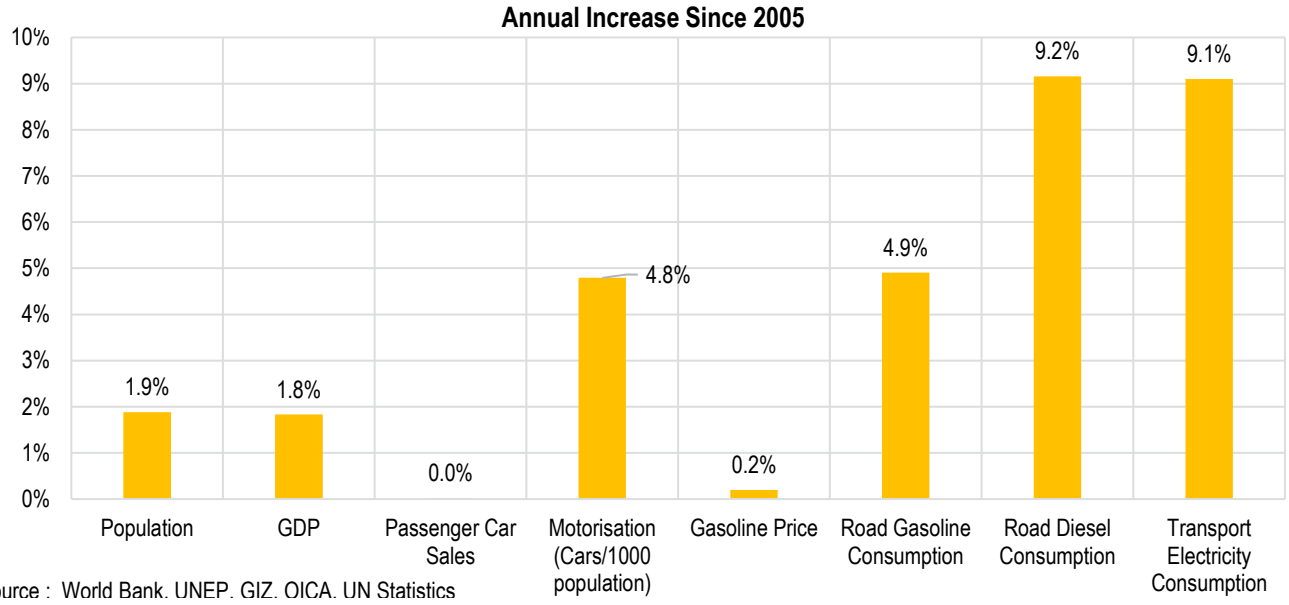
Source : IIASA

Sources & Notes

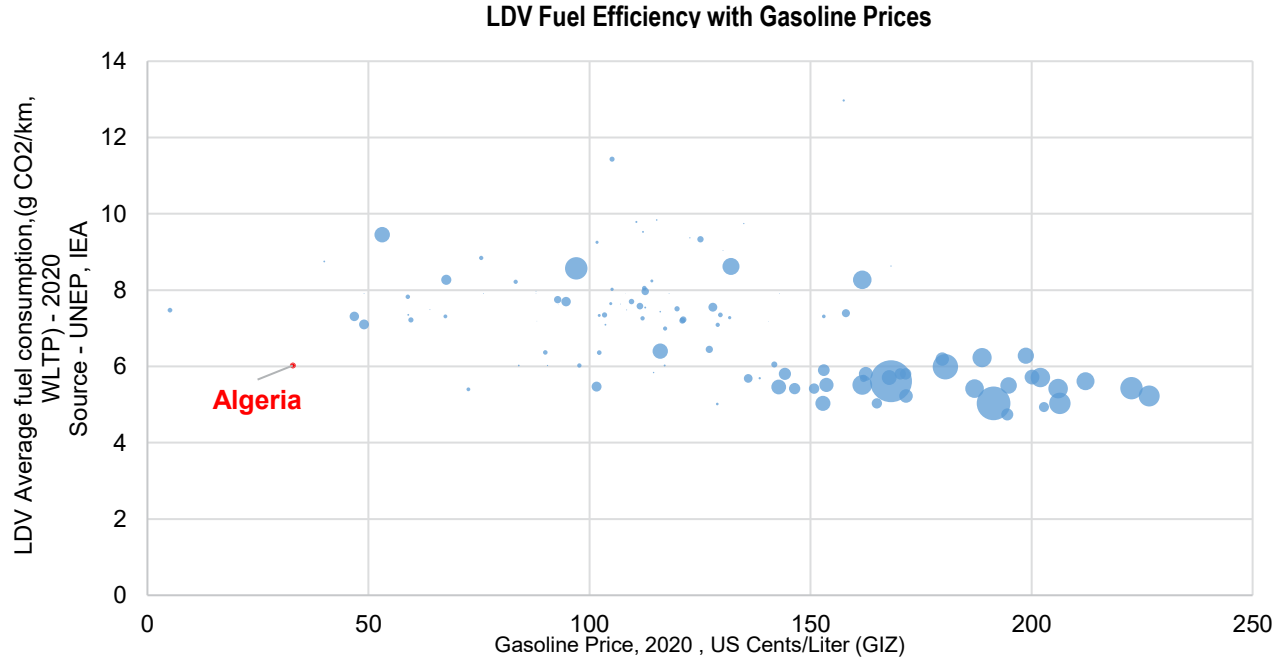
1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
7 World Bank
8 UN Statistics Division
9 SLOCAT &GIZ
10 Estimated using growth and sales data
11 Employment is for Transport; storage and communication, ILO
12 International Transport Forum
13 Koks, E.E. et al. A global multi-hazard risk analysis of road
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

FUEL ECONOMY TRENDS





Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

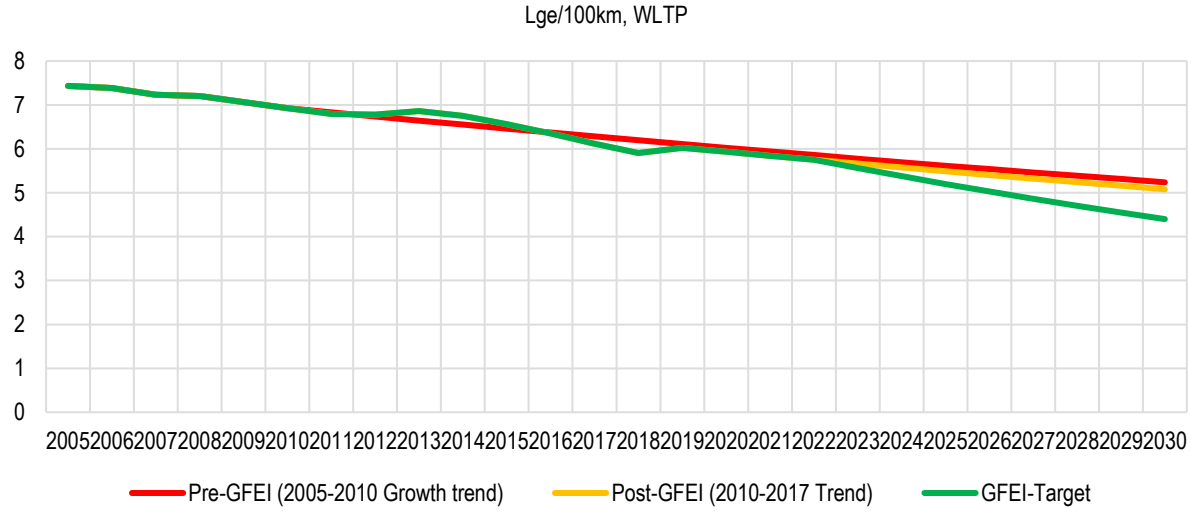
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

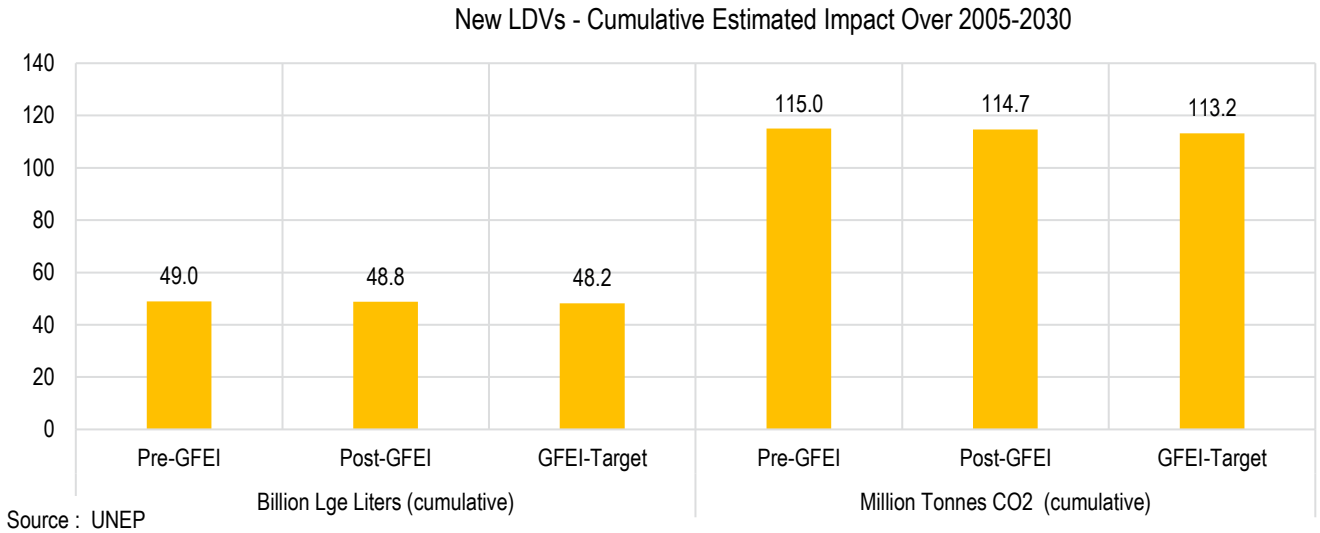
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-1.5%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-2.9%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

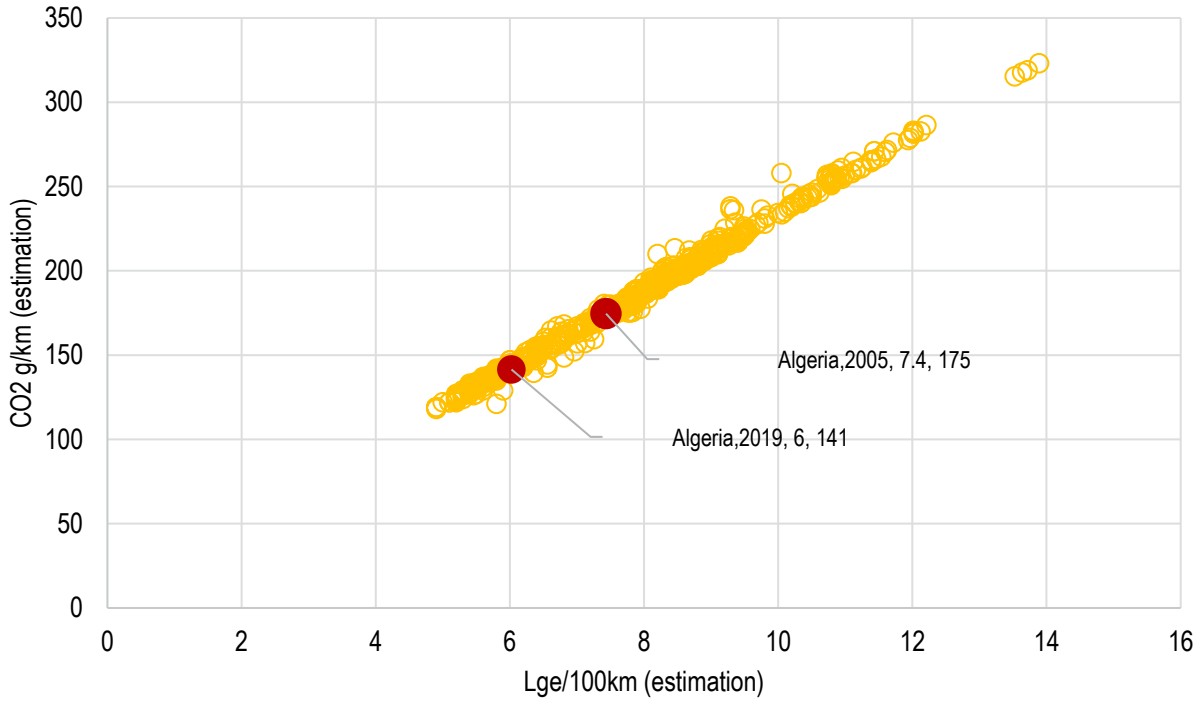
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



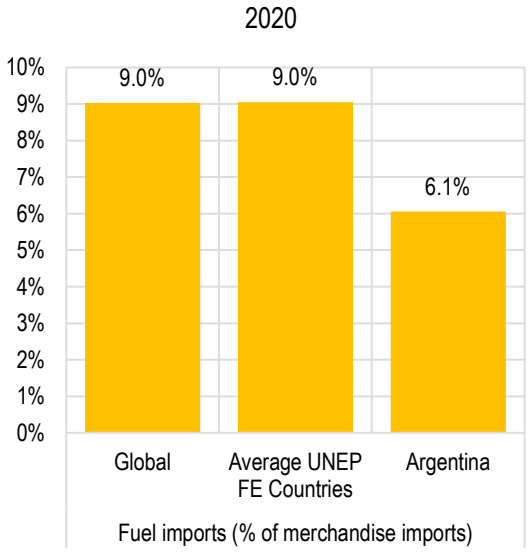
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

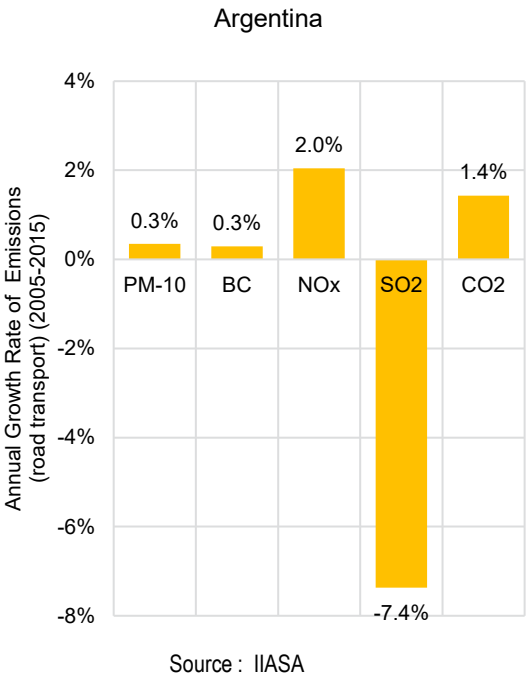
Algeria is trying to replace the diesel predominantly used by public transport and the transport of goods and persons with LPG (liquefied petroleum gas) and CNG (compressed natural gas), with 120,000 vehicles expected to be converted every year, more than one million by 2030. Algeria has targeted 9% reduction in energy consumption by 2030.
The assessment indicates that if Algeria implements a fuel economy policy for first-time registered LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 3.1 billion litres of gasoline-equivalent & 7.3 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR ARGENTINA

		Year	Source
Population (million)	45	2020	7
Income Level Category	Upper middle income		7
GDP per Capita (PPP, Curent USD)	20763	2020	7
Motorisation (Cars/1000 population)	241	2020	10
Car Sales (000)	223	2020	6
Gasoline Price $/l	0.9	2020	2
Fossil Fuel Subsidy (Million $) 2019	73	2019	4
Road Infrastructure Length/Capita (meters)	17.9	2018	13
Employment (Transport+,000)	1432	2019	11
Fuel Economy (Lge/100 km, WLTP) -	8	2019	1
Average CO2 emissions/kilometre (g/km, WLTP) -	182	2014	1
Average displacement (cm3) -	1725	2019	1
Average kerb weight (kg) -	1358	2019	1
Average power (kw) -	92	2019	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -	5673		1
Diesel Share in LDV (sample,%)	13%	2017	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.136	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.179	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	11.6	2019	8
Transport CO2 Emissions per Capita (tonnes) -	4.4	2019	14
Road Transport PM Emissions per Capita (grams) -	291.2	2015	14
Road Transport NOx Emissions per Capita (grams)-	8470.3	2015	14
Road Transport BC Emissions per Capita (grams)-	143.2	2015	14
LDV Emission Standards -	Euro 5	2019	1
Diesel Sulphur Levels (ppm) -	1000	2019	1
Gasoline Sulphur Levels (ppm) -	50	2019	1
Annual rate of economy-wide energy intensity growth	-0.6%	2000-18	16
Annual rate of transport energy consumption growth	1.2%	2000-18	16
LDV Import value (Million USD)	1615	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
7 World Bank
8 UN Statistics Division
9 SLOCAT &GIZ
10 Estimated using growth and sales data
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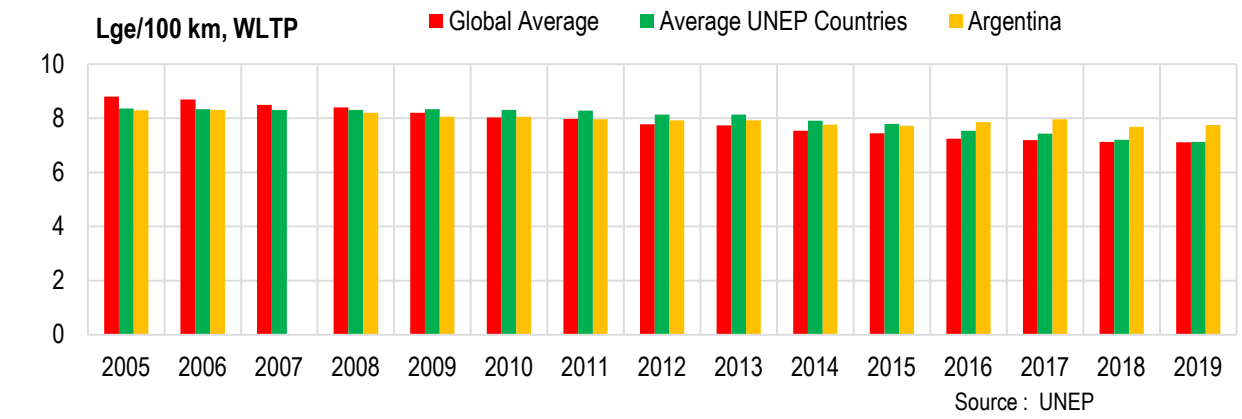
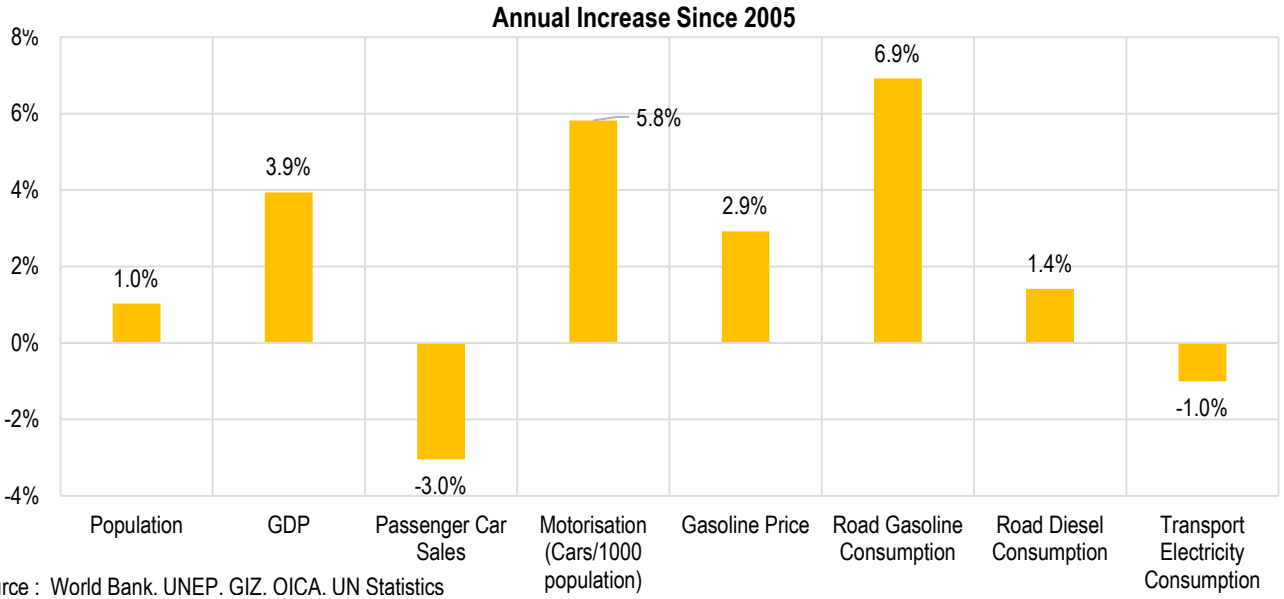
13 Koks, E.E. et al. A global multi-hazard risk analysis of road
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

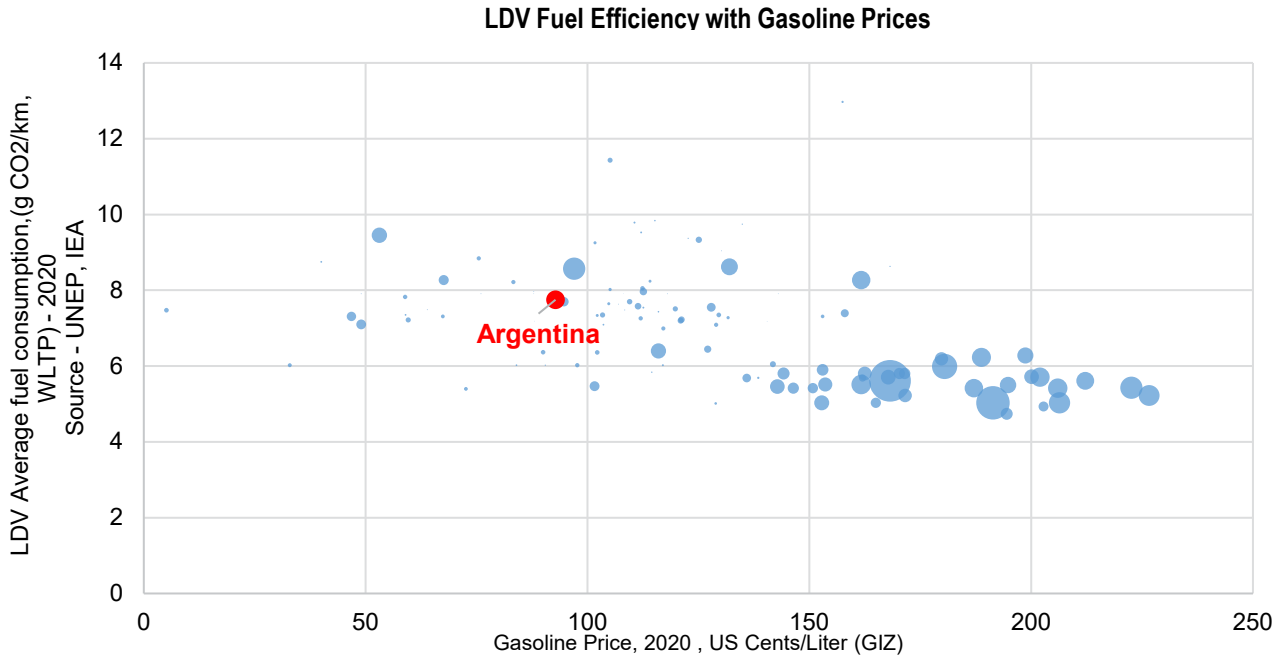
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank. UNEP. GIZ. OICA. UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

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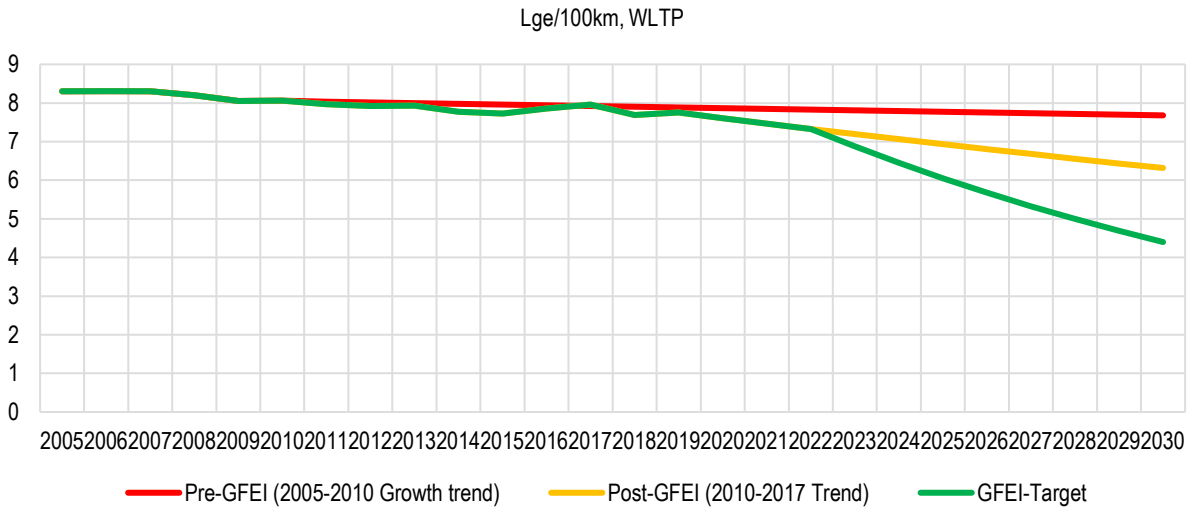
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-0.6%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-5.3%**



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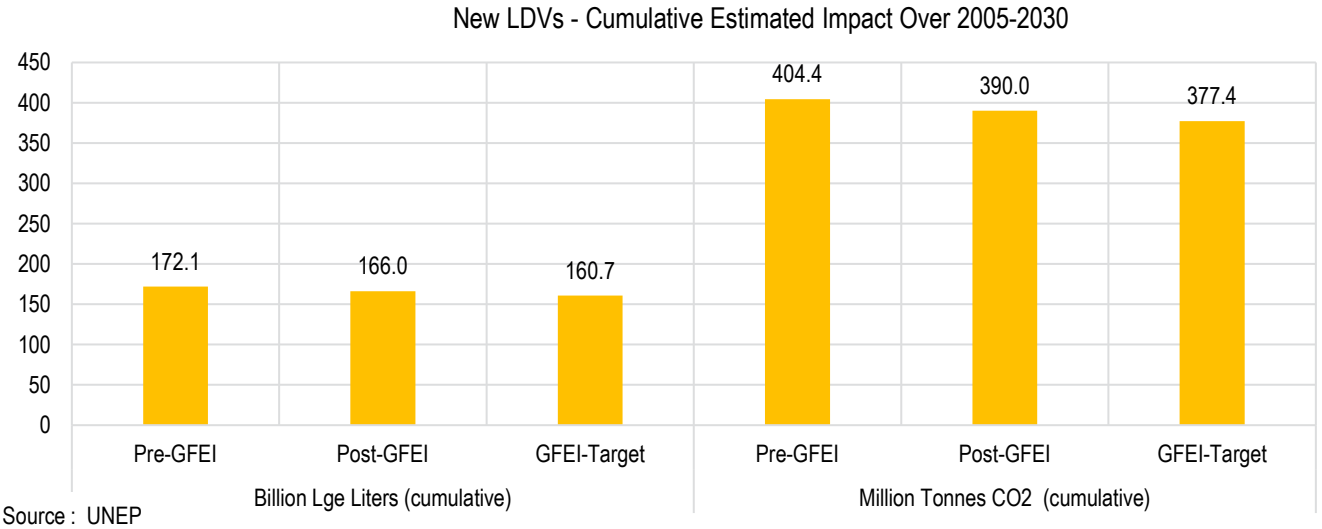


Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

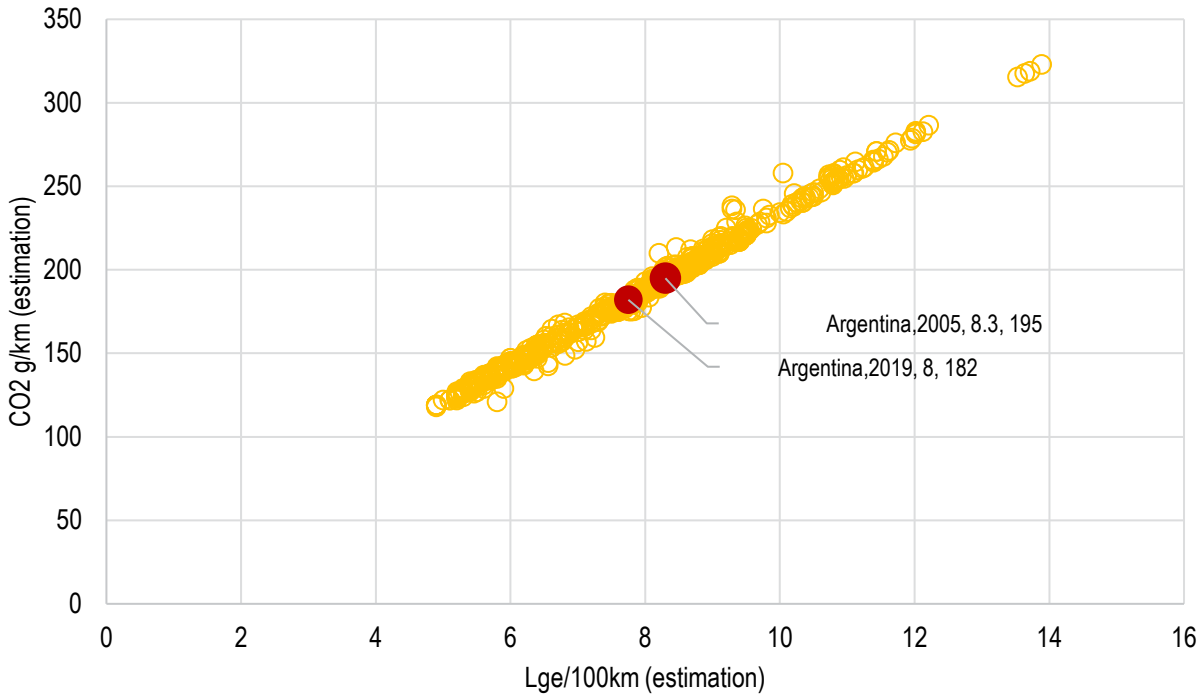
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

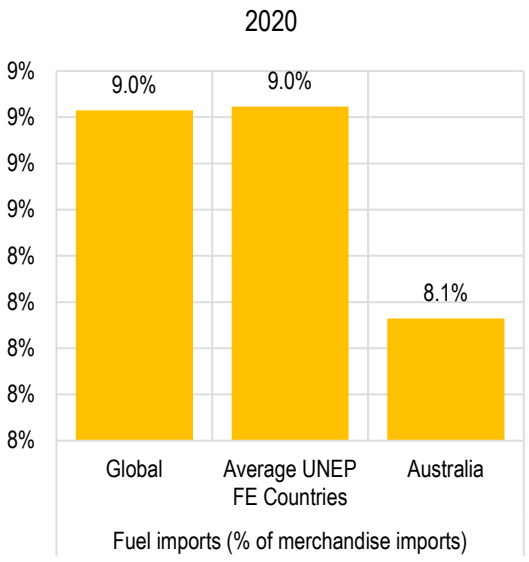
The activities to develop a fuel economy baseline in Argentina (Phase I) are part of the agreement signed with CEGESTI on 15 August 2016 while the activities to develop fuel economy policies (Phase II) in Argentina is part of the agreement signed with CMMCh on 28 June 2017. The Ministry of Environment and Sustainable Development was identified as the focal point for the project with technical support from CMMCh. As an initial result of the project, Argentina adopted a resolution in 2017 on Energy Efficiency labelling for light-duty vehicles. The fuel consumption must be declared for each new vehicle model starting from 2018. An Energy Efficiency vehicle label will then be developed and applied from 2019 (Resolution 797-E / 2017). Argentina's decree 32/2018 establishes new vehicle categories and a framework for type approval. The Ministry of Environment and Sustainable Development and the Association of Vehicle Manufacturers of Argentina (ADEFA) are working jointly to develop fuel efficiency labelling. In 2019, a website (http://etiqueta-vehicular.gob.ar/) was launched together with the government of Argentina to support the vehicle labelling as well as awareness-raising materials. Evaluation of options for the regulation and promotion of energy efficiency was carried out. In October 2019, following the election of the new government, the project proposal including the following activities was presented: capacity building events, support for the implementation of the labelling scheme, development of a vehicle energy efficiency policy.

Undersecretariat of Renewable energy and energy efficiency has developed an economy-wide target of reducing energy demand by 8.8% towards 2030.

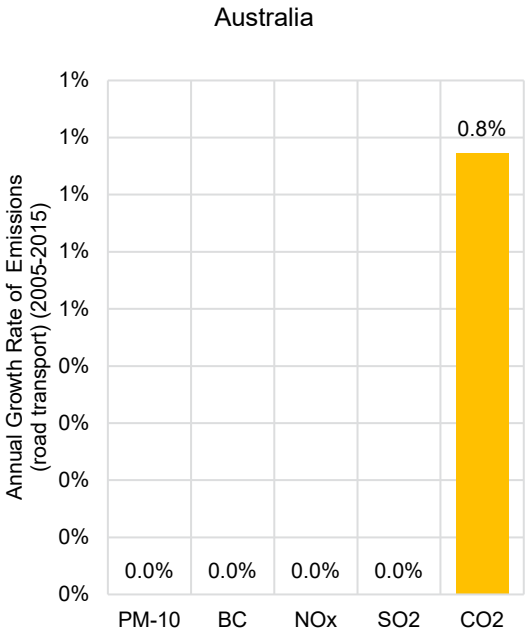
The assessment indicates that if Argentina implements a fuel economy policy for first-time registered LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 15.9 billion litres of gasoline-equivalent & 37.36 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR AUSTRALIA

		Year	Source
Population (million)	26	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	52397	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	677	2020	6
Gasoline Price $/l	1.6	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	44.7	2018	13
Employment (Transport+,000)	1125	2019	11
Fuel Economy (Lge/100 km, WLTP) -	8	2019	1
Average CO2 emissions/kilometre (g/km, WLTP) -	196	2019	1
Average displacement (cm3) -	2294	2019	1
Average kerb weight (kg) -	1703	2019	1
Average power (kw) -	136	2019	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.512	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.591	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	243.5	2019	8
Transport CO2 Emissions per Capita (tonnes) -	17.1	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	-1.9%	2000-18	16
Annual rate of transport energy consumption growth	1.5%	2000-18	16
LDV Import value (Million USD)	12847	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

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2 GIZ
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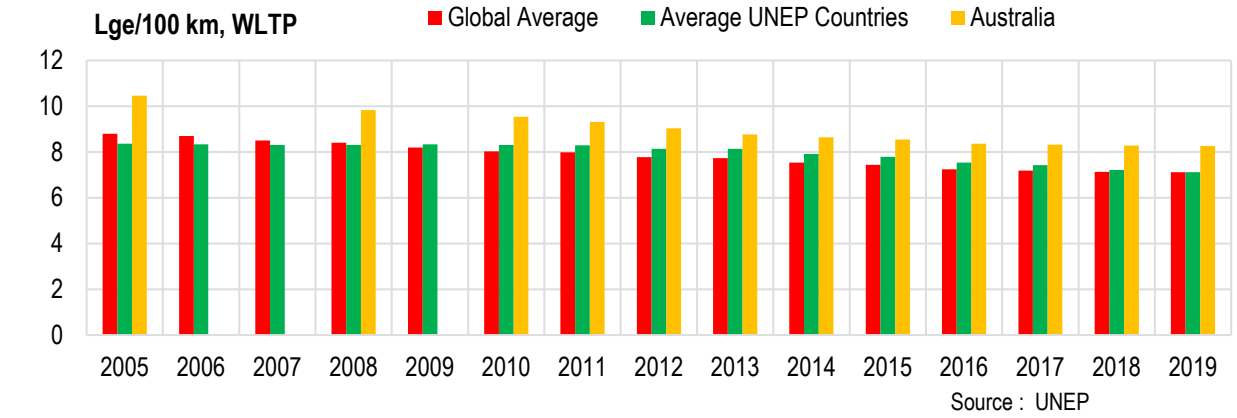
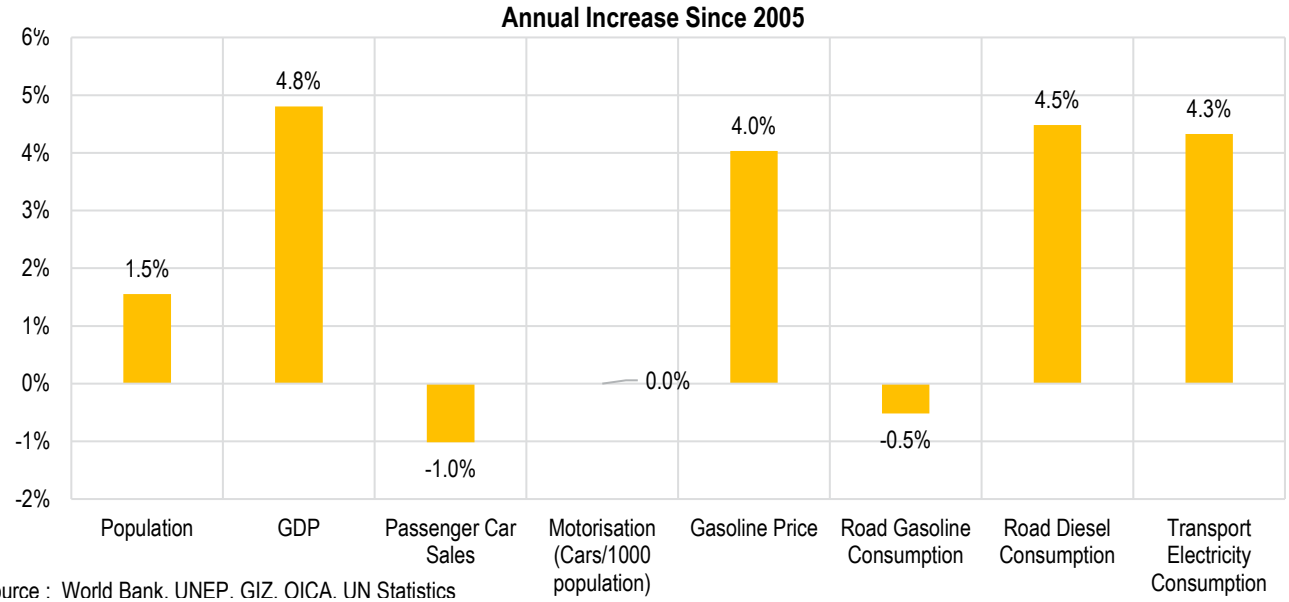
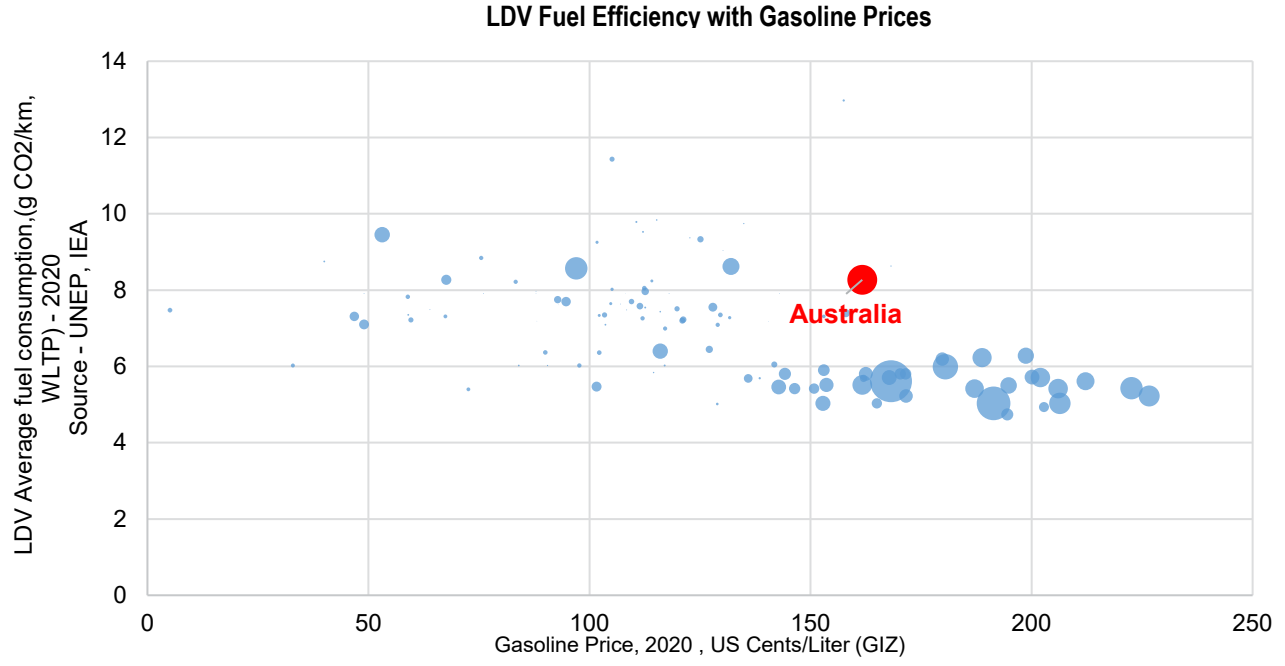
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

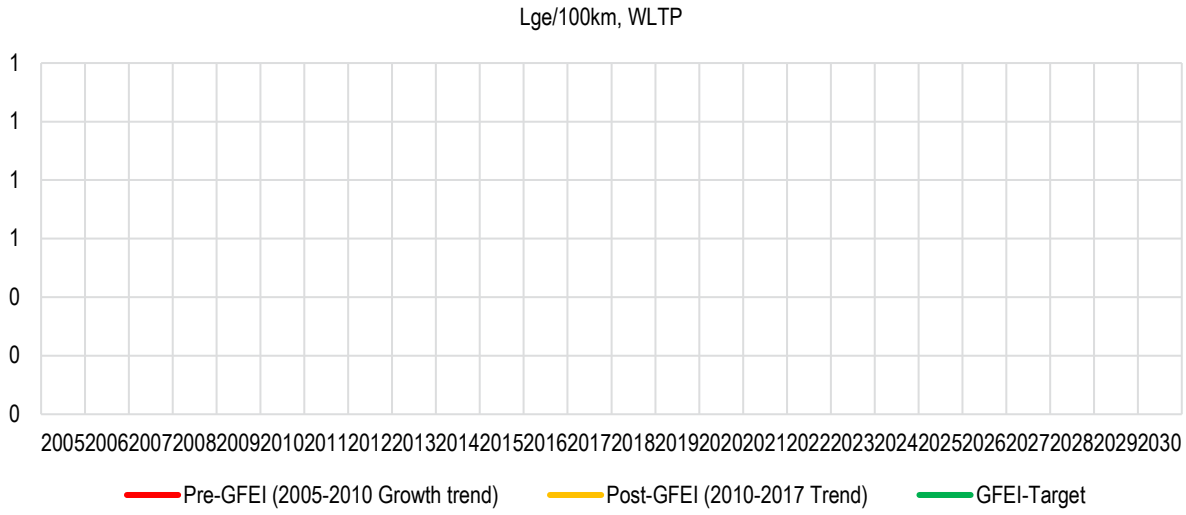
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



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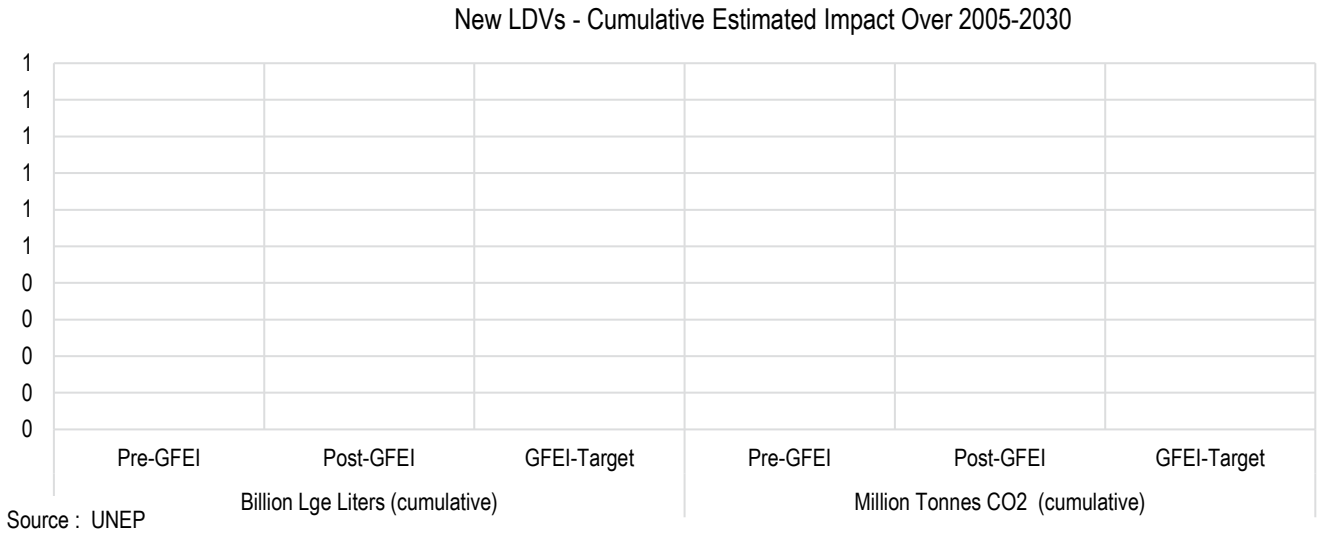


Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

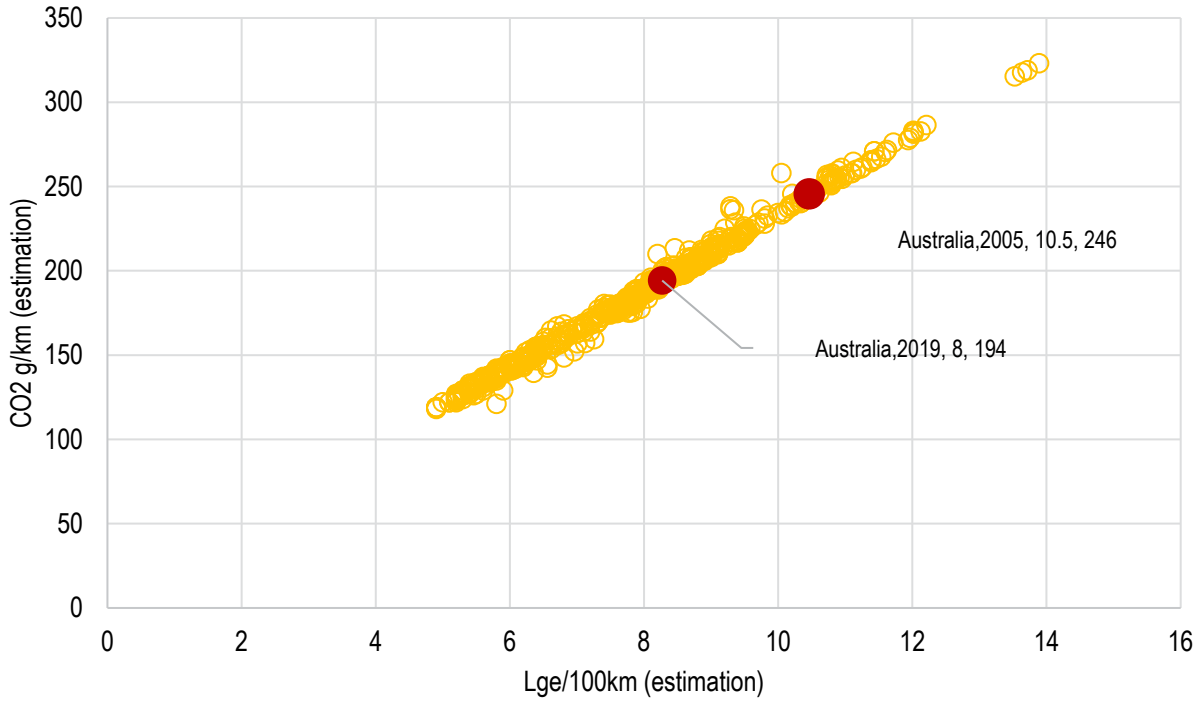
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



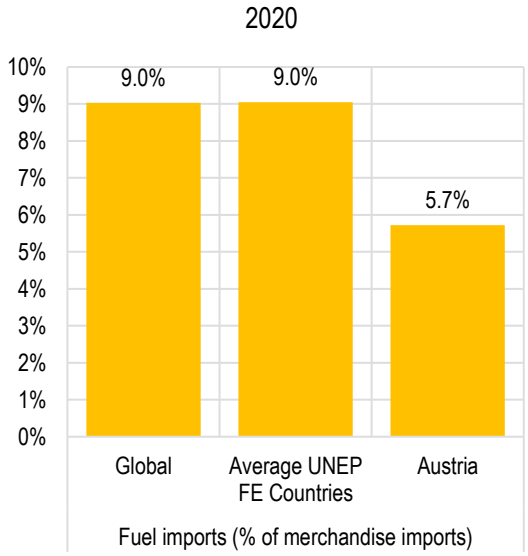
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

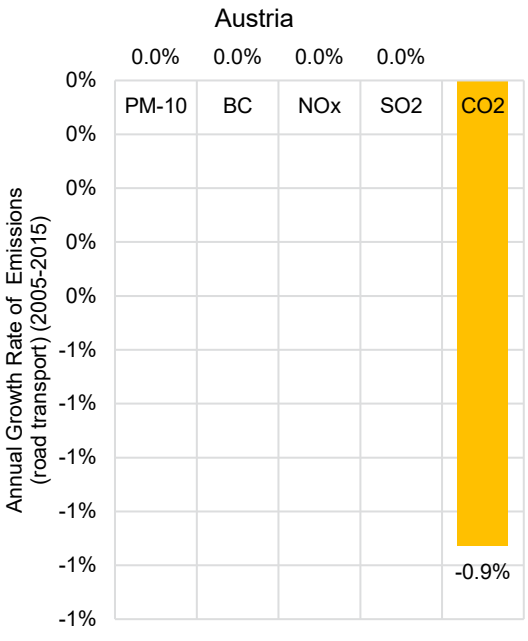
#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR AUSTRIA

		Year	Source
Population (million)	9	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	55649	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	258	2020	6
Gasoline Price $/l	1.6	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	21.5	2018	13
Employment (Transport+,000)	374	2019	11
Fuel Economy (Lge/100 km, WLTP) -	6	2015	1
Average CO2 emissions/kilometre (g/km, WLTP) -	136	2017	1
Average displacement (cm3) -	1613	2017	1
Average kerb weight (kg) -	1410	2017	1
Average power (kw) -	95	2017	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.185	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.739	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	367.7	2019	8
Transport CO2 Emissions per Capita (tonnes) -	8.1	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	-0.8%	2000-18	16
Annual rate of transport energy consumption growth	1.8%	2000-18	16
LDV Import value (Million USD)	8099	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

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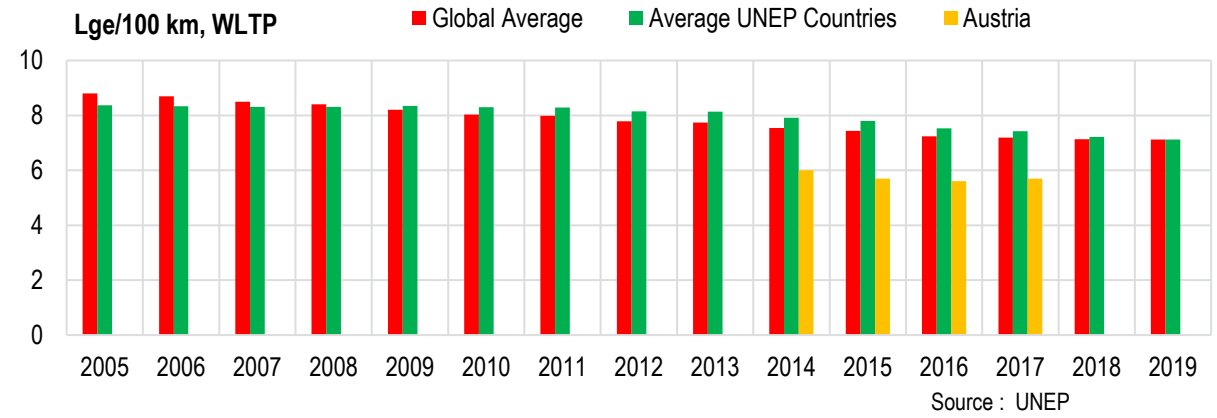
FUEL ECONOMY TRENDS



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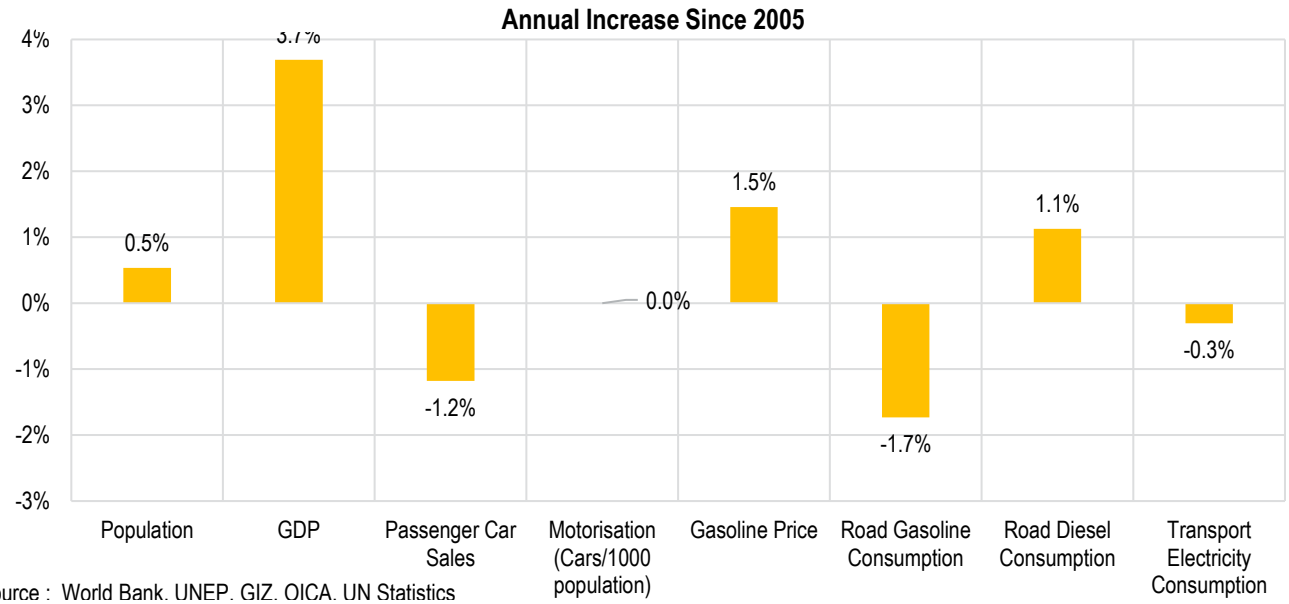
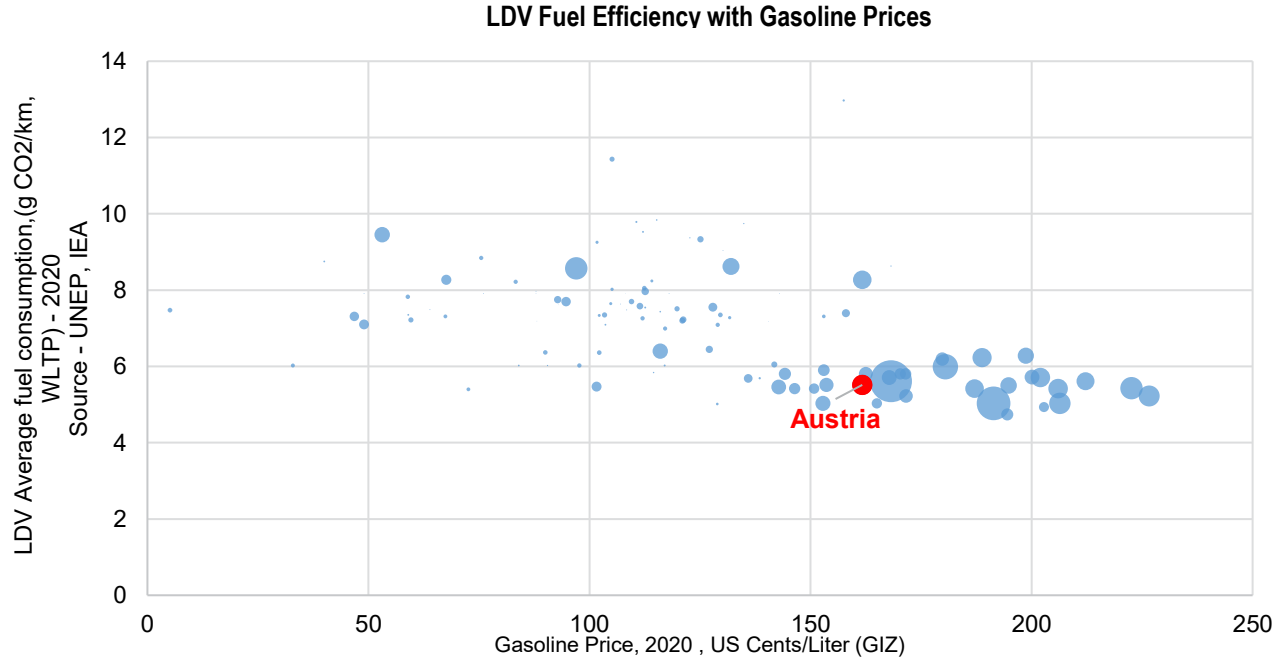


Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

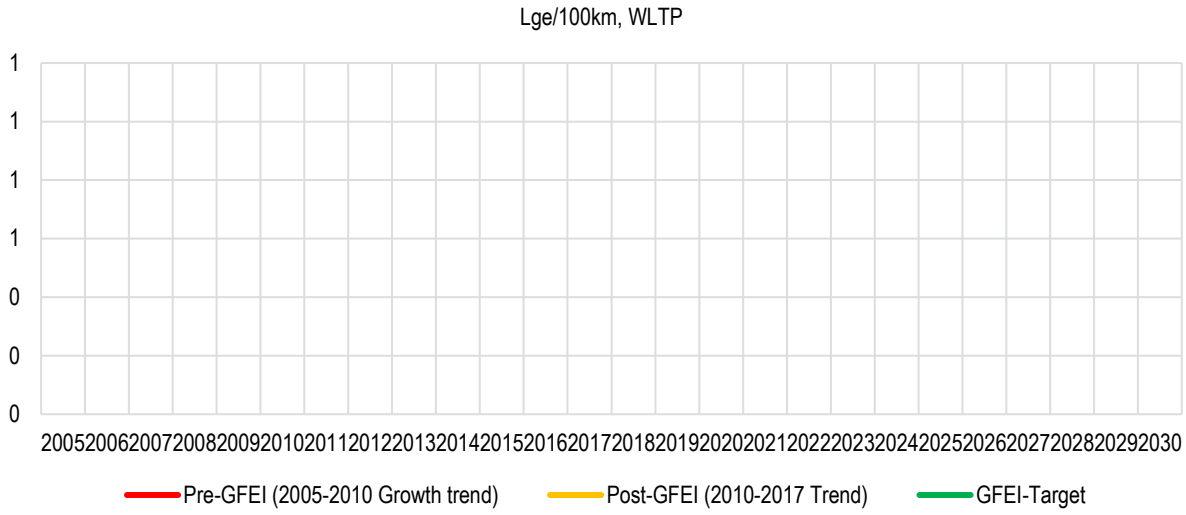
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



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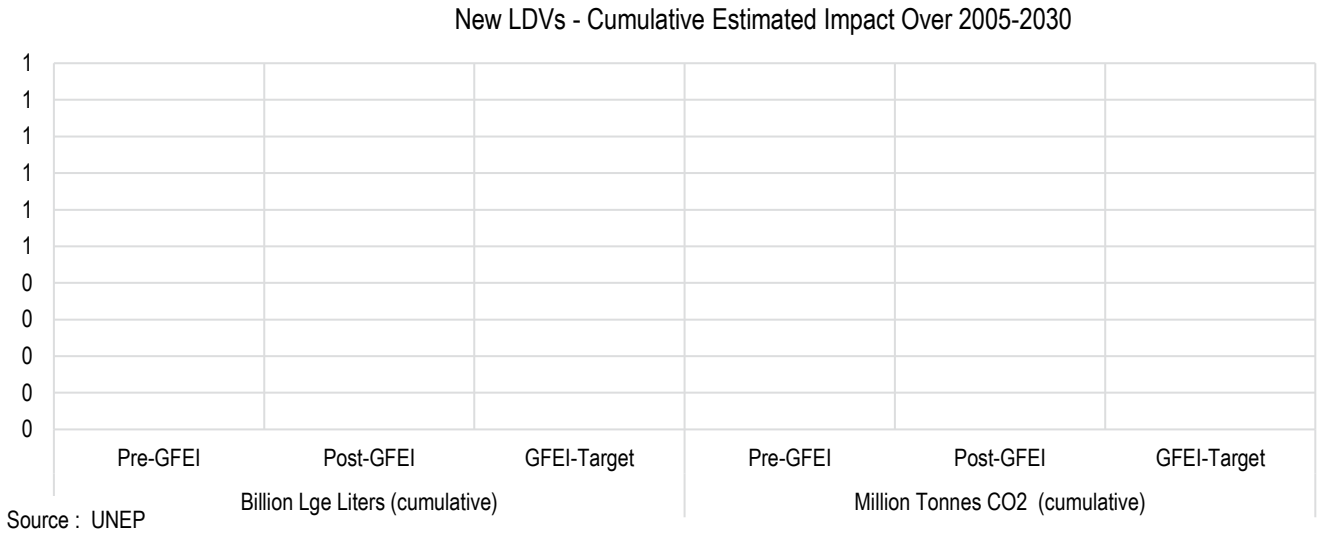


Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

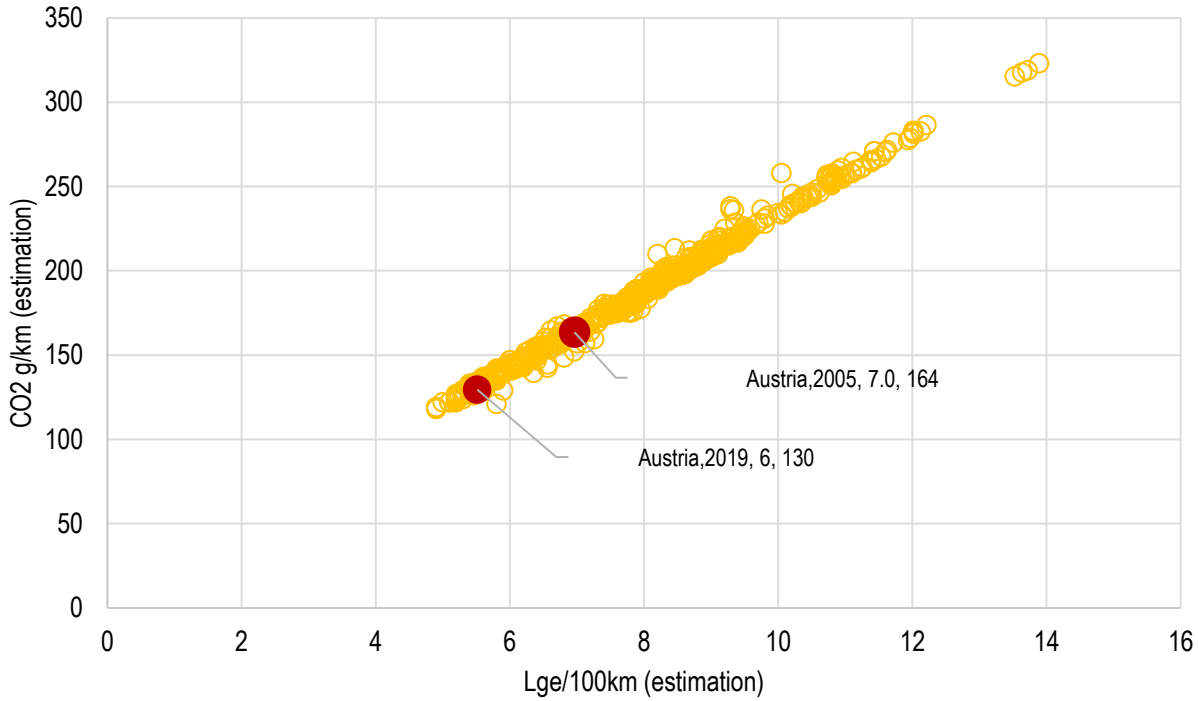
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



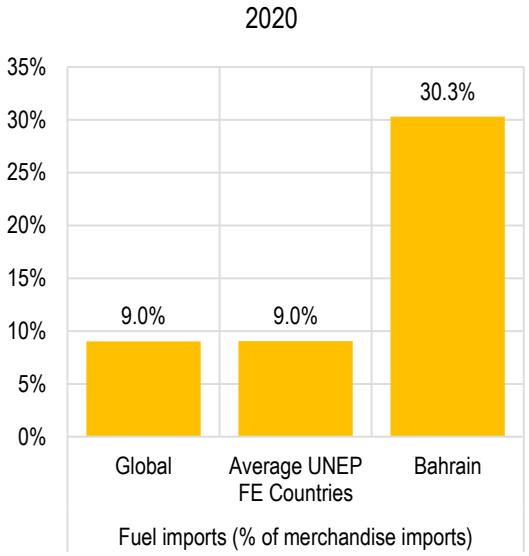
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

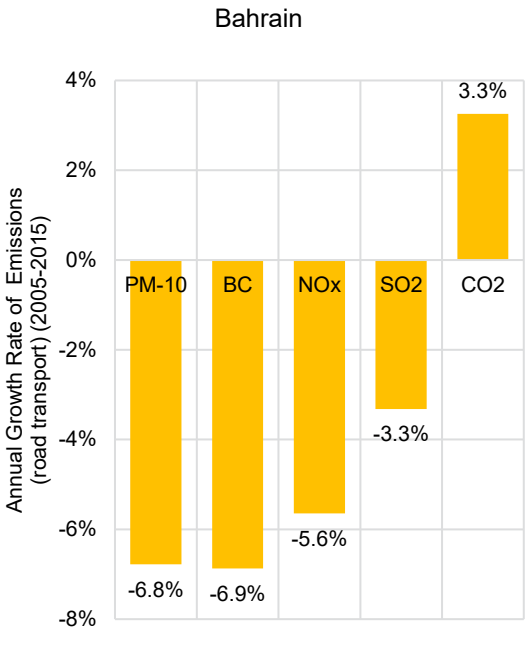
#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR BAHRAIN

		Year	Source
Population (million)	2	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	43740	2020	7
Motorisation (Cars/1000 population)	364	2020	10
Car Sales (000)	22	2020	6
Gasoline Price $/l	0.5	2020	2
Fossil Fuel Subsidy (Million $) 2019	166	2019	4
Road Infrastructure Length/Capita (meters)	3.0	2018	13
Employment (Transport+,000)	40	2019	11
Fuel Economy (Lge/100 km, WLTP) -	11	2012	1
Average CO2 emissions/kilometre (g/km, WLTP) -	246	2012	1
Average displacement (cm3) -	2297	2012	1
Average kerb weight (kg) -	1639	2012	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -	29		1
Diesel Share in LDV (sample,%)	0%	2012	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	No	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.433	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.180	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	233.0	2019	8
Transport CO2 Emissions per Capita (tonnes) -	21.6	2019	14
Road Transport PM Emissions per Capita (grams) -	106.1	2015	14
Road Transport NOx Emissions per Capita (grams)-	7193.9	2015	14
Road Transport BC Emissions per Capita (grams)-	49.4	2015	14
LDV Emission Standards -	0	2019	1
Diesel Sulphur Levels (ppm) -	0	2019	1
Gasoline Sulphur Levels (ppm) -	0	2019	1
Annual rate of economy-wide energy intensity growth	-1.2%	2000-18	16
Annual rate of transport energy consumption growth	4.9%	2000-18	16
LDV Import value (Million USD)	750	2020	3



Source : World Bank

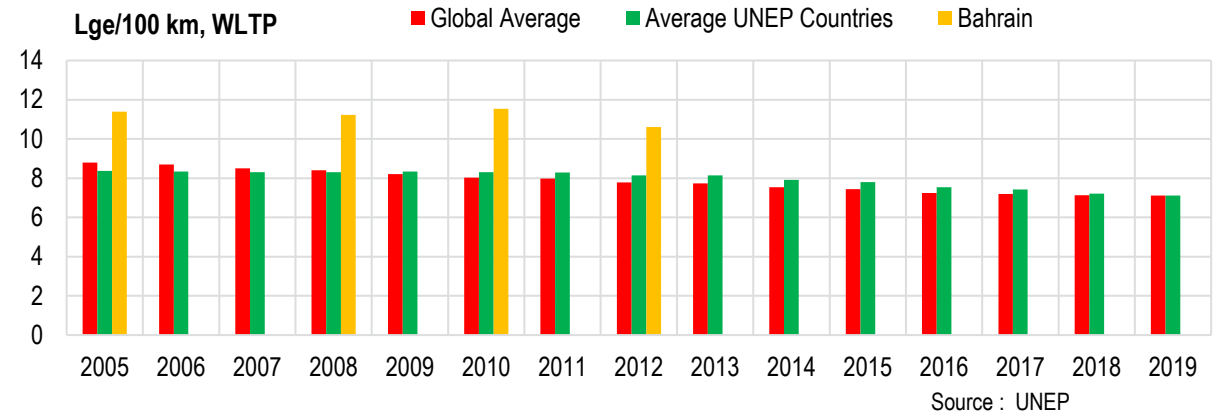


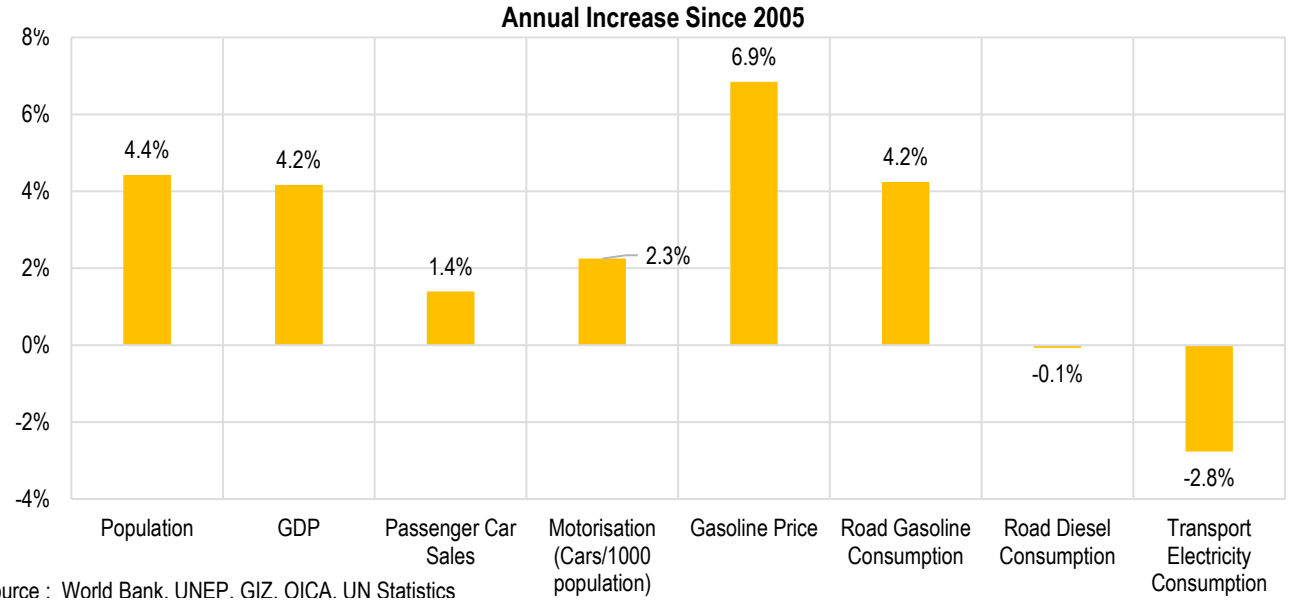
Source : IIASA

Sources & Notes

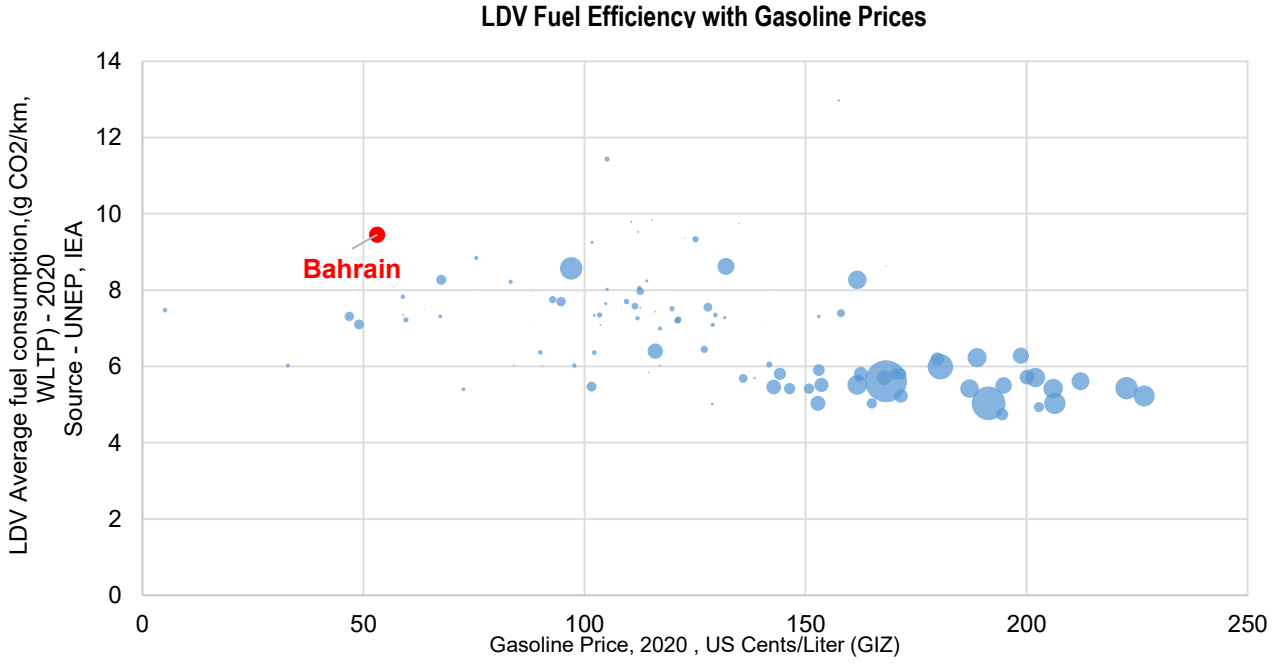
1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
7 World Bank
8 UN Statistics Division
9 SLOCAT &GIZ
10 Estimated using growth and sales data
11 Employment is for Transport; storage and communication, ILO
12 International Transport Forum
13 Koks, E.E. et al. A global multi-hazard risk analysis of road
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

FUEL ECONOMY TRENDS





Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

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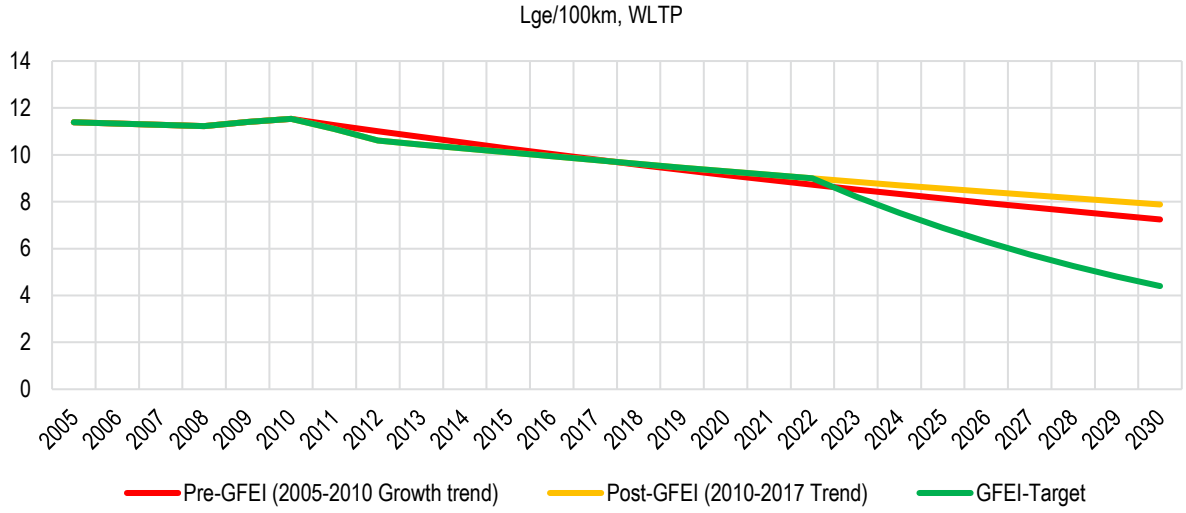
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

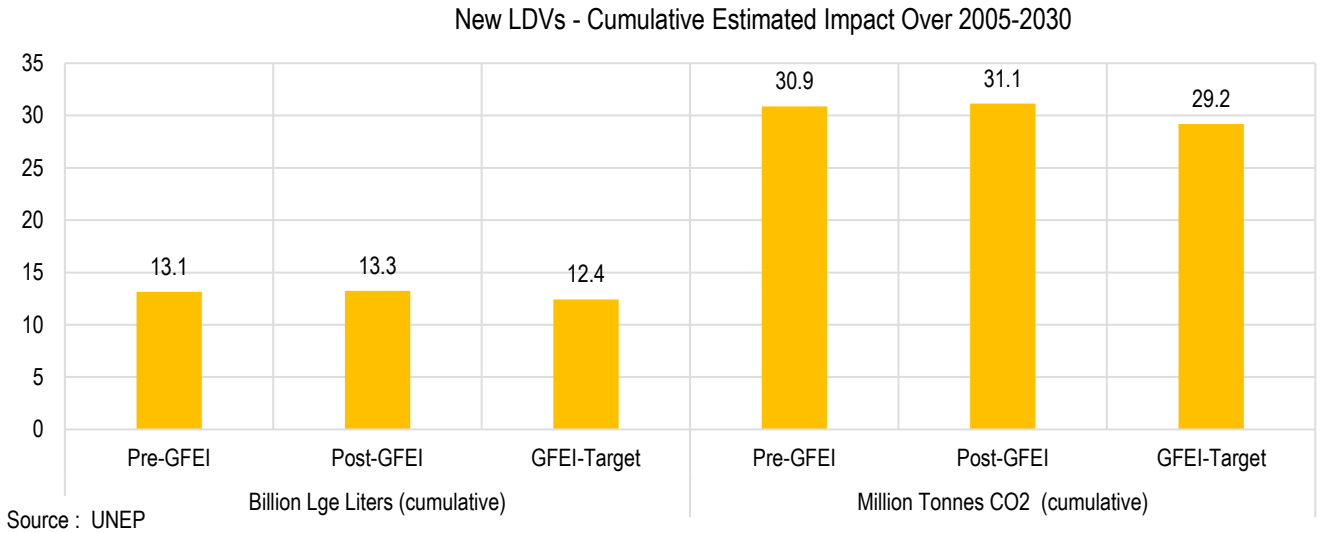
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-2.1%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-7.2%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

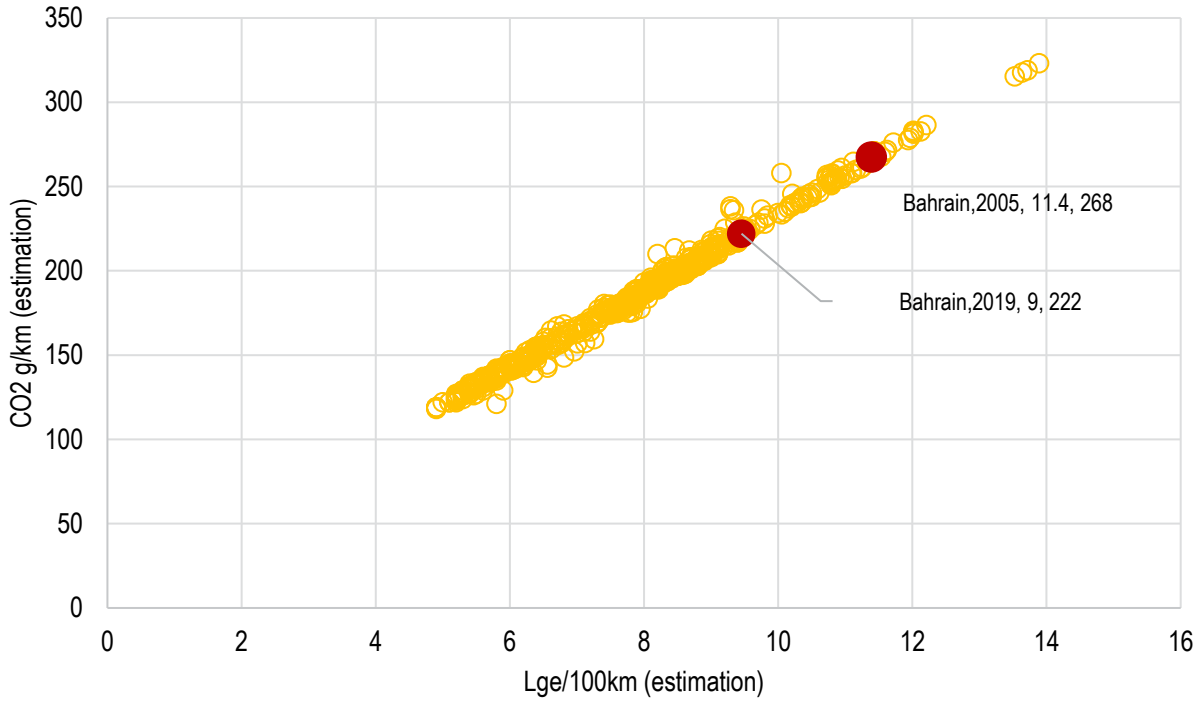
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

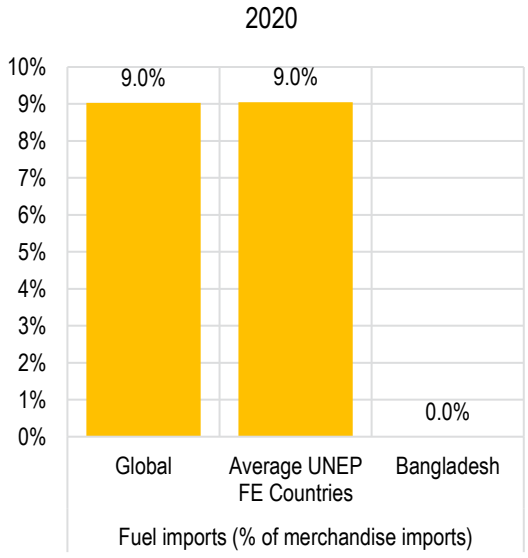
Source : UNEP

The government of Bahrain has taken several crucial steps to shift the country towards a more efficient consumption of energy. Bahrain made significant modifications to the pricing of transport fuel which had remained unchanged for 33 years. The price was increased by up to 60%. Along with the Transport Subsidy Reform initiative, Bahrain is pursuing Vehicle Efficiency Standards & Labelling initiative. The labelling will introduce minimum energy performance standards and labelling for all vehicles to transform the market towards cars with higher fuel efficiencies. The labelling initiative consists of four parts: setting the minimum requirements; confirming the vehicle performance at the point of importation; working with dealers to ensure that the labels are appropriately displayed, and increasing consumer awareness by providing information. The government estimates that about 4% reduction in energy consumption when compared with BAU.

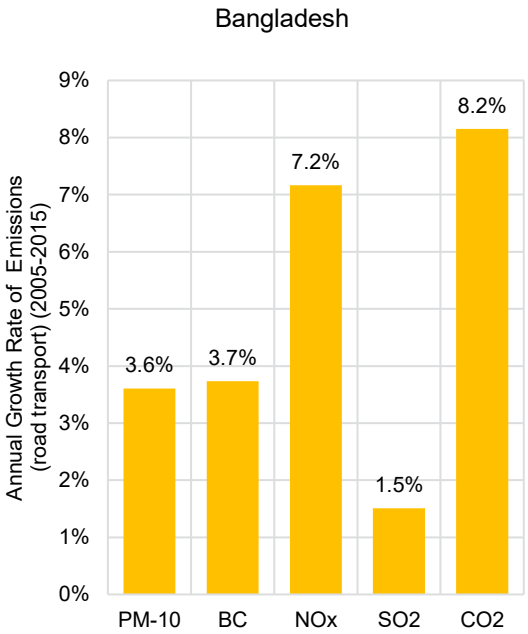
The assessment indicates that if Bahrain implements a fuel economy policy for first-time registered LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 3.2 billion litres of gasoline-equivalent & 7.6 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR BANGLADESH

		Year	Source
Population (million)	165	2020	7
Income Level Category	Lower middle income		7
GDP per Capita (PPP, Curent USD)	5137	2020	7
Motorisation (Cars/1000 population)	2	2020	10
Car Sales (000)	25	2020	6
Gasoline Price $/l	1.0	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	0.9	2018	13
Employment (Transport+,000)	6562	2019	11
Fuel Economy (Lge/100 km, WLTP) -	7	2017	1
Average CO2 emissions/kilometre (g/km, WLTP) -	177	2017	1
Average displacement (cm3) -	1879	2017	1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -	72	2017	1
Average Age of newly registered cars (years) -	3	2017	1
Cumulative number of LDVs (total sample size,000) -	35		1
Diesel Share in LDV (sample,%)	18%	2017	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.004	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.014	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	2.4	2019	8
Transport CO2 Emissions per Capita (tonnes) -	0.7	2019	14
Road Transport PM Emissions per Capita (grams) -	22.8	2015	14
Road Transport NOx Emissions per Capita (grams)-	536.2	2015	14
Road Transport BC Emissions per Capita (grams)-	11.0	2015	14
LDV Emission Standards -	Euro 2	2019	1
Diesel Sulphur Levels (ppm) -	500	2019	1
Gasoline Sulphur Levels (ppm) -	1000	2019	1
Annual rate of economy-wide energy intensity growth	-1.4%	2000-18	16
Annual rate of transport energy consumption growth	7.7%	2000-18	16
LDV Import value (Million USD)	334	2020	3



Source : World Bank



Source : IIASA

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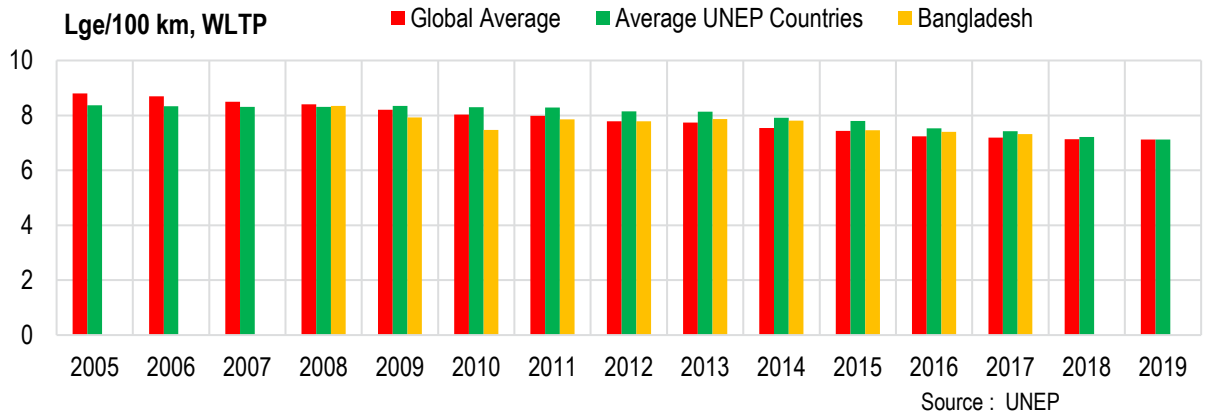
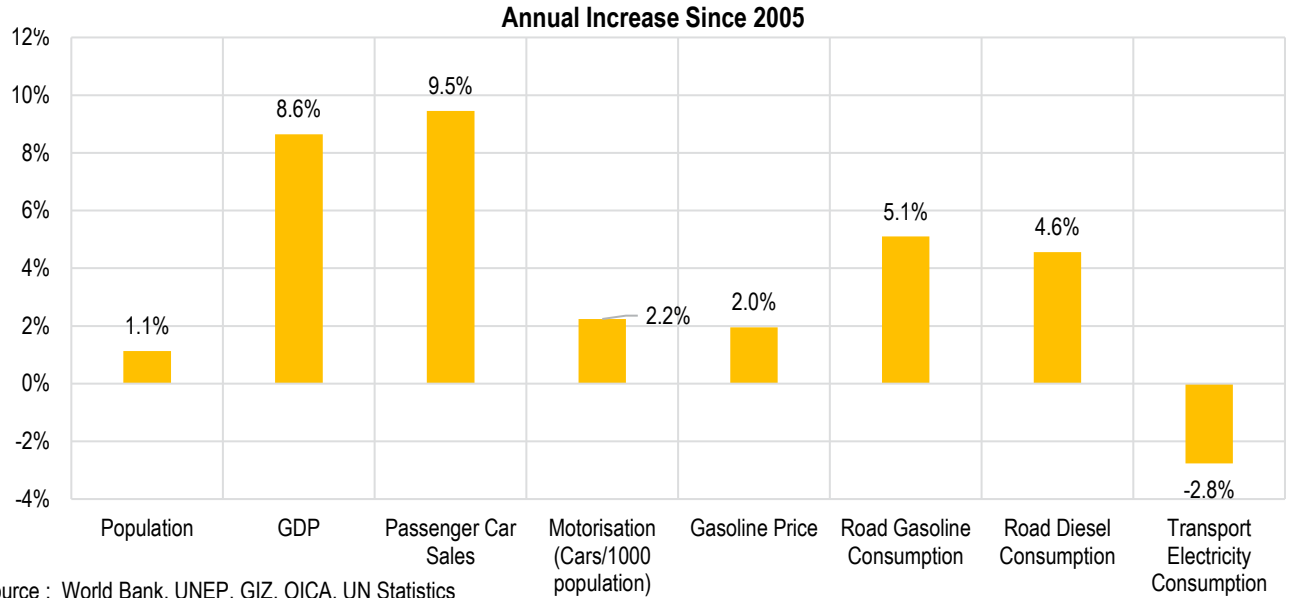
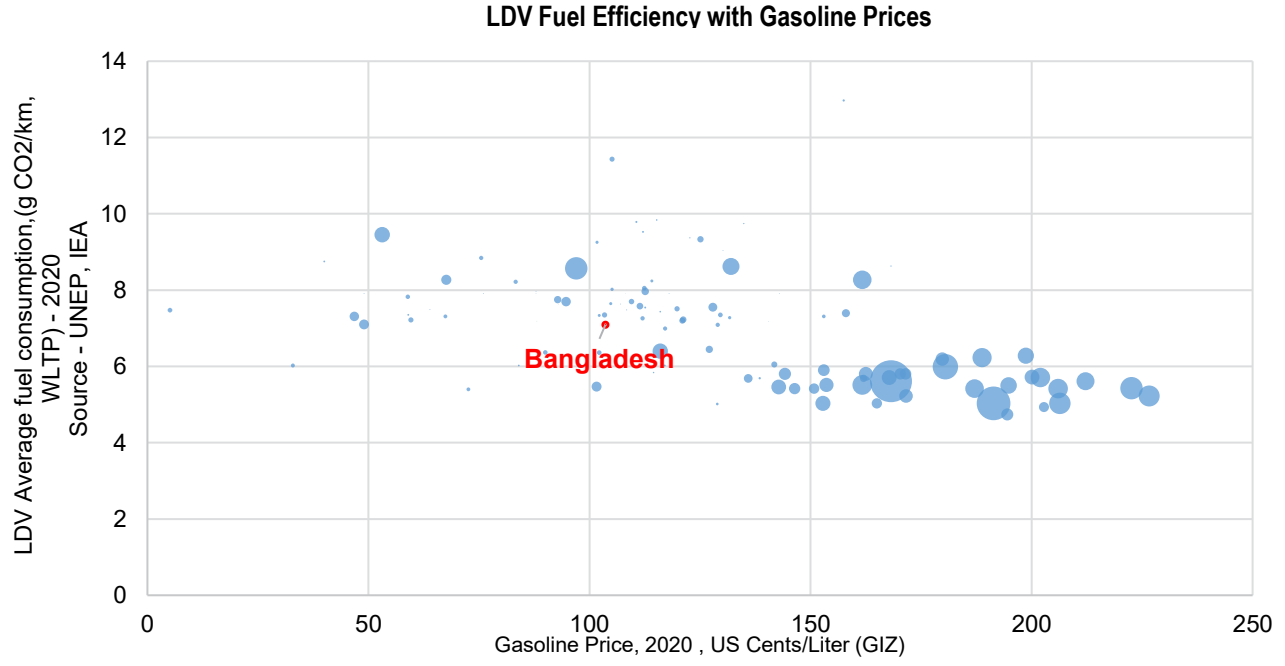
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

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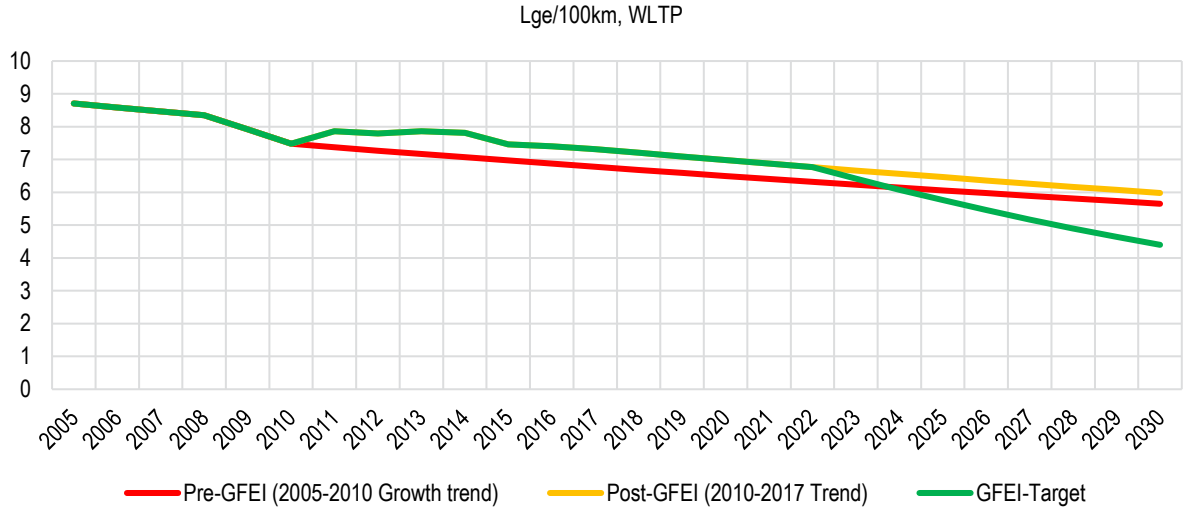
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

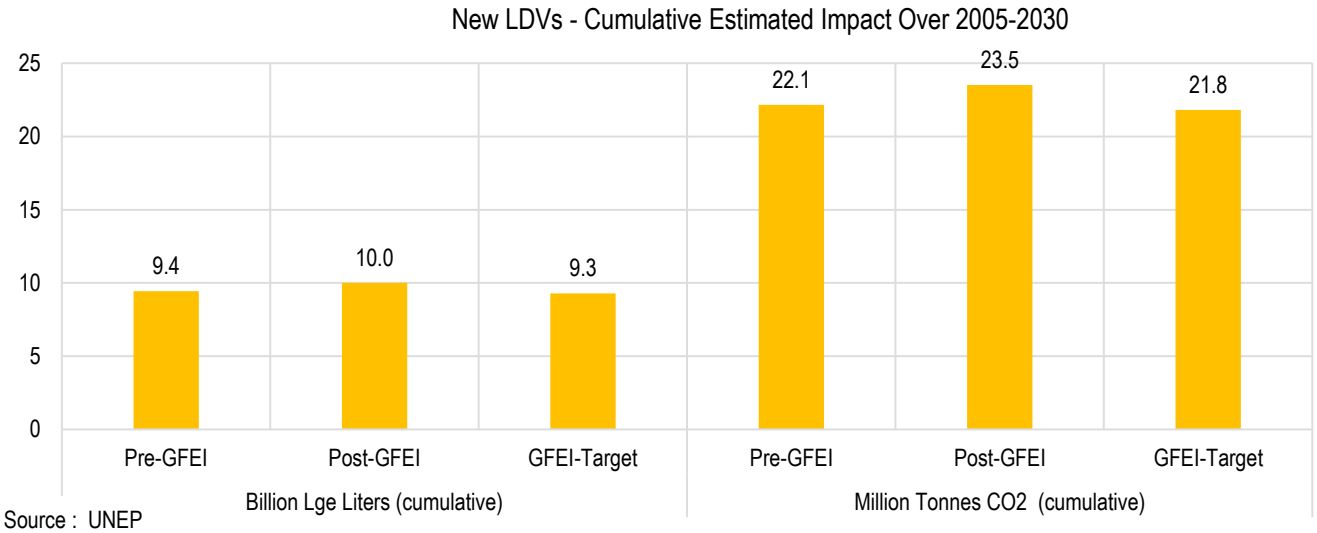
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-0.7%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-4.5%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

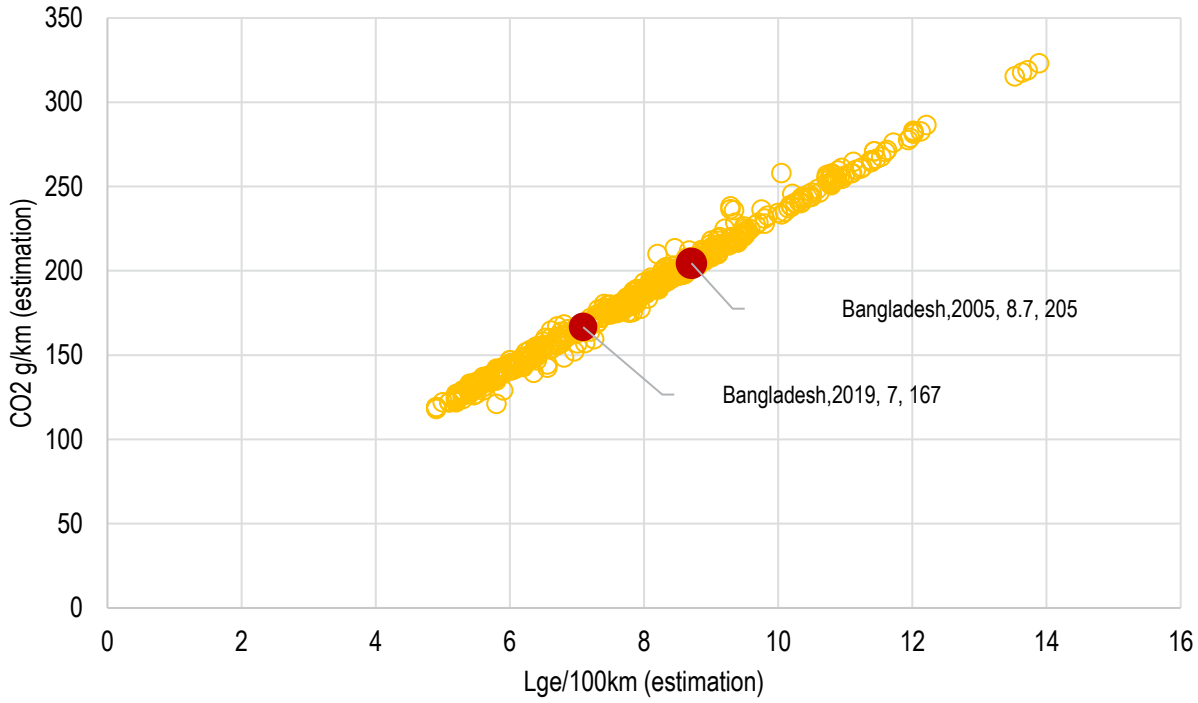
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

An agreement was signed with Clean Air Asia on 27 July 2016 to support countries in South and Southeast Asia, including Bangladesh, to develop a fuel economy baseline and policies for the country. For Bangladesh, the government partner is are the Road Transport and Highways Division (RTHD) of the Ministry of Road Transport and Bridges. On 30 August 2017, the official nomination of focal points was received from the Ministry naming a representative from the Road Transport Authority and the Project Manager of the Greater Dhaka Sustainable Urban Transport Project. Data collection started in late 2017, and initial results were discussed with the Project Manager in Bangkok in March 2018. On 10 May 2018, Bangladesh held a consultation workshop on developing fuel economy policies. On 23 April 2019, the fuel economy baseline and policy recommendations were presented to relevant stakeholders at the National Workshop on Developing Clean and Efficient Vehicle Policies for Bangladesh. The discussions focused on policy recommendations on fiscal policies, local manufacturing, and electric mobility.

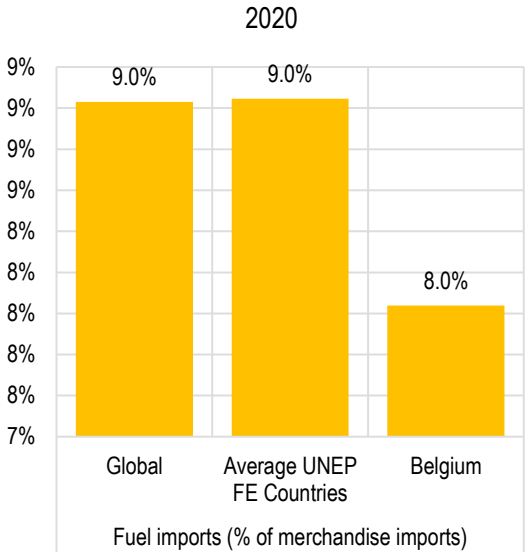
Bangladesh's Energy Efficiency and Conservation Master Plan up to 2030 developed by Sustainable and Renewable Energy Development Authority prioritises the penetration of high-efficiency vehicle among other energy efficiency-related strategies.

Estimates by Cardiff University, UK and by a team of researchers led by Monjur Mourshed have estimated that with fuel efficiency policies in passenger transport, close to 1.5 million tonnes of CO2 could be reduced by 2030 (when compared with BAU).

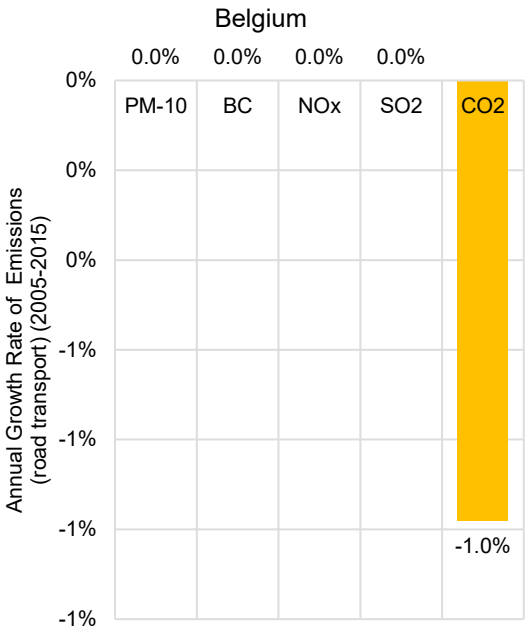
The assessment indicates that if Bangladesh implements a fuel economy policy for first-time registered LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 1.1 billion litres of gasoline-equivalent & 2.7 million tonnes of CO2 cumulative from newly registered LDVs

LDV FUEL ECONOMY COUNTRY REPORT FOR BELGIUM

		Year	Source
Population (million)	12	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	52627	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	424	2020	6
Gasoline Price $/l	1.9	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	12.2	2018	13
Employment (Transport+,000)	436	2019	11
Fuel Economy (Lge/100 km, WLTP) -	6	2015	1
Average CO2 emissions/kilometre (g/km, WLTP) -	133	2017	1
Average displacement (cm3) -	1589	2017	1
Average kerb weight (kg) -	1418	2017	1
Average power (kw) -	94	2017	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.164	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.569	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	155.2	2019	8
Transport CO2 Emissions per Capita (tonnes) -	9.1	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	-2.0%	2000-18	16
Annual rate of transport energy consumption growth	0.5%	2000-18	16
LDV Import value (Million USD)	32495	2020	3



Source : World Bank



Source : IIASA

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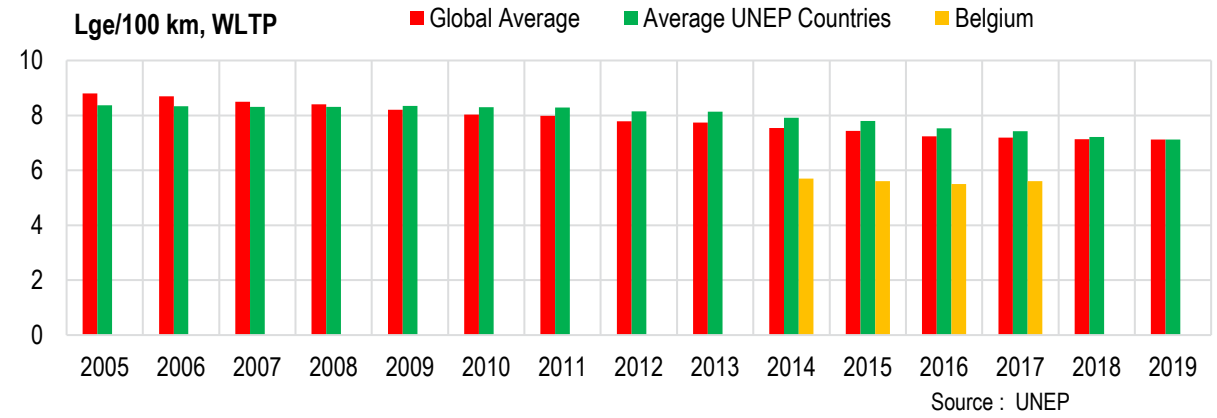
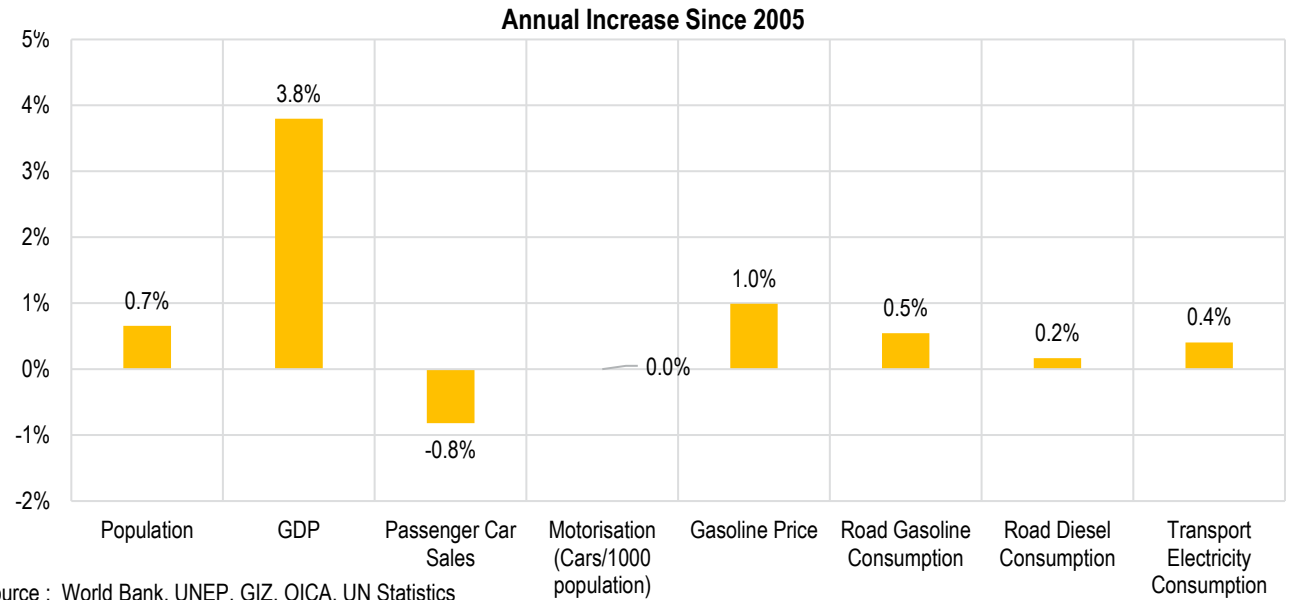
FUEL ECONOMY TRENDS





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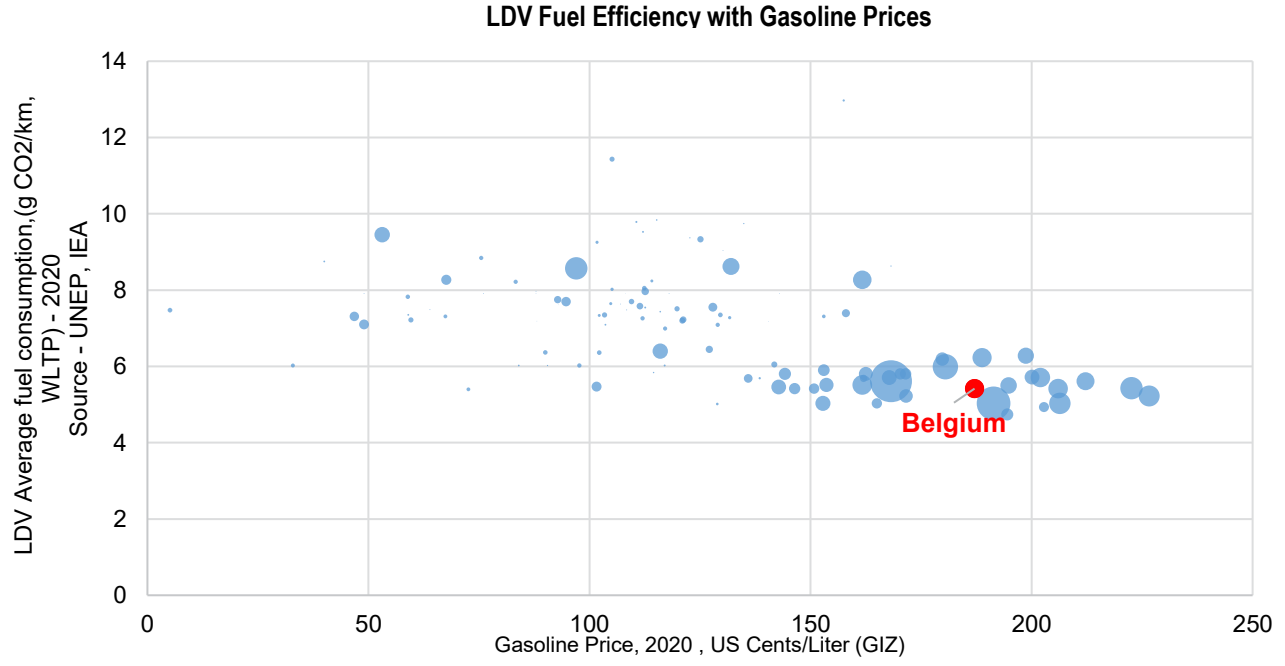

Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

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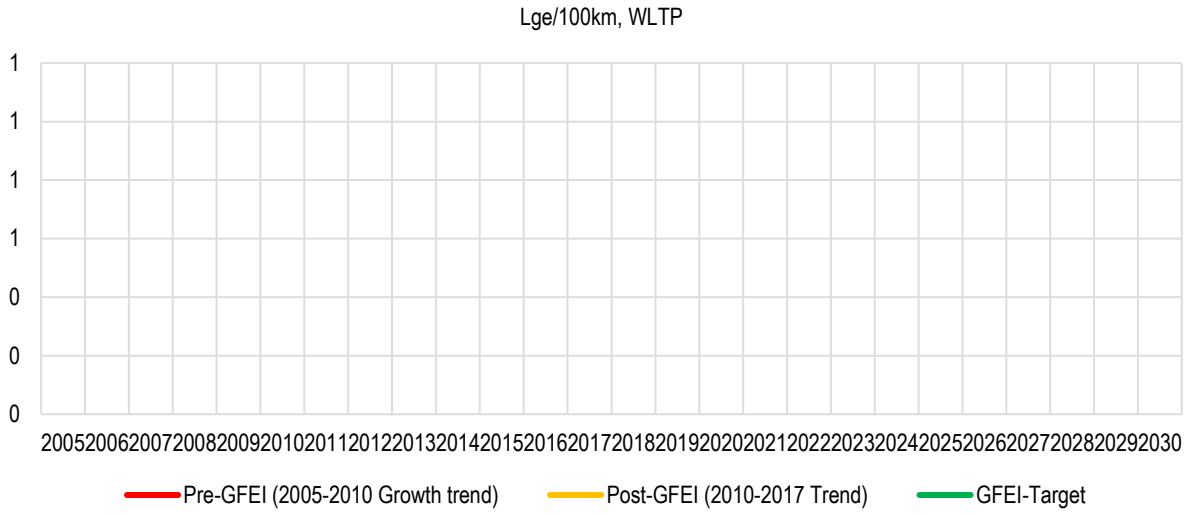
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

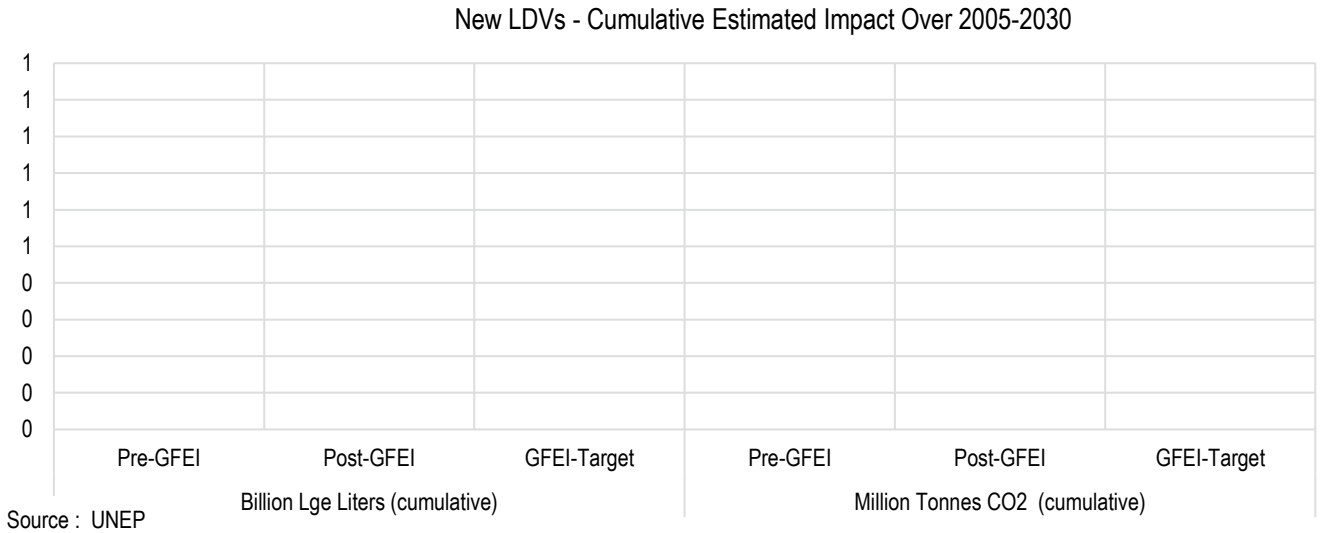
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

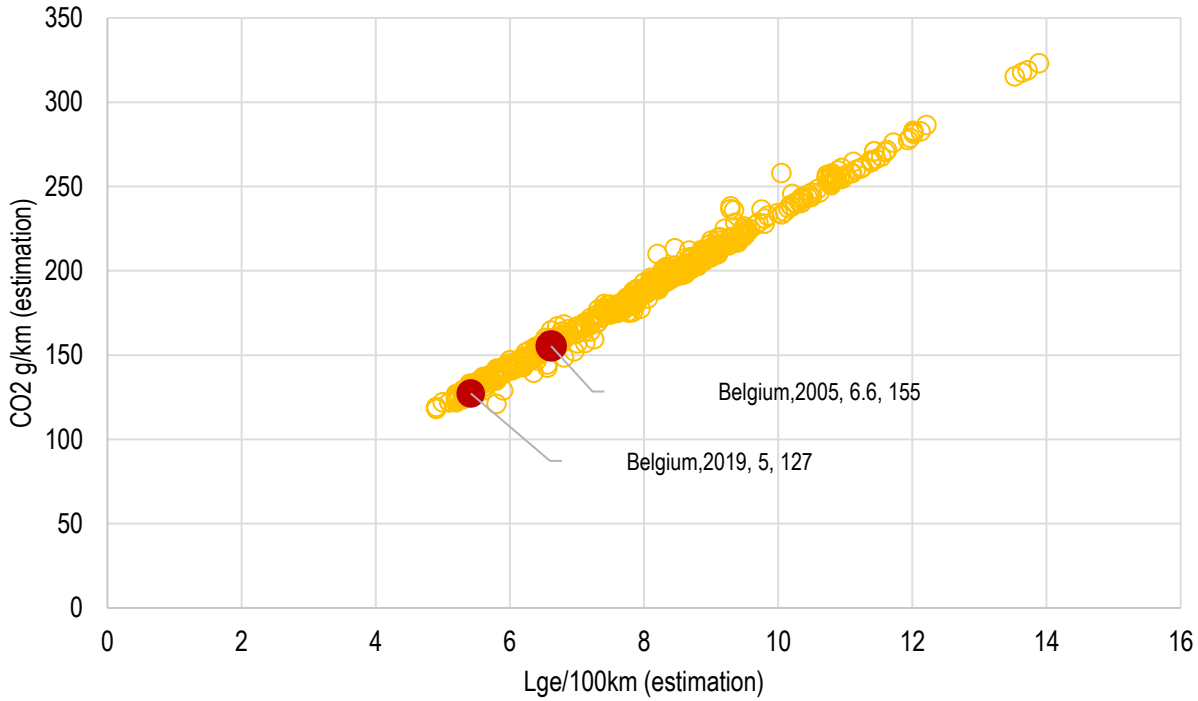
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



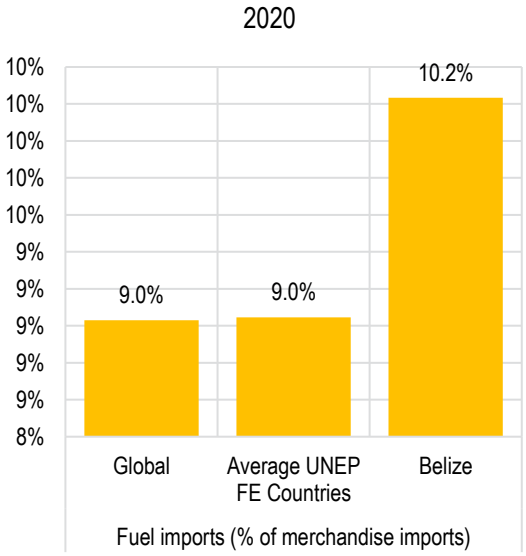
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR BELIZE

		Year	Source
Population (million)	0	2020	7
Income Level Category	Upper middle income		7
GDP per Capita (PPP, Curent USD)	6455	2020	7
Motorisation (Cars/1000 population)	55	2020	10
Car Sales (000)	0	2020	6
Gasoline Price $/l	1.6	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	23.4	2018	13
Employment (Transport+,000)	8	2019	11
Fuel Economy (Lge/100 km, WLTP) -	14	2016	1
Average CO2 emissions/kilometre (g/km, WLTP) -	319	2016	1
Average displacement (cm3) -	3368	2016	1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -	27		1
Diesel Share in LDV (sample,%)	4%	2016	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.213	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.194	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	4511.1	2019	8
Transport CO2 Emissions per Capita (tonnes) -	1.0	2019	14
Road Transport PM Emissions per Capita (grams) -	53.9	2015	14
Road Transport NOx Emissions per Capita (grams)-	1906.5	2015	14
Road Transport BC Emissions per Capita (grams)-	26.5	2015	14
LDV Emission Standards -	no policy	2019	1
Diesel Sulphur Levels (ppm) -	5000	2019	1
Gasoline Sulphur Levels (ppm) -	1500	2019	1
Annual rate of economy-wide energy intensity growth	-0.8%	2000-18	16
Annual rate of transport energy consumption growth	3.9%	2000-18	16
LDV Import value (Million USD)	10	2020	3



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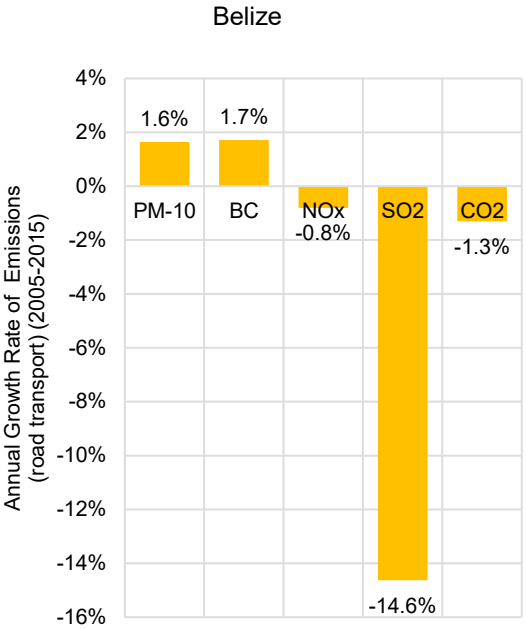

Source : IIASA

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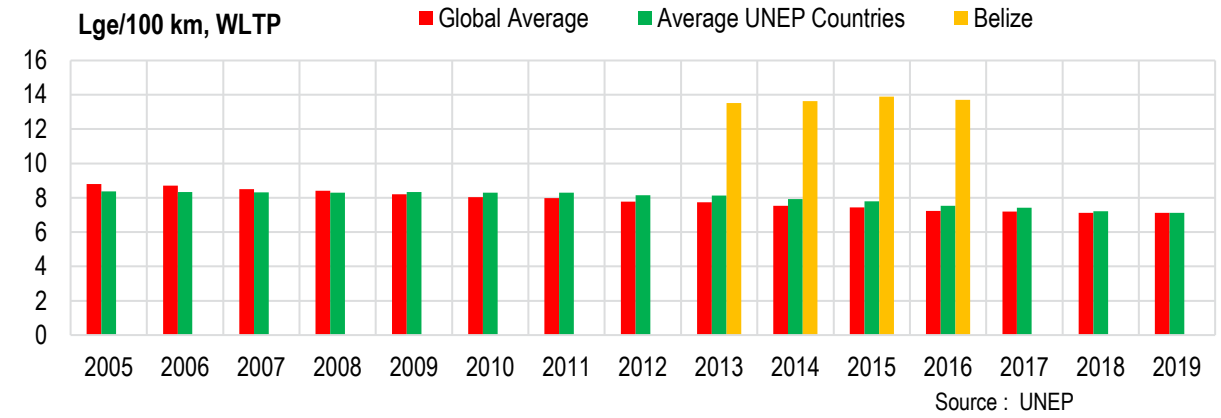
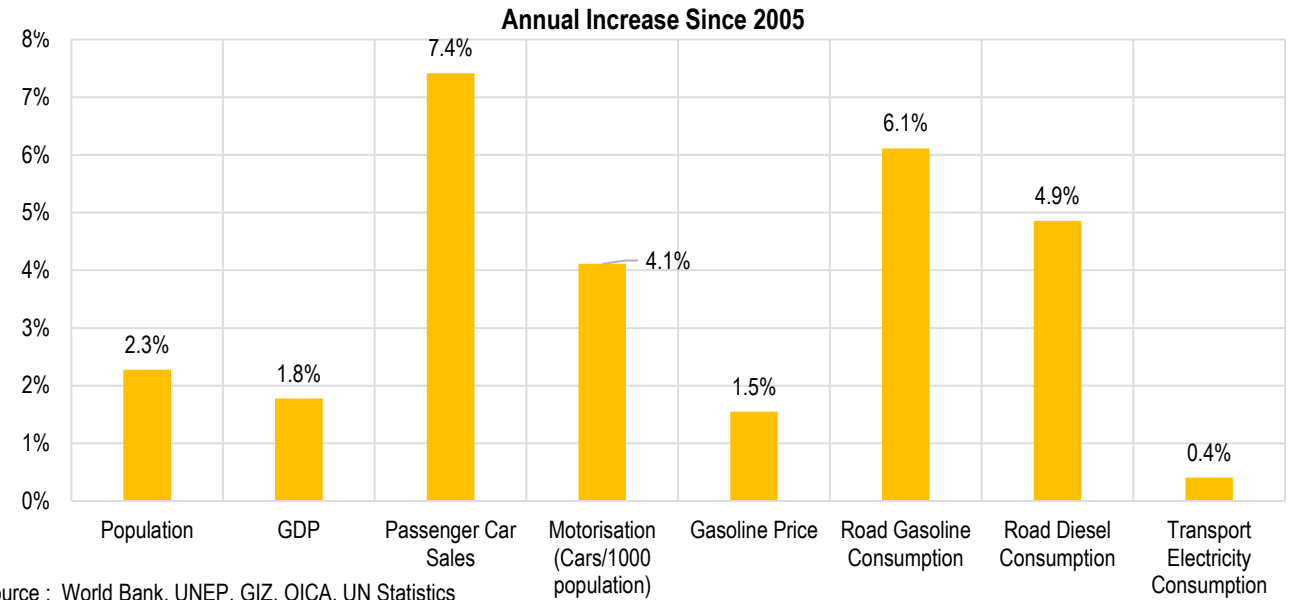
16 Tracking SDG7: The Energy Progress Report

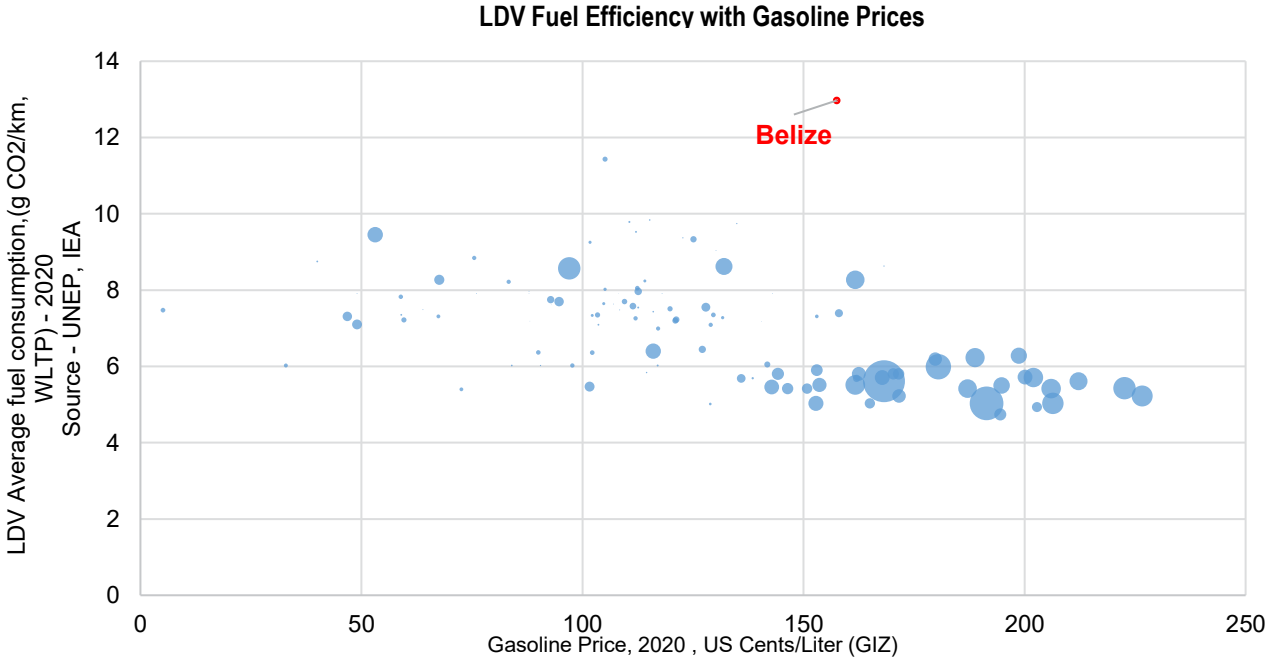
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

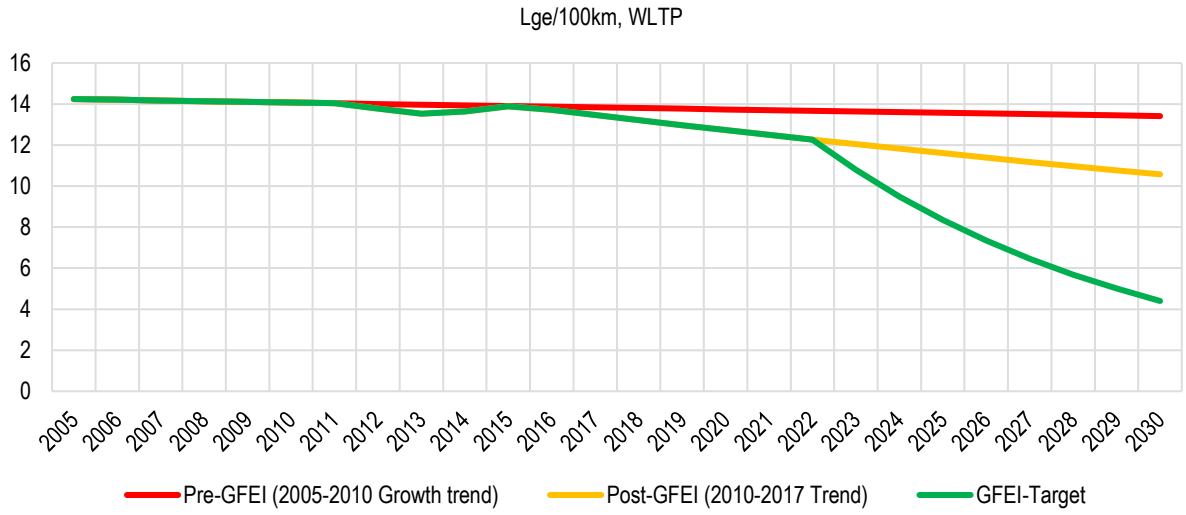
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

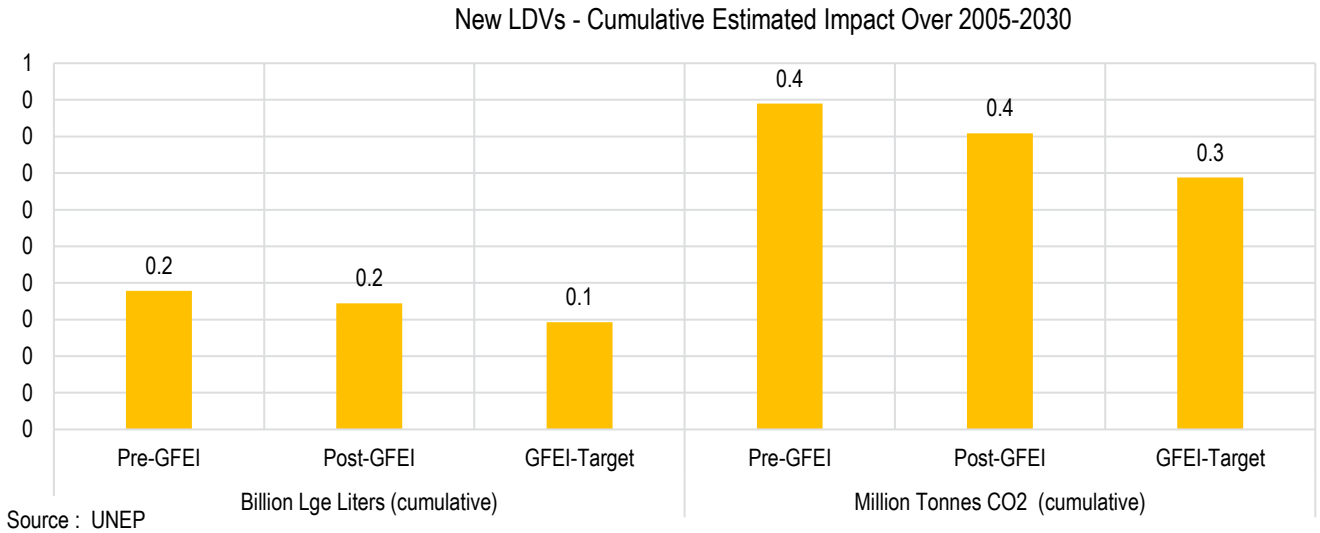
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-1.0%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-10.1%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

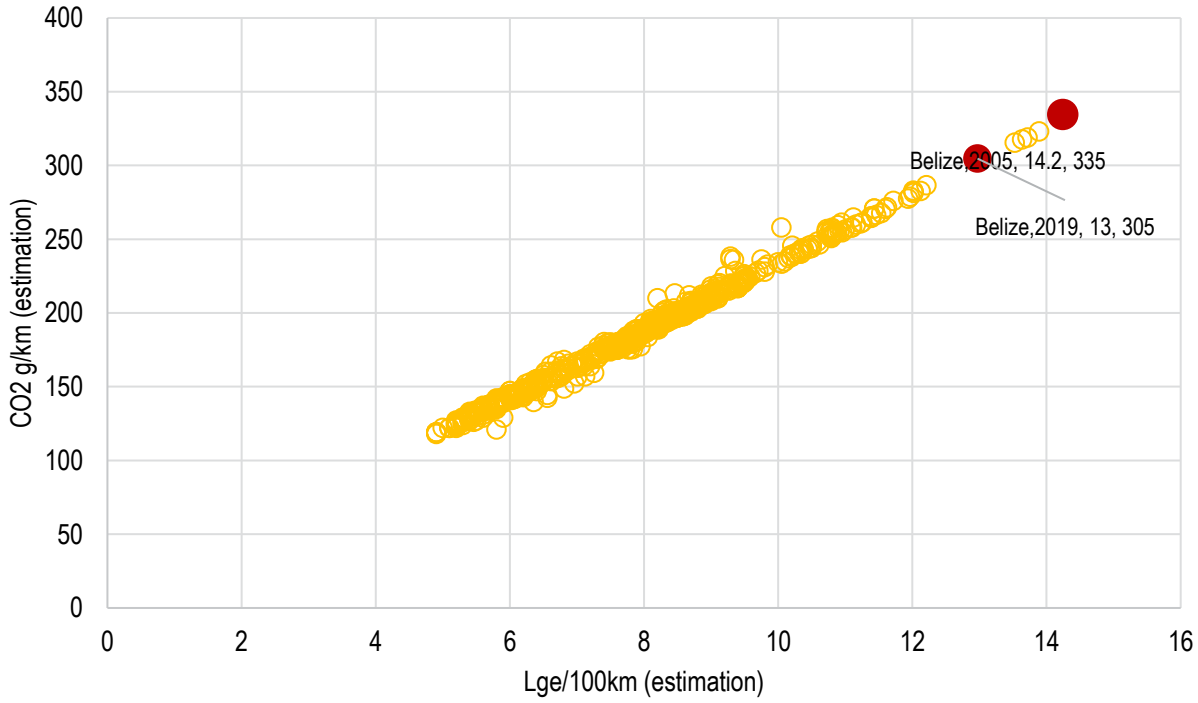
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

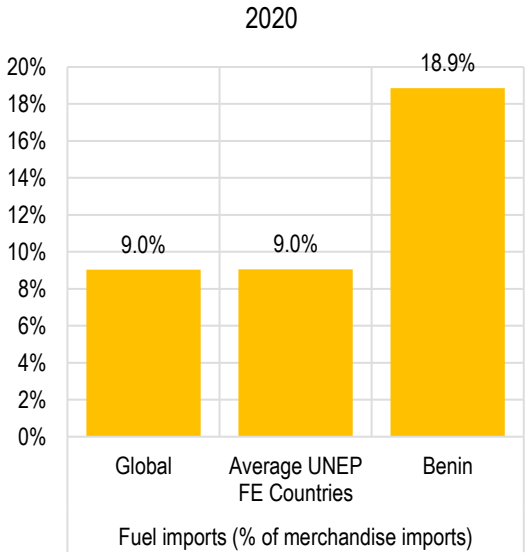
The activities to develop a fuel economy baseline in Belize (Phase I) are part of the agreement signed with CEGESTI on 15 August 2016. The project was launched in November 2016 together with the Ministry of Public Service, Energy and Public Utilities, the national focal point for this project. Technical support was provided by the regional technical partners, CEGESTI, CMMCh, and the University of Technology, Jamaica (UTech Ja.). This project supports Belize's Sustainable Energy Strategic Plan and its INDC contributions related to transport. The first phase included the formation of a national working group to support the project activities, including and securing auto registration data for the calculation of a national auto fuel economy baseline. The objectives of this workshop were to increase awareness of fuel economy further, share best practices, and support the development of appropriate national fuel economy policies.

As part of the Nationally Determined Contribution (NDC) under the United Nations Framework Convention on Climate Change (COP 21), Belize objective is to achieve at least a 20% reduction in conventional transportation fuel use by 2030 and promote energy efficiency in the transport sector through appropriate policies and investment.

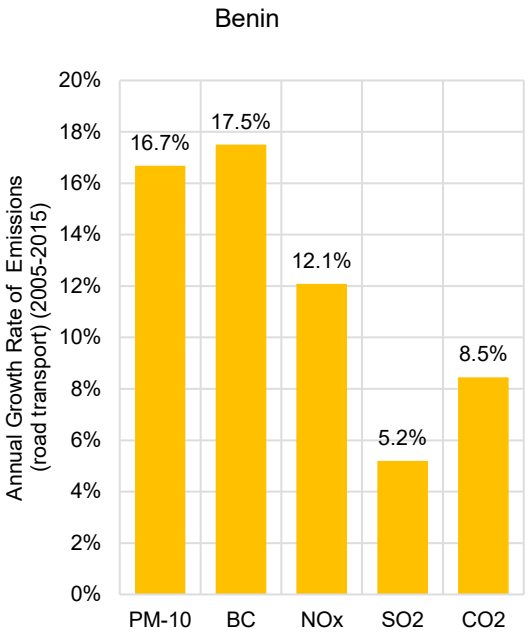
The assessment indicates that if Belize implements a fuel economy policy for first-time registered LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 775 million litres of gasoline-equivalent & 1.8 million tonnes of CO2 cumulative from newly registered LDVs

LDV FUEL ECONOMY COUNTRY REPORT FOR BENIN

		Year	Source
Population (million)	12	2020	7
Income Level Category	Lower middle income		7
GDP per Capita (PPP, Curent USD)	3504	2020	7
Motorisation (Cars/1000 population)	20	2020	10
Car Sales (000)	1	2020	6
Gasoline Price $/l	0.9	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	4.6	2018	13
Employment (Transport+,000)	238	2019	11
Fuel Economy (Lge/100 km, WLTP) -	#N/A	#N/A	1
Average CO2 emissions/kilometre (g/km, WLTP) -	#N/A	#N/A	1
Average displacement (cm3) -			1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.098	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.064	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	148.0	2019	8
Transport CO2 Emissions per Capita (tonnes) -	0.7	2019	14
Road Transport PM Emissions per Capita (grams) -	173.2	2015	14
Road Transport NOx Emissions per Capita (grams)-	4595.2	2015	14
Road Transport BC Emissions per Capita (grams)-	82.8	2015	14
LDV Emission Standards -	0	2019	1
Diesel Sulphur Levels (ppm) -	3500	2019	1
Gasoline Sulphur Levels (ppm) -	3500	2019	1
Annual rate of economy-wide energy intensity growth	1.2%	2000-18	16
Annual rate of transport energy consumption growth	10.3%	2000-18	16
LDV Import value (Million USD)	74	2020	3



Source : World Bank

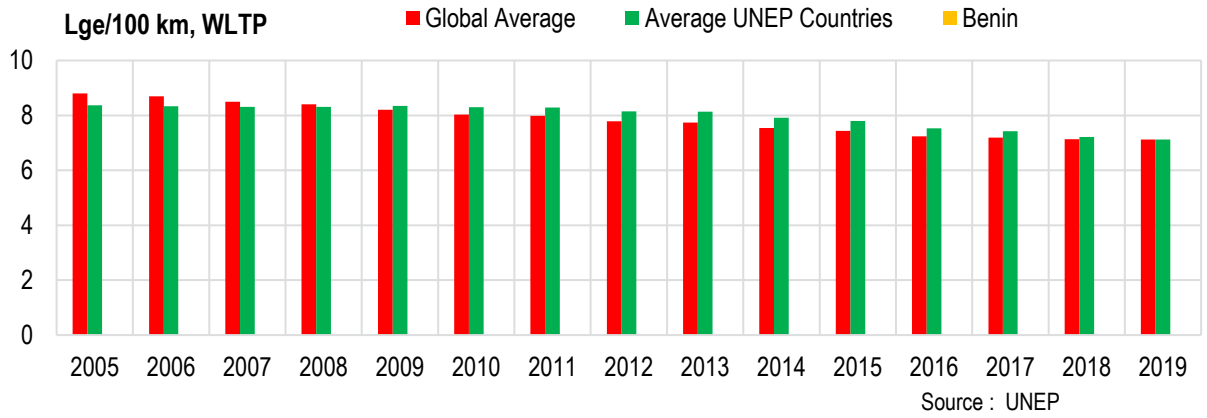


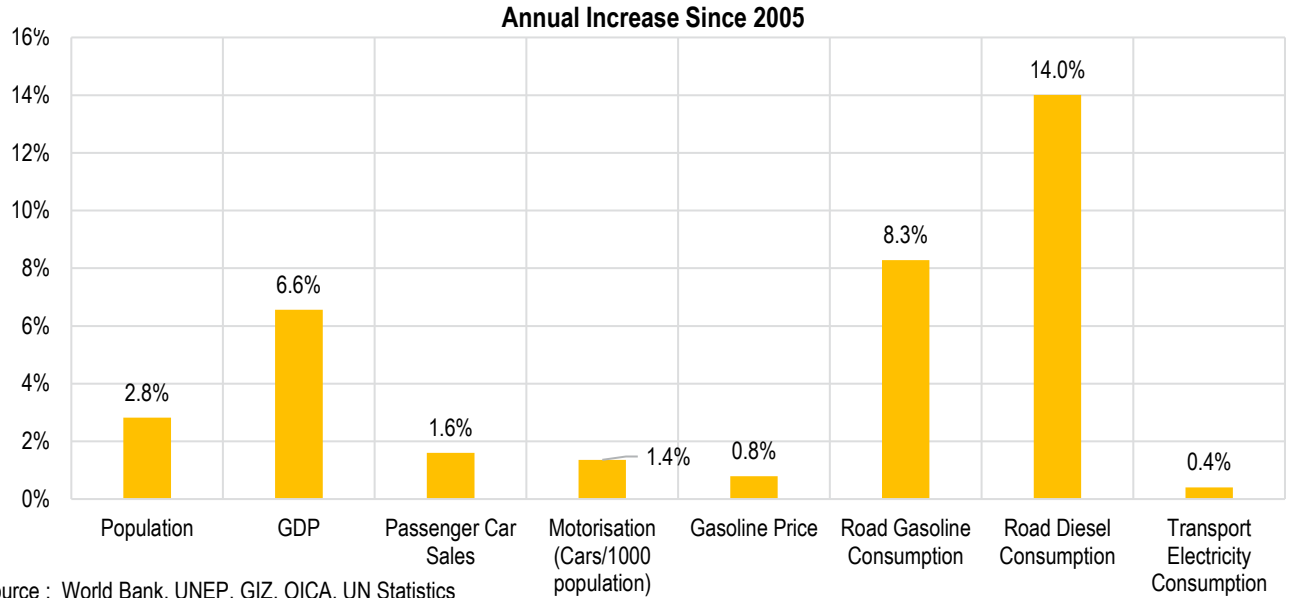
Source : IIASA

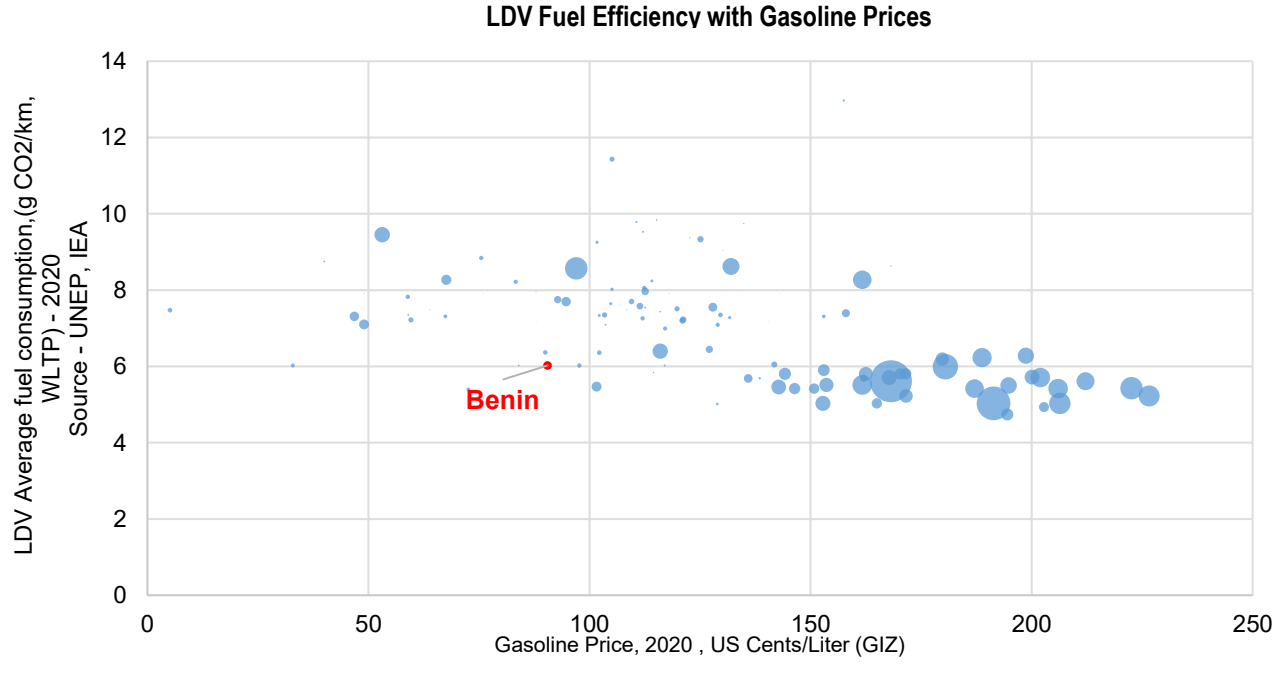
Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
7 World Bank
8 UN Statistics Division
9 SLOCAT &GIZ
10 Estimated using growth and sales data
11 Employment is for Transport; storage and communication, ILO
12 International Transport Forum
13 Koks, E.E. et al. A global multi-hazard risk analysis of road
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

FUEL ECONOMY TRENDS







Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

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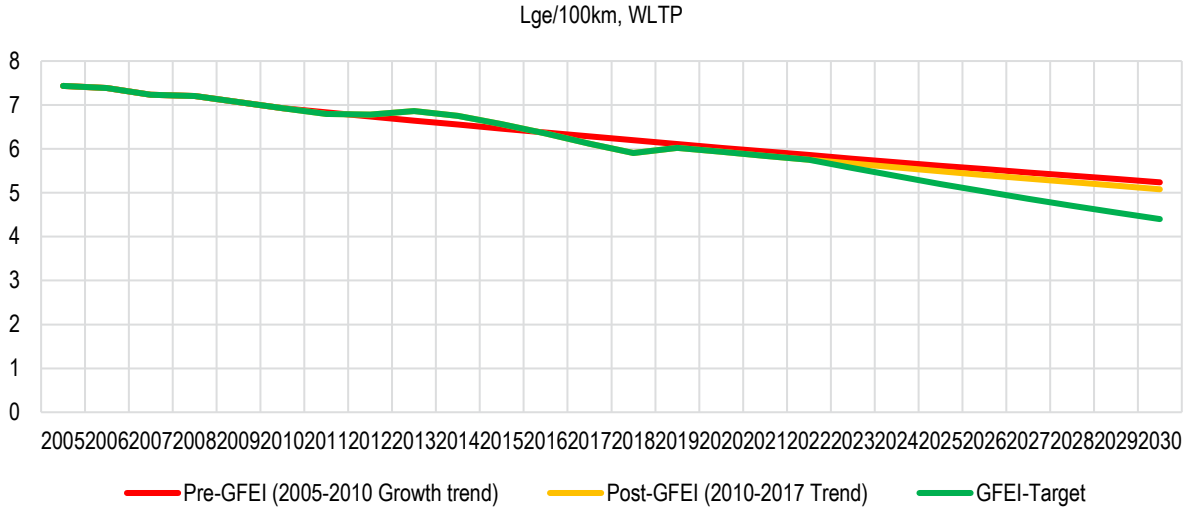
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

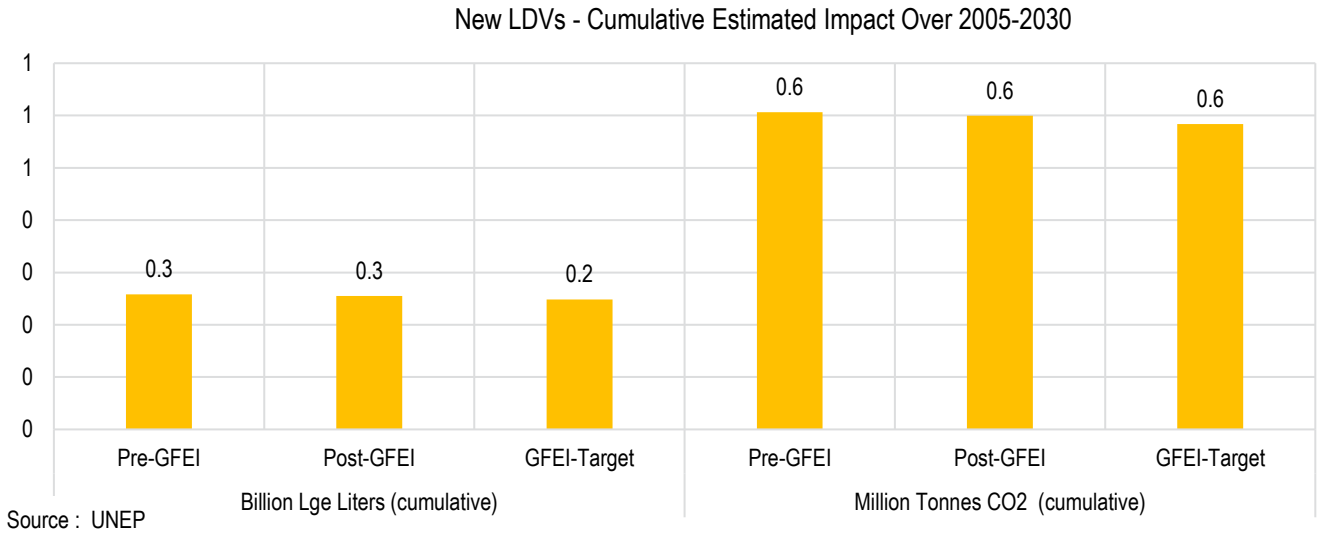
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-1.5%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-2.9%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

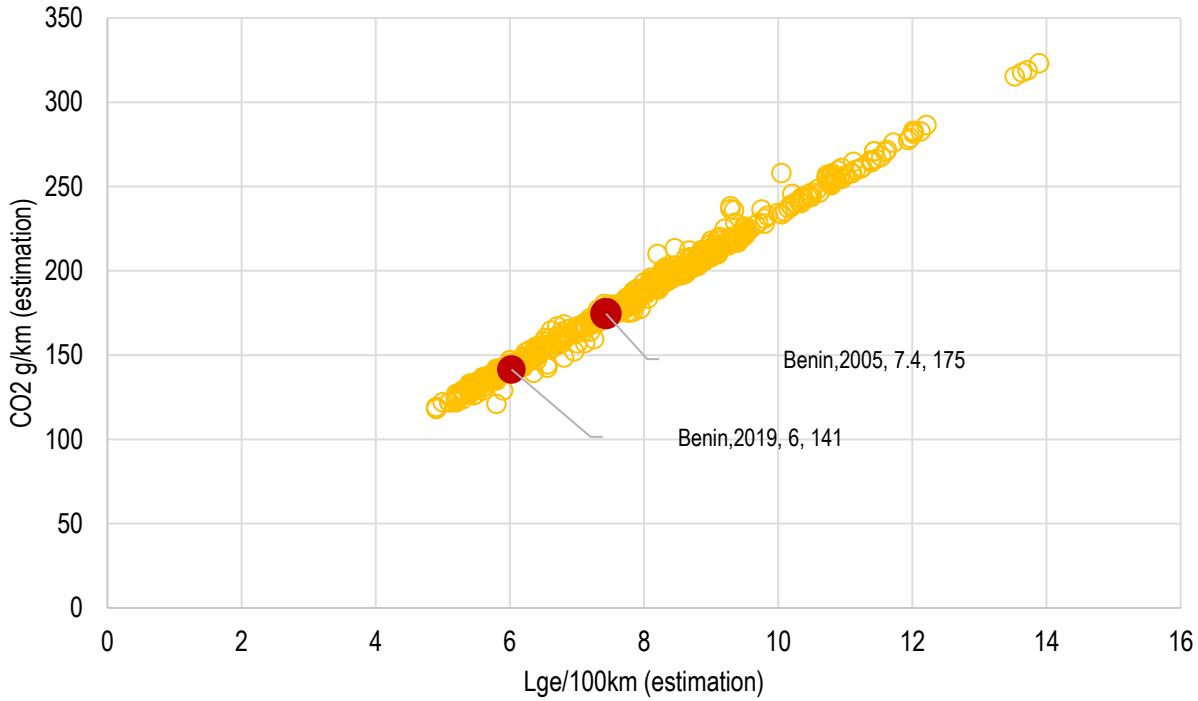
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



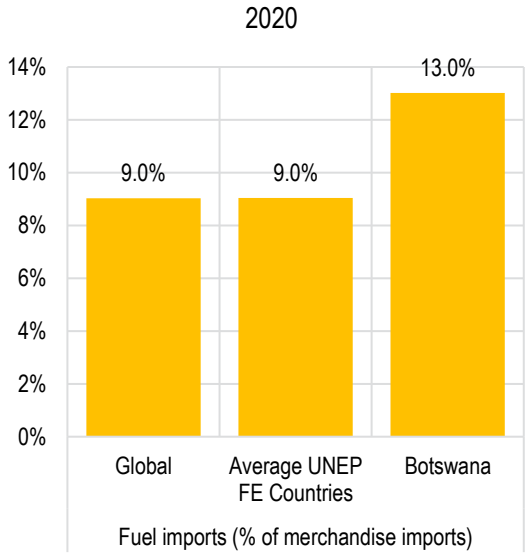
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

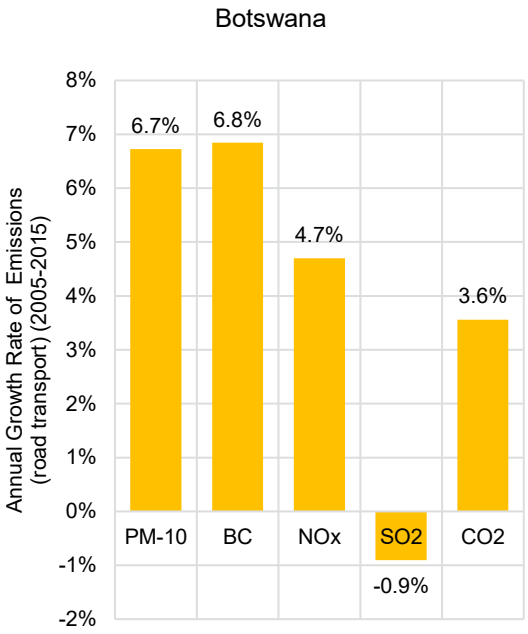
The assessment indicates that if Benin implements a fuel economy policy for first-time registered LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 17 million litres of gasoline-equivalent & 0.04 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR BOTSWANA

		Year	Source
Population (million)	2	2020	7
Income Level Category	Upper middle income		7
GDP per Capita (PPP, Curent USD)	15453	2020	7
Motorisation (Cars/1000 population)	116	2020	10
Car Sales (000)	6	2020	6
Gasoline Price $/l	1.1	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	25.7	2018	13
Employment (Transport+,000)	27	2019	11
Fuel Economy (Lge/100 km, WLTP) -	8	2015	1
Average CO2 emissions/kilometre (g/km, WLTP) -	201	2015	1
Average displacement (cm3) -	2577	2015	1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	3	2015	1
Cumulative number of LDVs (total sample size,000) -	37		1
Diesel Share in LDV (sample,%)	71%	2015	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	No	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.192	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.125	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	25.1	2019	8
Transport CO2 Emissions per Capita (tonnes) -	3.1	2019	14
Road Transport PM Emissions per Capita (grams) -	410.3	2015	14
Road Transport NOx Emissions per Capita (grams)-	11671.4	2015	14
Road Transport BC Emissions per Capita (grams)-	201.2	2015	14
LDV Emission Standards -	0	2019	1
Diesel Sulphur Levels (ppm) -	500	2019	1
Gasoline Sulphur Levels (ppm) -	500	2019	1
Annual rate of economy-wide energy intensity growth	-1.6%	2000-18	16
Annual rate of transport energy consumption growth	3.5%	2000-18	16
LDV Import value (Million USD)	152	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

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15 Fuel imports (% of merchandise imports) data is from World Bank
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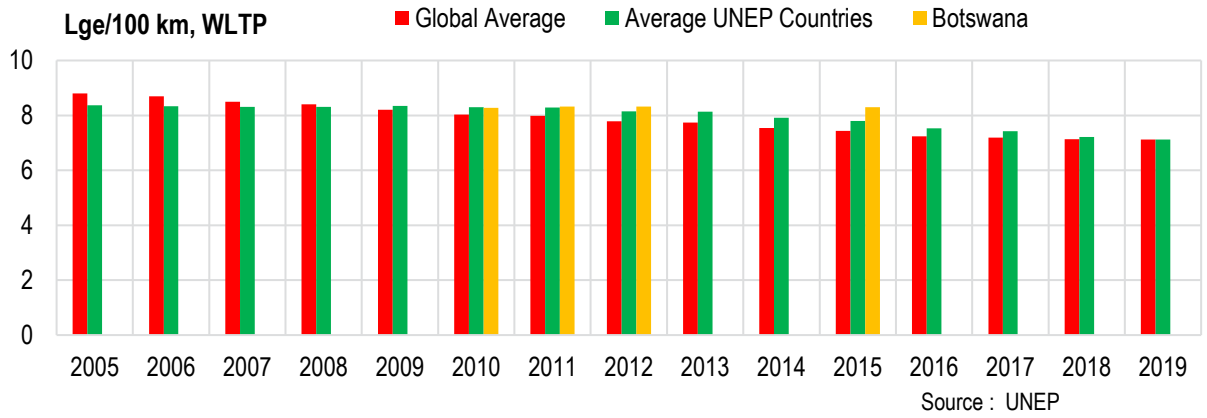
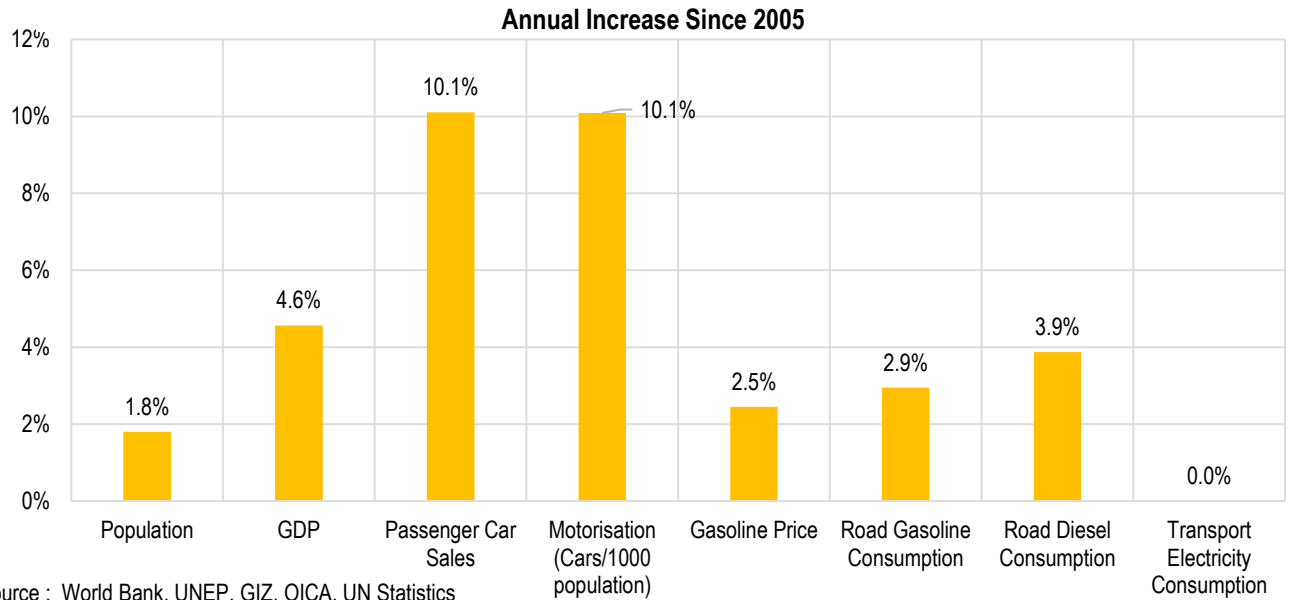
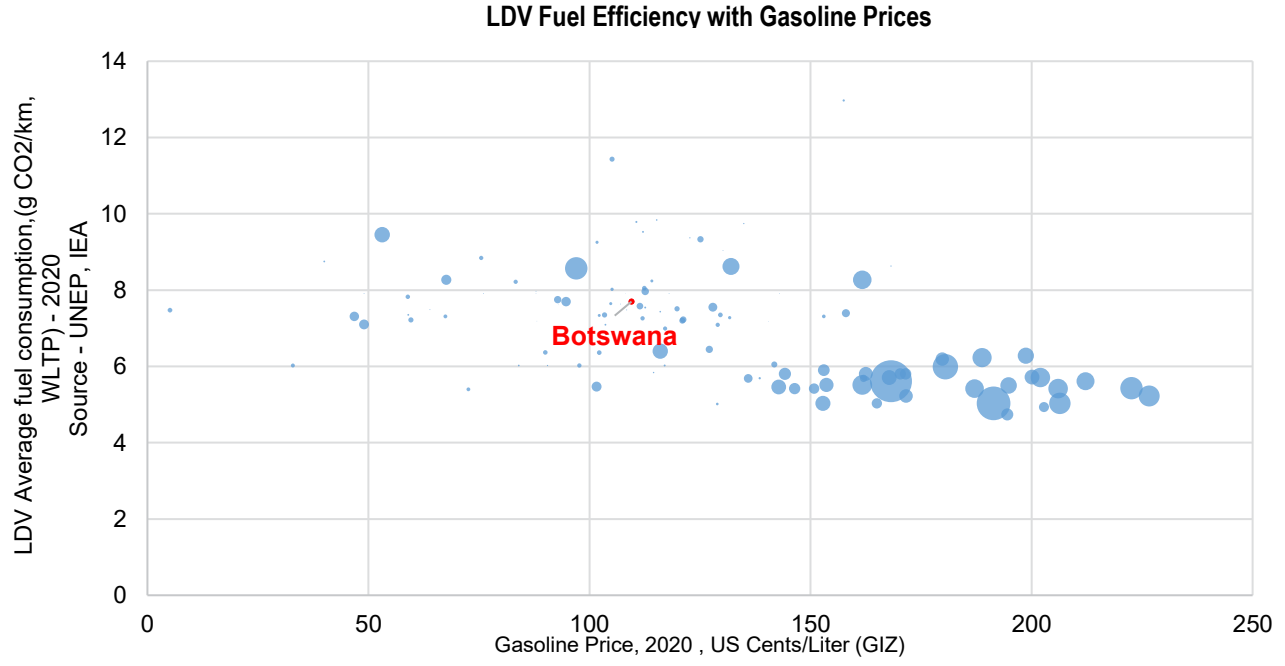
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

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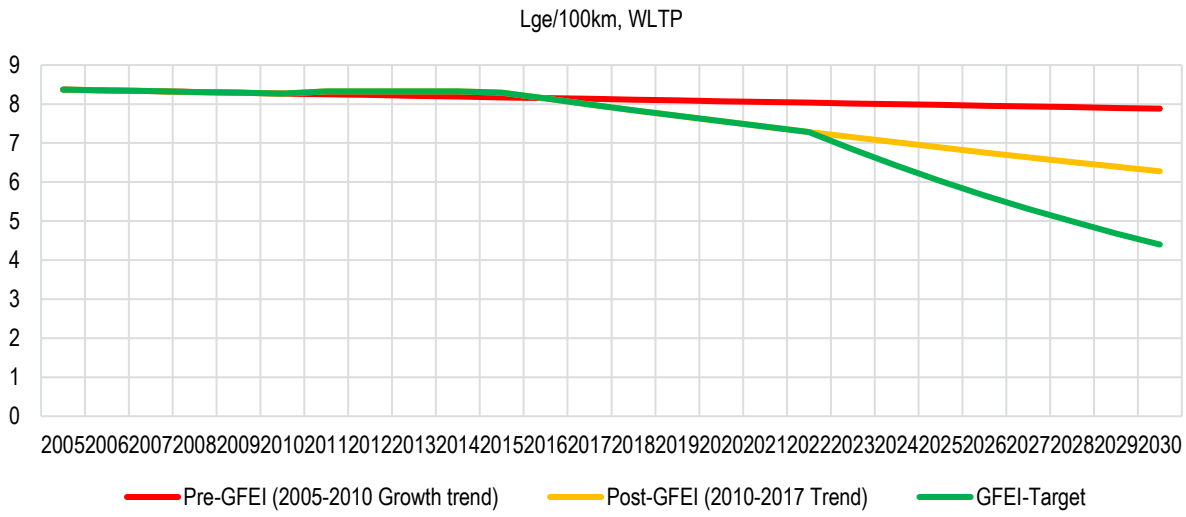
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-0.9%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-5.3%**



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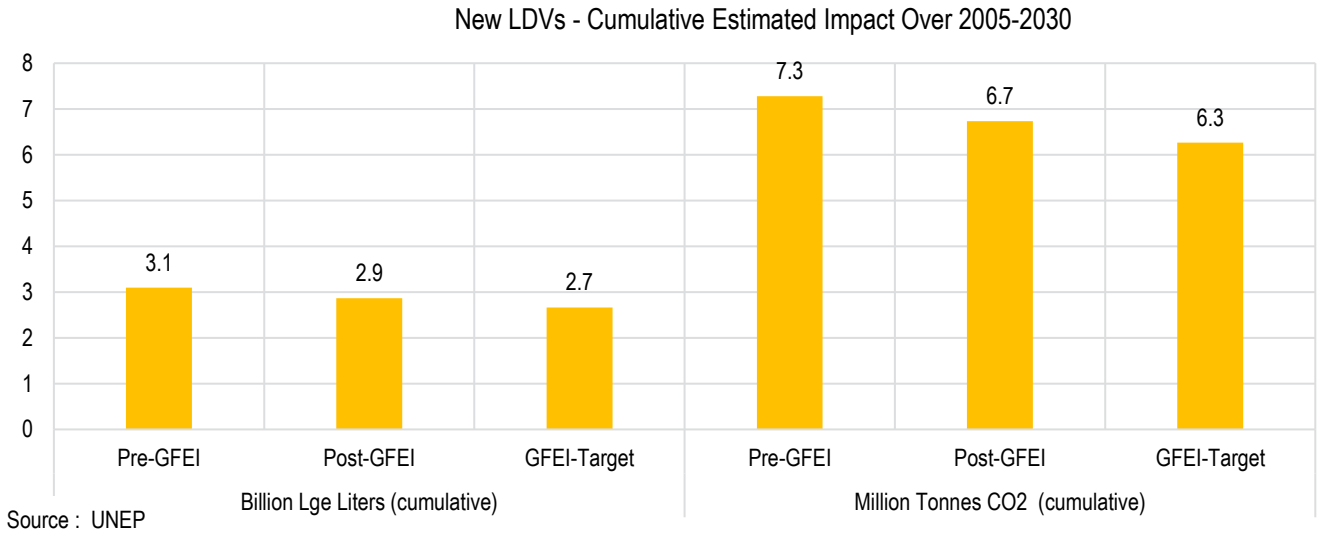


Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

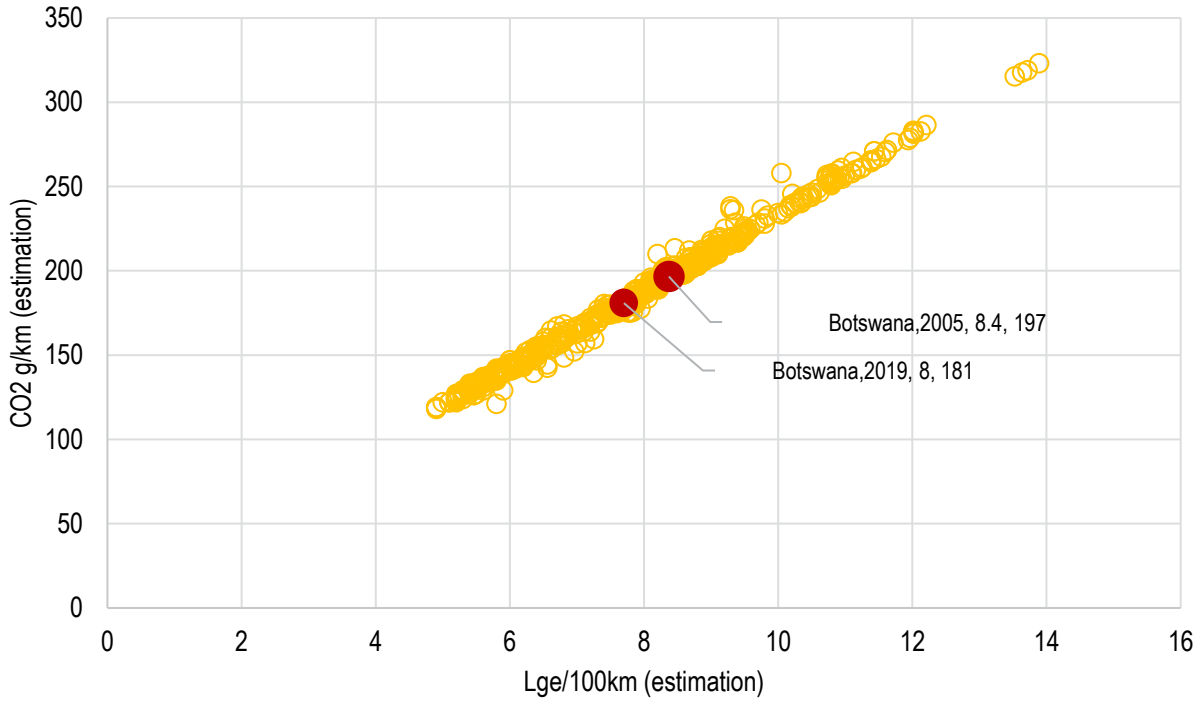
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

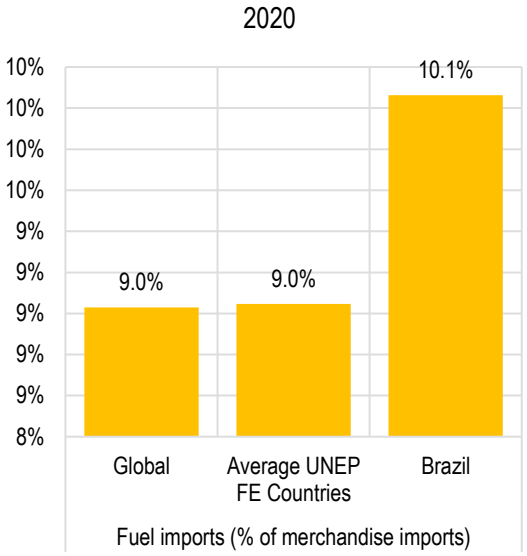
The agreement to promote fuel economy in Botswana was signed on 29 January 2016 with the Department of Energy Botswana as part of a broader project to promote low sulphur fuels and cleaner vehicles in Southern Africa. The activities focus on the development of fuel economy baseline and fuel economy policies. This national project was financially supported by the Climate and Clean Air Coalition (CCAC) to Reduce Short-Lived Climate Pollutants. In 2018, Botswana also began discussions to introduce a CO2-based standard. The Botswana government initiated this process after the UNEP-supported project ended. The CO2 based taxation system is being considered alongside a fuel economy vehicle labelling. The Department of Transport, Roads and Safety collects the baseline data on vehicle registrations.

Research indicates that the most significant energy efficiency gains in Botswana will come from programmes targeted at the high-energy usage areas - transportation, households, and industry

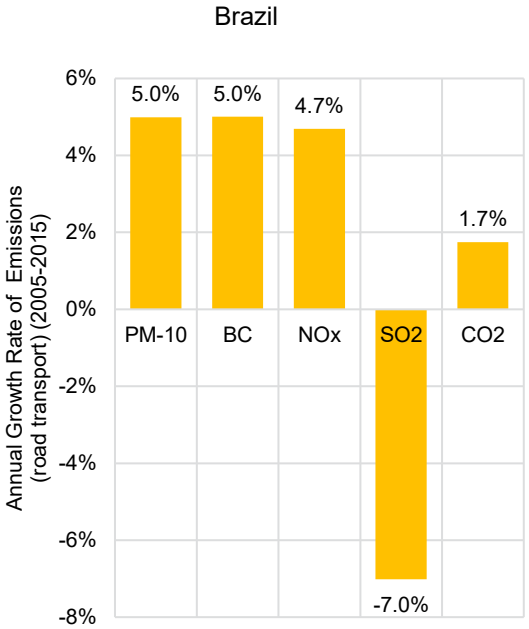
The assessment indicates that if Botswana implements a fuel economy policy for LDVs with a 2030 GFEI target, it could save 325 million litres of gasoline-equivalent & 0.76 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR BRAZIL

		Year	Source
Population (million)	213	2020	7
Income Level Category	Upper middle income		7
GDP per Capita (PPP, Curent USD)	14830	2020	7
Motorisation (Cars/1000 population)	173	2020	10
Car Sales (000)	1616	2020	6
Gasoline Price $/l	1.2	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	10.5	2018	13
Employment (Transport+,000)	6220	2019	11
Fuel Economy (Lge/100 km, WLTP) -	8	2019	1
Average CO2 emissions/kilometre (g/km, WLTP) -	176	2019	1
Average displacement (cm3) -	1484	2019	1
Average kerb weight (kg) -	1261	2019	1
Average power (kw) -	87	2019	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.127	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.191	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	10.6	2019	8
Transport CO2 Emissions per Capita (tonnes) -	2.3	2019	14
Road Transport PM Emissions per Capita (grams) -	323.6	2015	14
Road Transport NOx Emissions per Capita (grams)-	8425.0	2015	14
Road Transport BC Emissions per Capita (grams)-	155.6	2015	14
LDV Emission Standards -	Euro 4	2019	1
Diesel Sulphur Levels (ppm) -	500	2019	1
Gasoline Sulphur Levels (ppm) -	50	2019	1
Annual rate of economy-wide energy intensity growth	0.1%	2000-18	16
Annual rate of transport energy consumption growth	3.1%	2000-18	16
LDV Import value (Million USD)	1762	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

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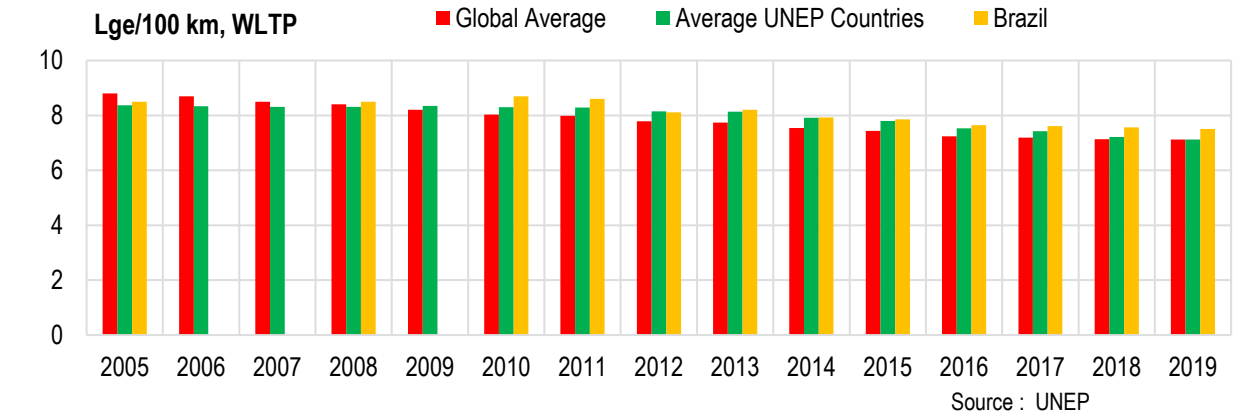

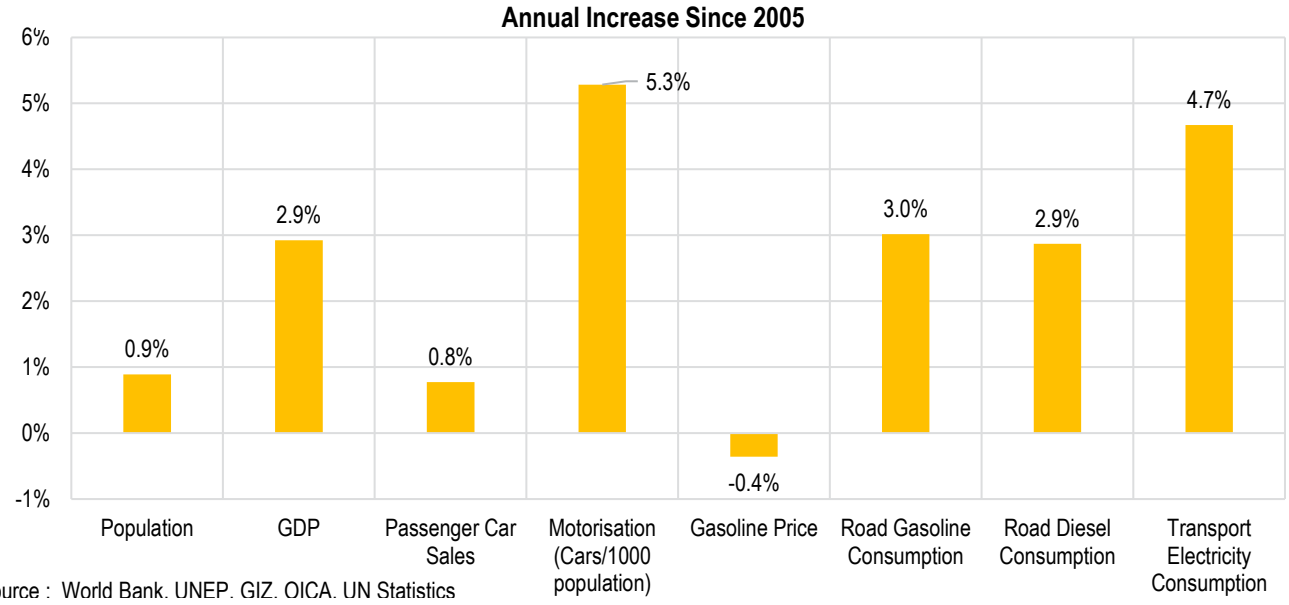

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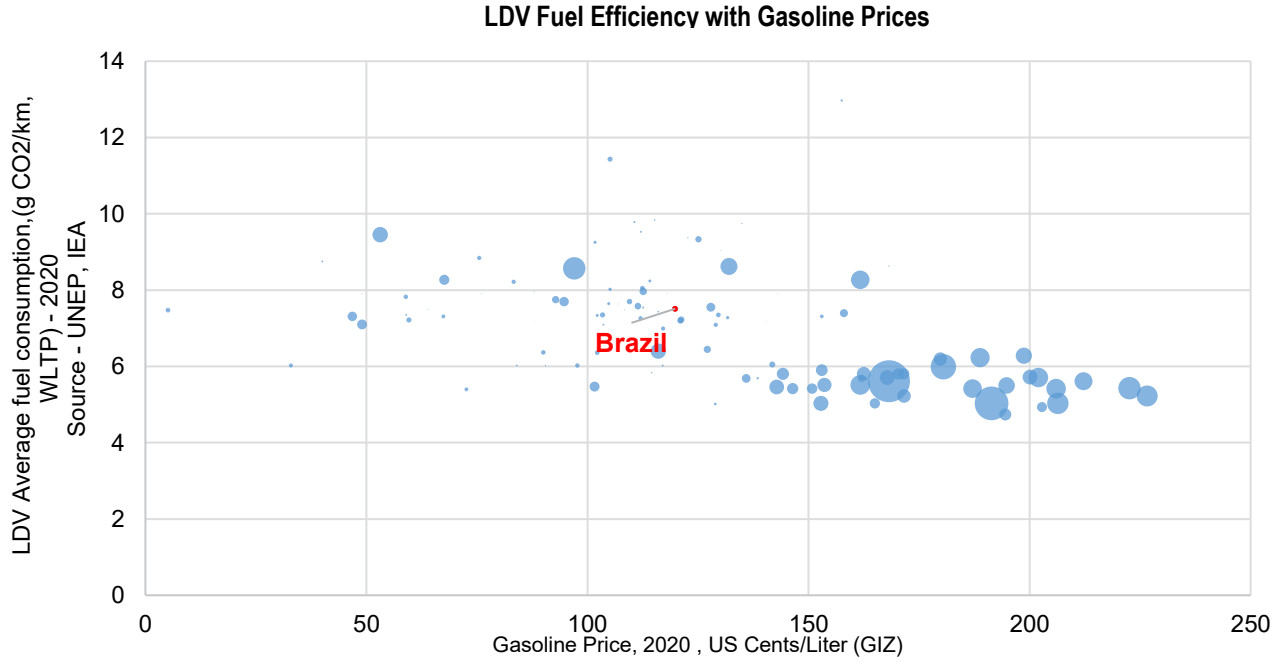

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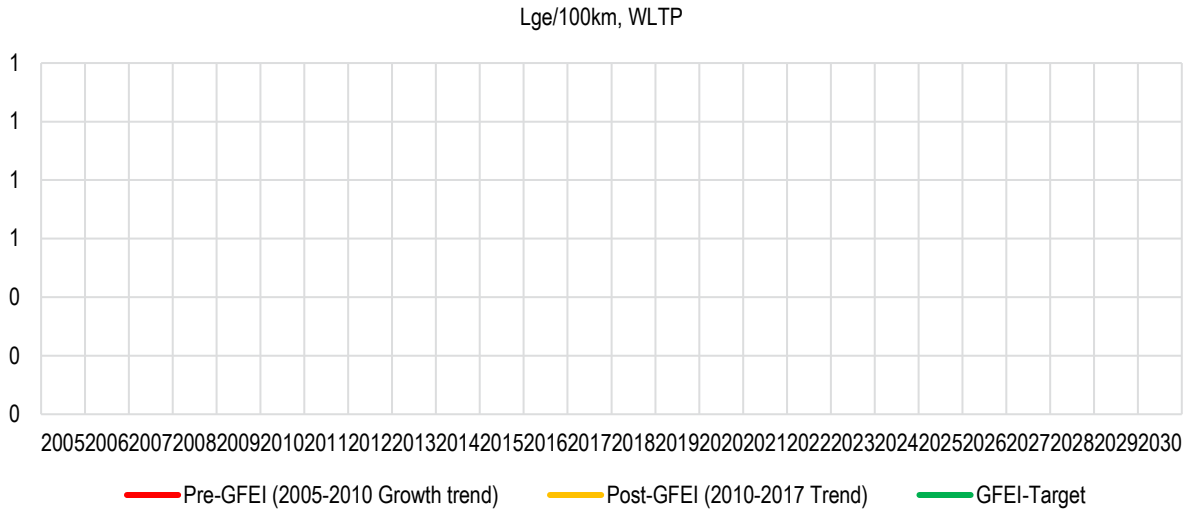
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

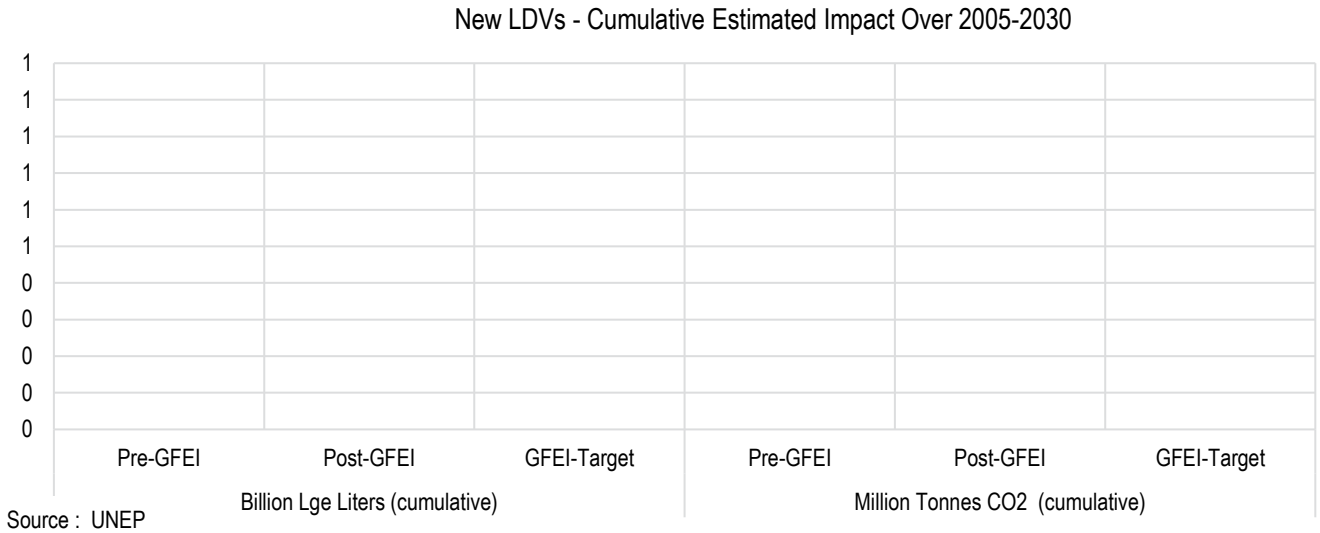
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **#N/A**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **#N/A**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

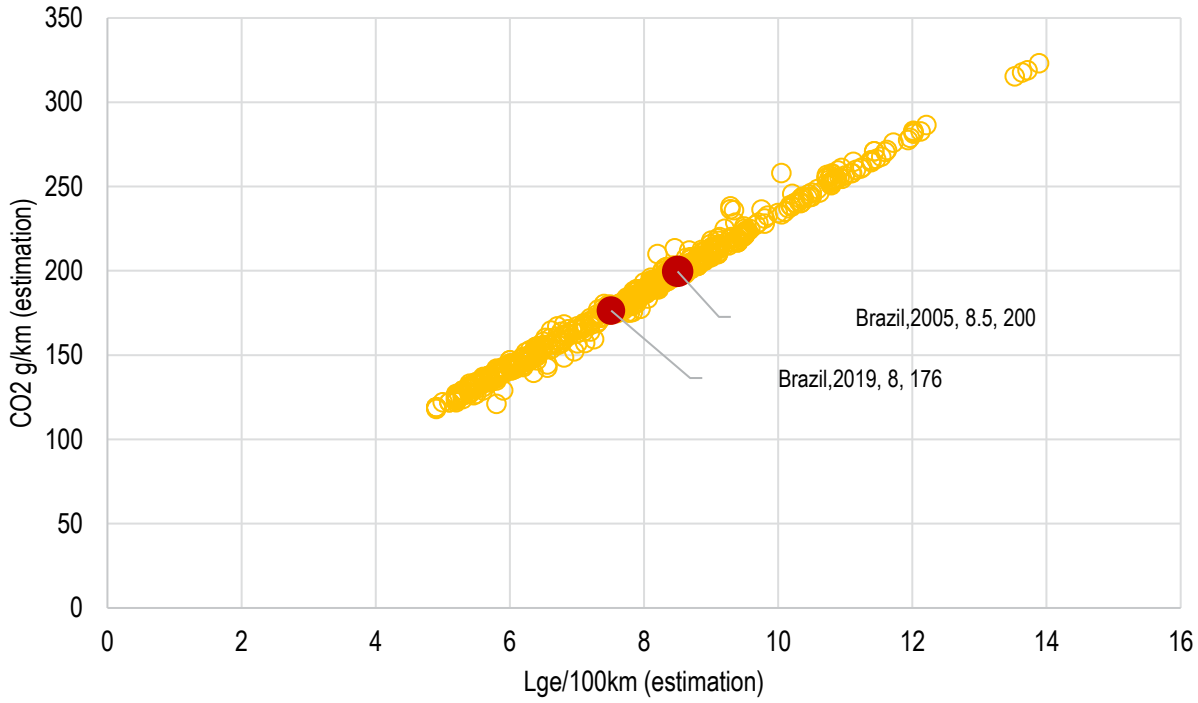
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



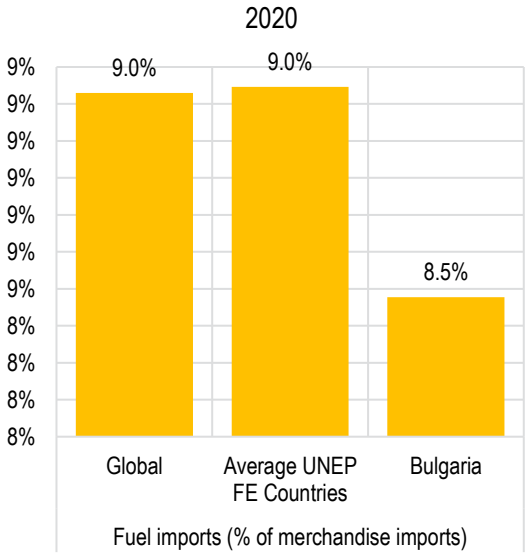
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

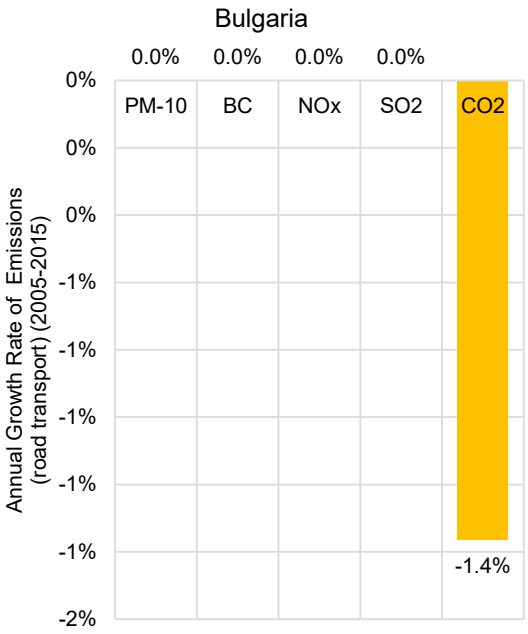
The assessment indicates that if Brazil implements a fuel economy policy for LDVs with a 2030 GFEI target, it could save 180 billion litres of gasoline-equivalent & 422 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR BULGARIA

		Year	Source
Population (million)	7	2020	7
Income Level Category	Upper middle income		7
GDP per Capita (PPP, Curent USD)	24620	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	22	2020	6
Gasoline Price $/l	1.4	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	16.0	2018	13
Employment (Transport+,000)	307	2019	11
Fuel Economy (Lge/100 km, WLTP) -	6	2016	1
Average CO2 emissions/kilometre (g/km, WLTP) -	140	2017	1
Average displacement (cm3) -	1669	2017	1
Average kerb weight (kg) -	1399	2017	1
Average power (kw) -	97	2017	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	No	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.065	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.305	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	51.8	2019	8
Transport CO2 Emissions per Capita (tonnes) -	6.2	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	-3.4%	2000-18	16
Annual rate of transport energy consumption growth	3.1%	2000-18	16
LDV Import value (Million USD)	858	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
7 World Bank
8 UN Statistics Division
9 SLOCAT &GIZ
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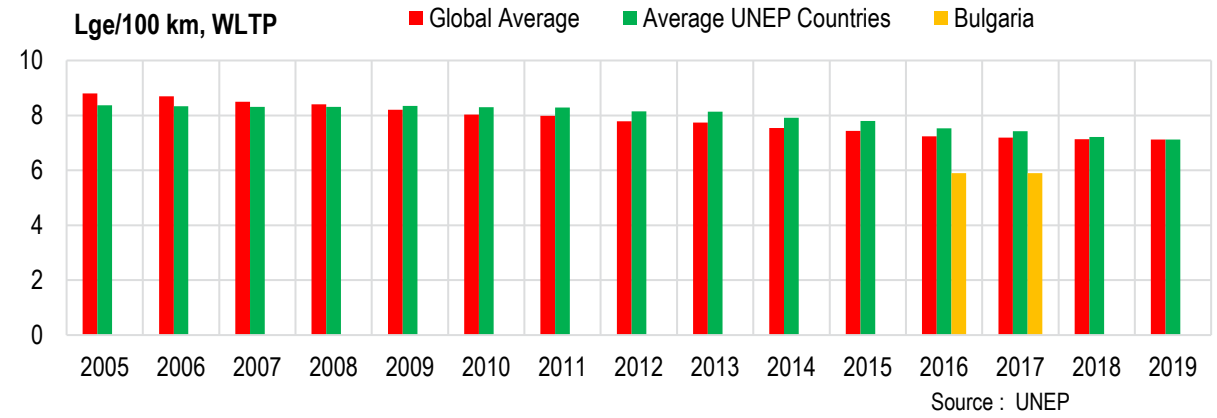
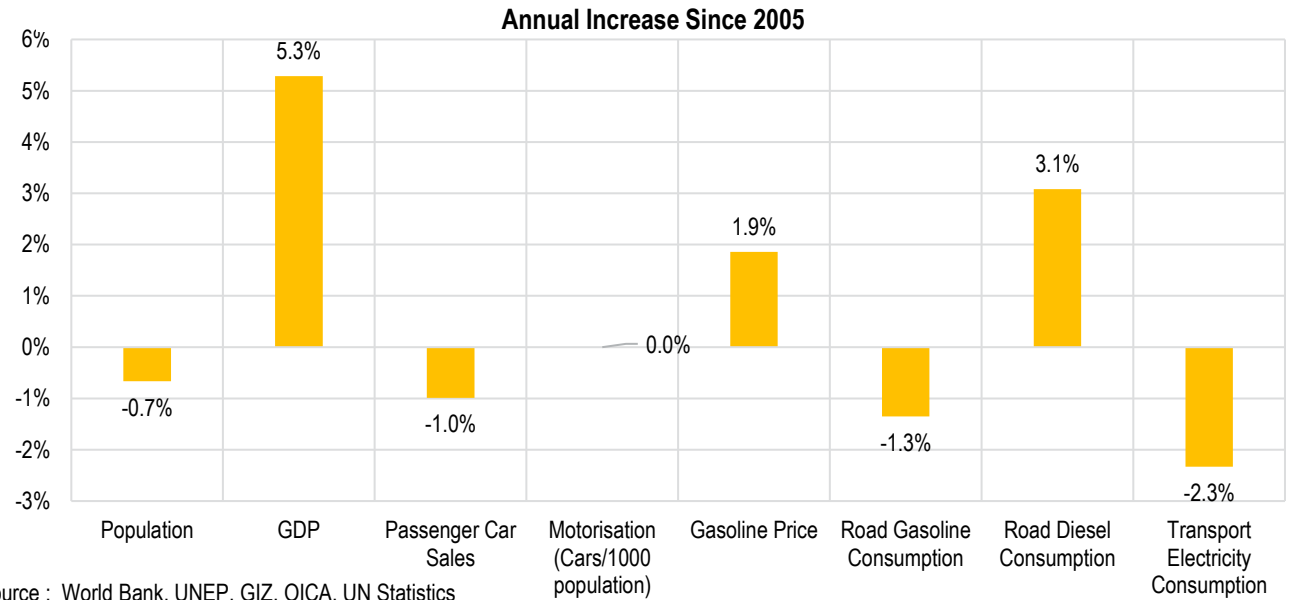
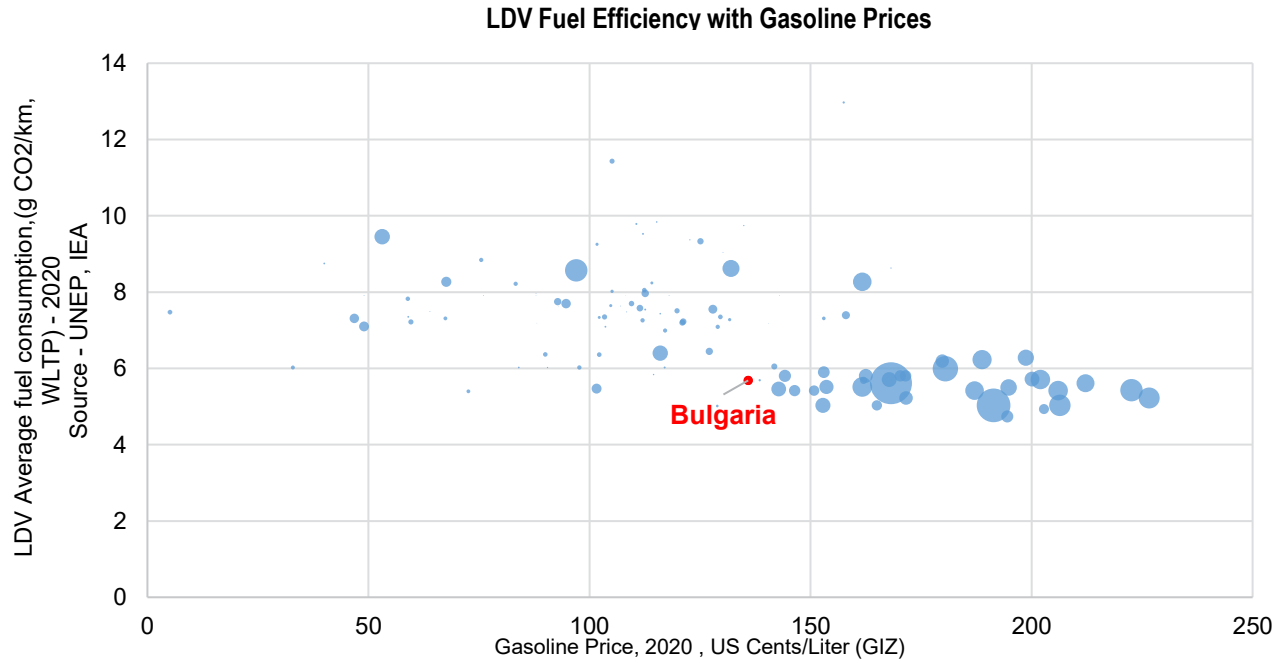
11 Employment is for Transport; storage and communication, ILO
12 International Transport Forum
13 Koks, E.E. et al. A global multi-hazard risk analysis of road
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

FUEL ECONOMY TRENDS





Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

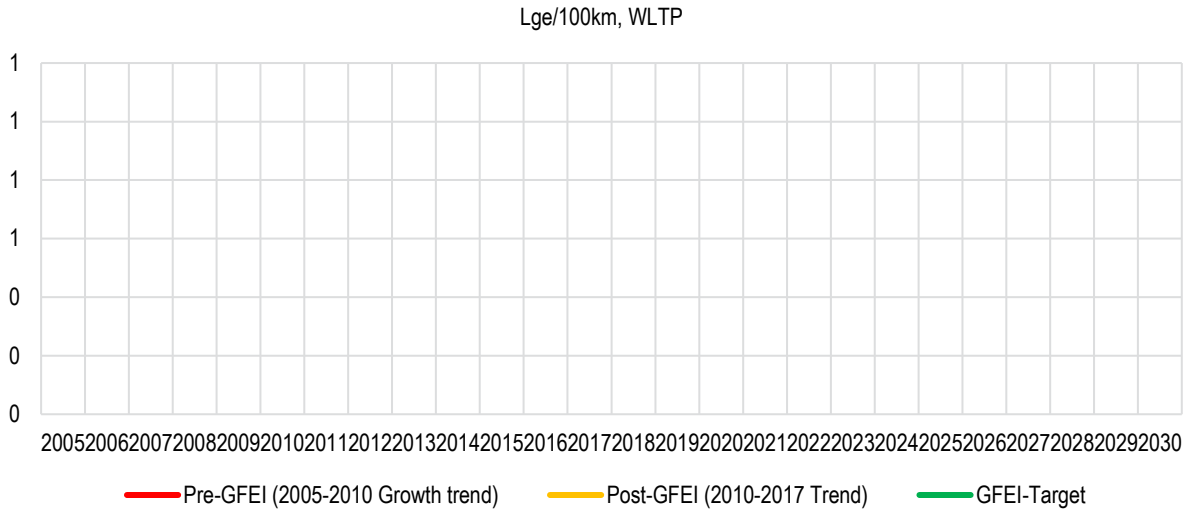
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

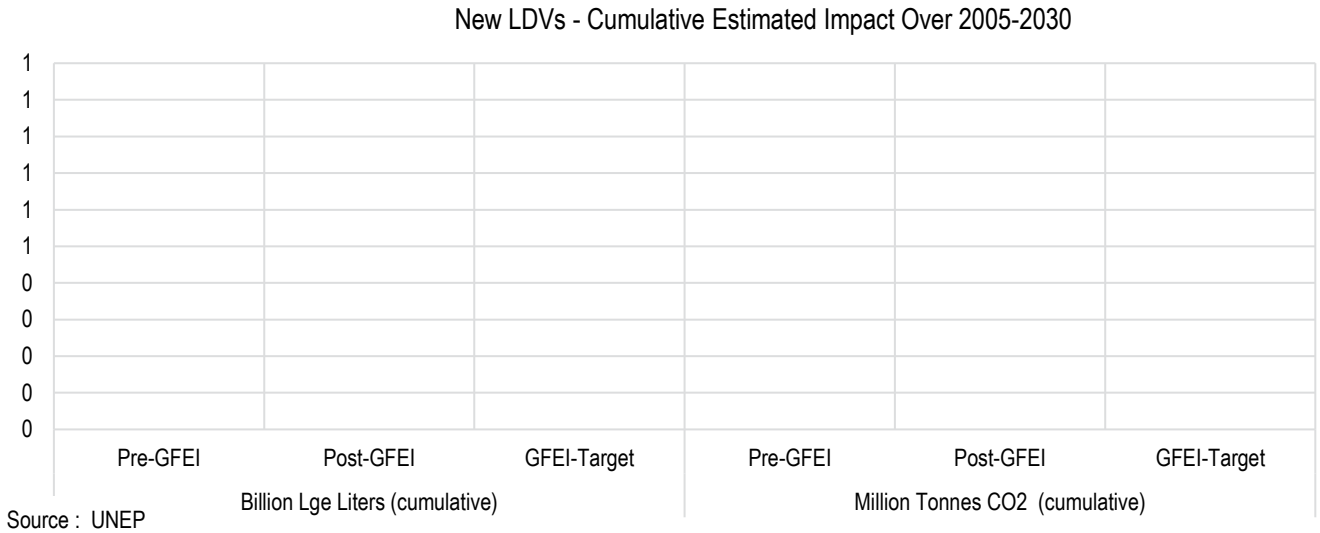
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

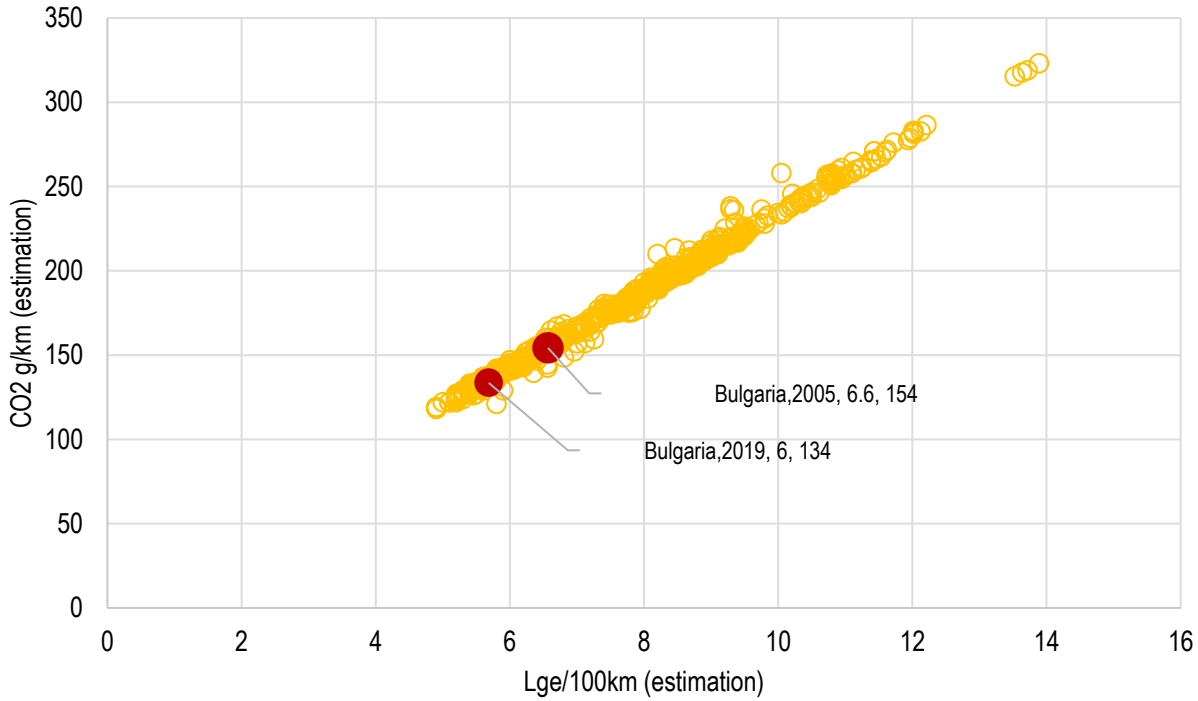
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



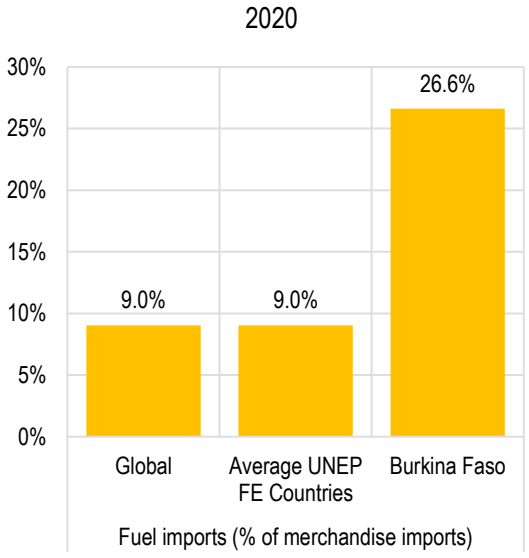
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

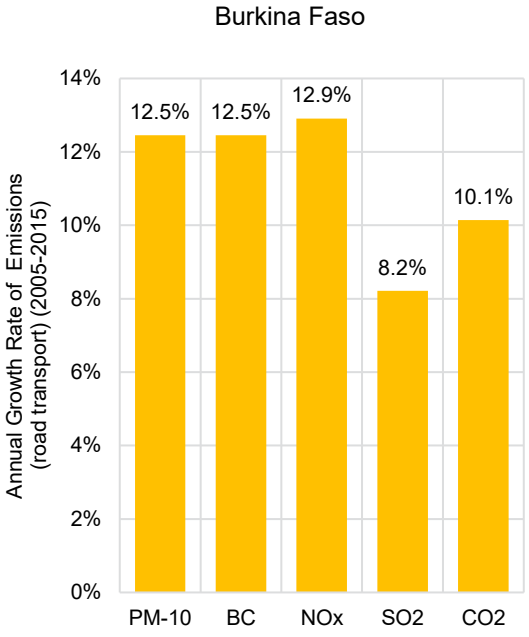
#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR BURKINA FASO

		Year	Source
Population (million)	21	2020	7
Income Level Category	Low income		7
GDP per Capita (PPP, Curent USD)	2273	2020	7
Motorisation (Cars/1000 population)	11	2020	10
Car Sales (000)	15	2020	6
Gasoline Price $/l	1.1	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	3.8	2018	13
Employment (Transport+,000)	129	2019	11
Fuel Economy (Lge/100 km, WLTP) -	8	2017	1
Average CO2 emissions/kilometre (g/km, WLTP) -	187	2017	1
Average displacement (cm3) -	2325	2017	1
Average kerb weight (kg) -	2114	2017	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -	76		1
Diesel Share in LDV (sample,%)	23%	2017	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.021	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.017	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	#VALUE!	2019	8
Transport CO2 Emissions per Capita (tonnes) -	0.2	2019	14
Road Transport PM Emissions per Capita (grams) -	36.2	2015	14
Road Transport NOx Emissions per Capita (grams)-	779.5	2015	14
Road Transport BC Emissions per Capita (grams)-	17.4	2015	14
LDV Emission Standards -	0	2019	1
Diesel Sulphur Levels (ppm) -	1000	2019	1
Gasoline Sulphur Levels (ppm) -	500	2019	1
Annual rate of economy-wide energy intensity growth	-1.0%	2000-18	16
Annual rate of transport energy consumption growth	8.4%	2000-18	16
LDV Import value (Million USD)	103	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
7 World Bank
8 UN Statistics Division
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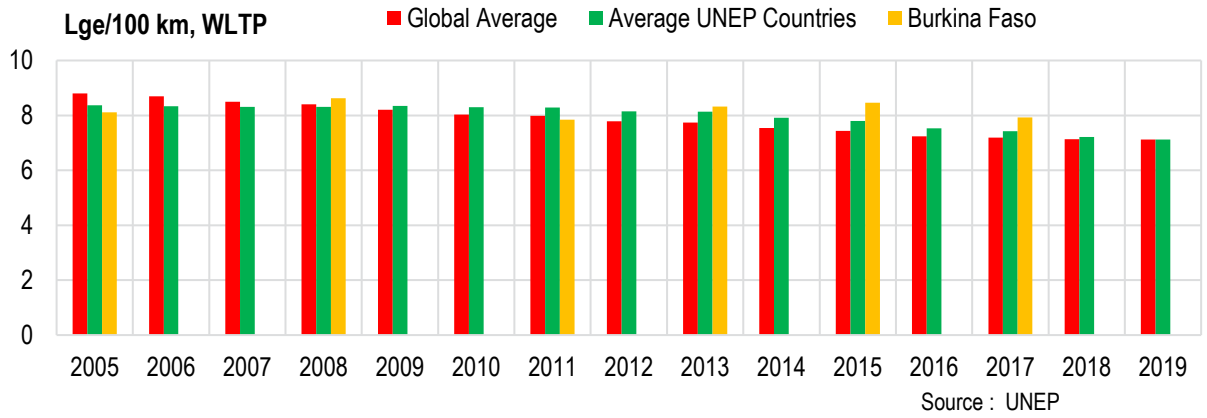
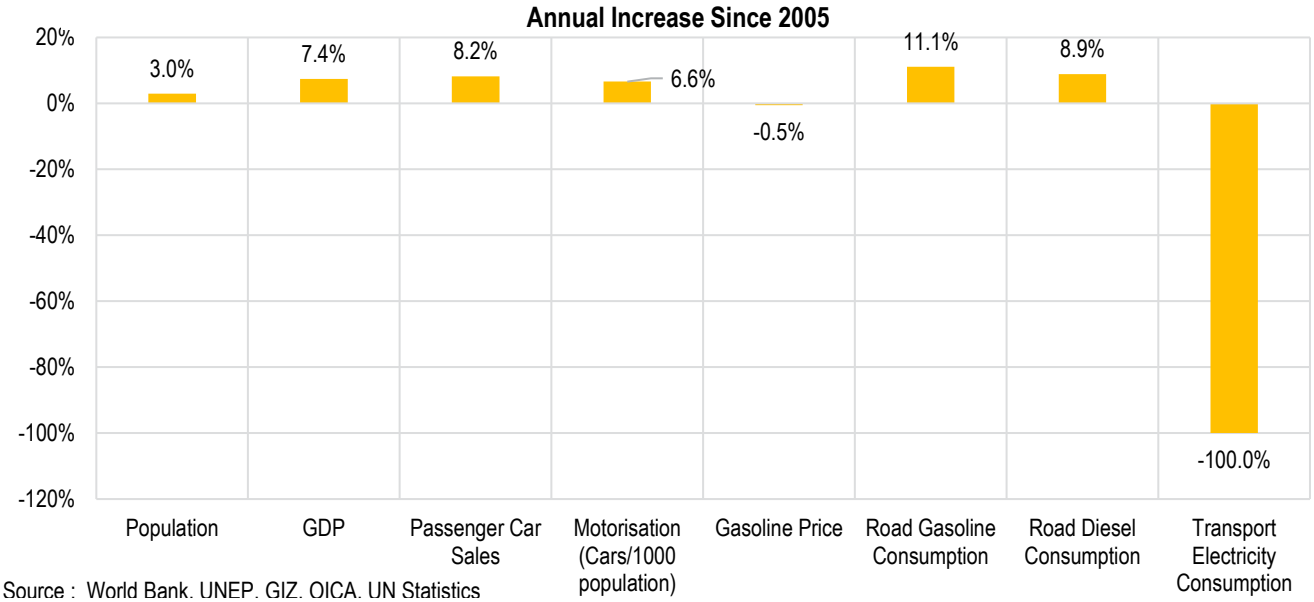
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

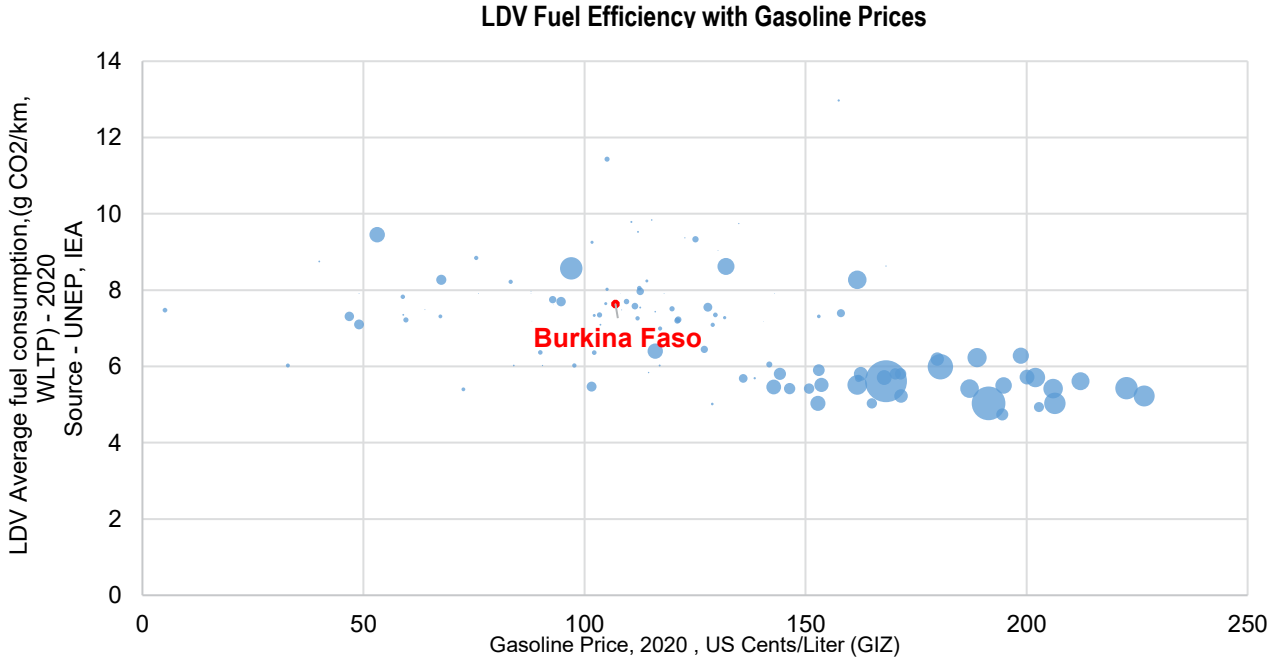
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

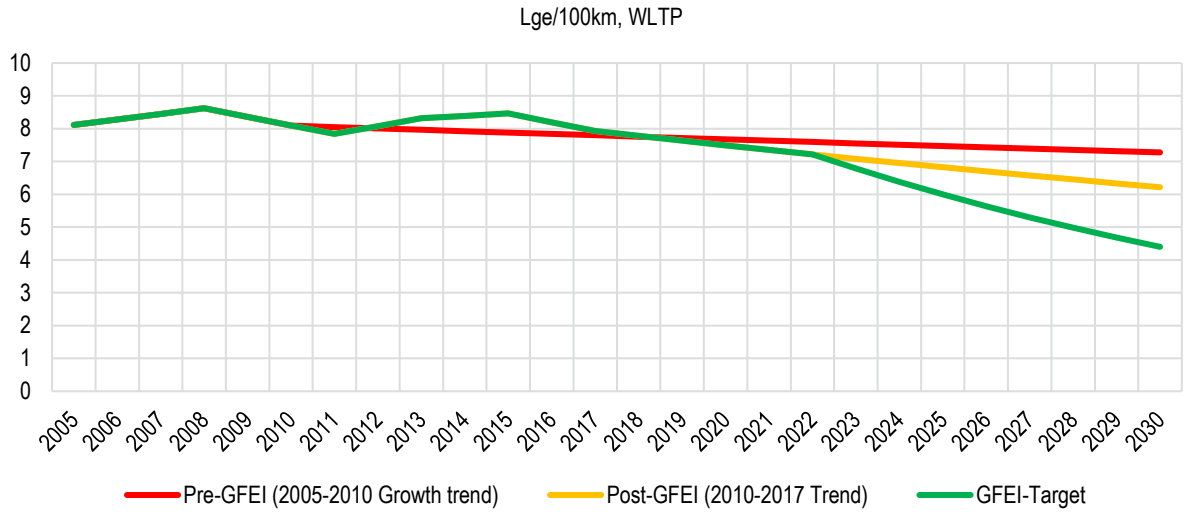
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

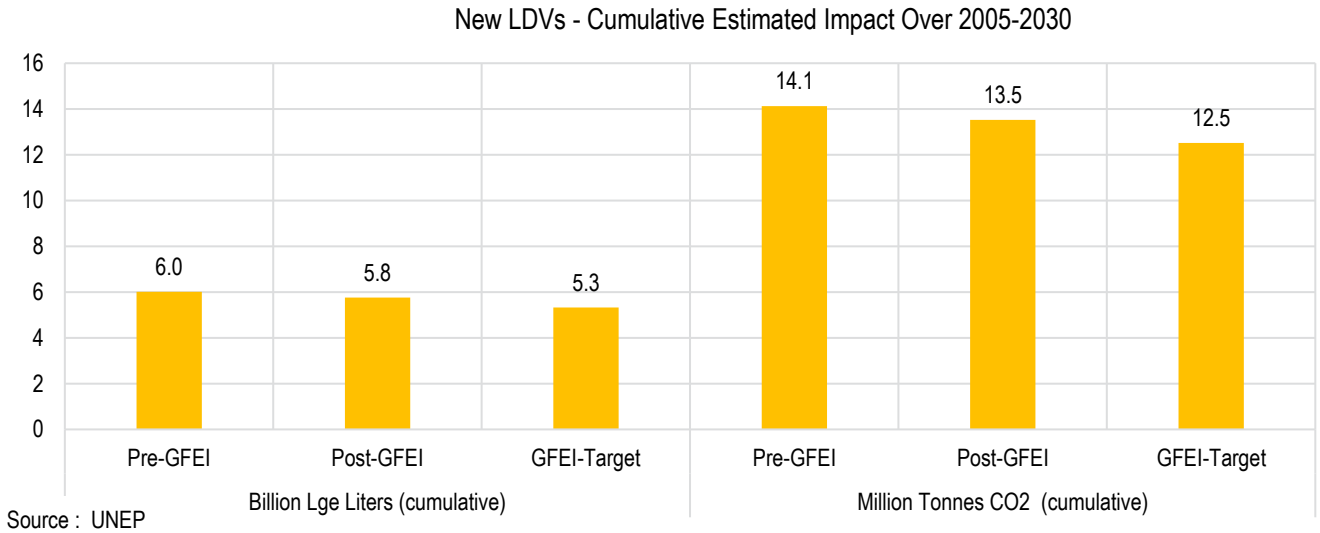
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-0.8%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-5.2%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

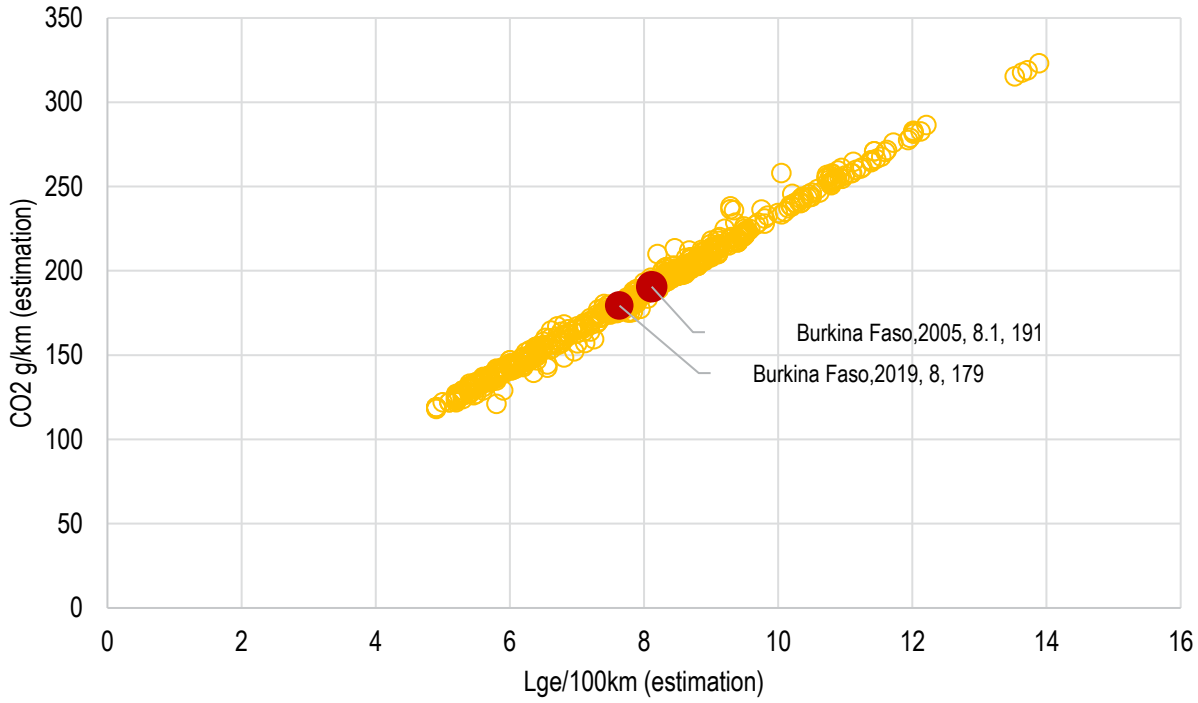
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

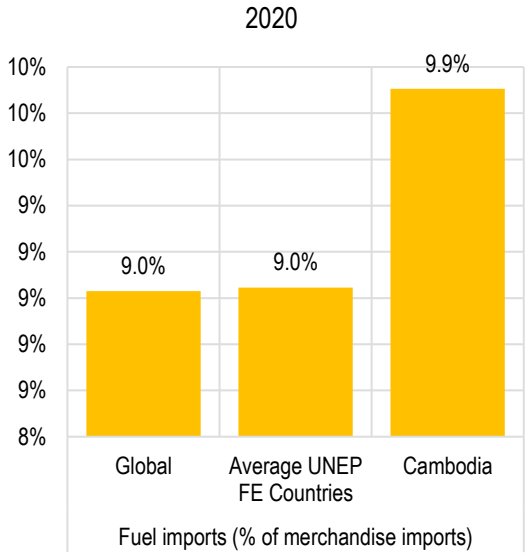
Source : UNEP

The GFEI country baseline project for Burkina Faso was integrated into an agreement to support the development of a regional roadmap on fuel economy for West Africa with the Economic Commission for West African States (ECOWAS). The leading institutional partner is the Ministry of the Environment, Green Economy and Climate Change. On 11 November 2018, a national workshop was organised by ECOWAS to disseminate the findings of the baseline study. The data indicated that the average vehicle age of the fleet was about 16 years. Among the recommendations made in the workshop were that the government needed to harmonise all vehicle databases to ensure consistency and homogeneity of data.

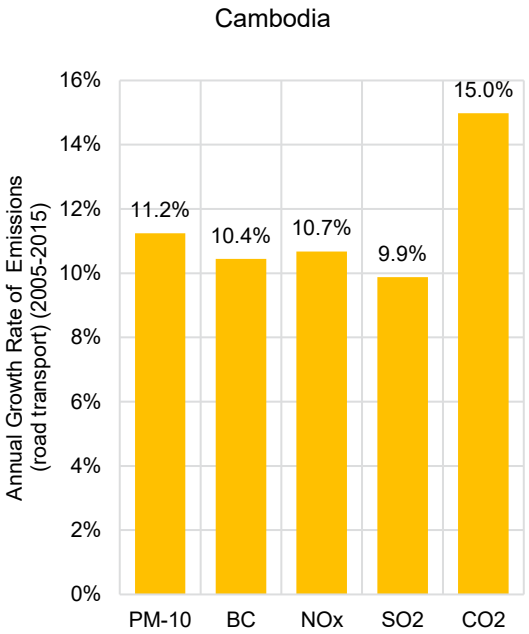
The assessment indicates that if Burkina Faso implements a fuel economy policy for LDVs with a 2030 GFEI target, it could save 414 million litres of gasoline-equivalent & 0.97 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR CAMBODIA

		Year	Source
Population (million)	17	2020	7
Income Level Category	Lower middle income		7
GDP per Capita (PPP, Curent USD)	4420	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	29	2020	6
Gasoline Price $/l	1.2	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	3.8	2018	13
Employment (Transport+,000)	537	2019	11
Fuel Economy (Lge/100 km, WLTP) -	10	2016	1
Average CO2 emissions/kilometre (g/km, WLTP) -	241	2016	1
Average displacement (cm3) -	2605	2016	1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	13	2016	1
Cumulative number of LDVs (total sample size,000) -	147		1
Diesel Share in LDV (sample,%)	9%	2016	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.040	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.059	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	#VALUE!	2019	8
Transport CO2 Emissions per Capita (tonnes) -	1.0	2019	14
Road Transport PM Emissions per Capita (grams) -	210.7	2015	14
Road Transport NOx Emissions per Capita (grams)-	1767.8	2015	14
Road Transport BC Emissions per Capita (grams)-	94.2	2015	14
LDV Emission Standards -	Euro 2	2019	1
Diesel Sulphur Levels (ppm) -	1500	2019	1
Gasoline Sulphur Levels (ppm) -	1000	2019	1
Annual rate of economy-wide energy intensity growth	-2.4%	2000-18	16
Annual rate of transport energy consumption growth	8.2%	2000-18	16
LDV Import value (Million USD)	502	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
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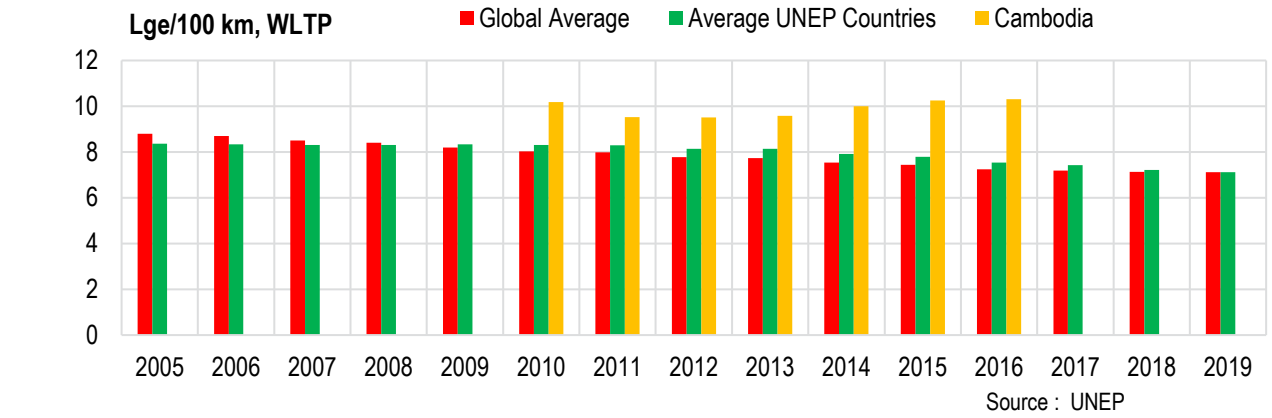
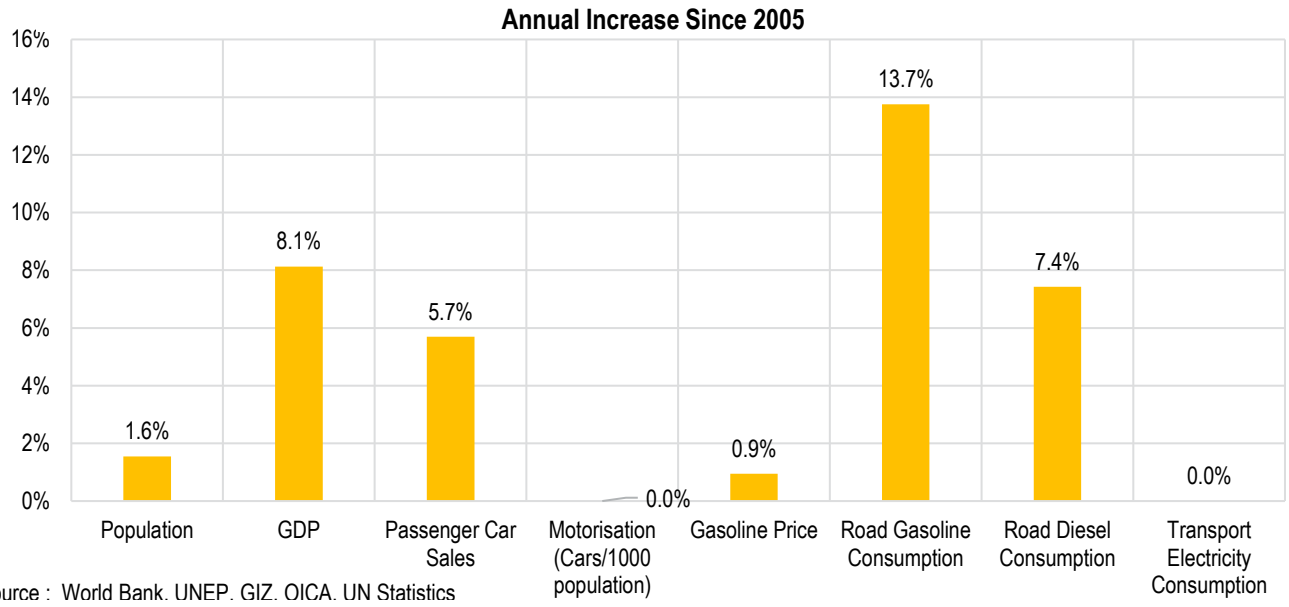
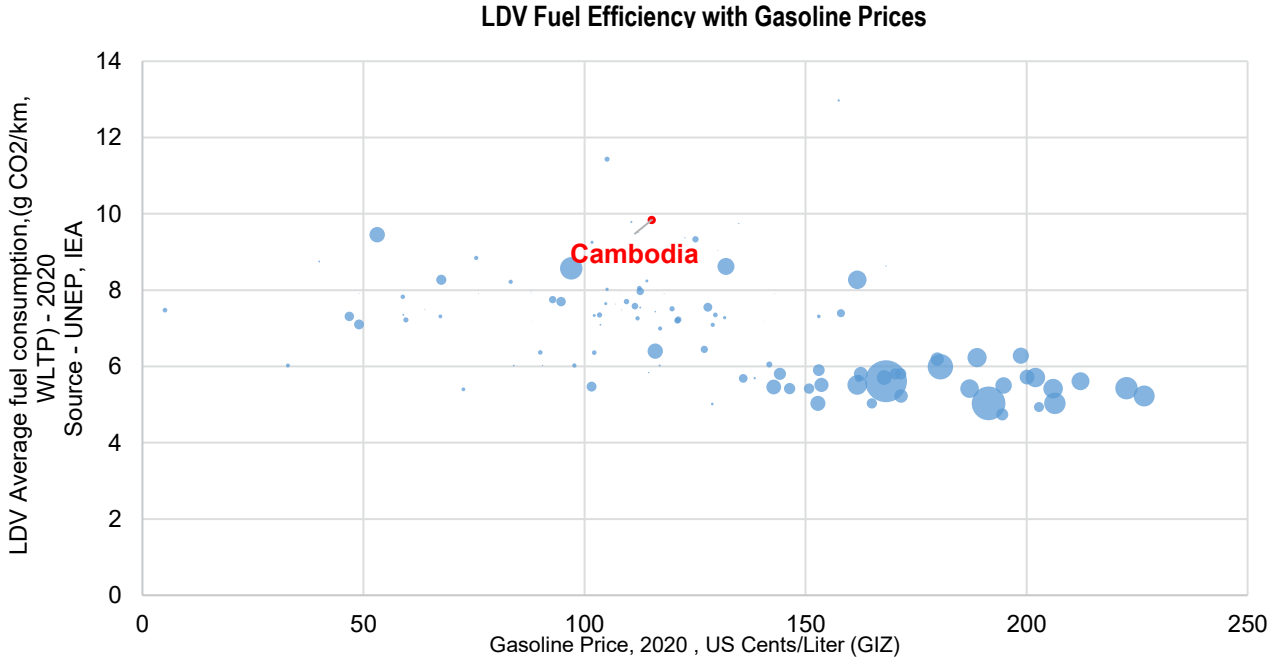
FUEL ECONOMY TRENDS





Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

page 2/4

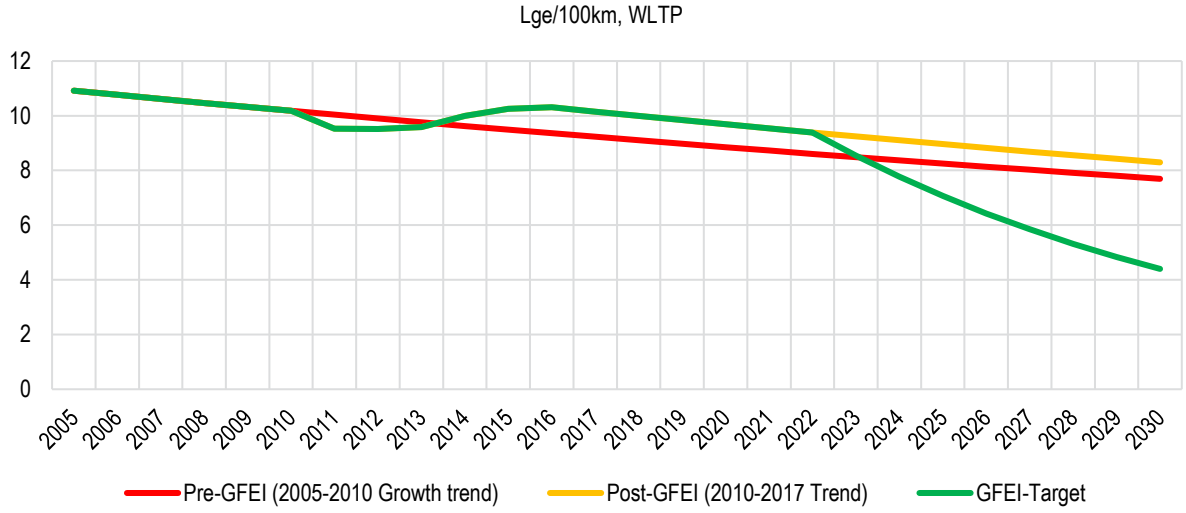
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

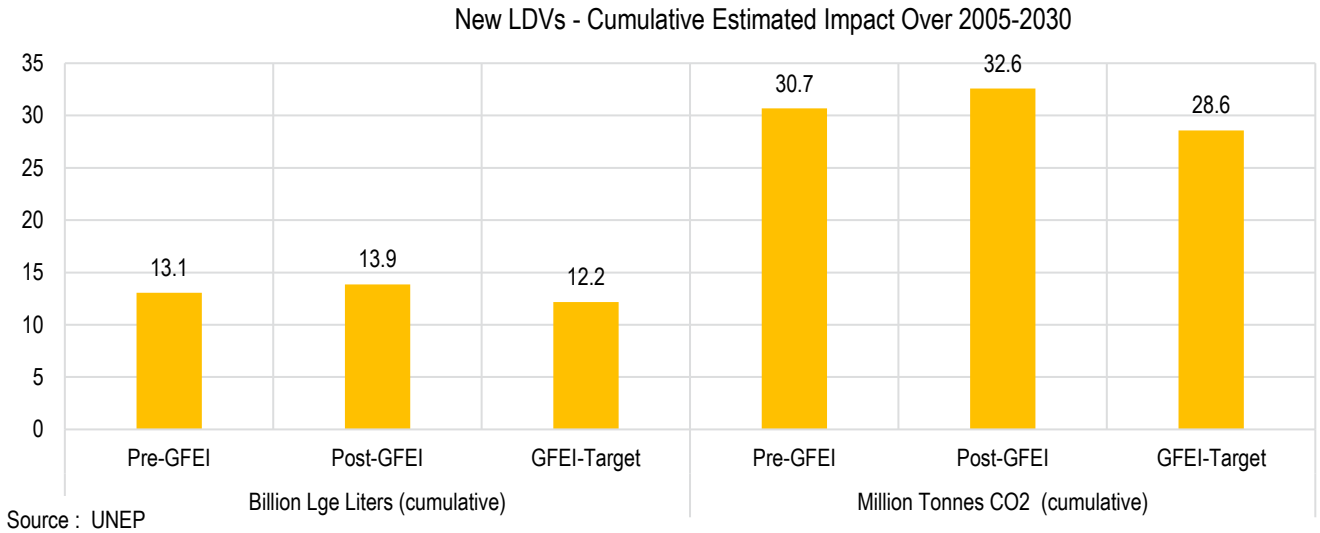
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-0.5%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-7.6%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

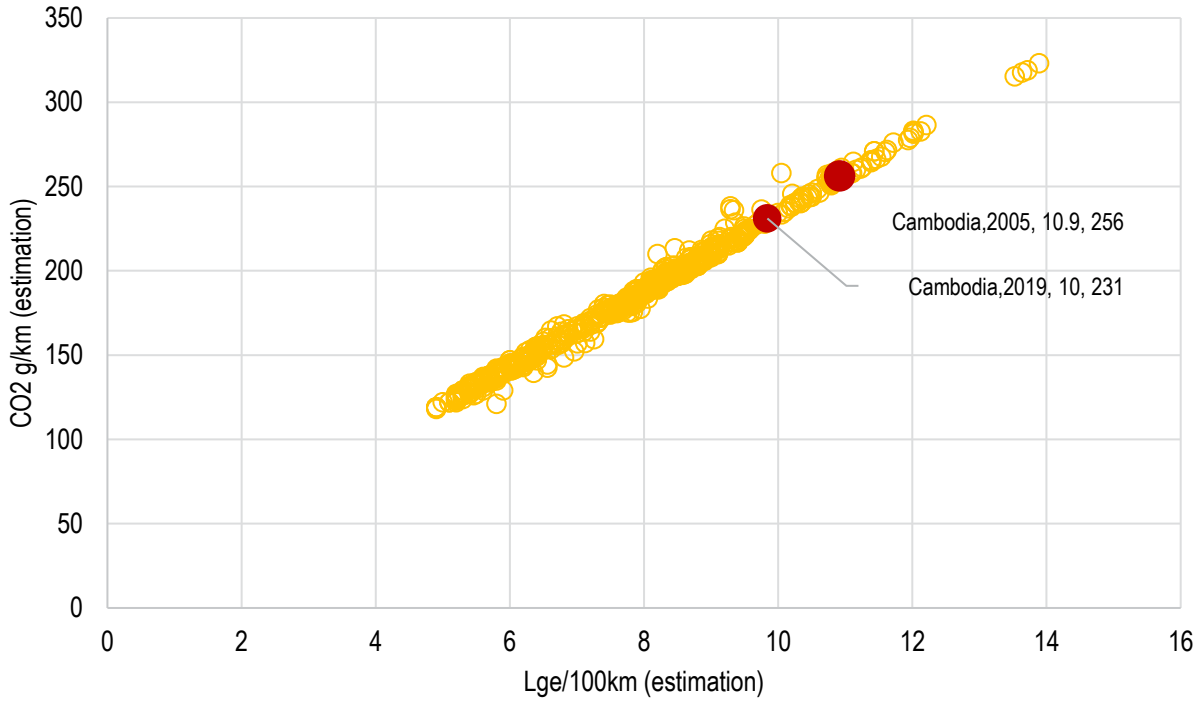
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

The fuel economy baseline development is led by Clean Air Asia together with the Ministry of Road Transport in Cambodia. The results of the fuel economy baseline study are being used as a basis for developing further policies. Clean Air Asia also worked with UNDP and used the results of the fuel economy baseline study in conducting fiscal policy analysis for cleaner vehicles in Cambodia. Research indicates that the transport sector is responsible for nearly half (46%) of final energy consumption.

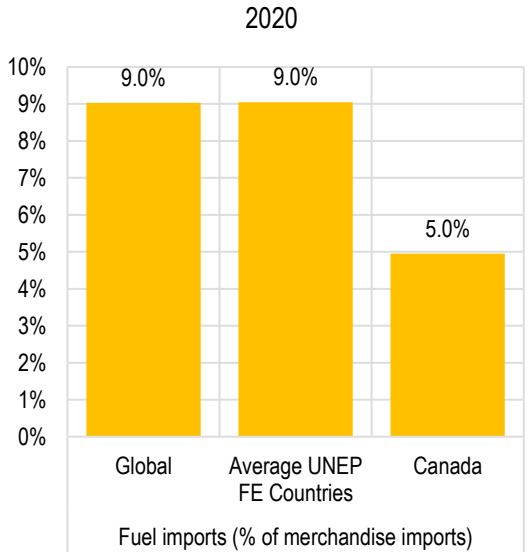
The Royal Government of Cambodia has drafted the National Energy Efficiency Policy, which sets the goal to reduce energy use in industries and buildings by 25% and in the transport sector by 15%. Cambodia has also endorsed the ASEAN Fuel Economy Roadmap for Transport Sector 2018 – 2025: with Focus on Light-Duty Vehicles. The roadmap sets six aspirational goals for ASEAN. The headline goal is an aspirational target to reduce the average fuel consumption of new light-duty vehicles sold in ASEAN by 26% between 2015 and 2025, which leads to an improvement in average fuel economy to around 5.3 LGe/100km by 2025, from an estimated 7.2 LGe/100km in 2015. This improvement leads to about 17% reduction in annual LDVs CO2 emissions by 2030.

Cambodia's nationally determined contribution has suggested implementation of the following fuel economy specific strategies – promoting mass public transport, improving operation and maintenance of vehicles through motor vehicle inspection and eco-driving, and the increased use of hybrid cars, electric vehicles, and bicycles.

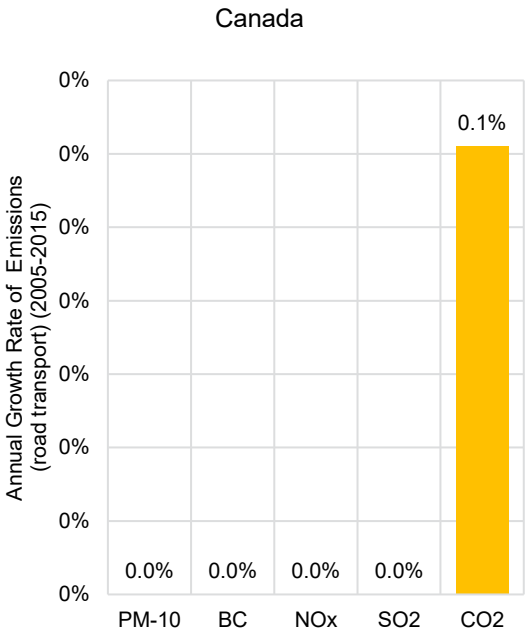
The assessment indicates that if Cambodia implements a fuel economy policy for first-time registered LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 2.9 billion litres of gasoline-equivalent & 6.8 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR CANADA

		Year	Source
Population (million)	38	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	48091	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	319	2020	6
Gasoline Price $/l	1.3	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	33.9	2018	13
Employment (Transport+,000)	1291	2019	11
Fuel Economy (Lge/100 km, WLTP) -	9	2019	1
Average CO2 emissions/kilometre (g/km, WLTP) -	198	2019	1
Average displacement (cm3) -	2826	2019	1
Average kerb weight (kg) -	1757	2019	1
Average power (kw) -	184	2019	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.921	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.508	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	202.1	2019	8
Transport CO2 Emissions per Capita (tonnes) -	15.6	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	-1.6%	2000-18	16
Annual rate of transport energy consumption growth	1.5%	2000-18	16
LDV Import value (Million USD)	21849	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
7 World Bank
8 UN Statistics Division
9 SLOCAT &GIZ
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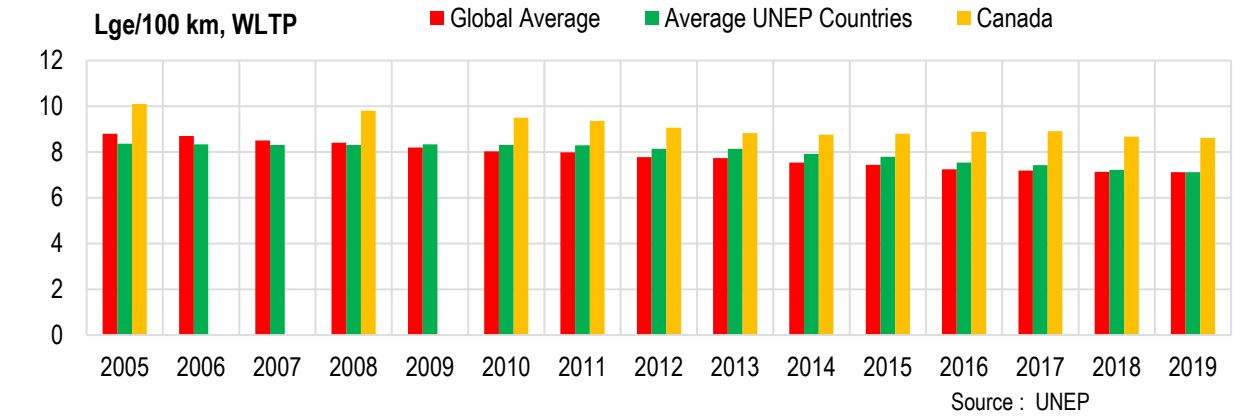
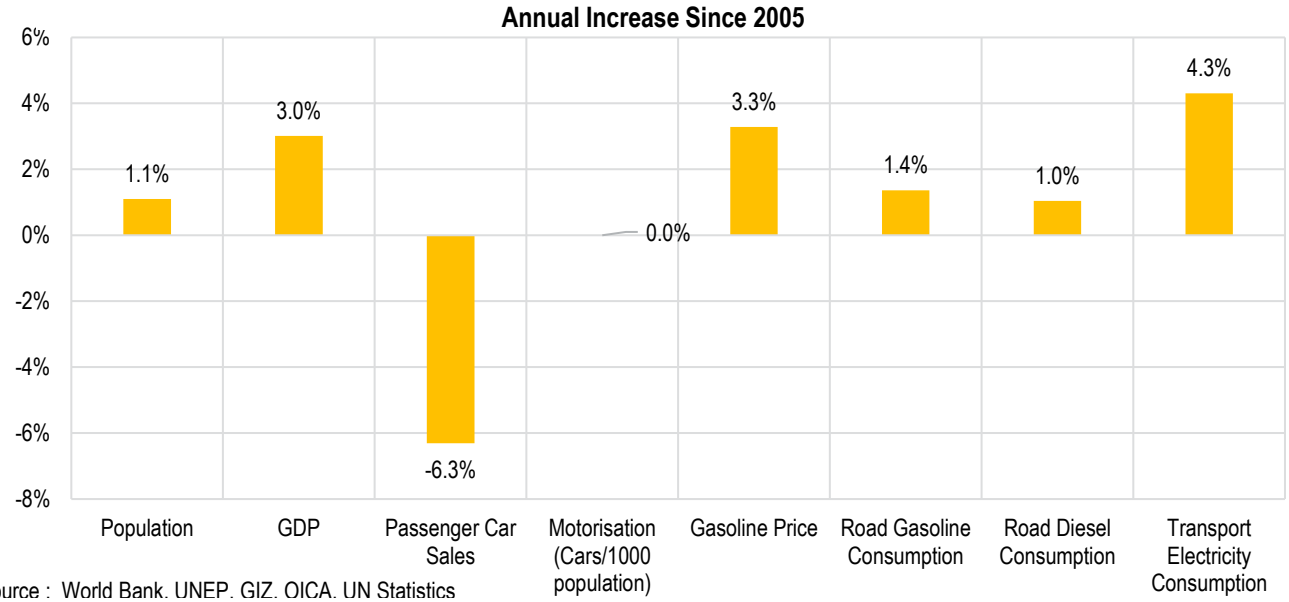
11 Employment is for Transport; storage and communication, ILO
12 International Transport Forum
13 Koks, E.E. et al. A global multi-hazard risk analysis of road
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

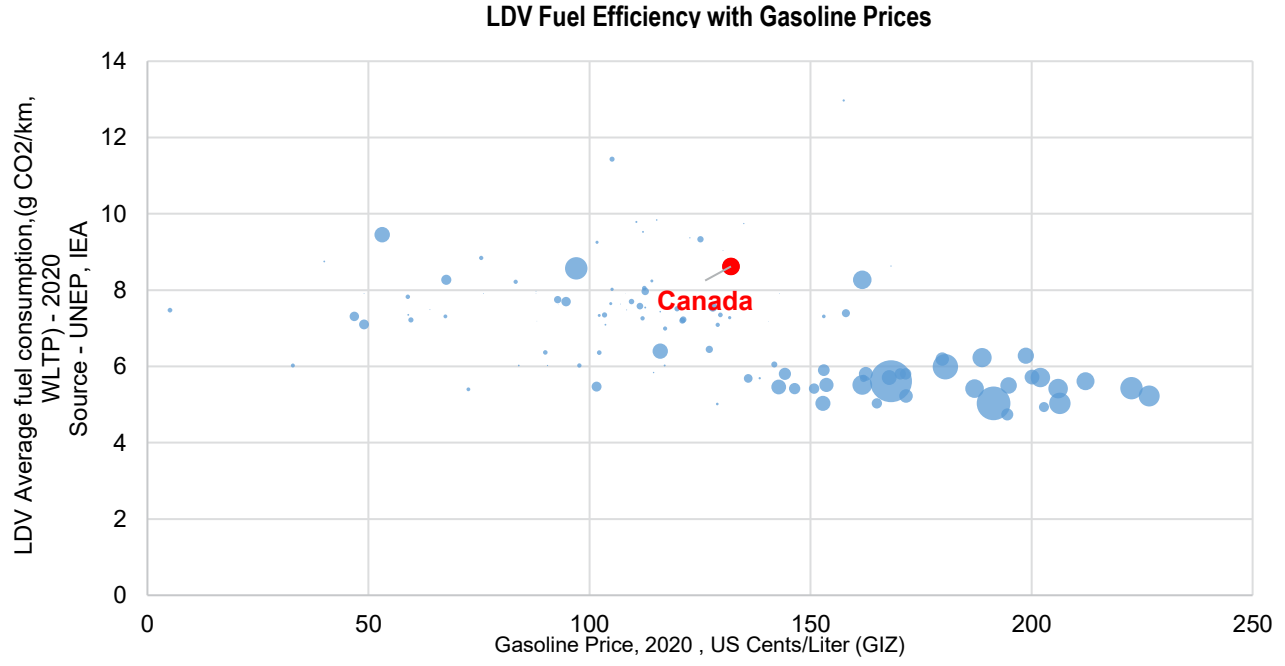
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

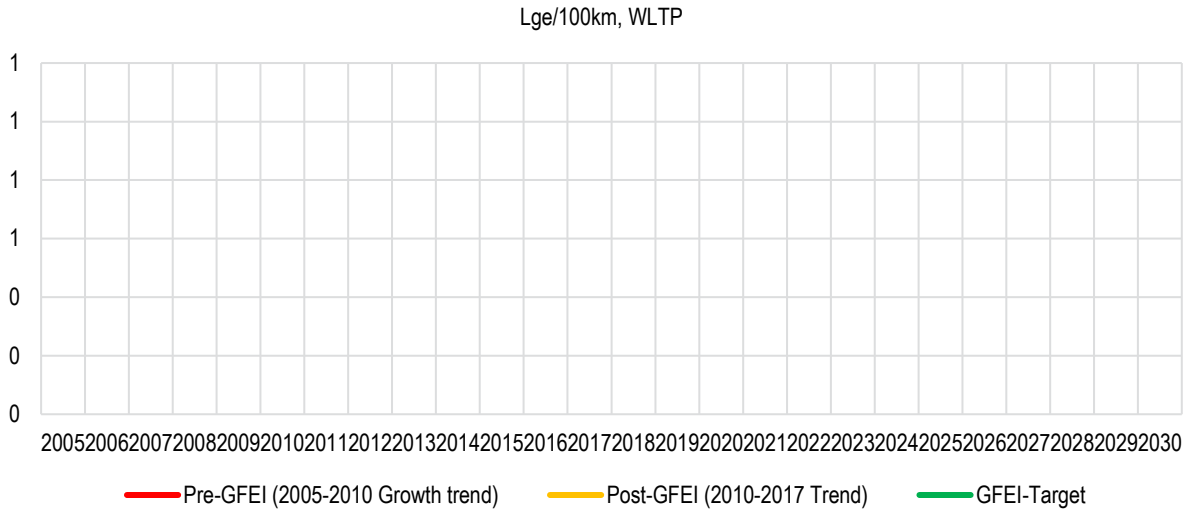
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

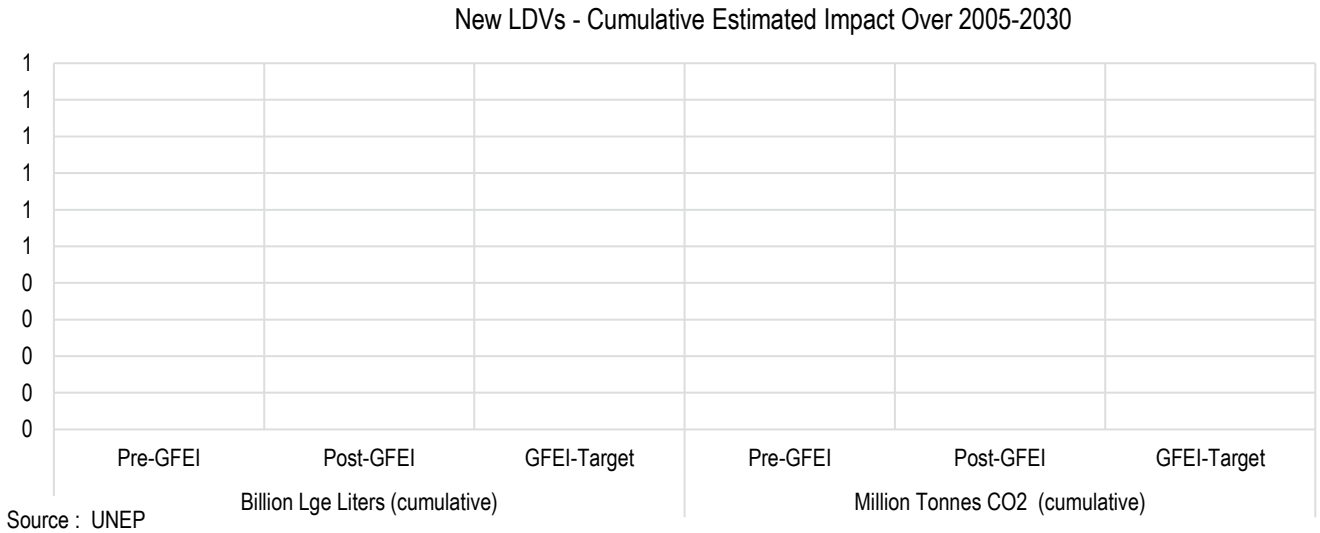
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

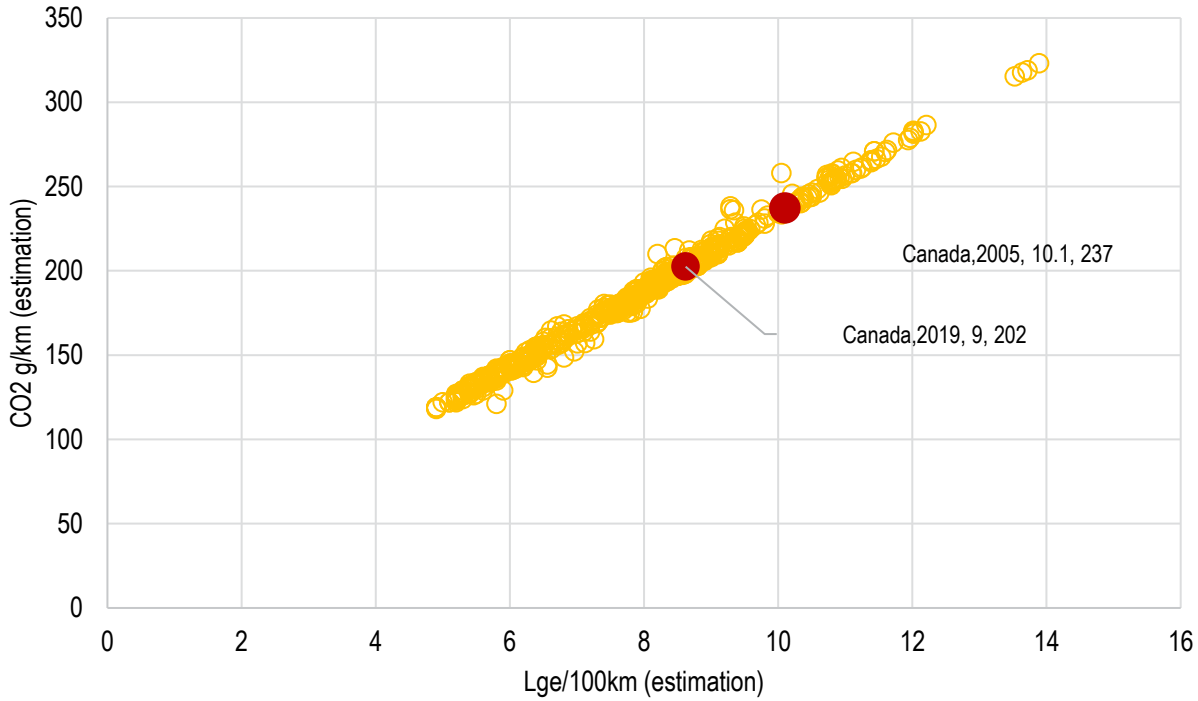
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



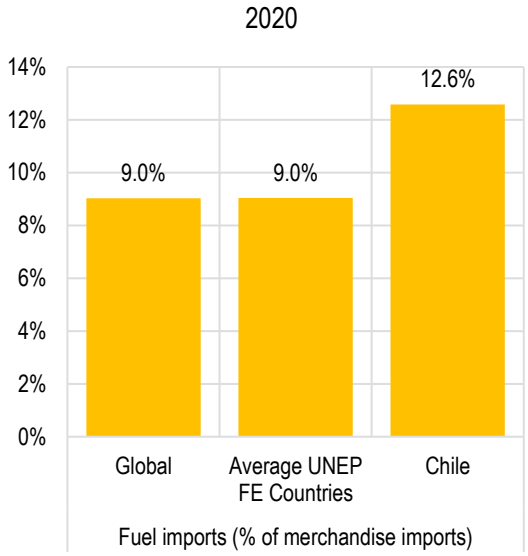
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

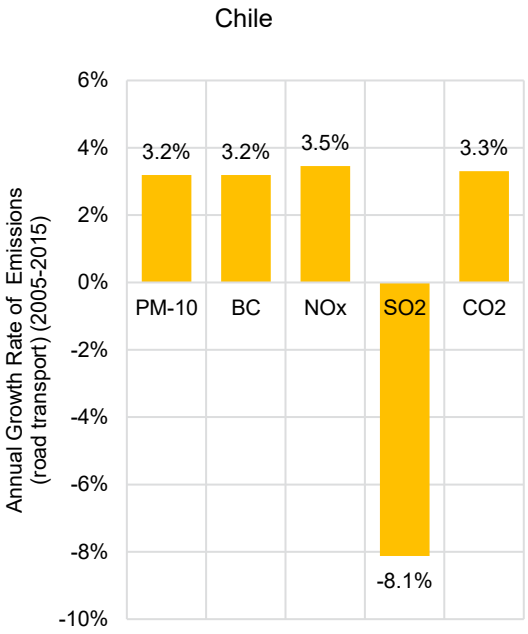
#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR CHILE

		Year	Source
Population (million)	19	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	25068	2020	7
Motorisation (Cars/1000 population)	174	2020	10
Car Sales (000)	218	2020	6
Gasoline Price $/l	1.3	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	8.8	2018	13
Employment (Transport+,000)	813	2019	11
Fuel Economy (Lge/100 km, WLTP) -	8	2019	1
Average CO2 emissions/kilometre (g/km, WLTP) -	178	2019	1
Average displacement (cm3) -	1821	2019	1
Average kerb weight (kg) -	1447	2017	1
Average power (kw) -	98	2017	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -	3967		1
Diesel Share in LDV (sample,%)	28%	2018	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.177	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.257	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	67.8	2019	8
Transport CO2 Emissions per Capita (tonnes) -	4.7	2019	14
Road Transport PM Emissions per Capita (grams) -	551.2	2015	14
Road Transport NOx Emissions per Capita (grams)-	7922.9	2015	14
Road Transport BC Emissions per Capita (grams)-	273.2	2015	14
LDV Emission Standards -	Euro 4	2019	1
Diesel Sulphur Levels (ppm) -	15	2019	1
Gasoline Sulphur Levels (ppm) -	15	2019	1
Annual rate of economy-wide energy intensity growth	-1.3%	2000-18	16
Annual rate of transport energy consumption growth	2.8%	2000-18	16
LDV Import value (Million USD)	1464	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
7 World Bank
8 UN Statistics Division
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10 Estimated using growth and sales data
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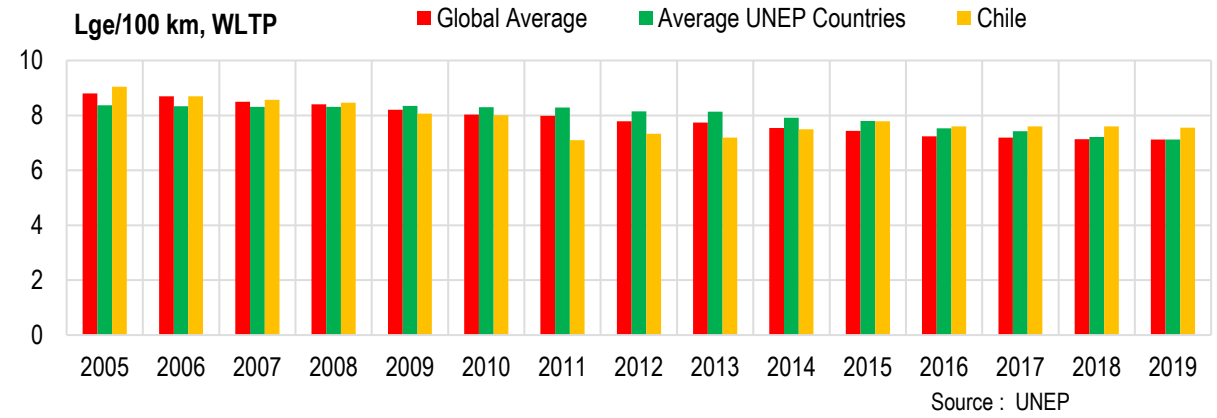
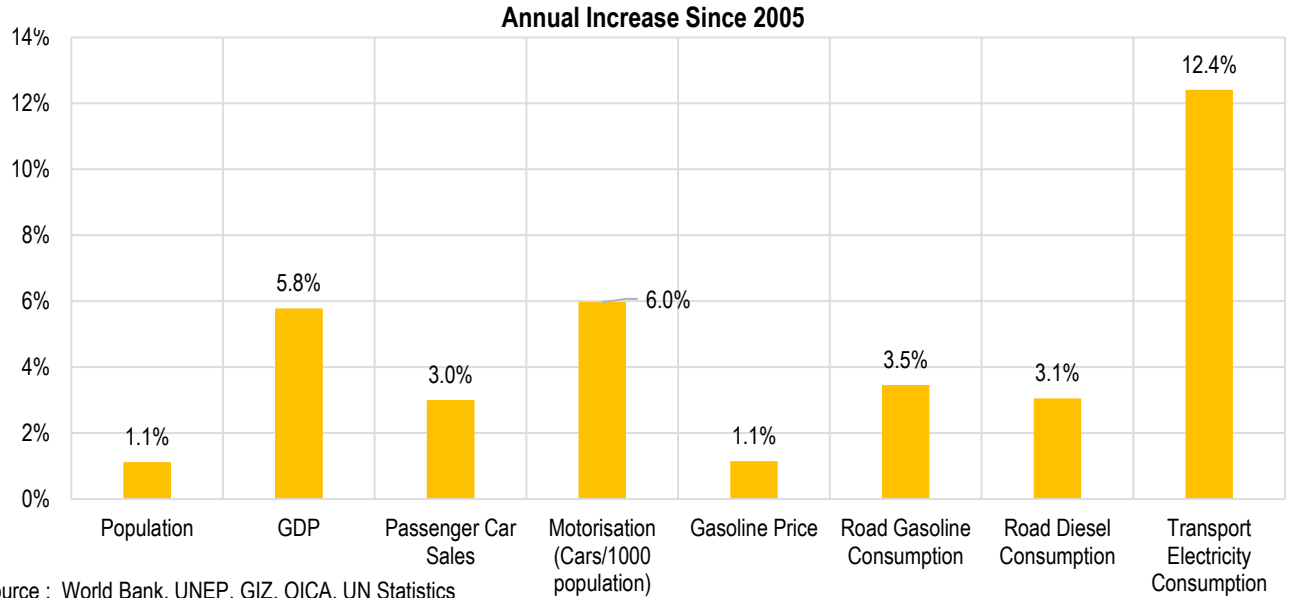
12 International Transport Forum
13 Koks, E.E. et al. A global multi-hazard risk analysis of road
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

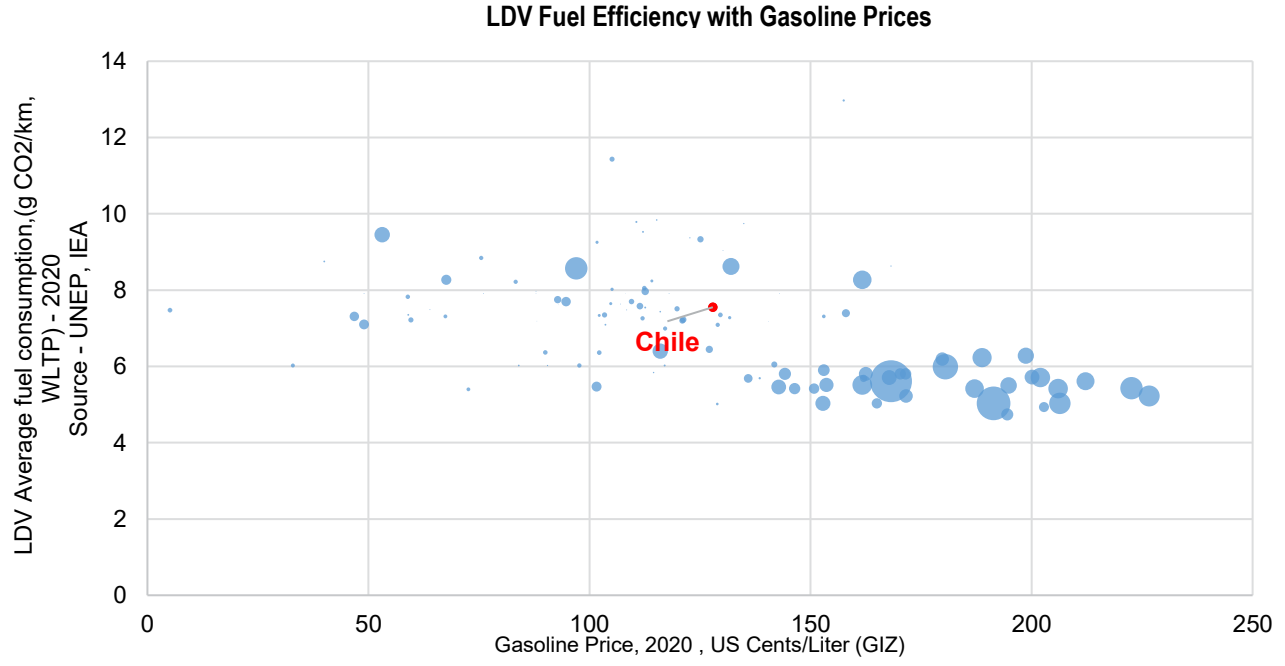
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

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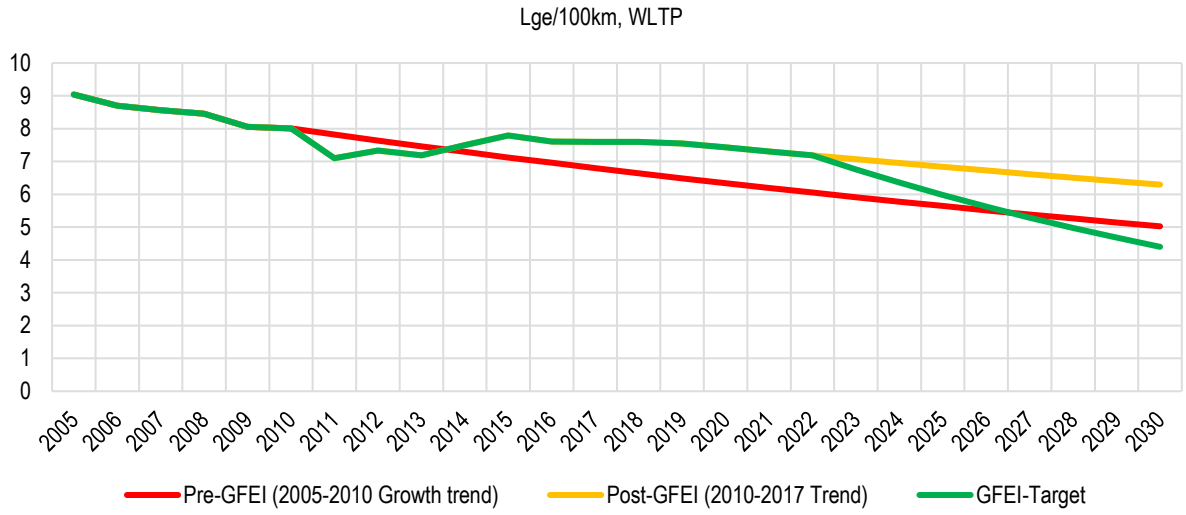
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

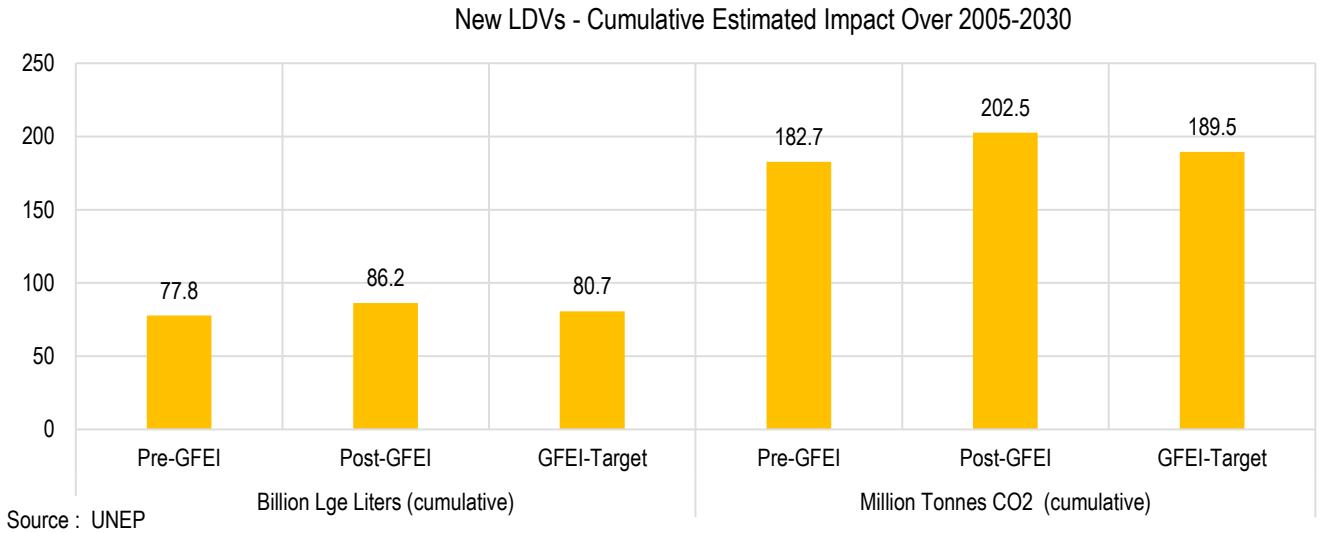
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-0.7%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-5.1%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

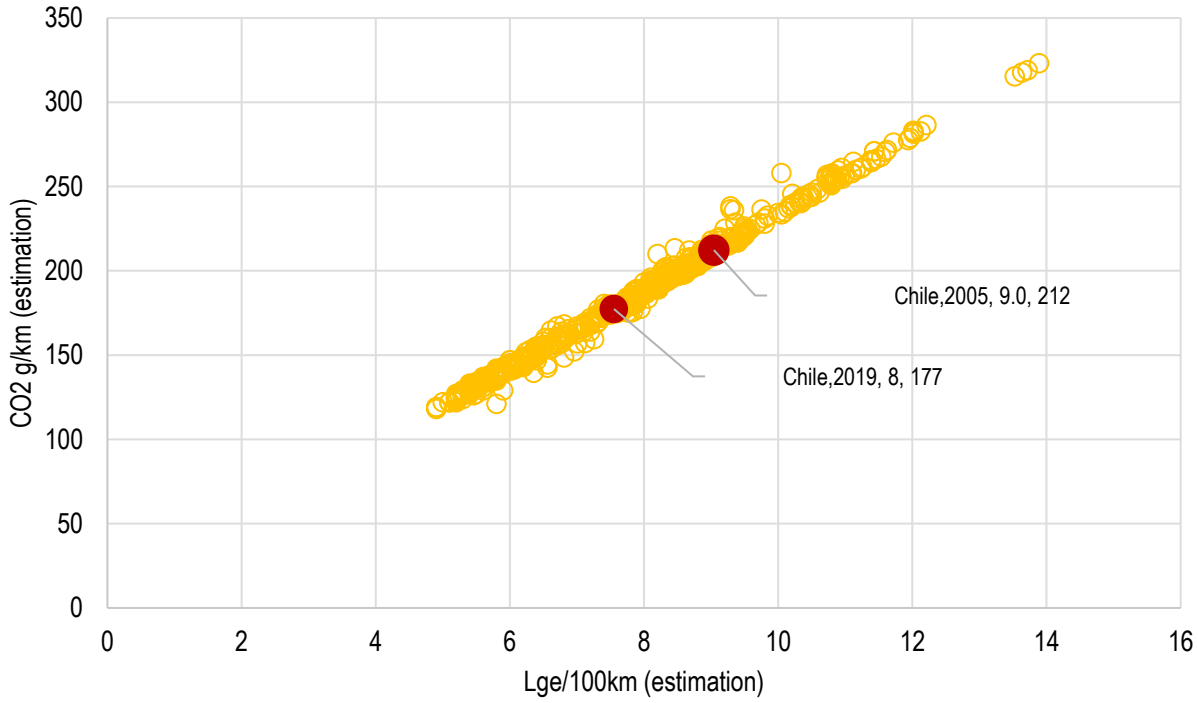
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

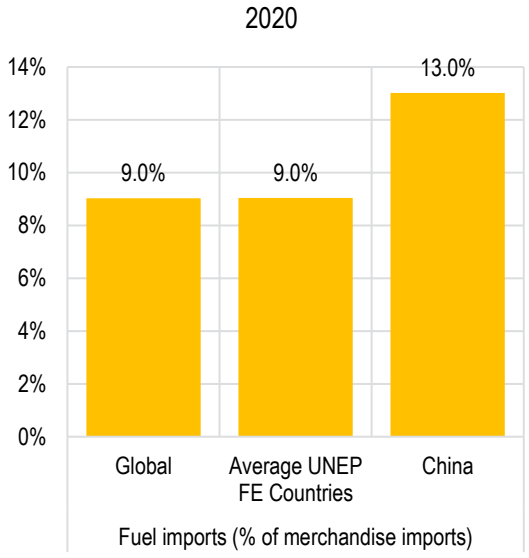
Source : UNEP

The Energy sector is the largest GHG emitter in Chile (77.4%), mainly due to the consumption of coal and diesel for electricity generation and use of diesel in road transport. The Ministry of Transportation and Communications (MTT), through the Transportation Subsecretary (Subtrans), is the public institution responsible for producing policies, standards and conditions for the efficient, safe and environmentally friendly transportation systems. Chile has implemented Energy efficiency labelling for new vehicles weighing less than 2700 kg, which requires reporting on their energy consumption (km/ l) and emissions (gCO2/km).

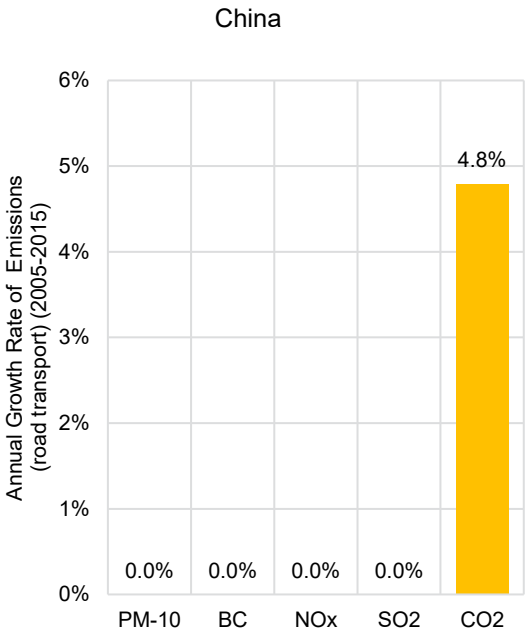
The assessment indicates that if Chile implements a fuel economy policy for LDVs with a 2030 GFEI target, it could save 12.5 billion litres of gasoline-equivalent & 29 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR CHINA

		Year	Source
Population (million)	1411	2020	7
Income Level Category	Upper middle income		7
GDP per Capita (PPP, Curent USD)	17204	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	20178	2020	6
Gasoline Price $/l	1.2	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	2.0	2018	13
Employment (Transport+,000)	37326	2019	11
Fuel Economy (Lge/100 km, WLTP) -	7	2019	1
Average CO2 emissions/kilometre (g/km, WLTP) -	164	2019	1
Average displacement (cm3) -	1671	2019	1
Average kerb weight (kg) -	1476	2019	1
Average power (kw) -	115	2019	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.044	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.070	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	124.2	2019	8
Transport CO2 Emissions per Capita (tonnes) -	8.2	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	-3.0%	2000-18	16
Annual rate of transport energy consumption growth	7.7%	2000-18	16
LDV Import value (Million USD)	44923	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
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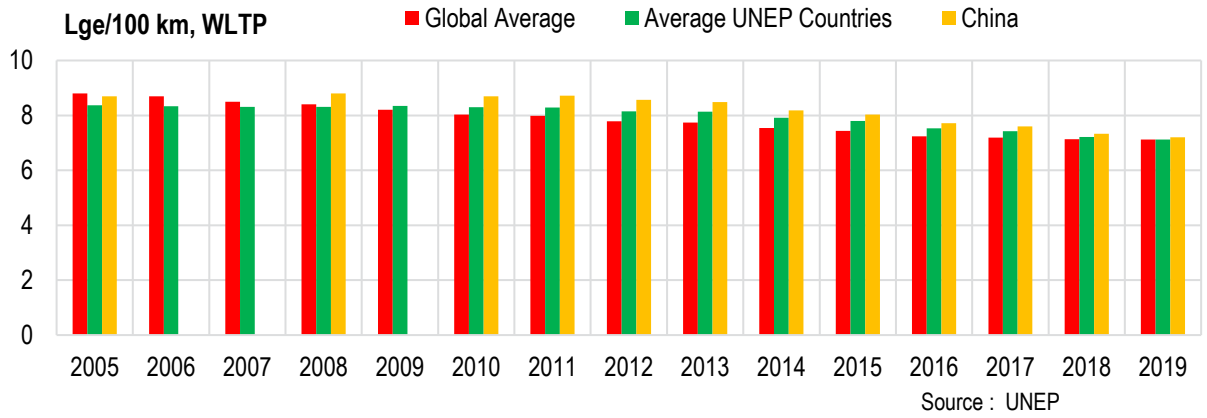
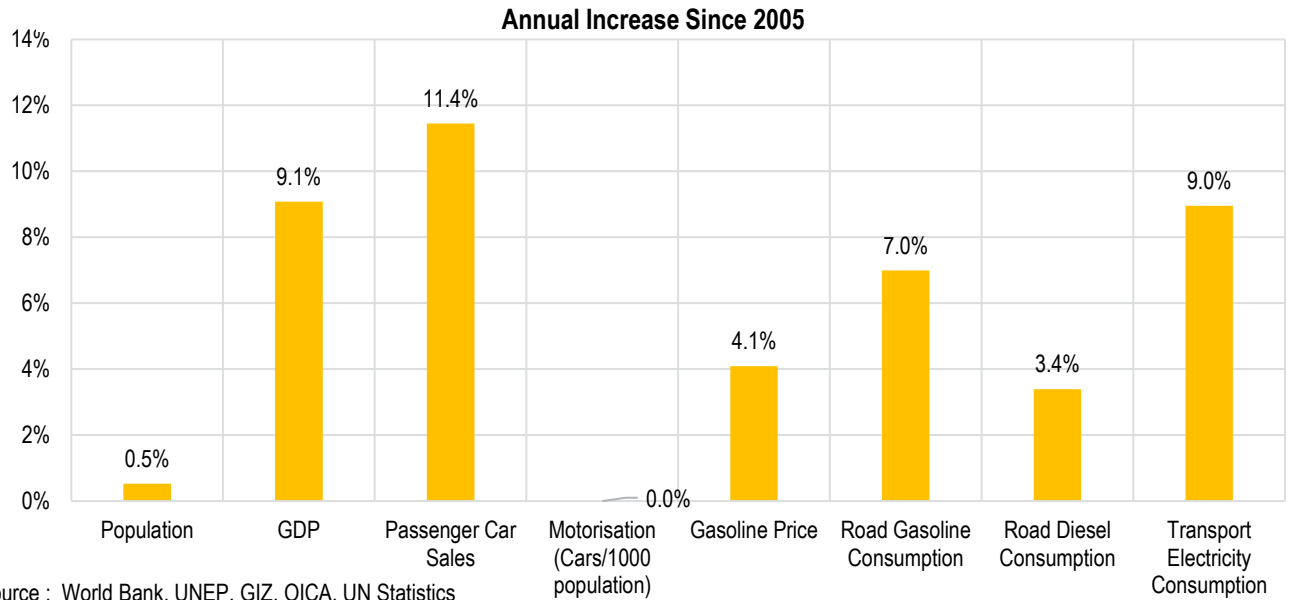
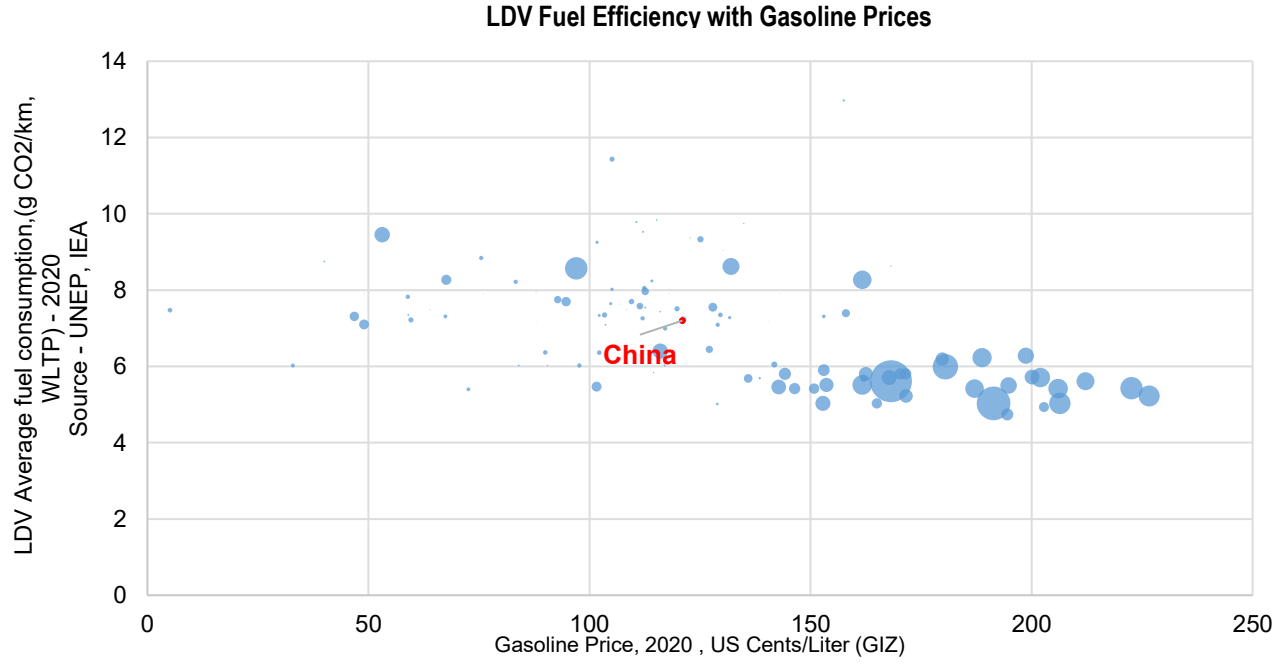
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

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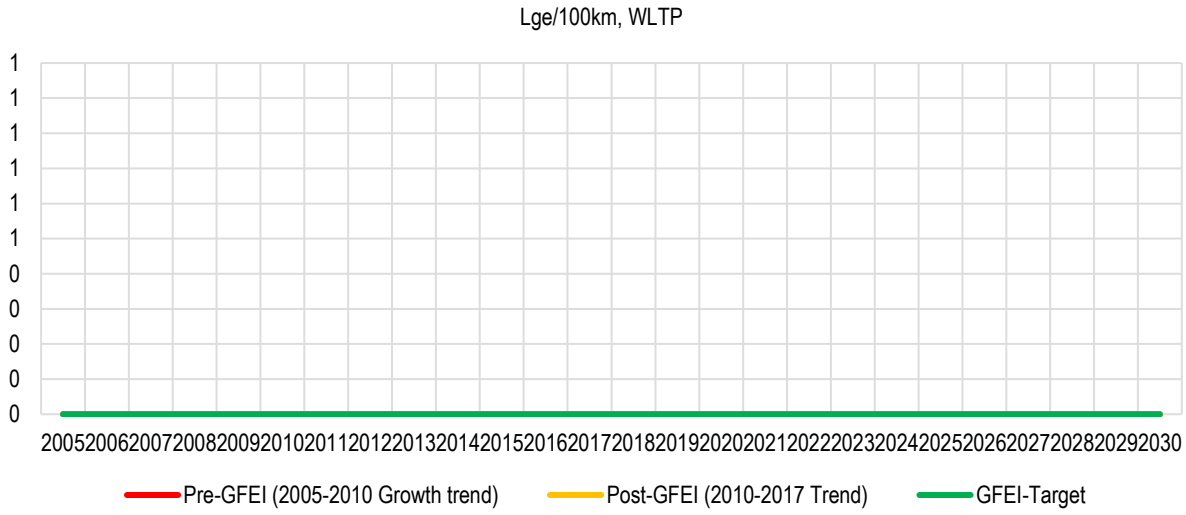
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

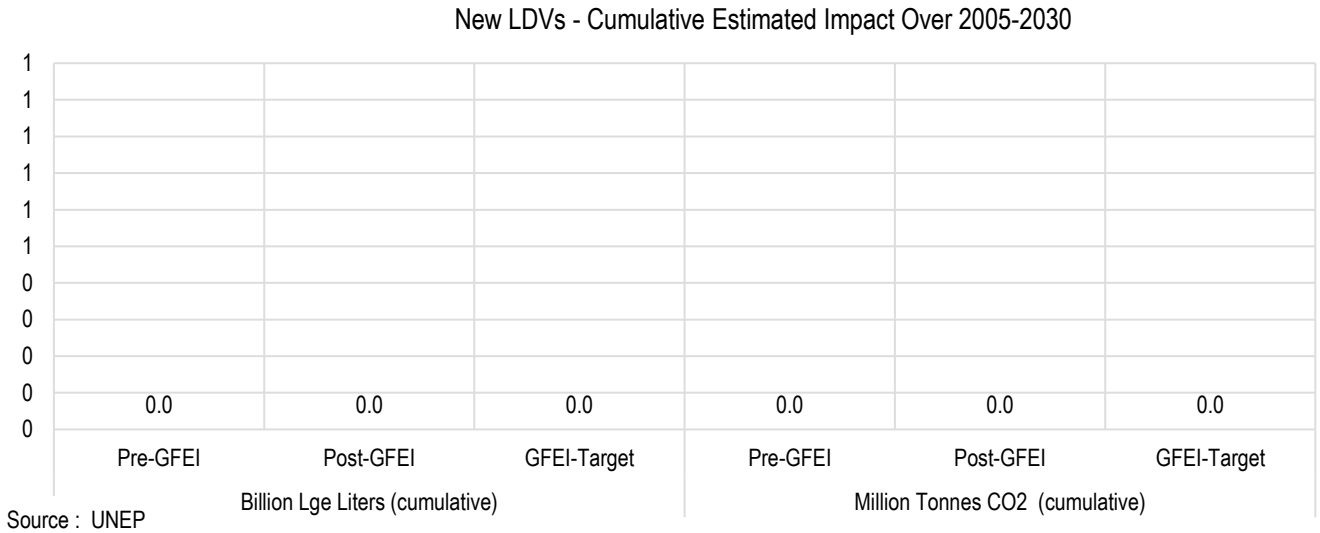
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **#DIV/0!**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **#DIV/0!**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

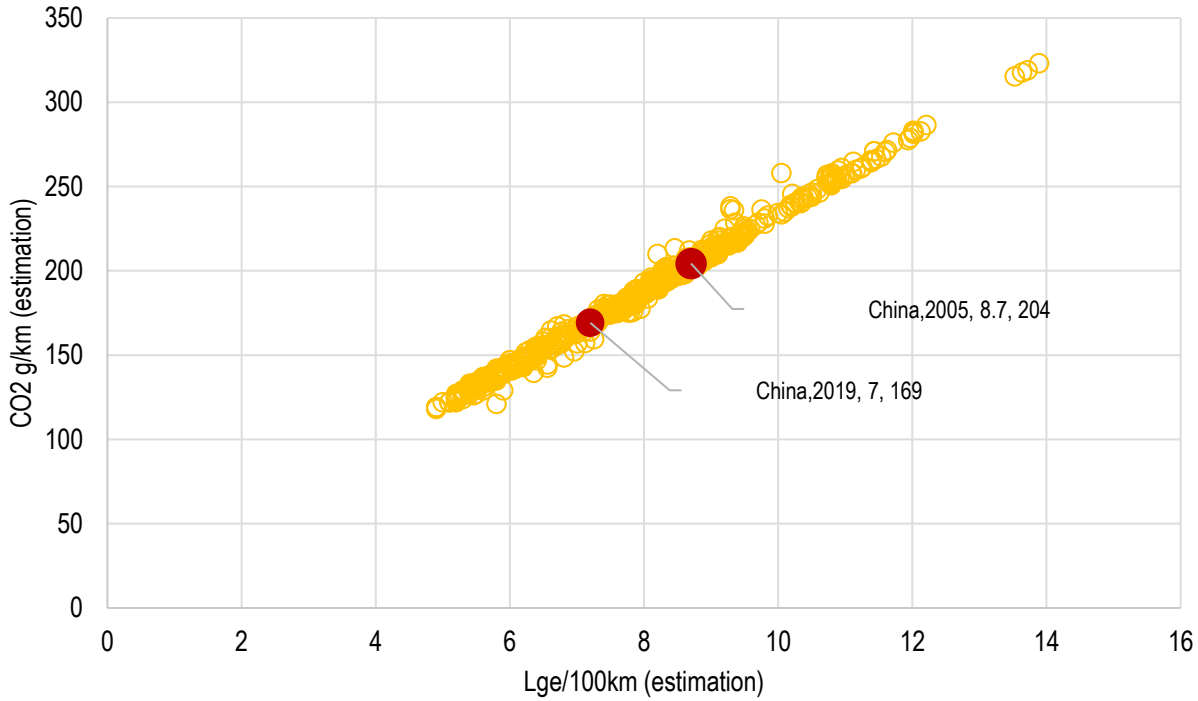
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



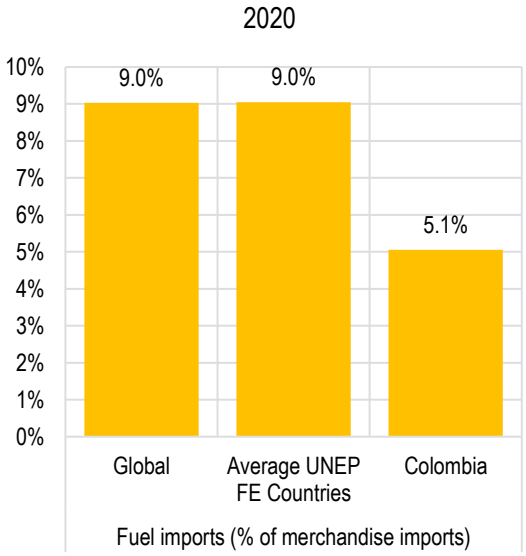
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

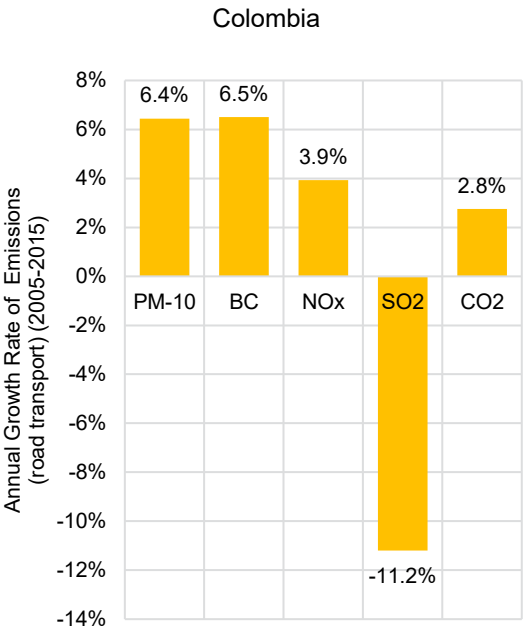
#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR COLOMBIA

		Year	Source
Population (million)	51	2020	7
Income Level Category	Upper middle income		7
GDP per Capita (PPP, Curent USD)	14570	2020	7
Motorisation (Cars/1000 population)	65	2020	10
Car Sales (000)	85	2020	6
Gasoline Price $/l	0.6	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	3.3	2018	13
Employment (Transport+,000)	2027	2019	11
Fuel Economy (Lge/100 km, WLTP) -	8	2016	1
Average CO2 emissions/kilometre (g/km, WLTP) -	178	2016	1
Average displacement (cm3) -	1618	2016	1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -	772		1
Diesel Share in LDV (sample,%)	2%	2016	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.119	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.103	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	2.1	2019	8
Transport CO2 Emissions per Capita (tonnes) -	1.7	2019	14
Road Transport PM Emissions per Capita (grams) -	183.5	2015	14
Road Transport NOx Emissions per Capita (grams)-	4756.0	2015	14
Road Transport BC Emissions per Capita (grams)-	90.8	2015	14
LDV Emission Standards -	Euro 2	2019	1
Diesel Sulphur Levels (ppm) -	50	2019	1
Gasoline Sulphur Levels (ppm) -	300	2019	1
Annual rate of economy-wide energy intensity growth	-1.5%	2000-18	16
Annual rate of transport energy consumption growth	4.1%	2000-18	16
LDV Import value (Million USD)	1531	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
7 World Bank
8 UN Statistics Division
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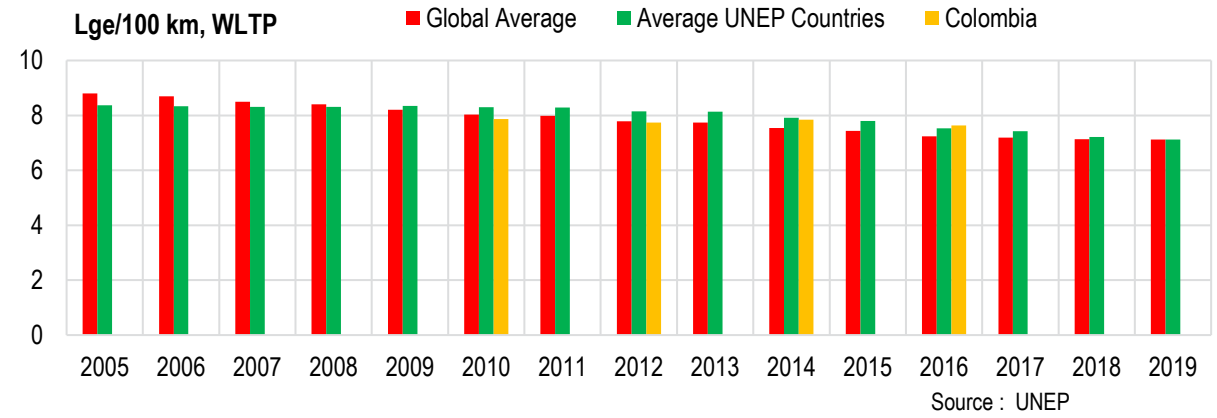
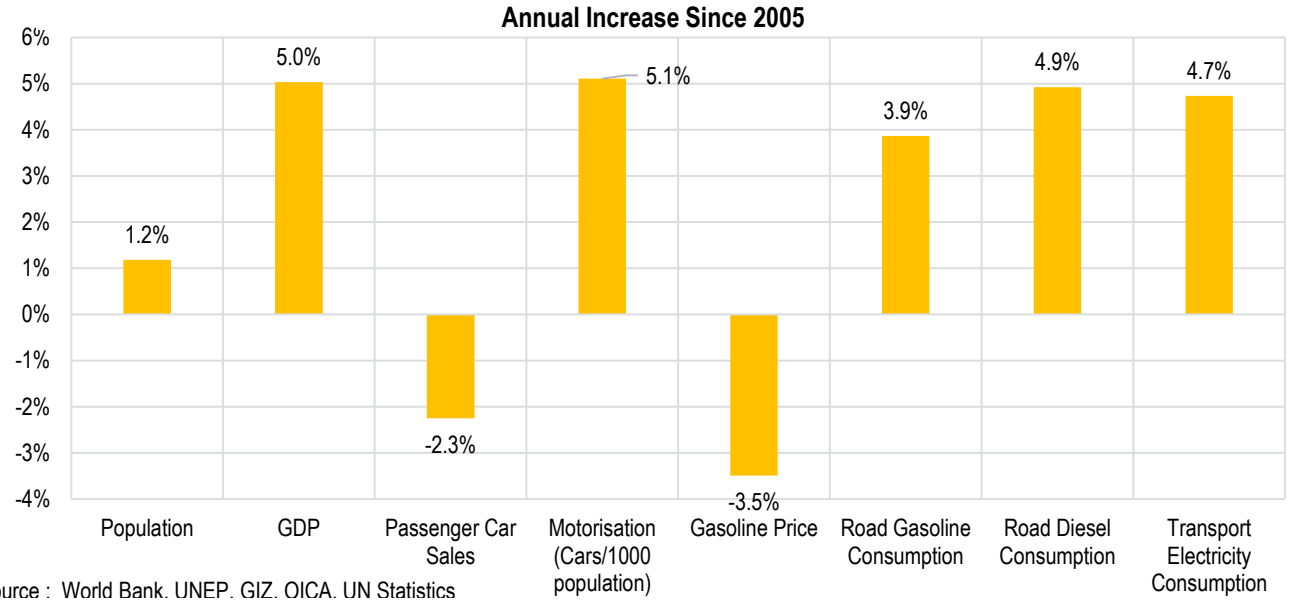
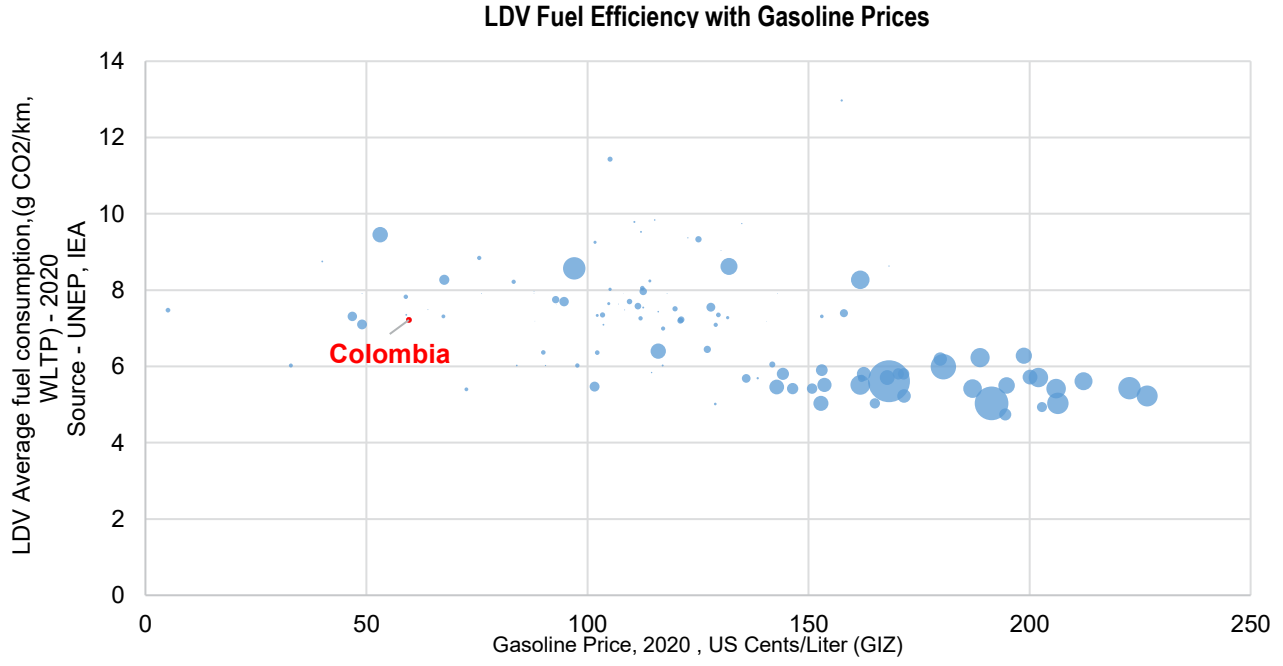
12 International Transport Forum
13 Koks, E.E. et al. A global multi-hazard risk analysis of road
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

FUEL ECONOMY TRENDS





Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

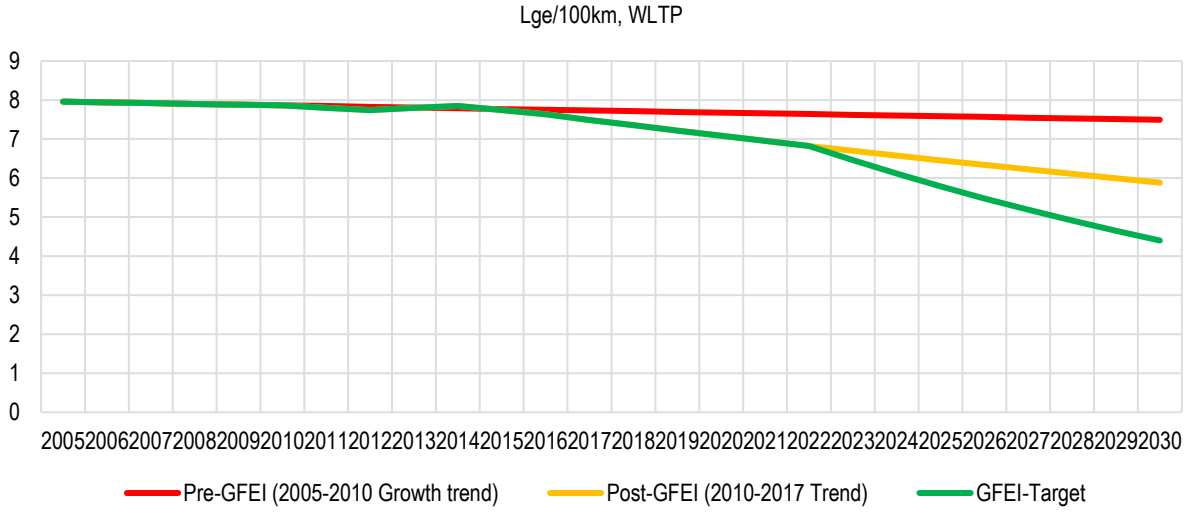
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

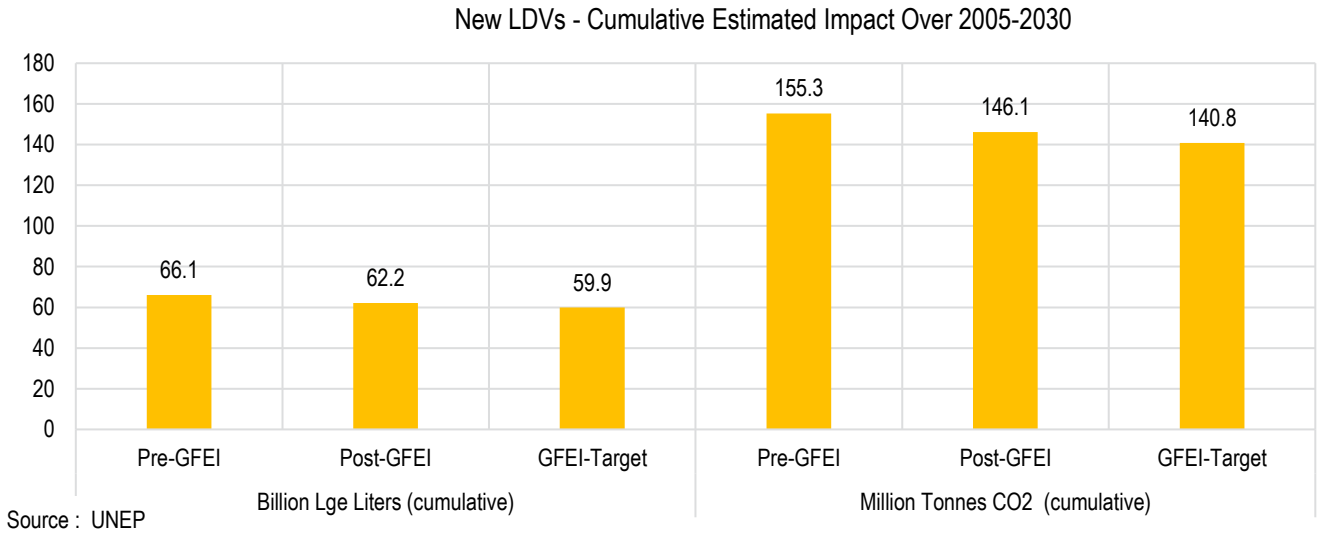
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-1.0%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-4.7%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

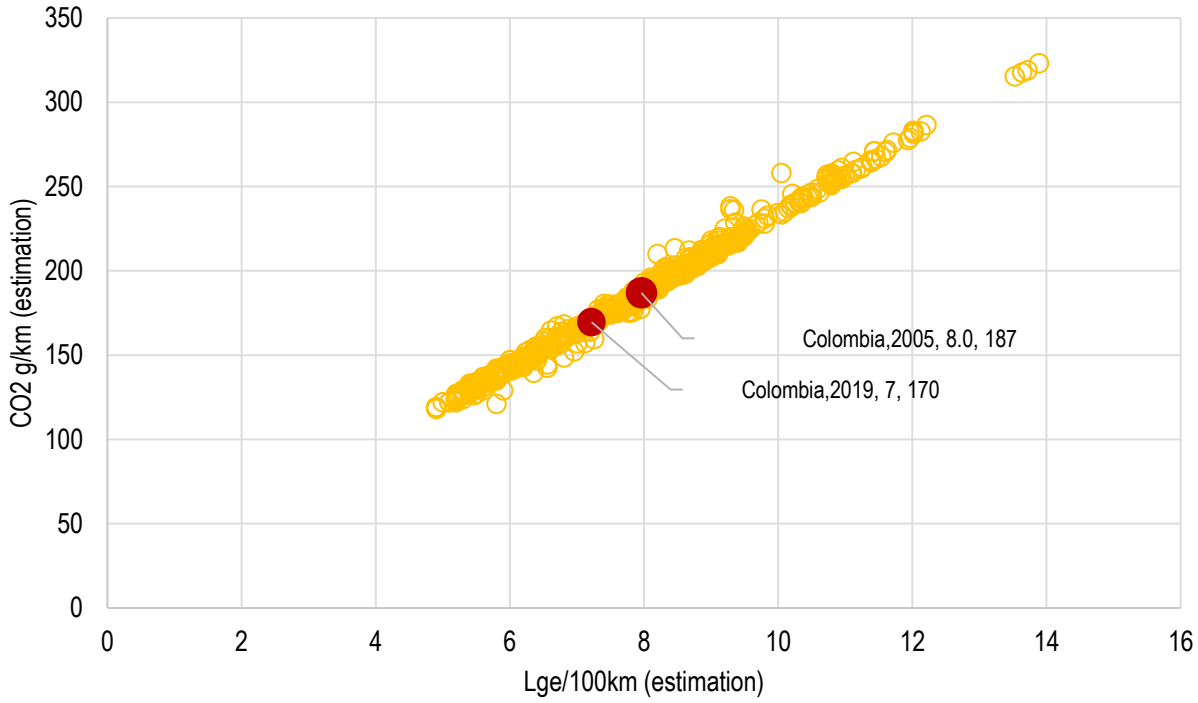
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

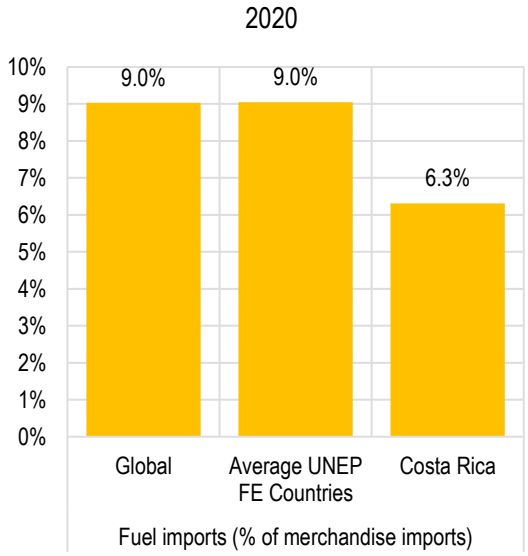
The activities to develop a fuel economy baseline (Phase I) in Colombia were part of the agreement signed with CEGESTI on 15 August 2016. The project was developed in collaboration with the Ministry of Environment and Sustainable Development and the Mines and Energy Planning Unit (UPME). In January 2017, the GFEI project for Colombia started with the aim to help create an enabling environment that will lead to the development and implementation of national fuel economy policies. The Ministry of Environment and Sustainable Development was identified as the focal point for the project. The first fuel economy baseline for light-duty vehicles in Colombia was completed in 2018. This work represents the first step at the national level to harmonise information for decision-making regarding energy efficiency in the transport sector. This information is now being used to develop an efficiency standard for transportation by UPME / WRI. The proposed activities for Phase II of the GFEI project, to support the development of policies to promote more efficient vehicles, were discussed with the Ministry and started in 2020. These include the update of the fuel efficiency baseline for light-duty vehicles (LDV); inclusion of heavy-duty vehicles in the fuel efficiency baseline; analysis of scenarios to improve the efficiency of the fleet, including through the introduction of electric cars; peer review of proposals developed by the government, including energy efficiency standards and labelling.

Colombia, In June 2017, with the support from the Partnership for Market Readiness (pmr), Colombia introduced a carbon tax for liquid fuels in its transport sector (equivalent to approximately USD 5 per tonne of CO2) payable by producers and importers of said fuels.

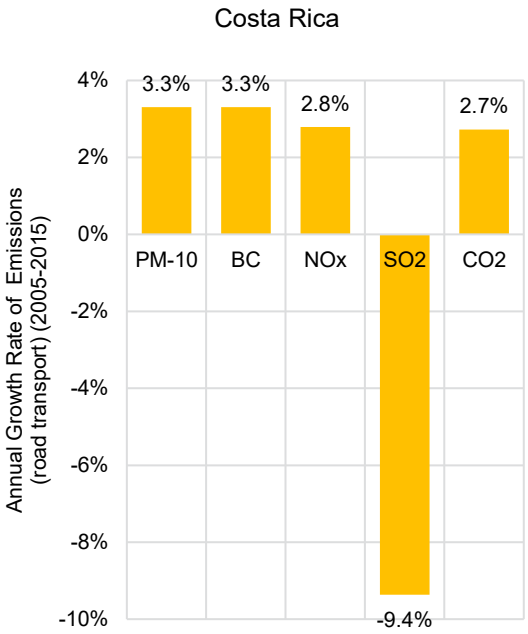
The assessment indicates that if Colombia implements a fuel economy policy for first-time registered LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 11.5 billion litres of gasoline-equivalent & 27 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR COSTA RICA

		Year	Source
Population (million)	5	2020	7
Income Level Category	Upper middle income		7
GDP per Capita (PPP, Curent USD)	21143	2020	7
Motorisation (Cars/1000 population)	175	2020	10
Car Sales (000)	26	2020	6
Gasoline Price $/l	1.1	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	9.4	2018	13
Employment (Transport+,000)	160	2019	11
Fuel Economy (Lge/100 km, WLTP) -	9	2015	1
Average CO2 emissions/kilometre (g/km, WLTP) -	202	2015	1
Average displacement (cm3) -	1950	2015	1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -	237		1
Diesel Share in LDV (sample,%)	22%	2015	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.155	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.151	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	0.0	2019	8
Transport CO2 Emissions per Capita (tonnes) -	1.8	2019	14
Road Transport PM Emissions per Capita (grams) -	177.6	2015	14
Road Transport NOx Emissions per Capita (grams)-	5452.2	2015	14
Road Transport BC Emissions per Capita (grams)-	87.7	2015	14
LDV Emission Standards -	Euro 4	2019	1
Diesel Sulphur Levels (ppm) -	50	2019	1
Gasoline Sulphur Levels (ppm) -	50	2019	1
Annual rate of economy-wide energy intensity growth	-1.0%	2000-18	16
Annual rate of transport energy consumption growth	3.0%	2000-18	16
LDV Import value (Million USD)	363	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

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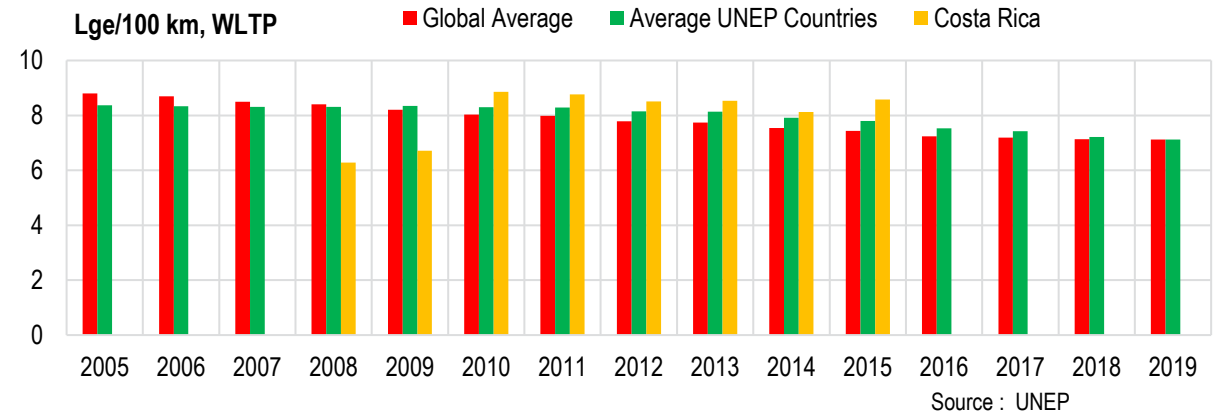
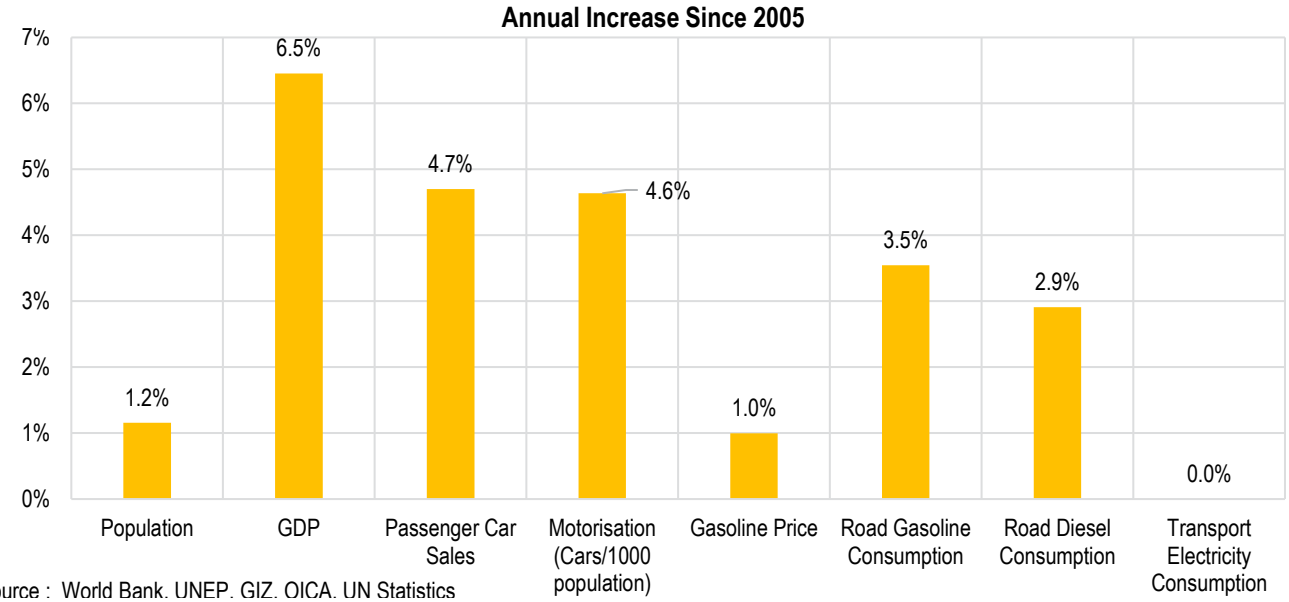
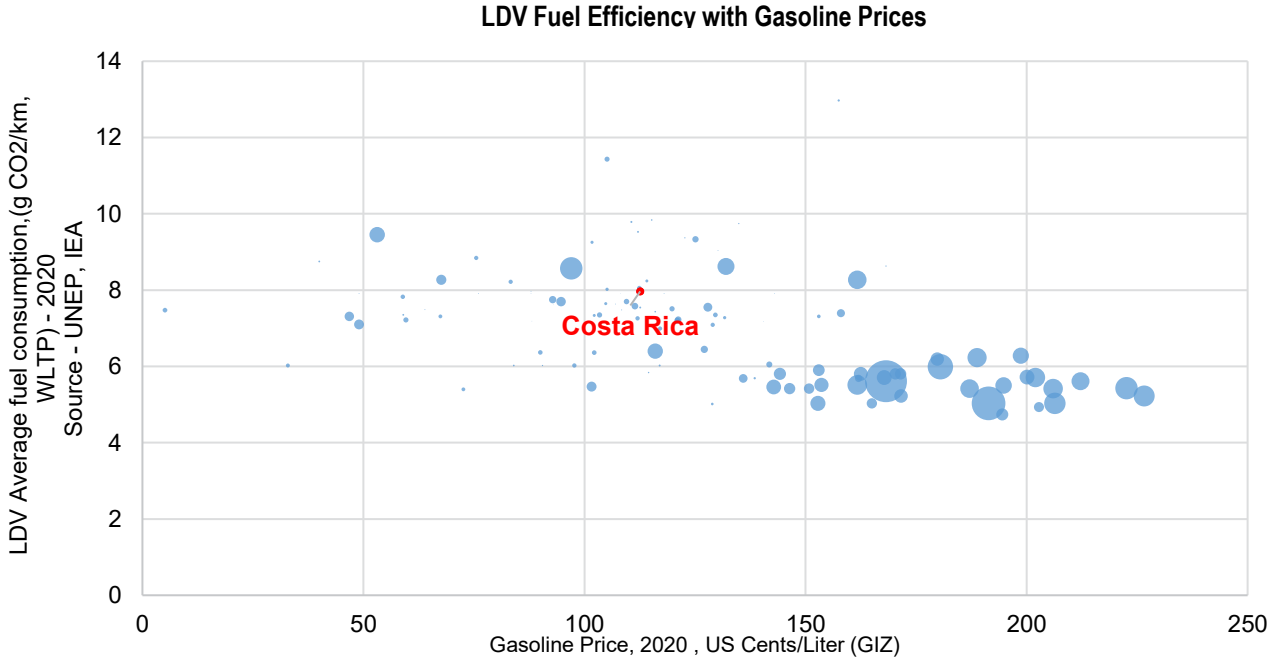
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

page 2/4

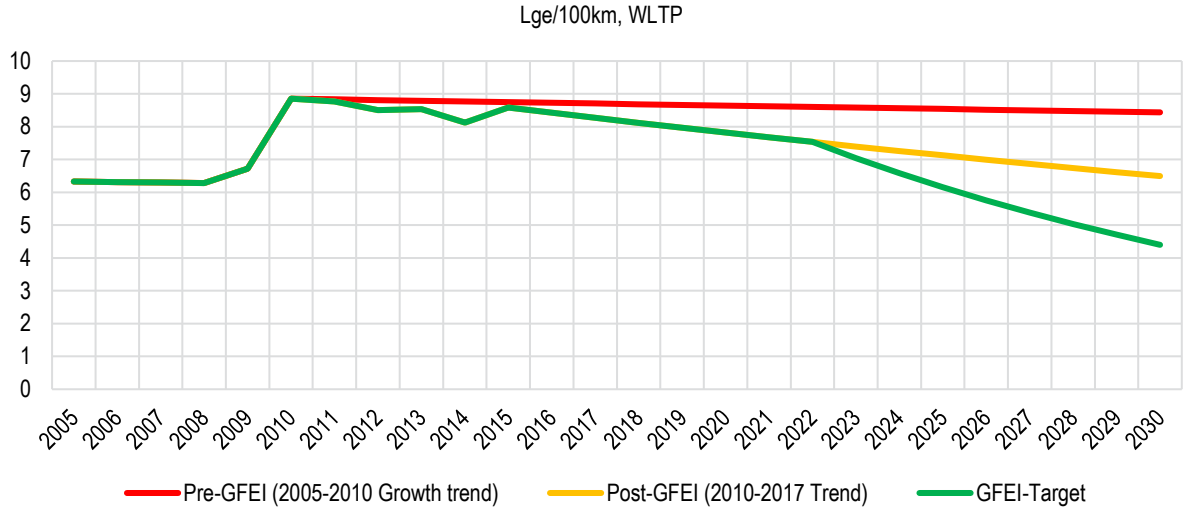
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-1.2%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-5.6%**



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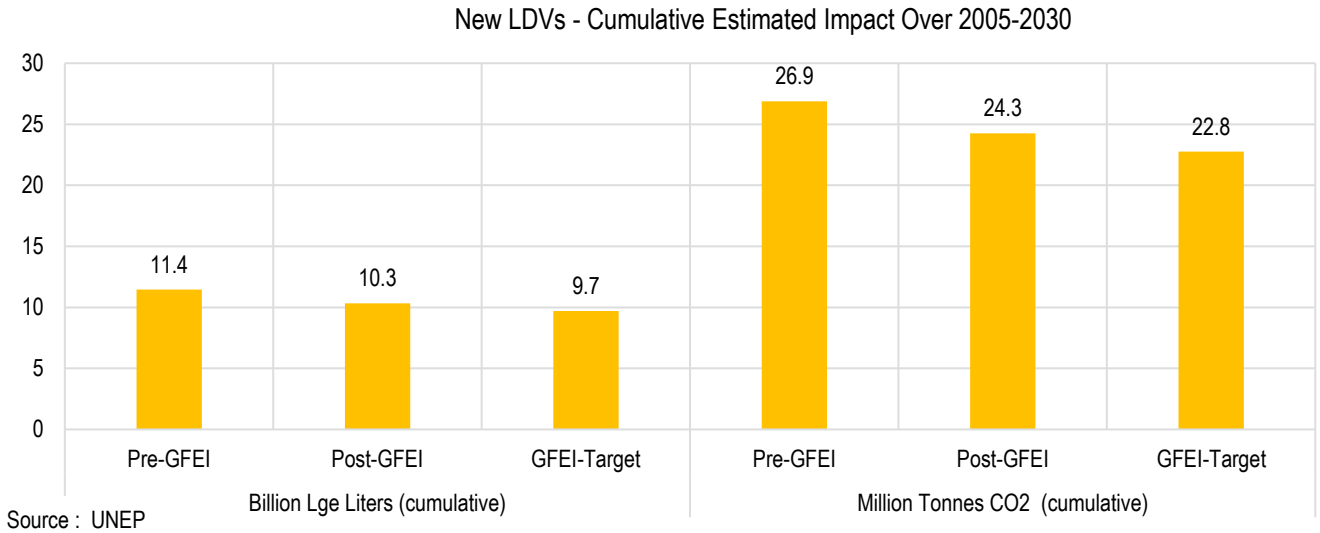


Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

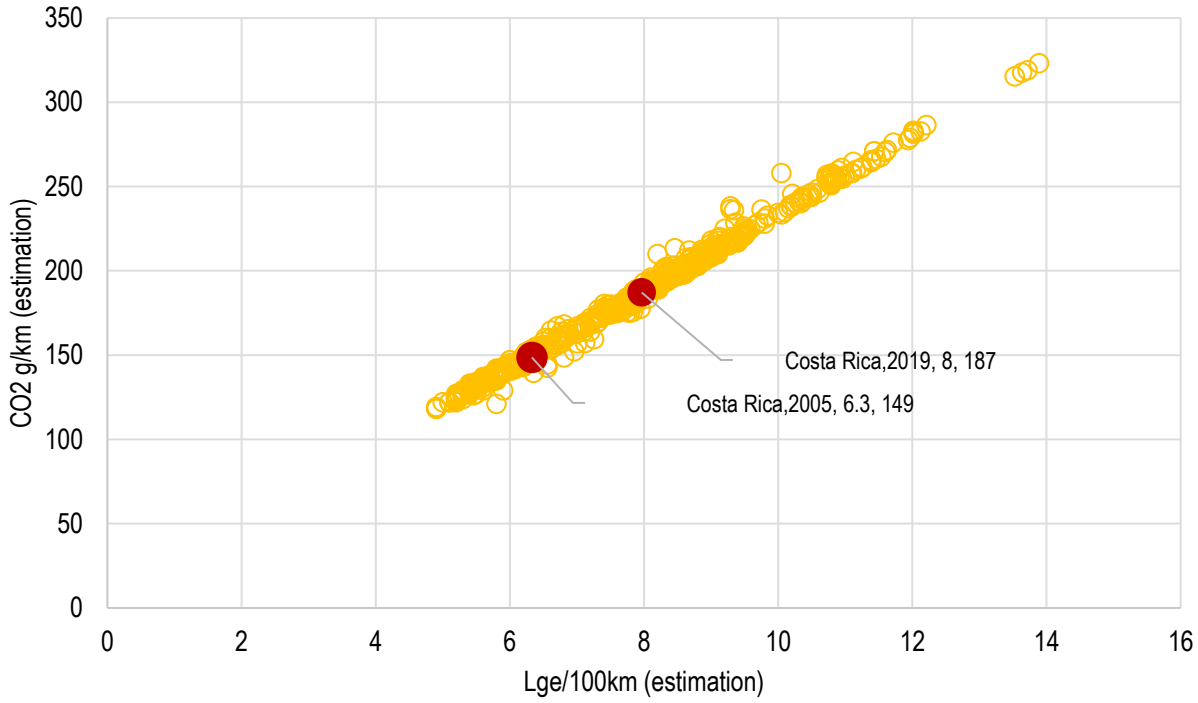
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

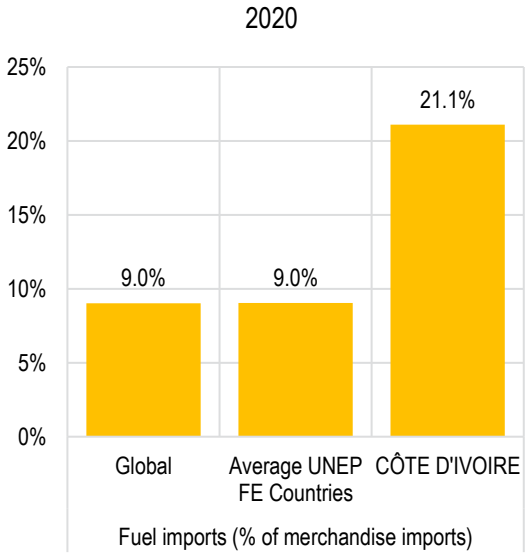
Starting in 2014 until the end of 2018 UNEP carried out activities to promote sustainable transport in Costa Rica. These activities were carried out in consultation with MINAE and key stakeholders (public and private). The priorities agreed with MINAE were supported by programs such as the Partnership for Clean Fuels and Vehicles (PCFV), the Global Fuel Economy Initiative (GFEI), Clean Air and Climate Change (CCAC). The activities were implemented with the support of CEGESTI and the Centro Mario Molina Chile (CMMCh), technical partners of UNEP. Following these efforts, Costa Rica adopted the first Electric Mobility law in the region. They also joined the UNEP GEF 7 Electric Mobility Program, with a GEF STAR allocation of USD one million. Additionally, Costa Rica adopted 50 ppm Sulphur fuels, and Euro 4 standards.

Costa Rica's National Decarbonazation Plan proposes by 2035, 30% of the light vehicles fleet - private and institutional - will be electric. In 2050, 95% of the fleet will be zero-emissions, to launch vehicle scrapping pilot program, eco-labelling for vehicle efficiency designed, incorporation of 5% to 10% of ethanol in both gasolines, to improve and update the energy efficiency regulations for the transport sector by upgrading the standards for the import and circulation of internal combustion engine vehicles, improving fleet standards.

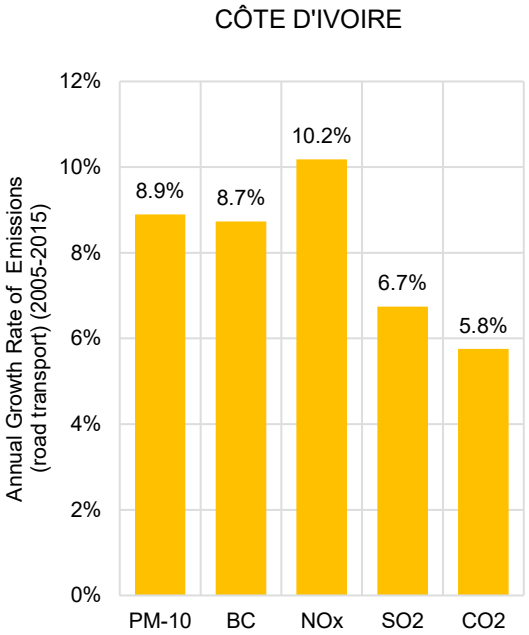
The assessment indicates that if Costa Rica implements a fuel economy policy for first-time registered LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 2.2 billion litres of gasoline-equivalent & 5.1 million tonnes of CO_2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR CÔTE D'IVOIRE

		Year	Source
Population (million)	26	2020	7
Income Level Category	Lower middle income		7
GDP per Capita (PPP, Curent USD)	5463	2020	7
Motorisation (Cars/1000 population)	19	2020	10
Car Sales (000)	6	2020	6
Gasoline Price $/l	1.1	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	4.2	2018	13
Employment (Transport+,000)	0	2019	11
Fuel Economy (Lge/100 km, WLTP) -	8	2015	1
Average CO2 emissions/kilometre (g/km, WLTP) -	190	2015	1
Average displacement (cm3) -			1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -	23		1
Diesel Share in LDV (sample,%)	62%	2015	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	No	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.023	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.028	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	0.0	2019	8
Transport CO2 Emissions per Capita (tonnes) -	0.5	2019	14
Road Transport PM Emissions per Capita (grams) -	59.1	2015	14
Road Transport NOx Emissions per Capita (grams)-	1111.6	2015	14
Road Transport BC Emissions per Capita (grams)-	28.8	2015	14
LDV Emission Standards -	0	2019	1
Diesel Sulphur Levels (ppm) -	3500	2019	1
Gasoline Sulphur Levels (ppm) -	150	2019	1
Annual rate of economy-wide energy intensity growth	#N/A	2000-18	16
Annual rate of transport energy consumption growth	6.0%	2000-18	16
LDV Import value (Million USD)	260	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

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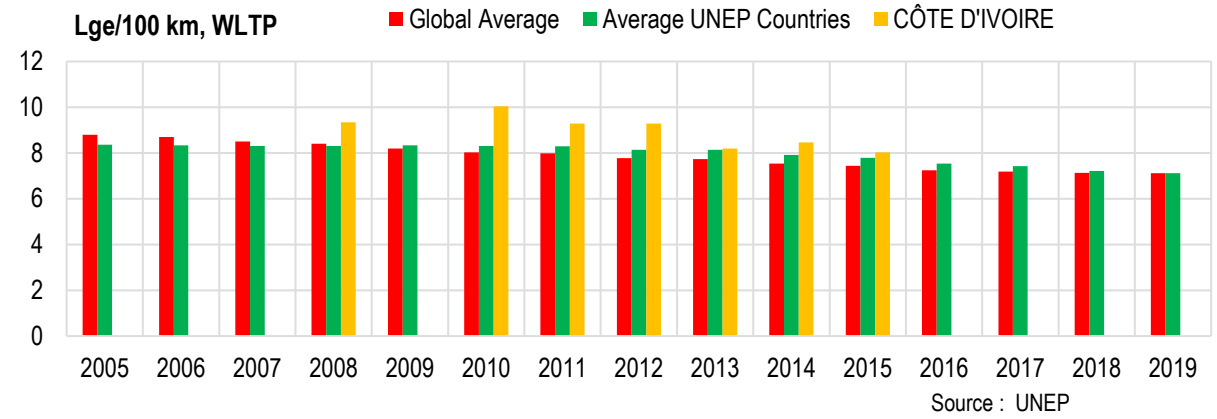
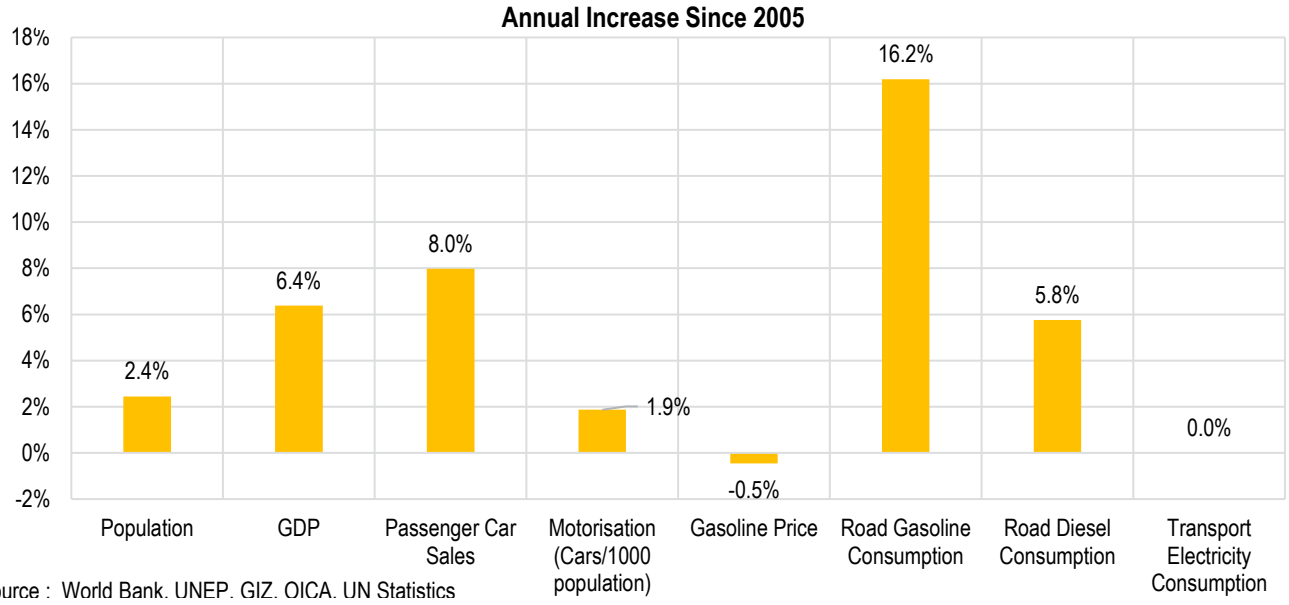
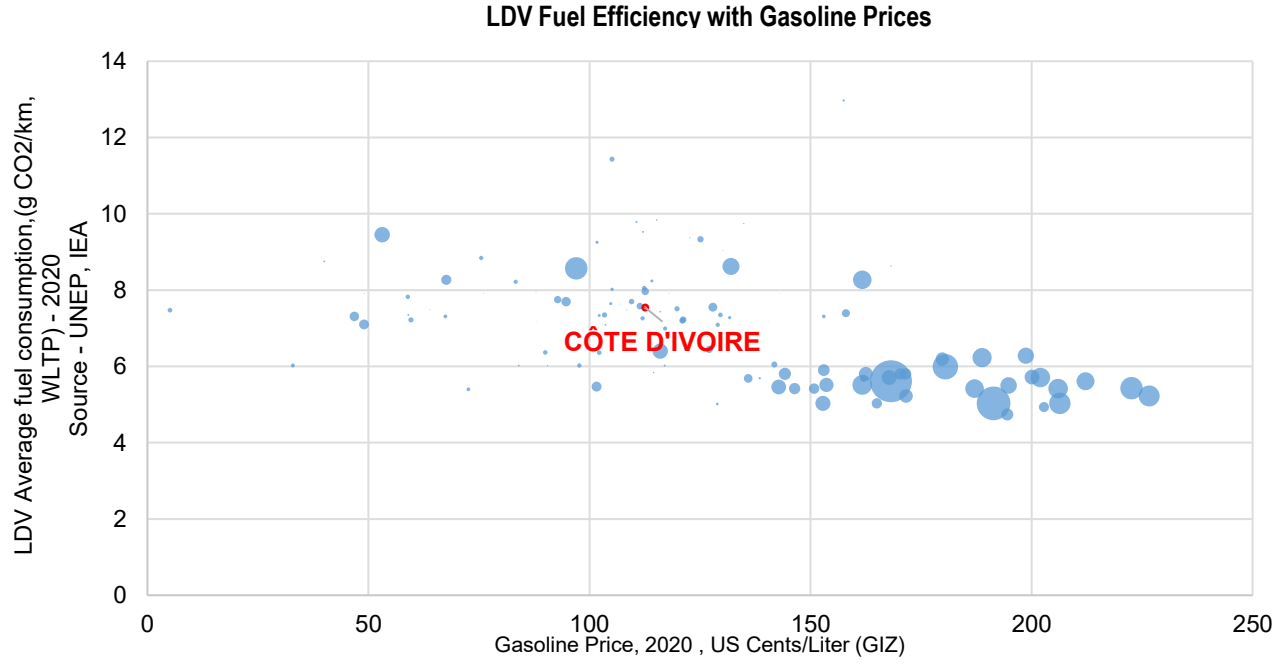
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

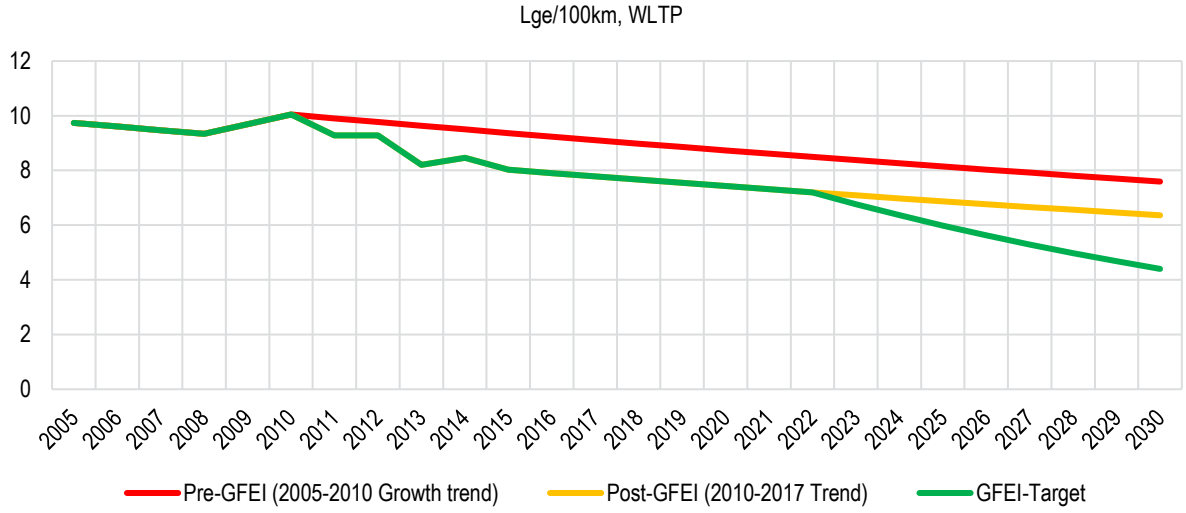
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-3.0%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-5.1%**



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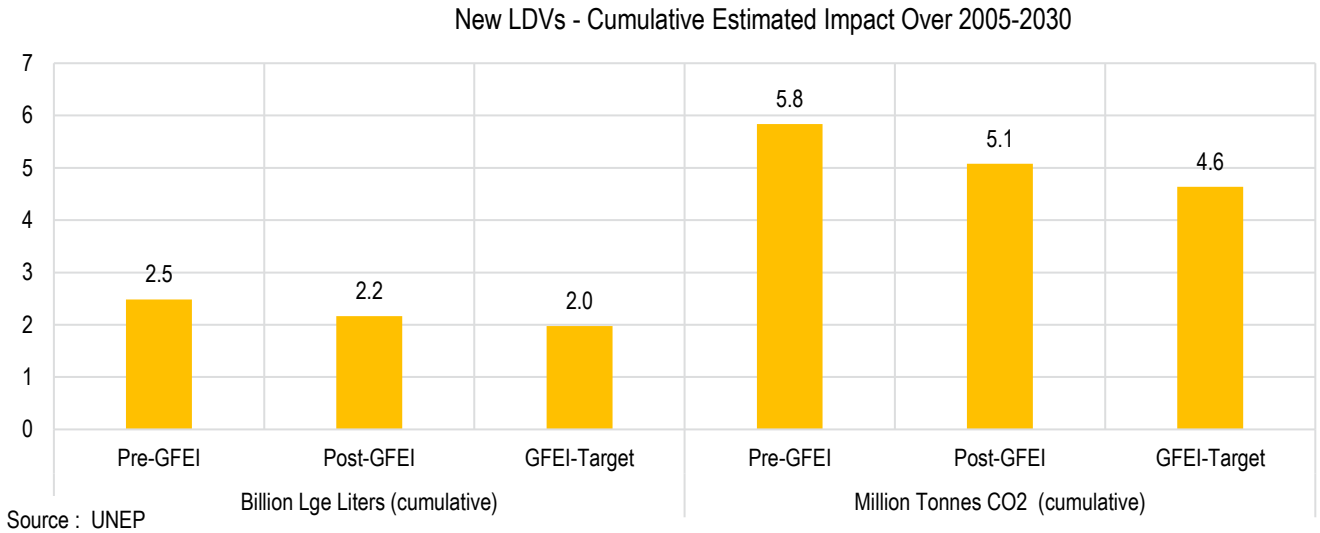


Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

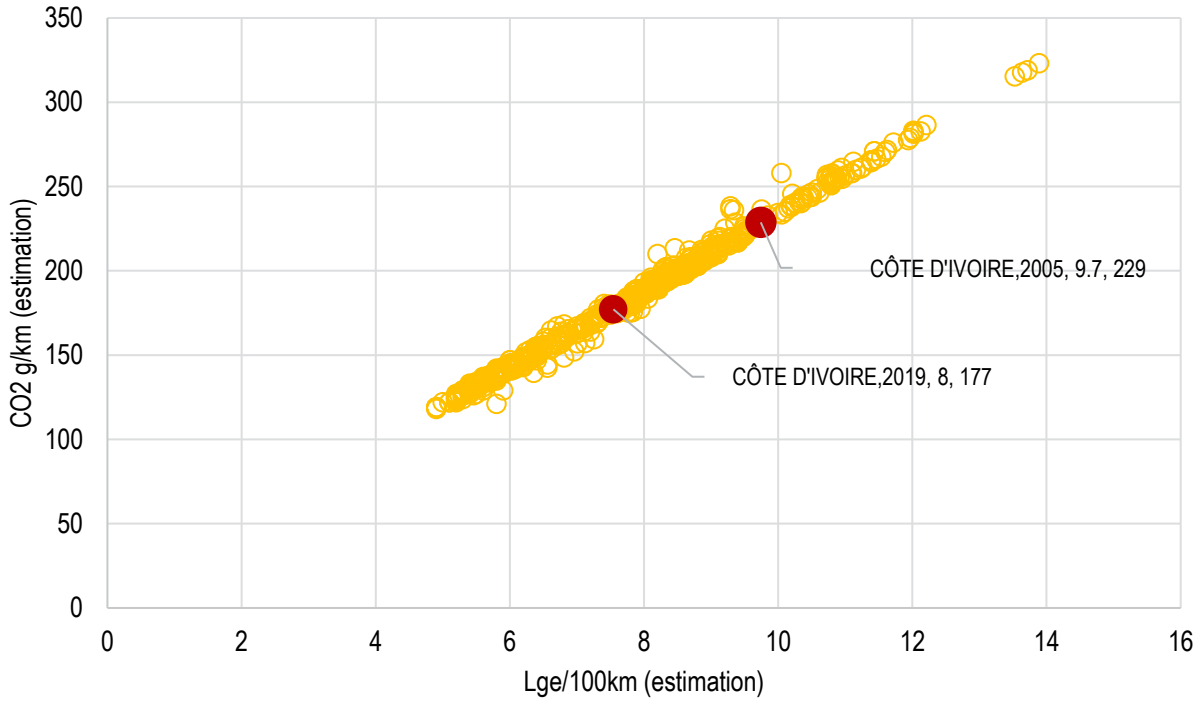
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

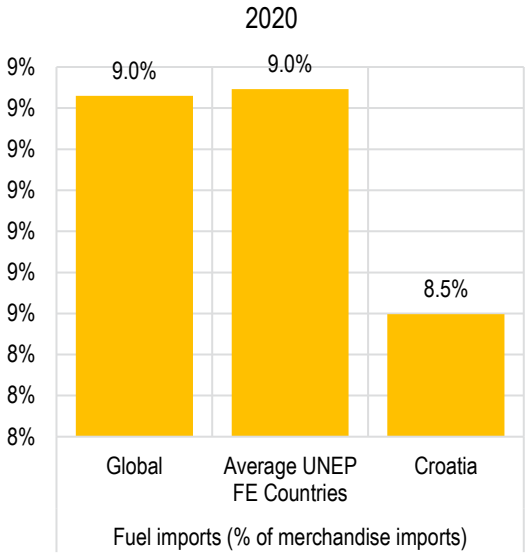
Source : UNEP

GFEI activities in Cote d'Ivoire started with an agreement with Ministère de l'Environnement, de la Salubrité Urbaine et du Développement Durable (MINESUDD) on 16 April 2015 to carry out the fuel economy baseline analysis and was completed on 30 August 2017. For fuel economy policy, among the interventions considered were fuel economy labelling and a feebate/rebate scheme to incentivise cleaner vehicles as well as a consumer awareness campaign. On 30 August 2017, a working group meeting was held to adopt an action plan for operationalising the strategies and policies proposed through the whole GFEI process. On 6 December 2017, the government introduced new vehicle age restrictions effective March 2018. All light-duty vehicles imported into the country will need to be of less than 5 years of age, 7 years for vans, and ten years for buses and trucks. As a follow up to the fuel economy work, Cote d'Ivoire joined UNEP's Global Electric mobility program by providing $500,000 GEF STAR allocation. The project seeks to: revise laws and set up of institutional framework to support the accelerated introduction of electric mobility in Cote d'Ivoire; pilot and demonstrate the viability of electric 2&3 wheelers and buses; establish a measurement, reporting & verification (MRV) framework for transport; prepare for scale-up and replication of electric mobility, and promote of the long-term sustainability of electric mobility in Cote d'Ivoire.

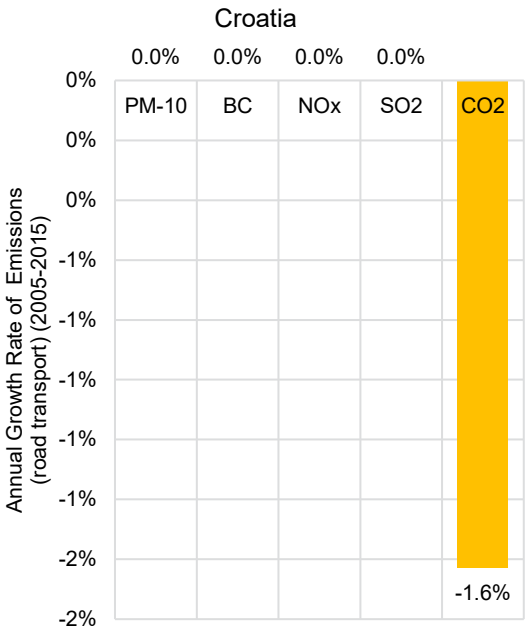
The assessment indicates that if Cote d'Ivoire implements a fuel economy policy for LDVs with a 2030 GFEI target, it could save 543 million litres of gasoline-equivalent & 1.2 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR CROATIA

		Year	Source
Population (million)	4	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	29134	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	36	2020	6
Gasoline Price $/l	1.7	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	19.2	2018	13
Employment (Transport+,000)	168	2019	11
Fuel Economy (Lge/100 km, WLTP) -	5	2016	1
Average CO2 emissions/kilometre (g/km, WLTP) -	126	2016	1
Average displacement (cm3) -	1535	2017	1
Average kerb weight (kg) -	1309	2017	1
Average power (kw) -	83	2017	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	No	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.115	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.379	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	67.4	2019	8
Transport CO2 Emissions per Capita (tonnes) -	4.7	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	-1.7%	2000-18	16
Annual rate of transport energy consumption growth	2.2%	2000-18	16
LDV Import value (Million USD)	977	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
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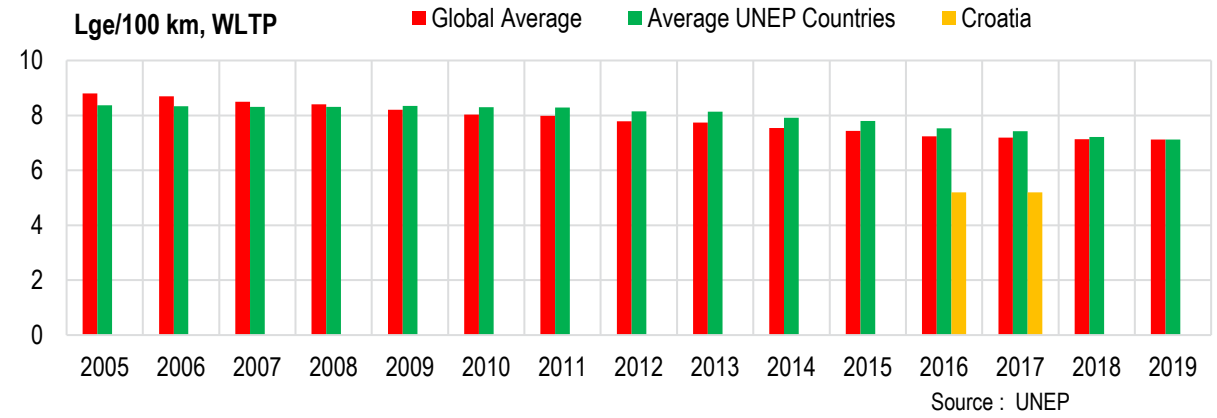
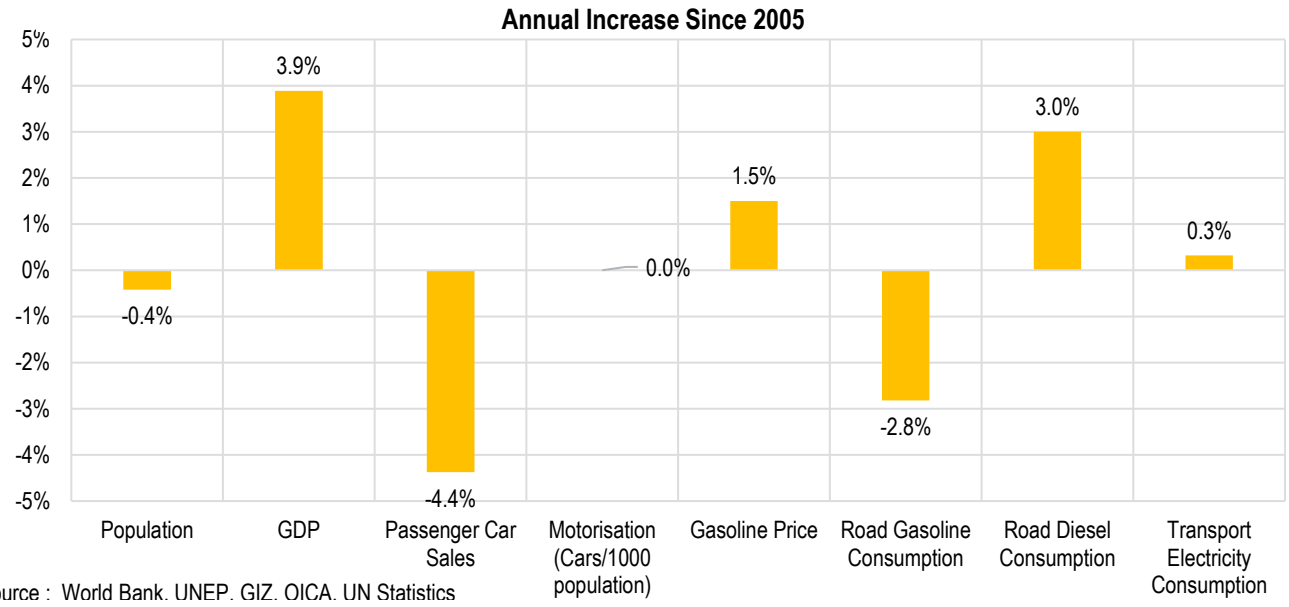
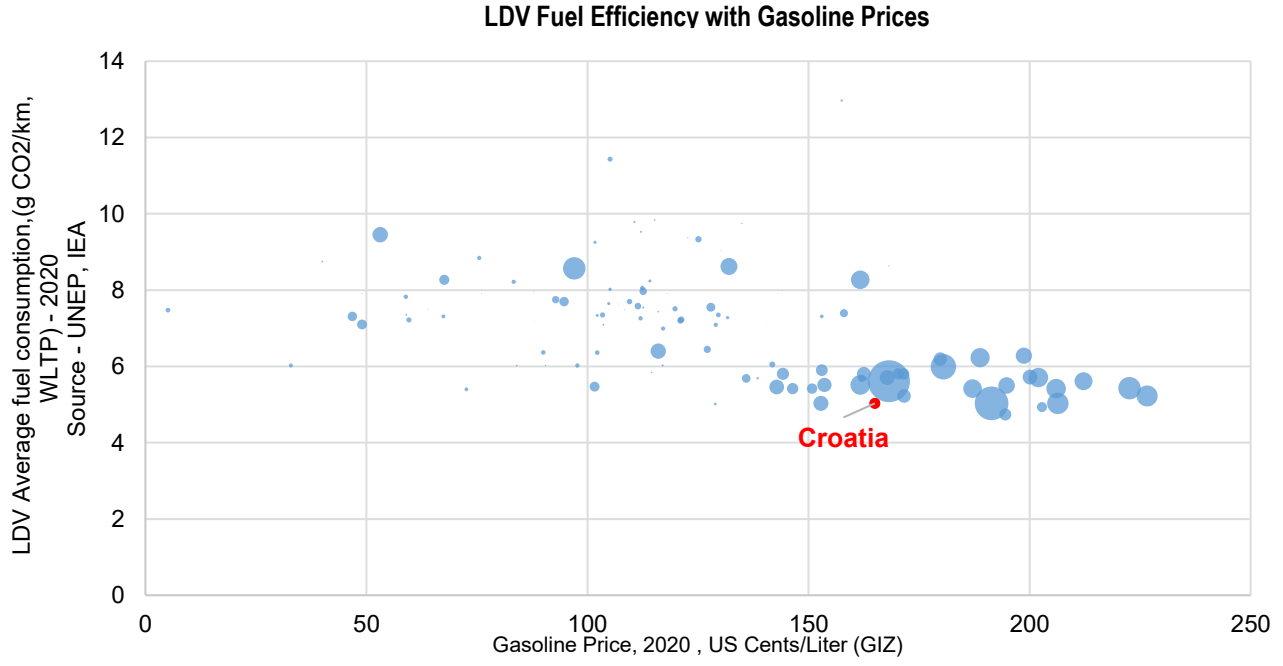
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

FUEL ECONOMY TRENDS





Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

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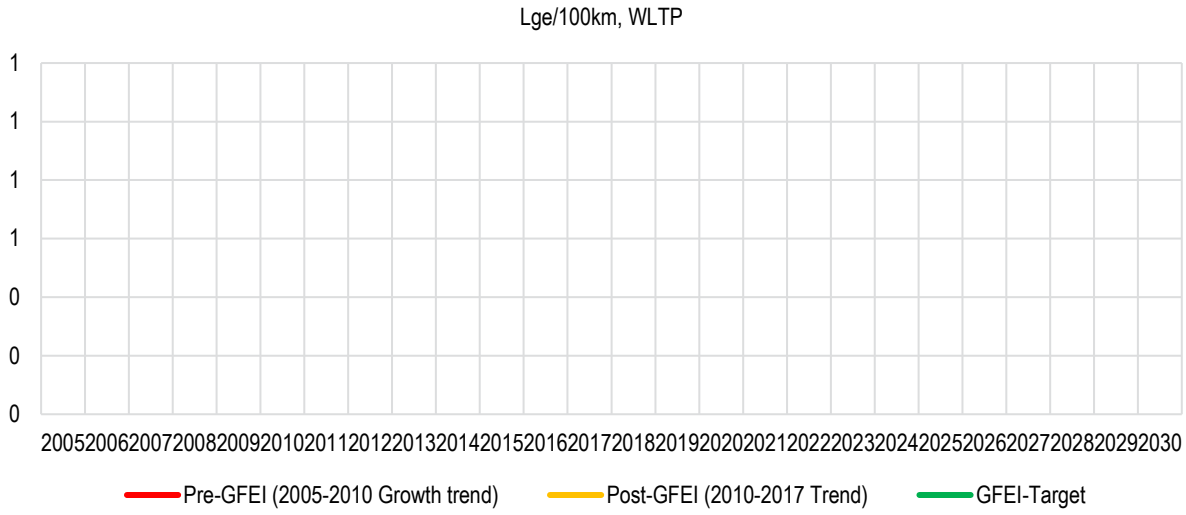
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

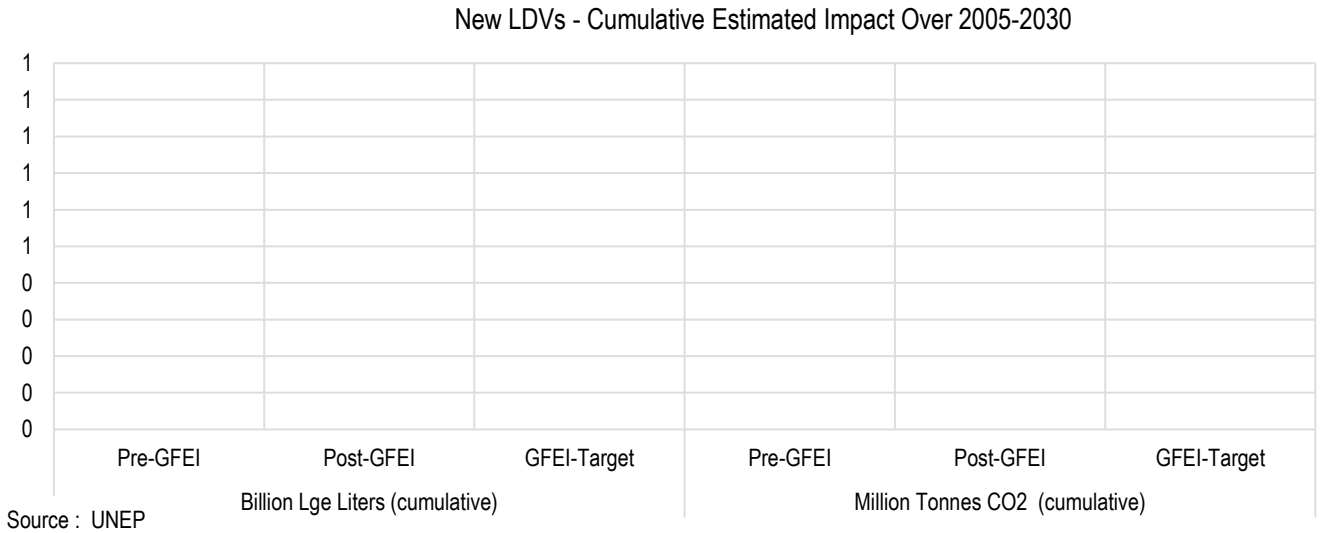
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

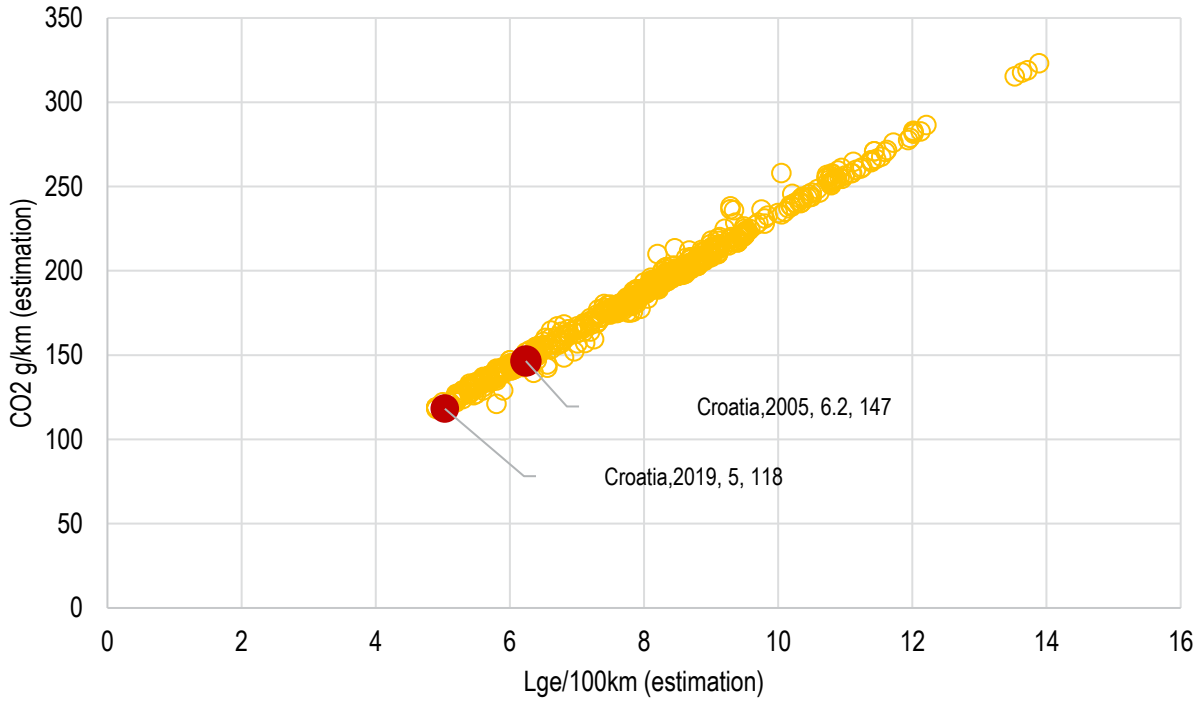
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



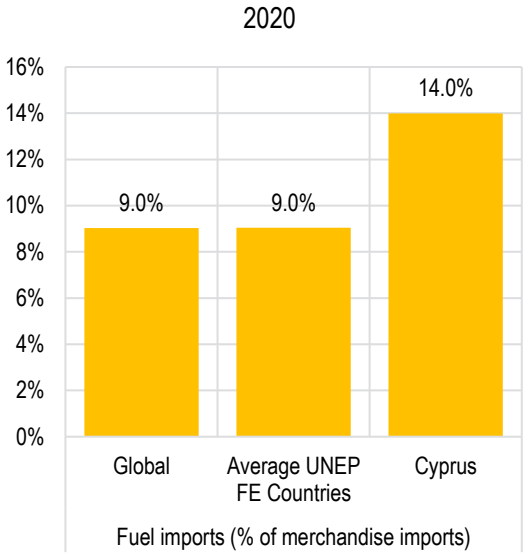
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

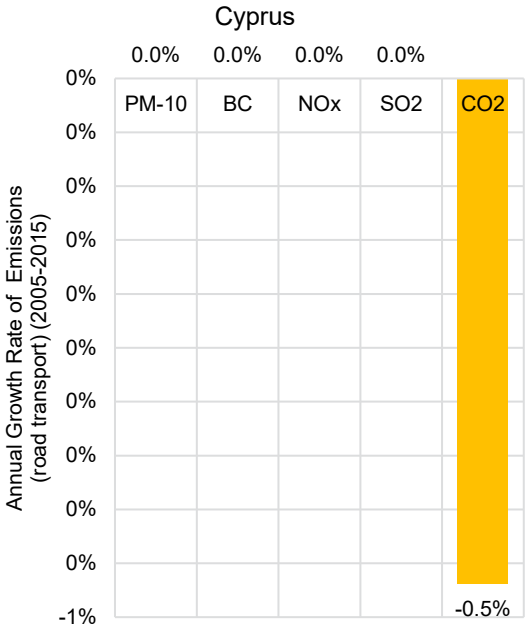
#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR CYPRUS

		Year	Source
Population (million)	1	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	29447	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	10	2020	6
Gasoline Price $/l	1.5	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	11.0	2018	13
Employment (Transport+,000)	47	2019	11
Fuel Economy (Lge/100 km, WLTP) -	6	2017	1
Average CO2 emissions/kilometre (g/km, WLTP) -	134	2017	1
Average displacement (cm3) -	1603	2017	1
Average kerb weight (kg) -	1362	2017	1
Average power (kw) -	92	2017	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	No	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.279	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.262	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	238.7	2019	8
Transport CO2 Emissions per Capita (tonnes) -	6.2	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	-1.9%	2000-18	16
Annual rate of transport energy consumption growth	1.0%	2000-18	16
LDV Import value (Million USD)	521	2020	3



Source : World Bank



Source : IIASA

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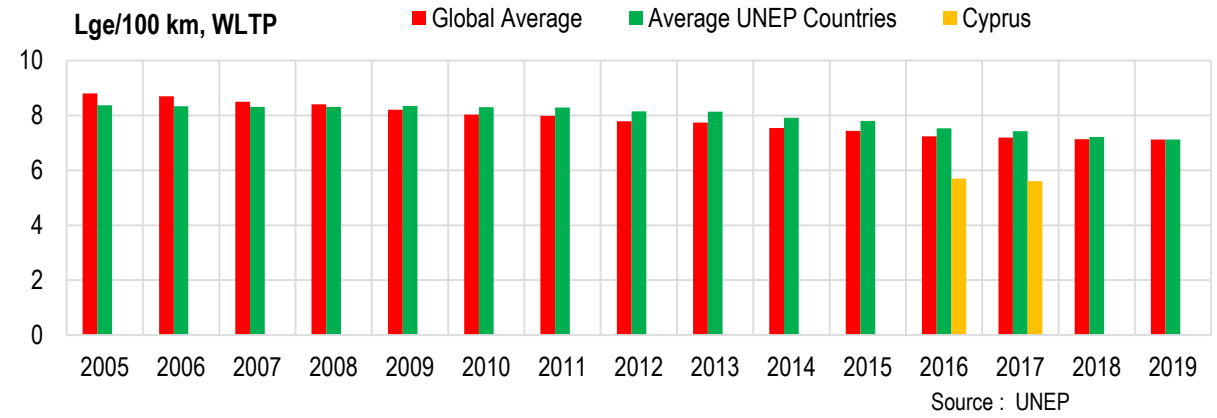
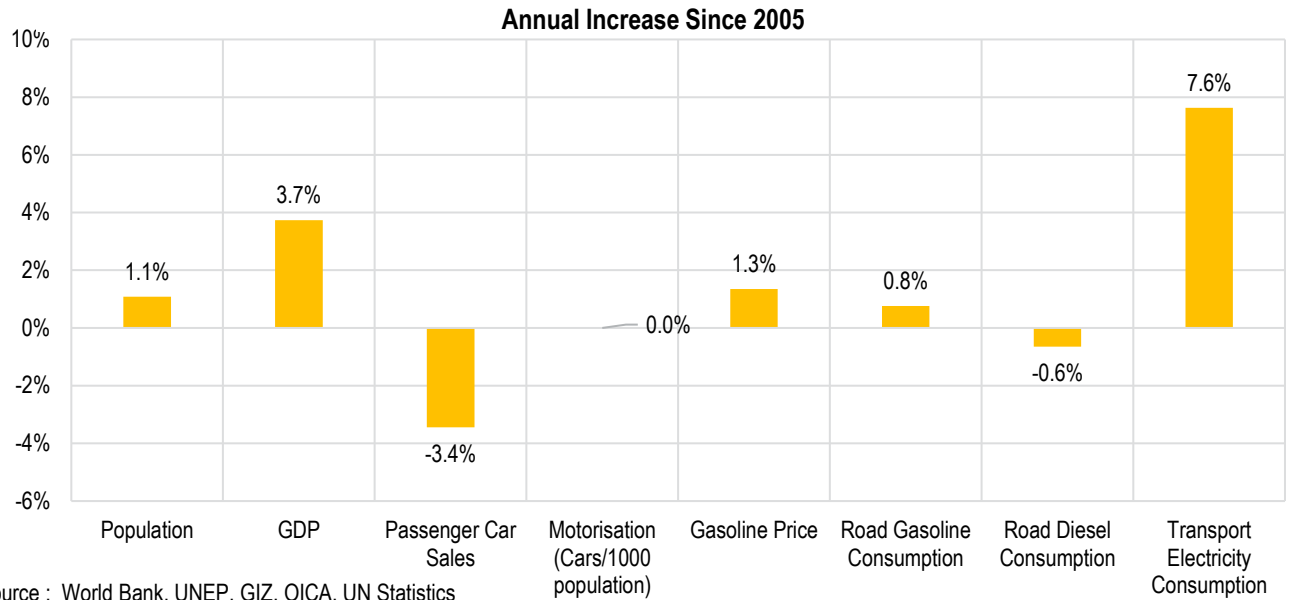
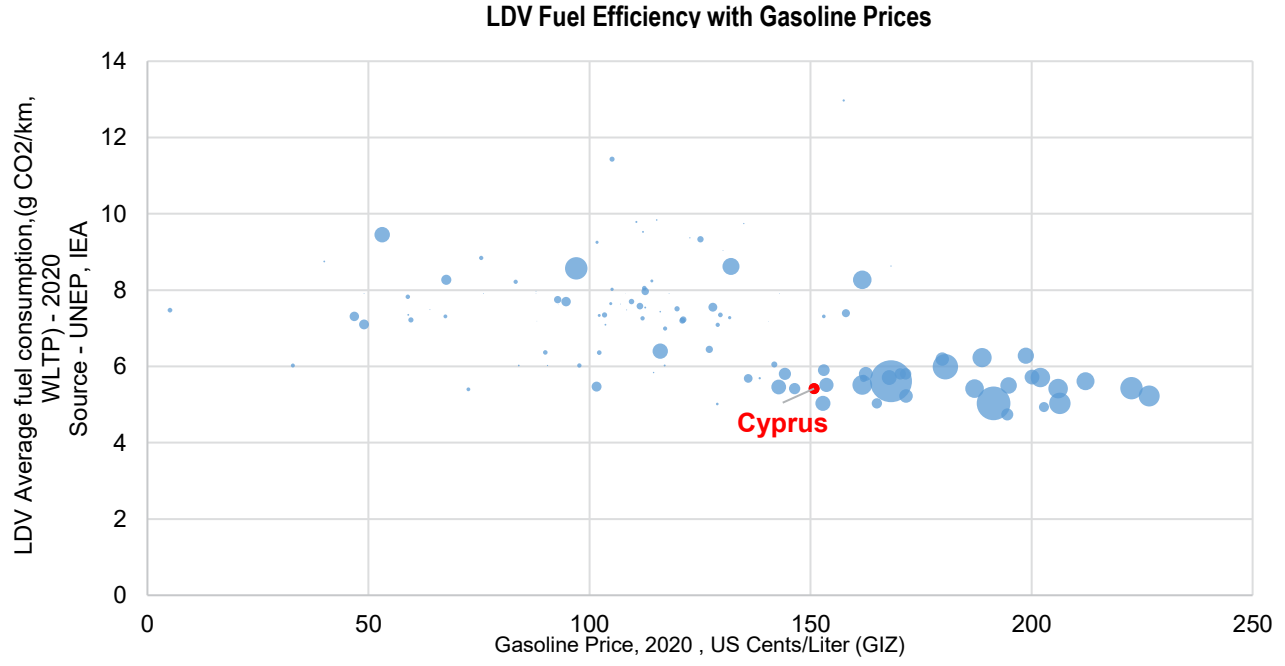
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

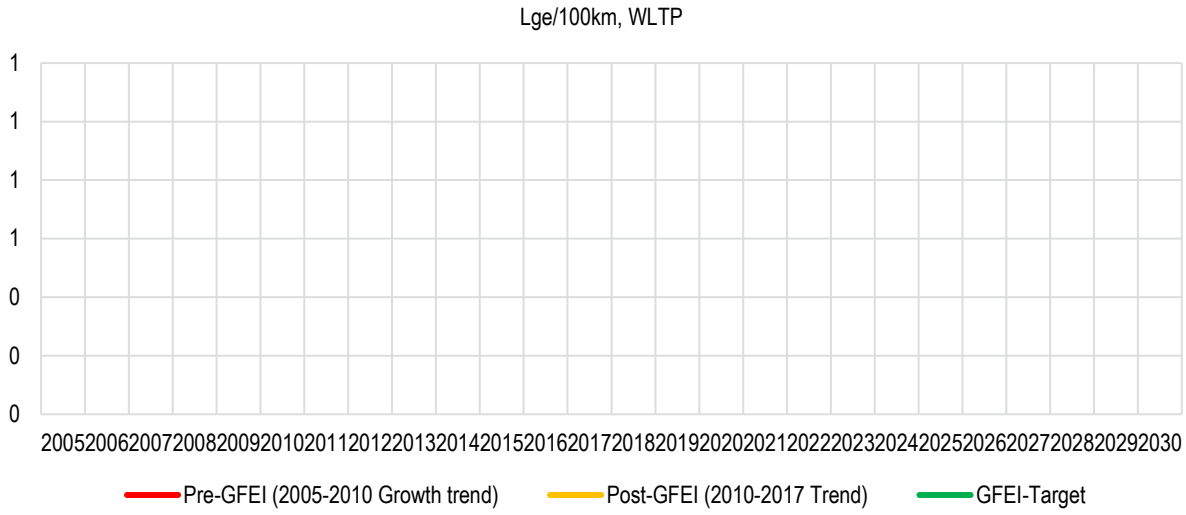
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

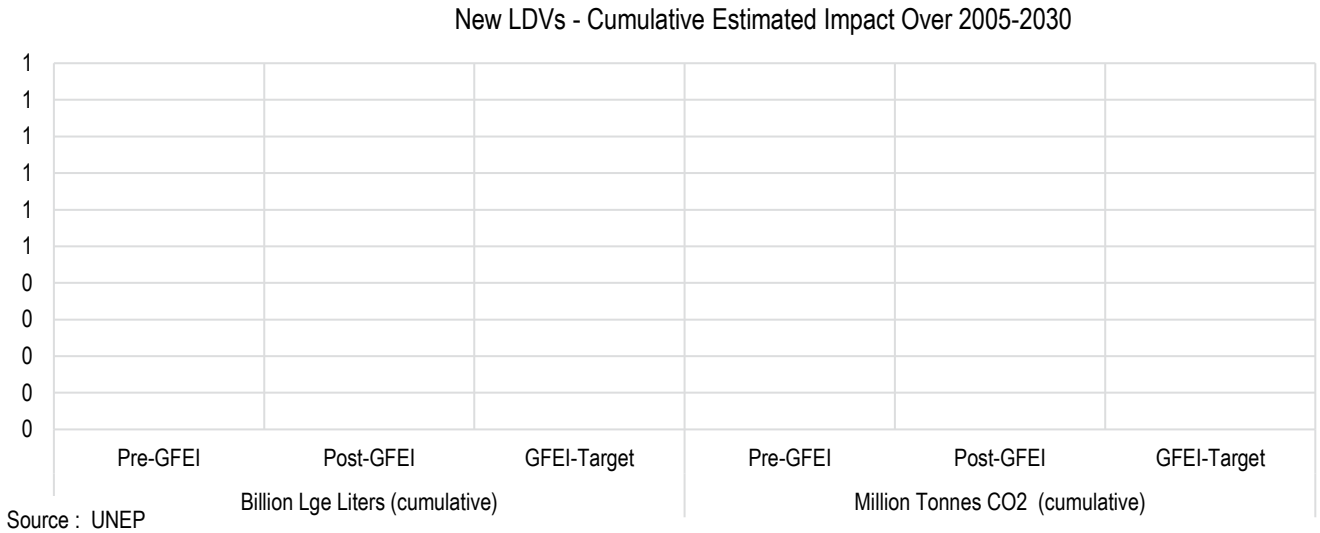
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

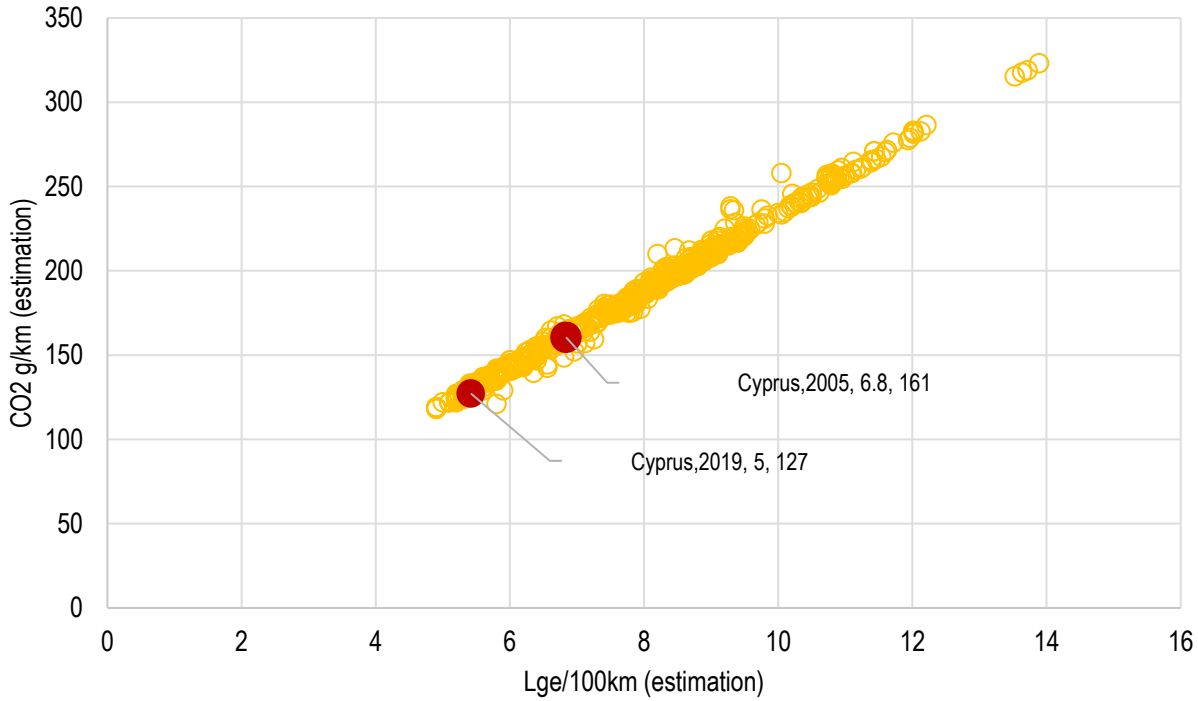
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



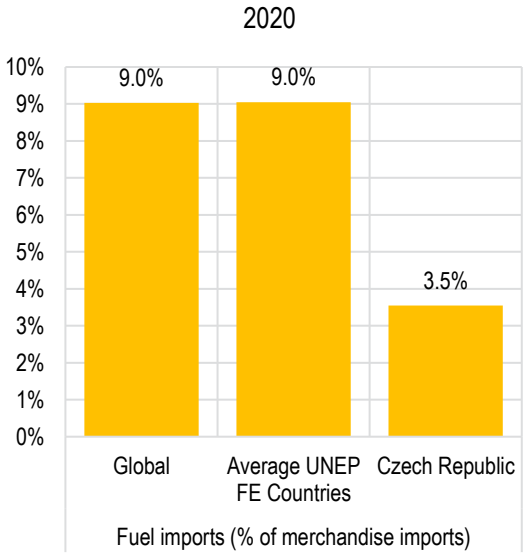
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

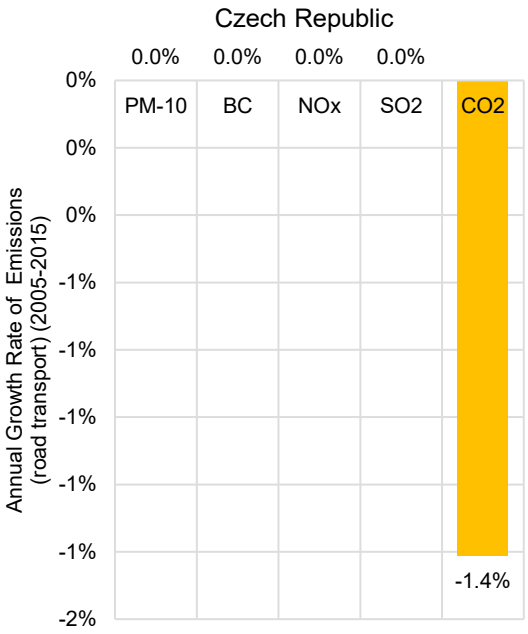
#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR CZECH REPUBLIC

		Year	Source
Population (million)	11	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	42049	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	203	2020	6
Gasoline Price $/l	1.7	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	14.1	2018	13
Employment (Transport+,000)	518	2019	11
Fuel Economy (Lge/100 km, WLTP) -	6	2017	1
Average CO2 emissions/kilometre (g/km, WLTP) -	140	2017	1
Average displacement (cm3) -	1592	2017	1
Average kerb weight (kg) -	1364	2017	1
Average power (kw) -	96	2017	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.151	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.433	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	164.0	2019	8
Transport CO2 Emissions per Capita (tonnes) -	9.9	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	#N/A	2000-18	16
Annual rate of transport energy consumption growth	2.5%	2000-18	16
LDV Import value (Million USD)	3779	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
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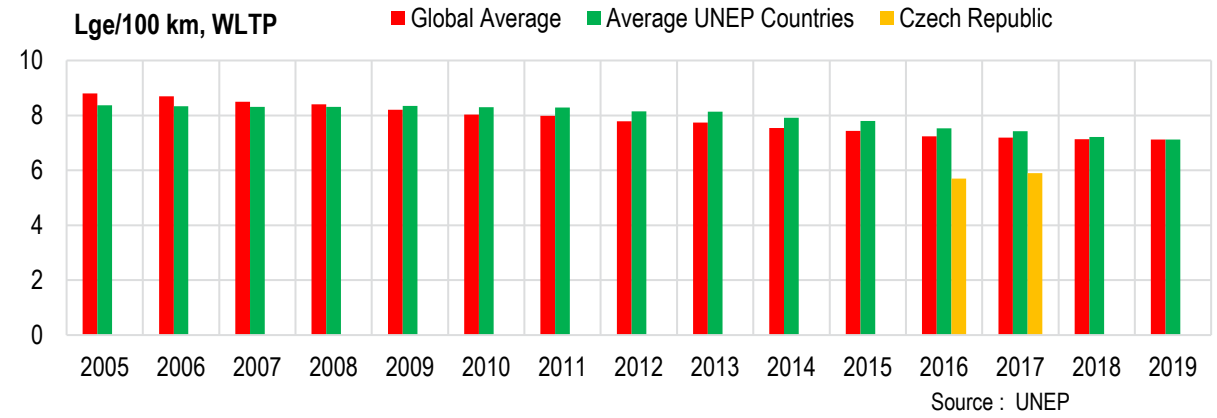
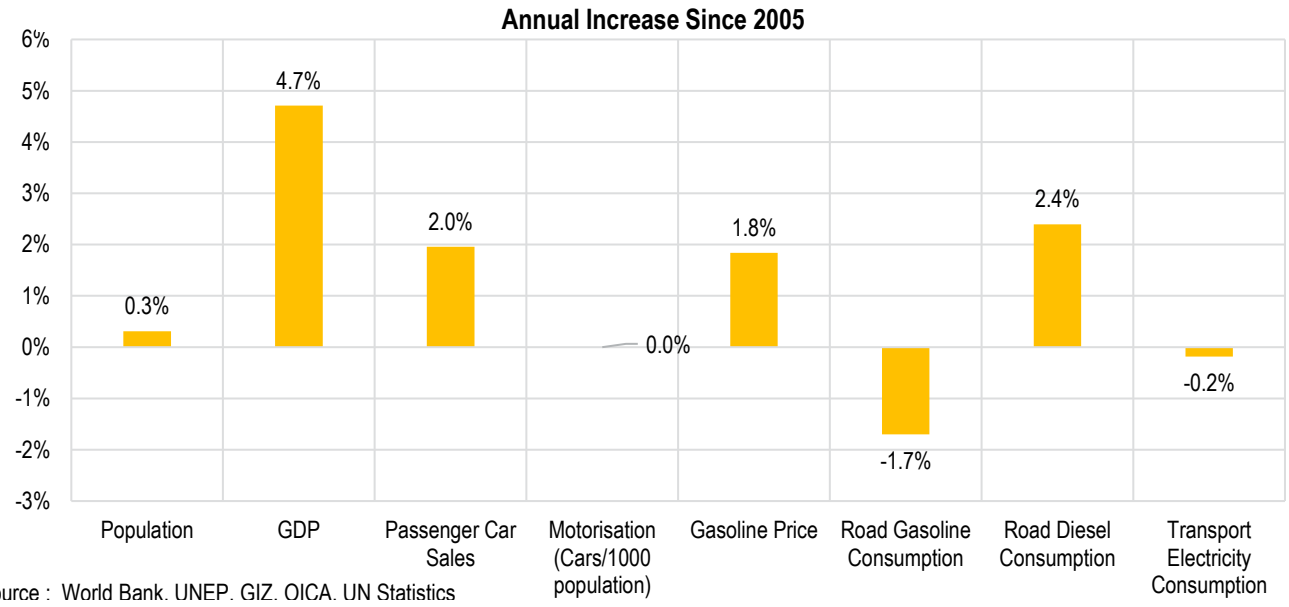
FUEL ECONOMY TRENDS





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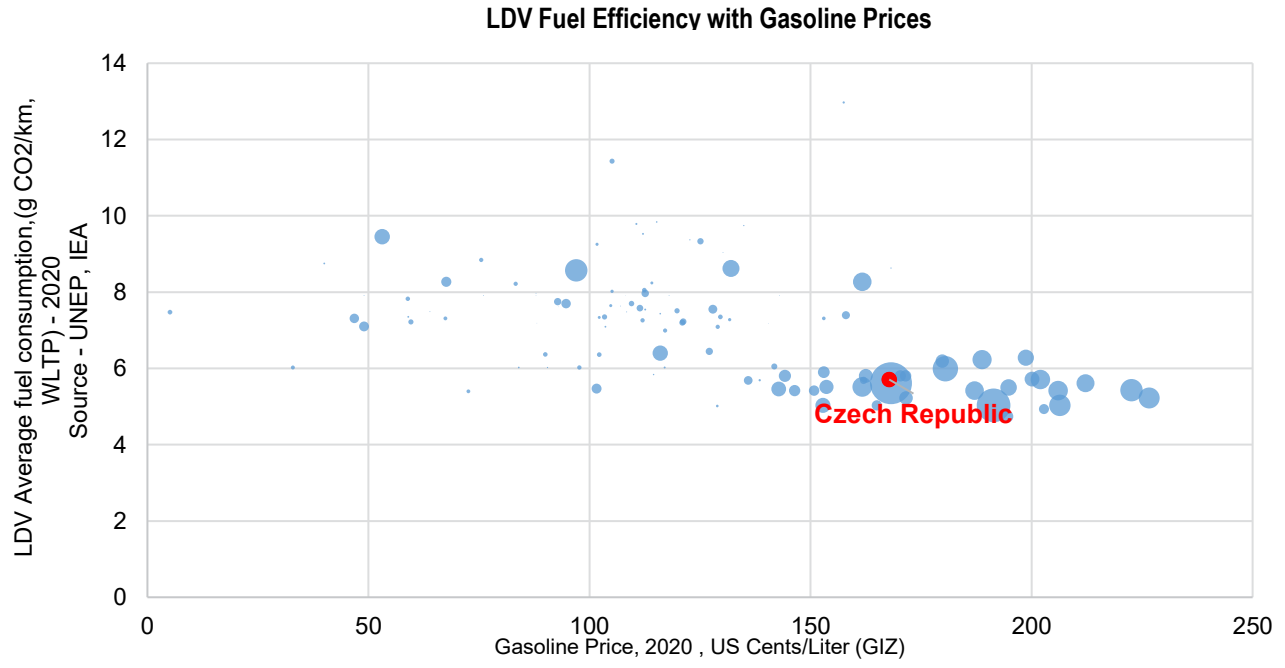


Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

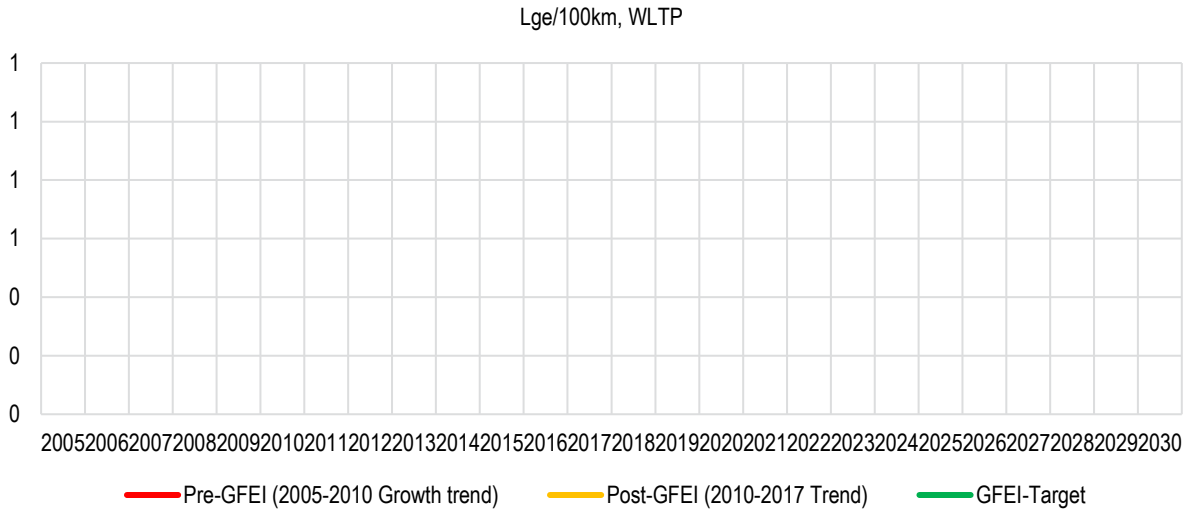
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



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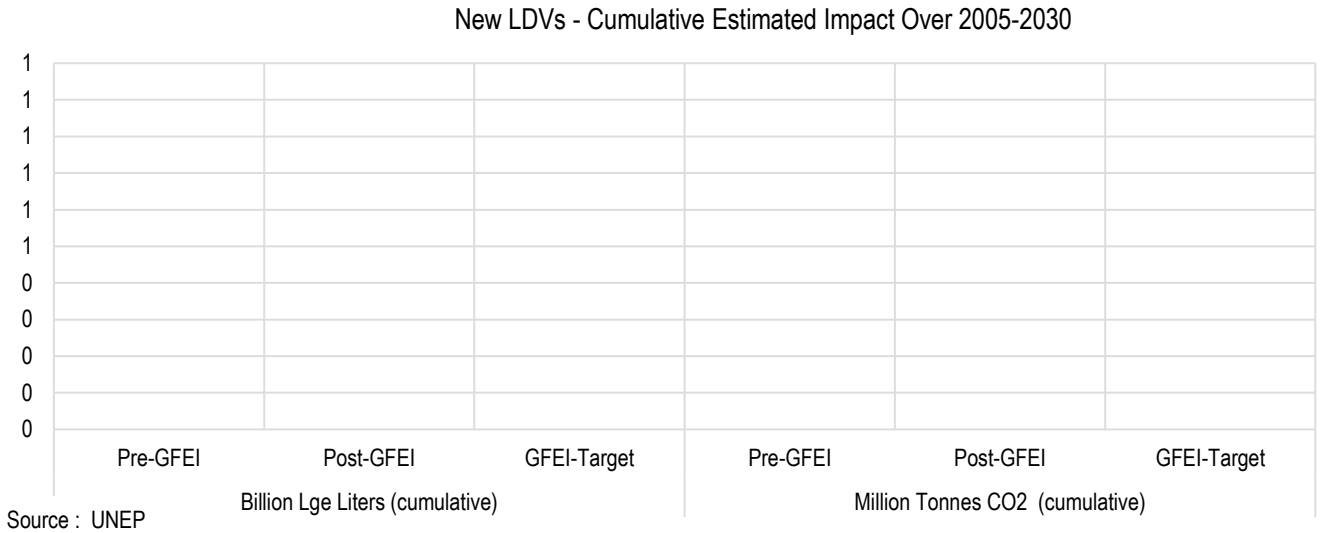

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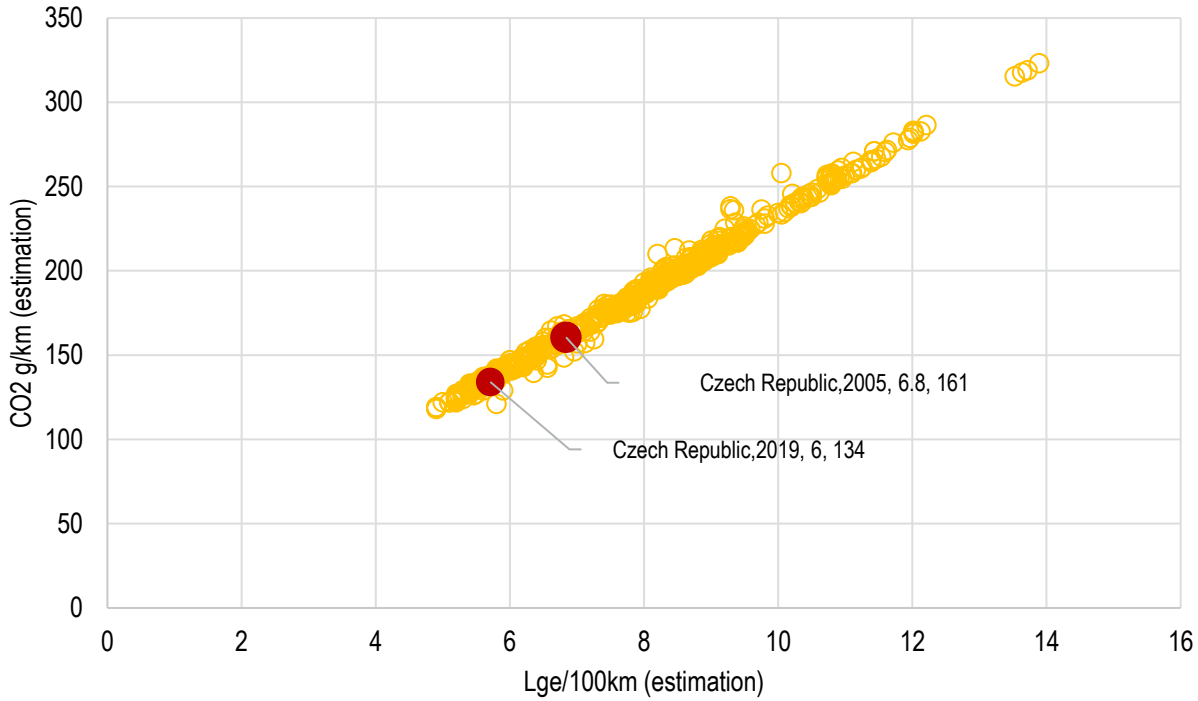
d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



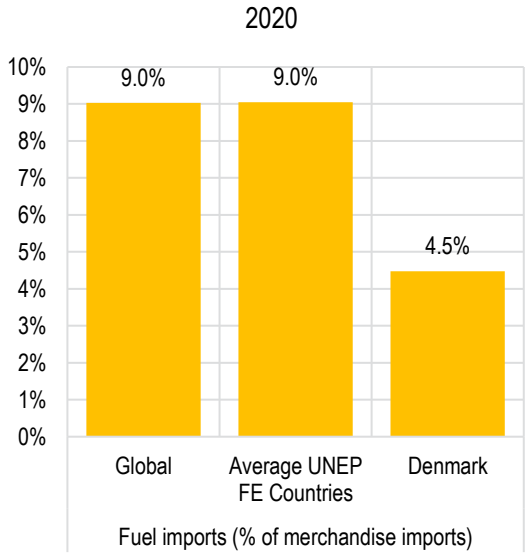
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

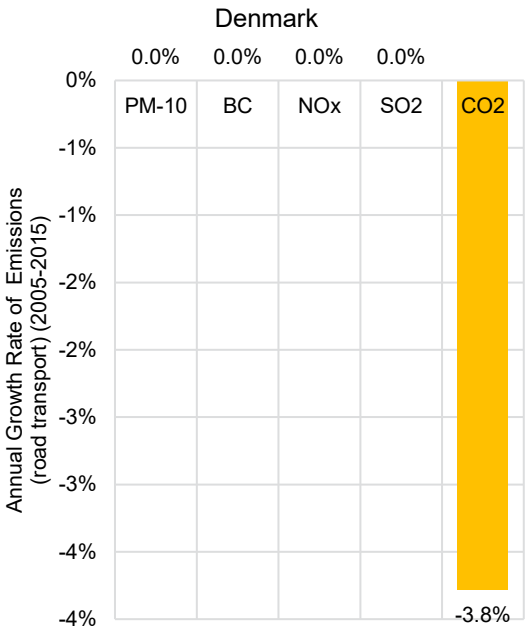
#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR DENMARK

		Year	Source
Population (million)	6	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	60552	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	198	2020	6
Gasoline Price $/l	2.1	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	24.9	2018	13
Employment (Transport+,000)	245	2019	11
Fuel Economy (Lge/100 km, WLTP) -	5	2016	1
Average CO2 emissions/kilometre (g/km, WLTP) -	124	2015	1
Average displacement (cm3) -	1474	2017	1
Average kerb weight (kg) -	1307	2017	1
Average power (kw) -	86	2017	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.228	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.473	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	79.9	2019	8
Transport CO2 Emissions per Capita (tonnes) -	5.4	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	-1.7%	2000-18	16
Annual rate of transport energy consumption growth	0.4%	2000-18	16
LDV Import value (Million USD)	4731	2020	3



Source : World Bank



Source : IIASA

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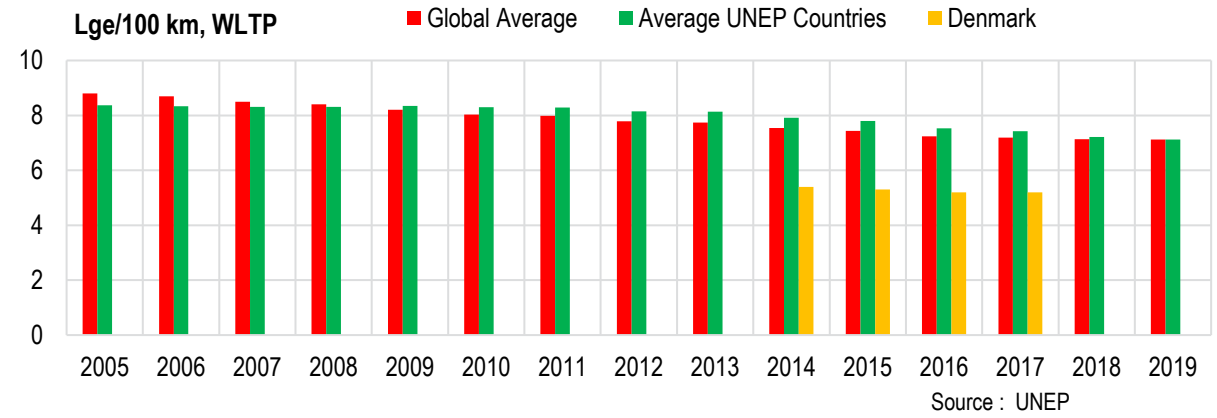
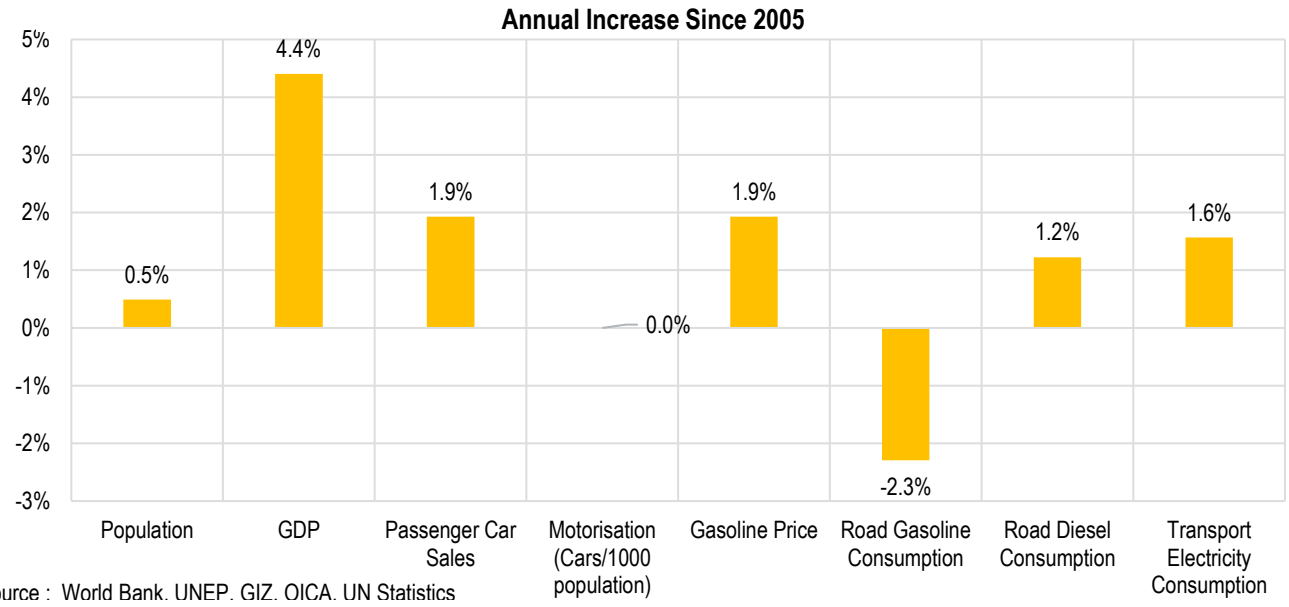
FUEL ECONOMY TRENDS





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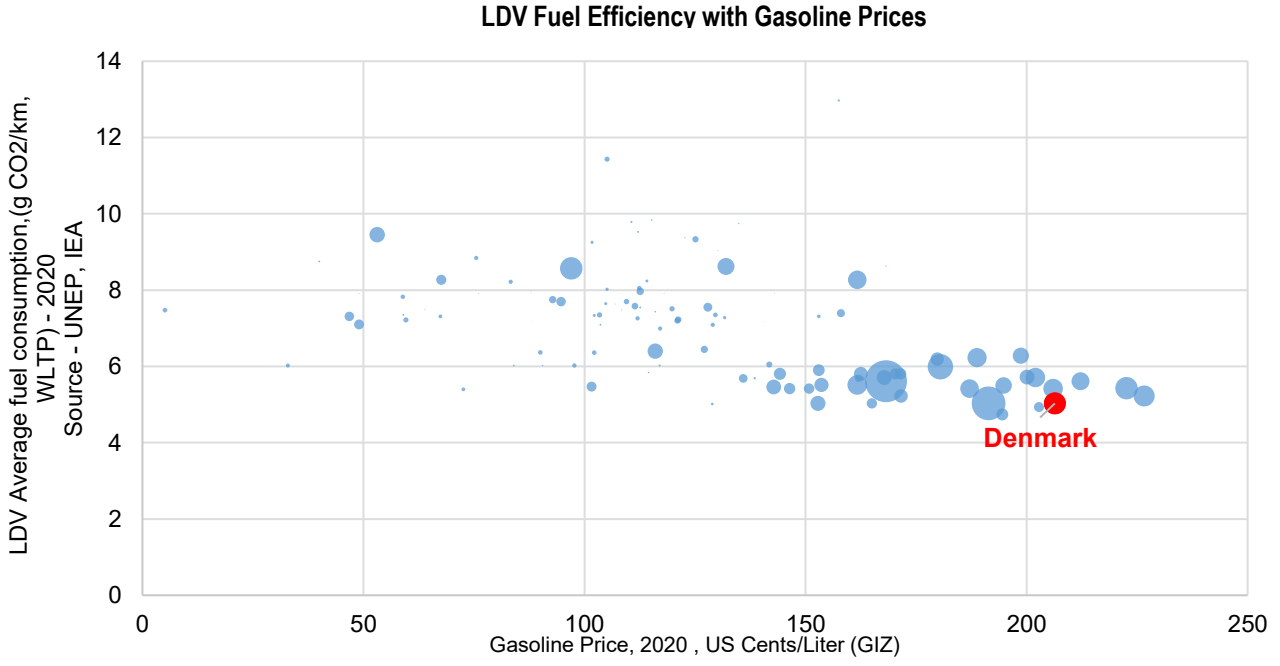

Source : GIZ, UNEP, IEA

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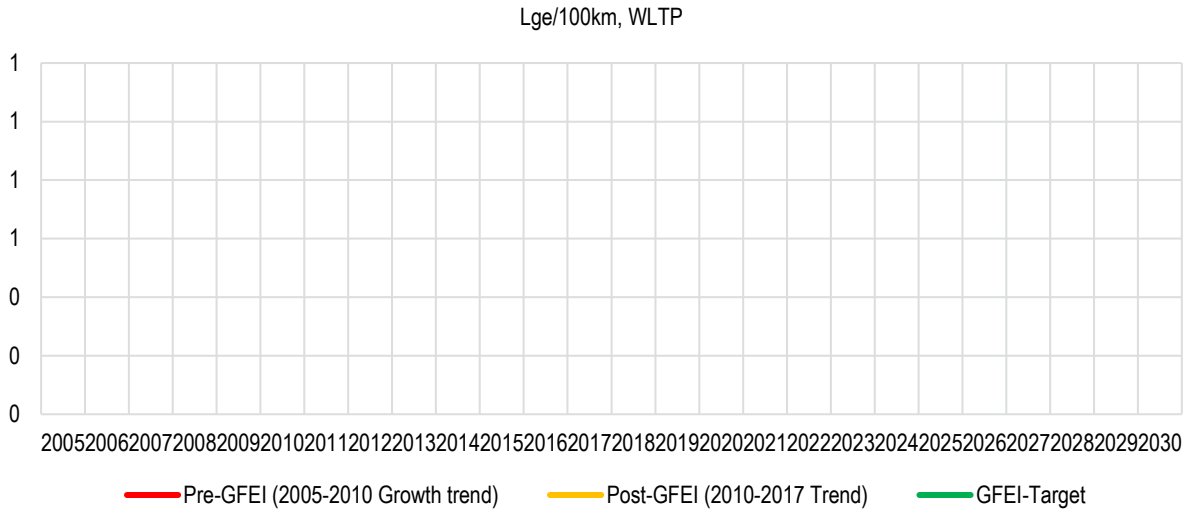
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

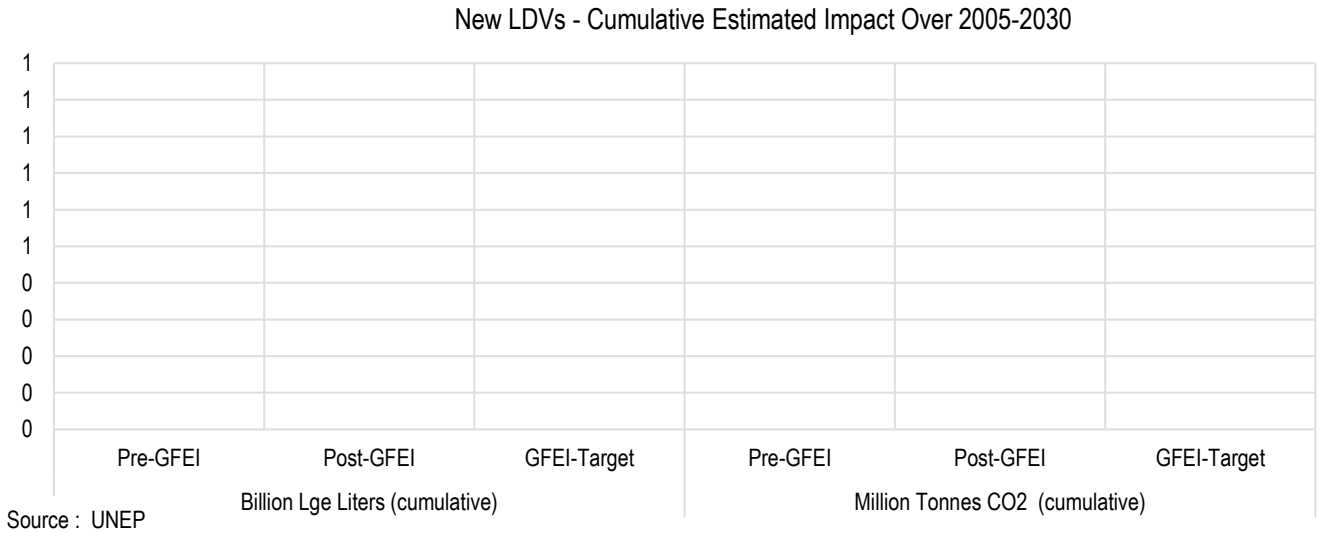
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

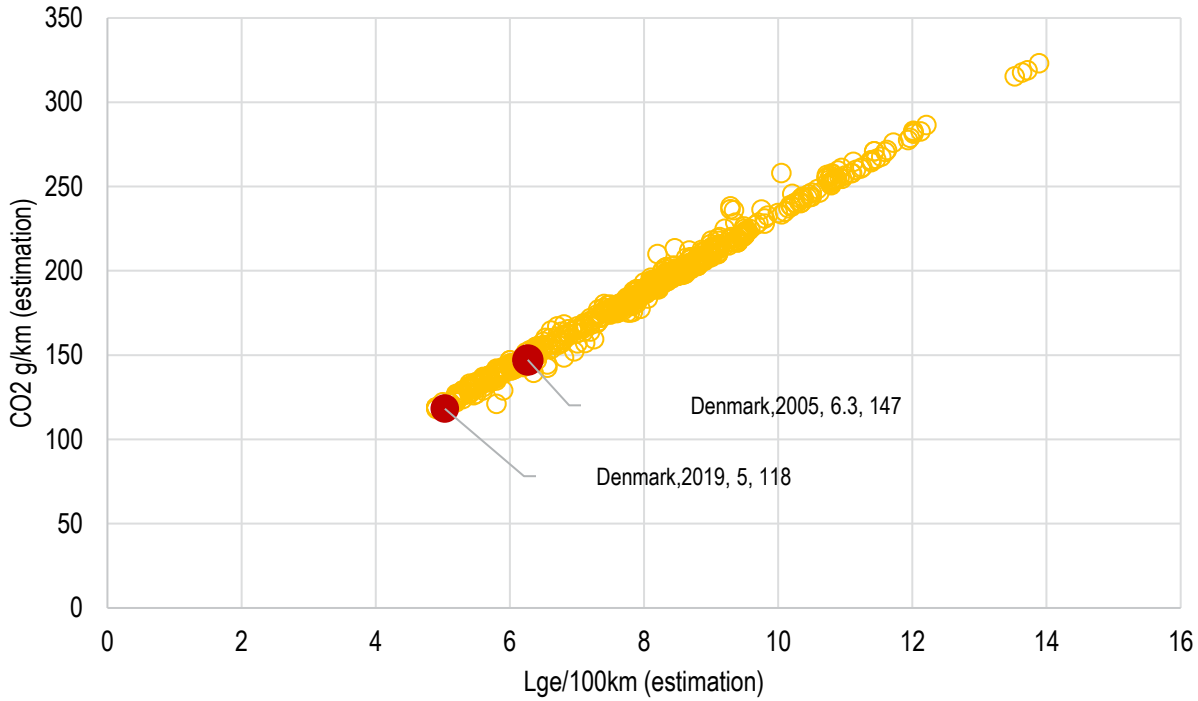
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



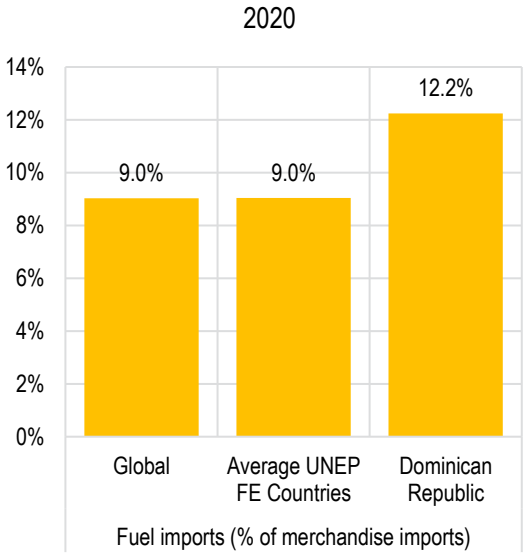
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

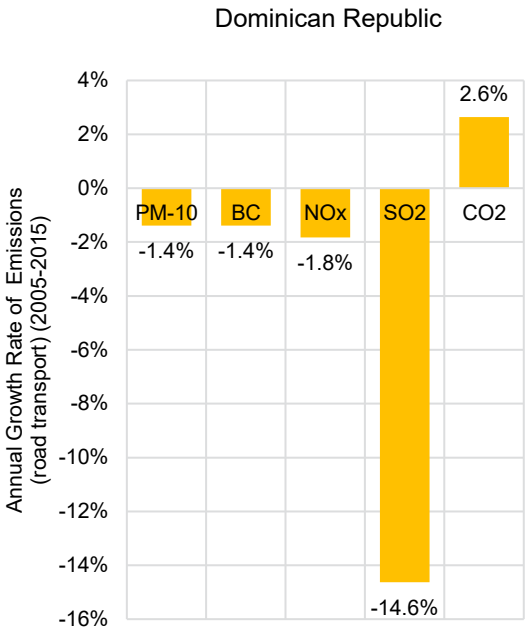
#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR DOMINICAN REPUBLIC

		Year	Source
Population (million)	11	2020	7
Income Level Category	Upper middle income		7
GDP per Capita (PPP, Curent USD)	17929	2020	7
Motorisation (Cars/1000 population)	75	2020	10
Car Sales (000)	18	2020	6
Gasoline Price $/l	1.3	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	3.7	2018	13
Employment (Transport+,000)	373	2019	11
Fuel Economy (Lge/100 km, WLTP) -	10	2015	1
Average CO2 emissions/kilometre (g/km, WLTP) -	233	2015	1
Average displacement (cm3) -	2454	2015	1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -	237		1
Diesel Share in LDV (sample,%)	1%	2015	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.093	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.087	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	5.8	2019	8
Transport CO2 Emissions per Capita (tonnes) -	2.5	2019	14
Road Transport PM Emissions per Capita (grams) -	58.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	2075.8	2015	14
Road Transport BC Emissions per Capita (grams)-	28.5	2015	14
LDV Emission Standards -	no policy	2019	1
Diesel Sulphur Levels (ppm) -	7500	2019	1
Gasoline Sulphur Levels (ppm) -	1500	2019	1
Annual rate of economy-wide energy intensity growth	-3.5%	2000-18	16
Annual rate of transport energy consumption growth	0.7%	2000-18	16
LDV Import value (Million USD)	795	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
7 World Bank
8 UN Statistics Division
9 SLOCAT &GIZ
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11 Employment is for Transport; storage and communication, ILO
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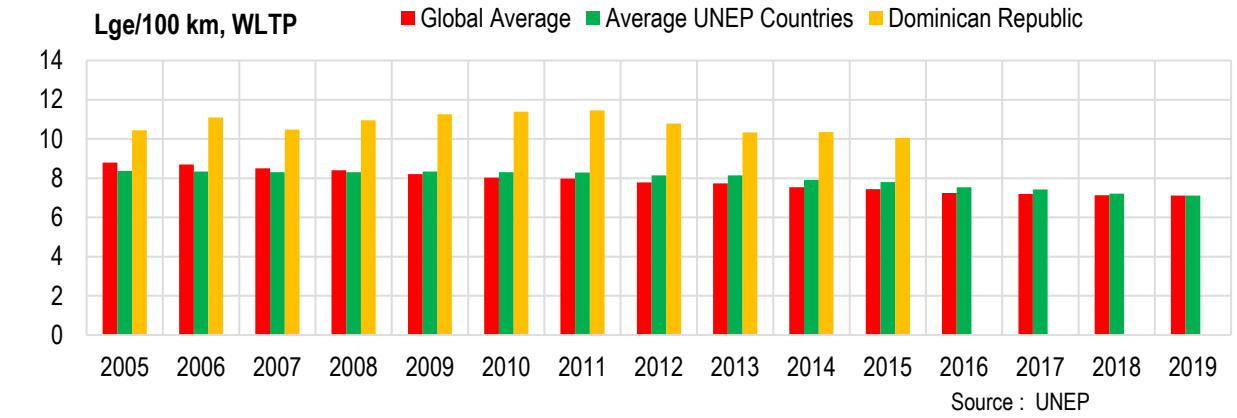
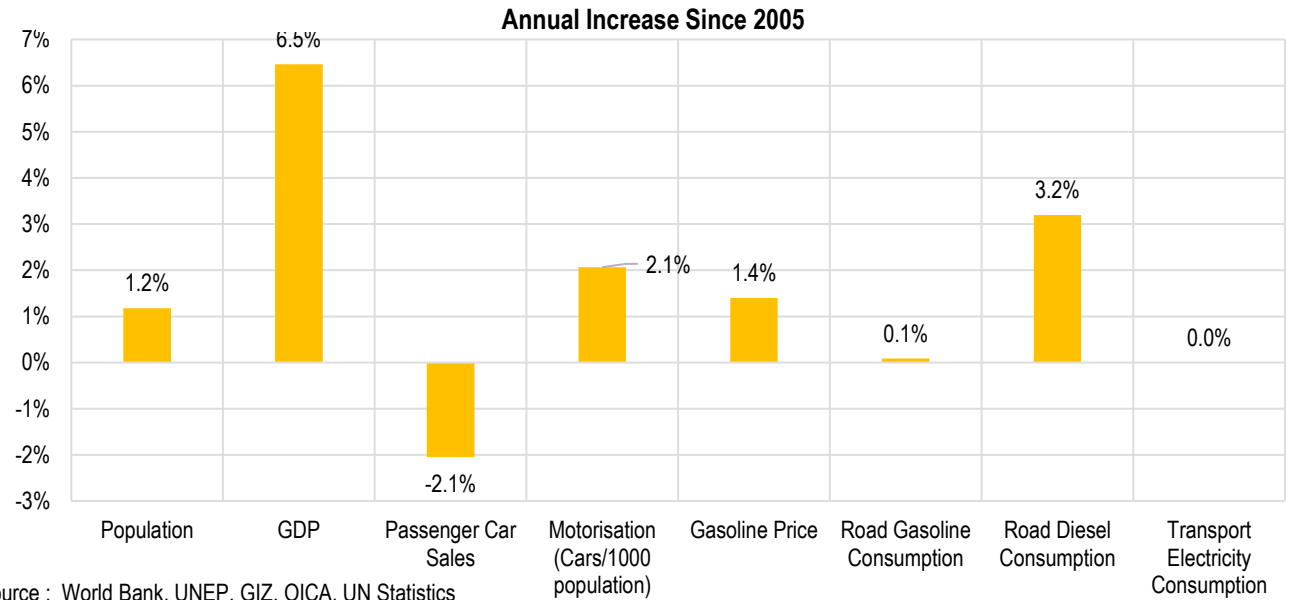
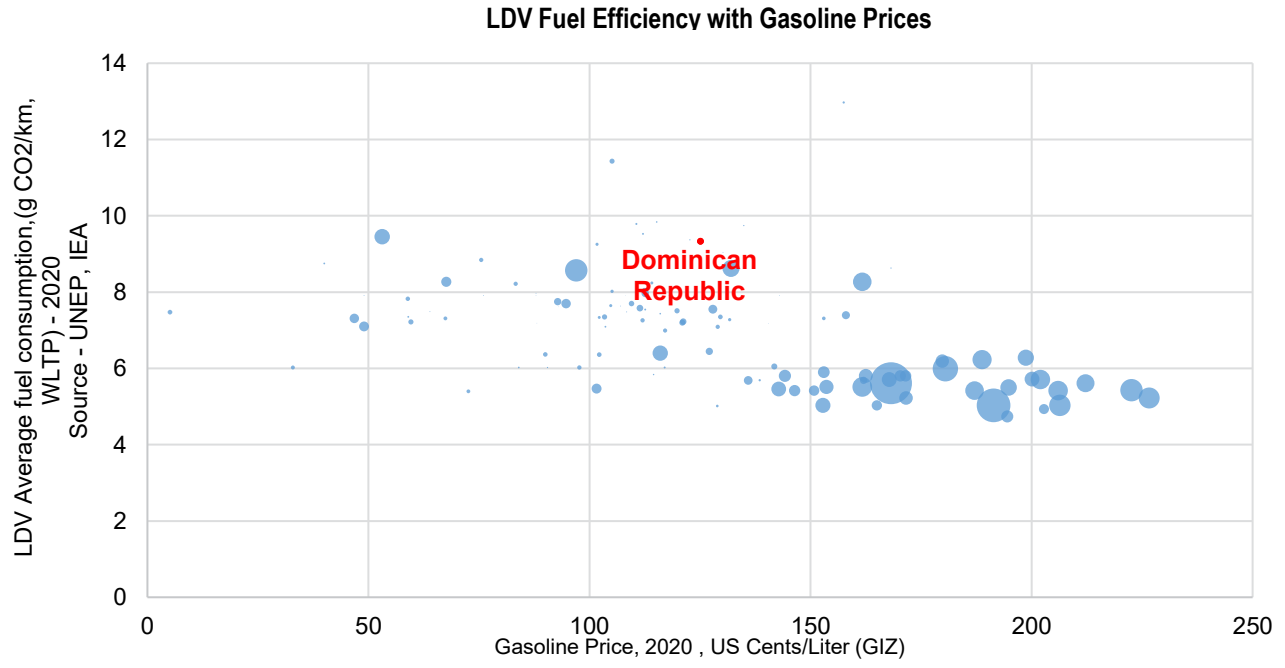
13 Koks, E.E. et al. A global multi-hazard risk analysis of road
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

FUEL ECONOMY TRENDS





Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

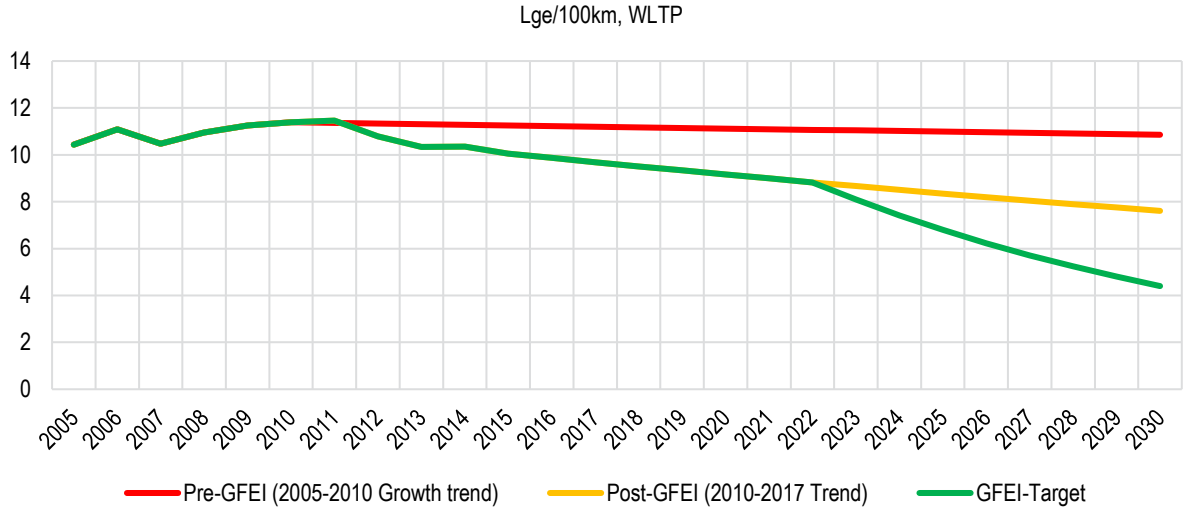
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

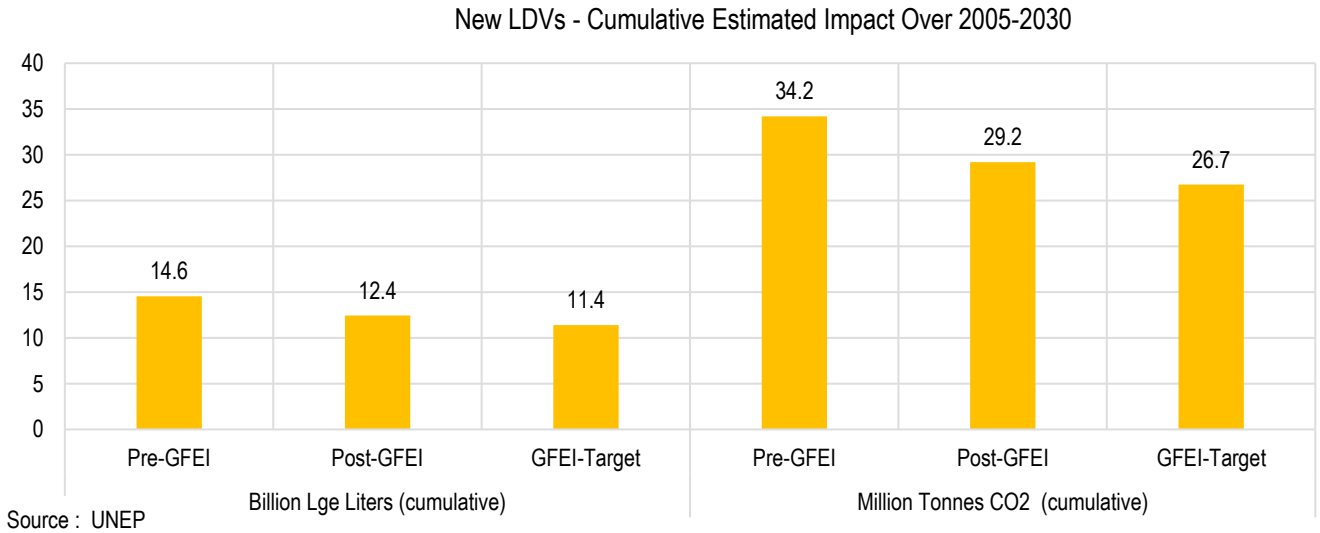
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-2.2%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-7.1%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

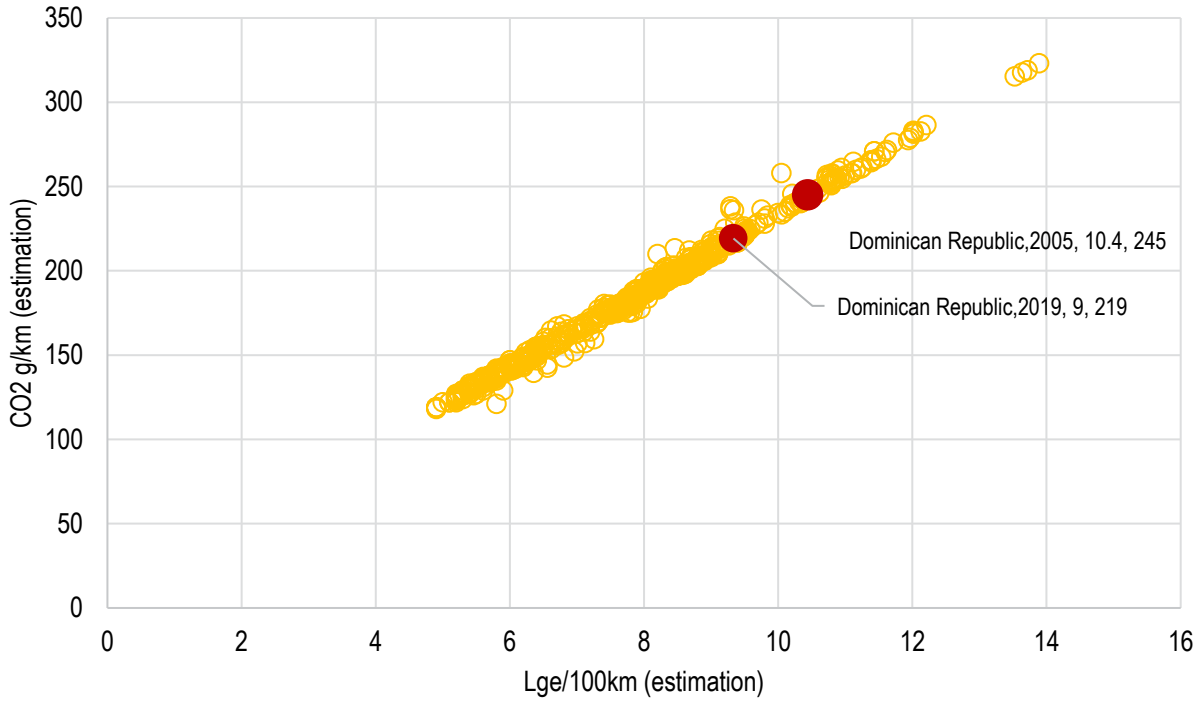
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

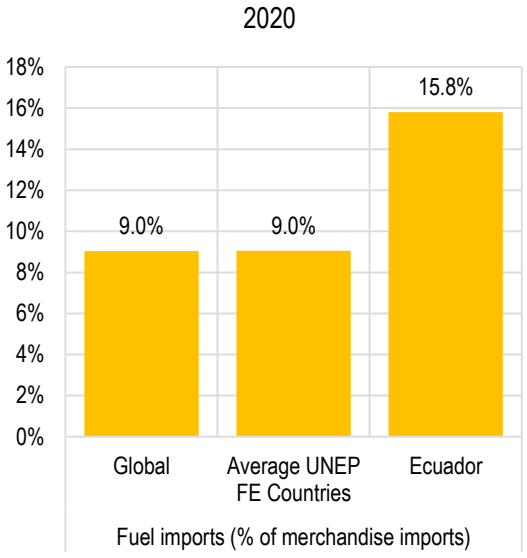
Source : UNEP

The activities to develop a fuel economy baseline (Phase I) in the Dominican Republic were part of the agreement signed on 15 August 2016 with CEGESTI. Phase II activities to develop fuel economy policies for the Dominican Republic were part of the agreement signed with CMMCh on 28 June 2017. The GFEI project was launched in the Dominican Republic in December 2016, and the national fuel economy baseline analysis started in January 2017, coordinated by the Ministry of Energy and Mines. The fuel economy baseline report was presented in December 2017. CMMCh has been implementing the project in the Dominican Republic and have discussed with local authorities the development of type approval certification/homologation for LDVs, fuel economy/emission labelling, and a CO2 tax review, and an update to the fuel economy baseline, with a report on lessons, learned specifying how the project supported the development of public policies on energy efficiency, fuel quality and emission standards, as well as recommendations for improving the impact on current and future regulations. In July 2019, a workshop on cleaner fuels and vehicles was hosted by the National Council on Climate Change and Clean Development Mechanism with the support of the Minister of Energy and Mines of the Dominican Republic. The country has established the relevance of this project which will help the country to improve the air quality, reduce the pollutant emissions and mitigate the GHG emissions from the transport sector. The Dominican Republic, through the NDC, has a commitment to reduce on 25% of GHG to 2050 in comparison to 2010.

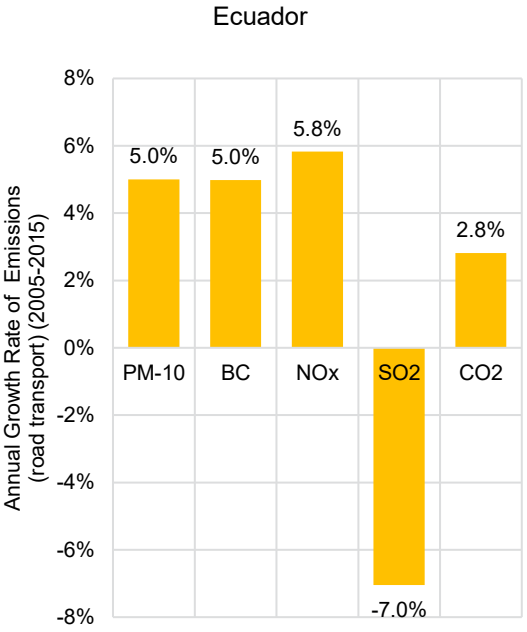
The assessment indicates that if Dominican Republic implements a fuel economy policy for first-time registered LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 3.1 billion litres of gasoline-equivalent & 7.3 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR ECUADOR

		Year	Source
Population (million)	18	2020	7
Income Level Category	Upper middle income		7
GDP per Capita (PPP, Curent USD)	10892	2020	7
Motorisation (Cars/1000 population)	60	2020	10
Car Sales (000)	62	2020	6
Gasoline Price $/l	0.7	2020	2
Fossil Fuel Subsidy (Million $) 2019	1455	2019	4
Road Infrastructure Length/Capita (meters)	6.9	2018	13
Employment (Transport+,000)	568	2019	11
Fuel Economy (Lge/100 km, WLTP) -	#N/A	#N/A	1
Average CO2 emissions/kilometre (g/km, WLTP) -	#N/A	#N/A	1
Average displacement (cm3) -			1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	No	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.111	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.157	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	0.6	2019	8
Transport CO2 Emissions per Capita (tonnes) -	2.3	2019	14
Road Transport PM Emissions per Capita (grams) -	298.8	2015	14
Road Transport NOx Emissions per Capita (grams)-	7663.4	2015	14
Road Transport BC Emissions per Capita (grams)-	147.9	2015	14
LDV Emission Standards -	Euro 1	2019	1
Diesel Sulphur Levels (ppm) -	5000	2019	1
Gasoline Sulphur Levels (ppm) -	650	2019	1
Annual rate of economy-wide energy intensity growth	-0.3%	2000-18	16
Annual rate of transport energy consumption growth	3.8%	2000-18	16
LDV Import value (Million USD)	547	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
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14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
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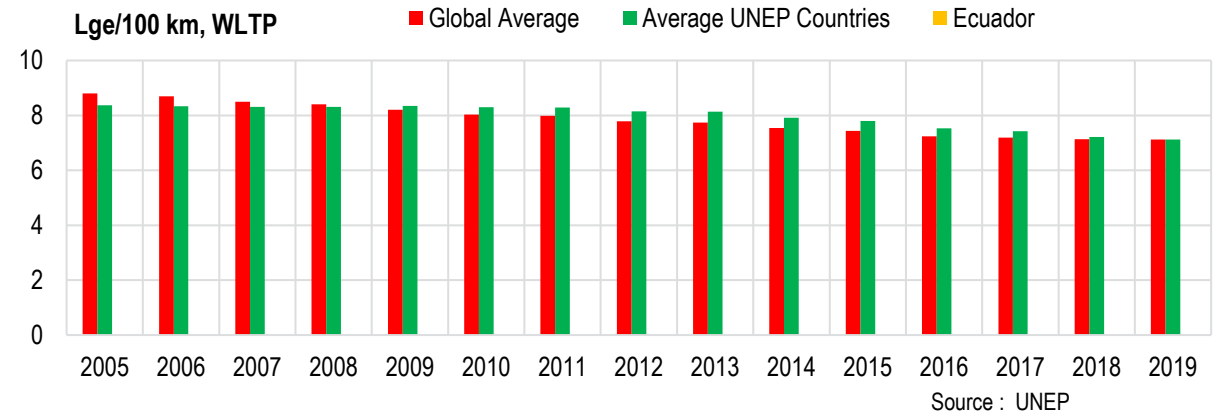
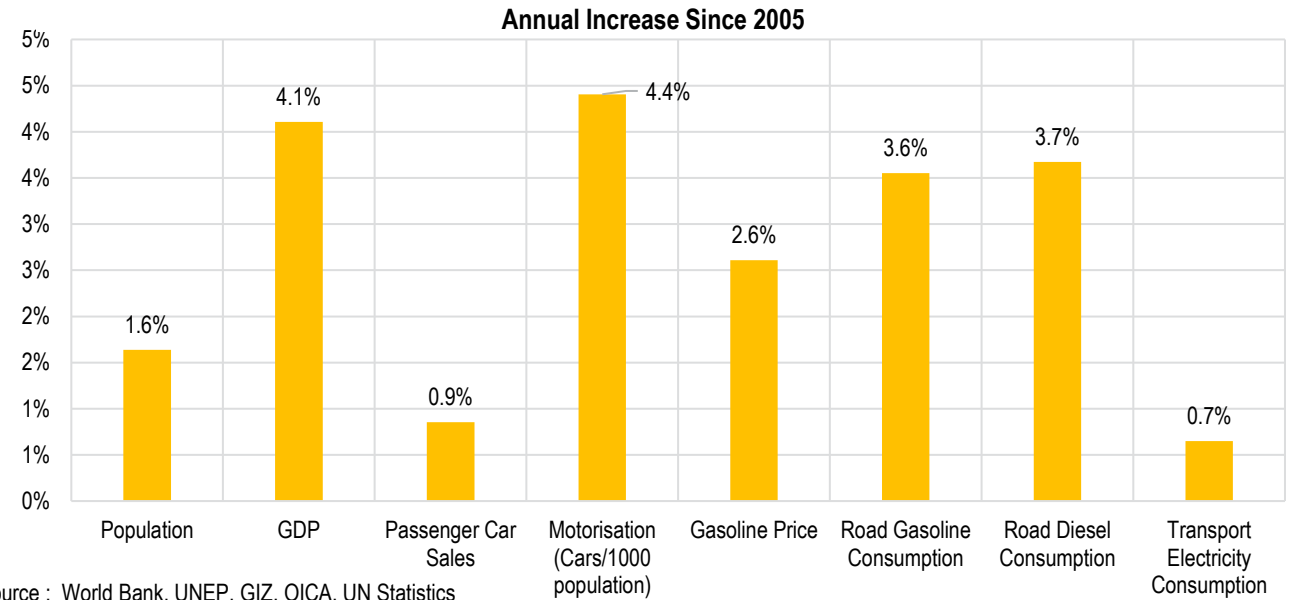
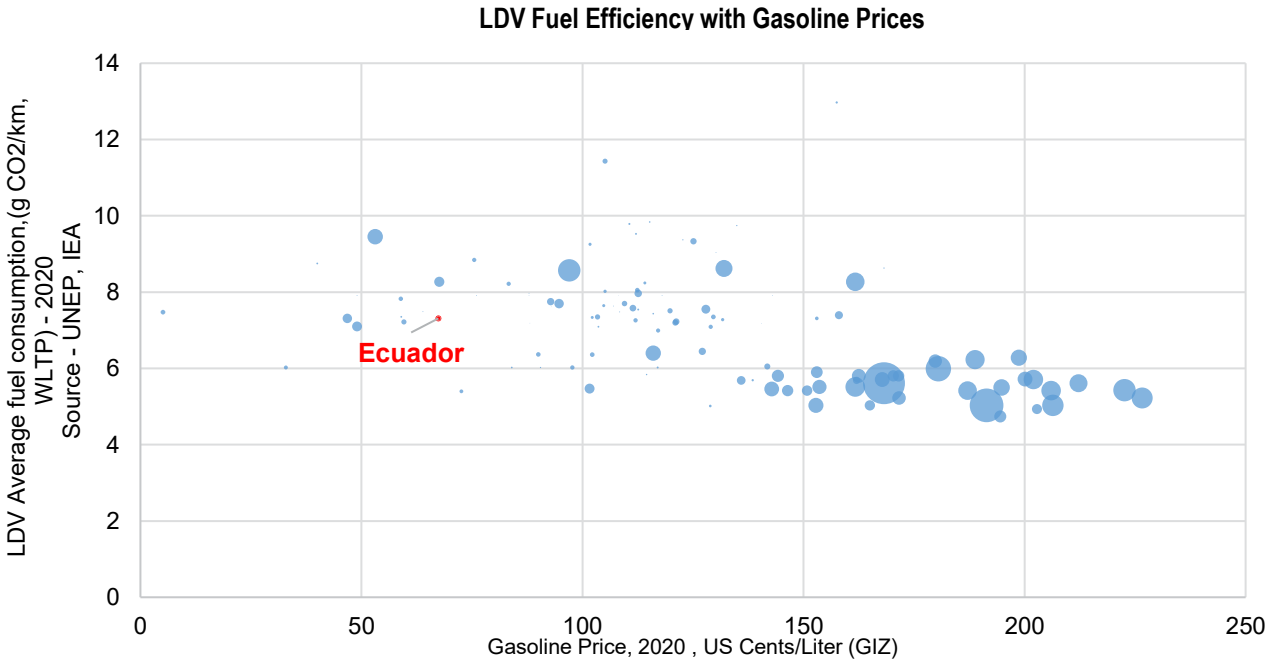
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

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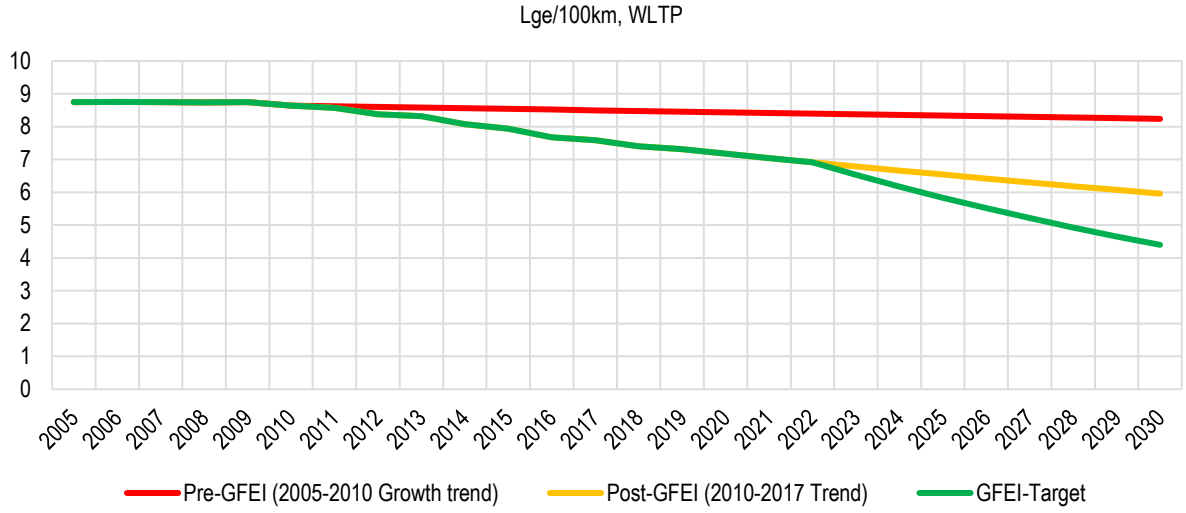
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

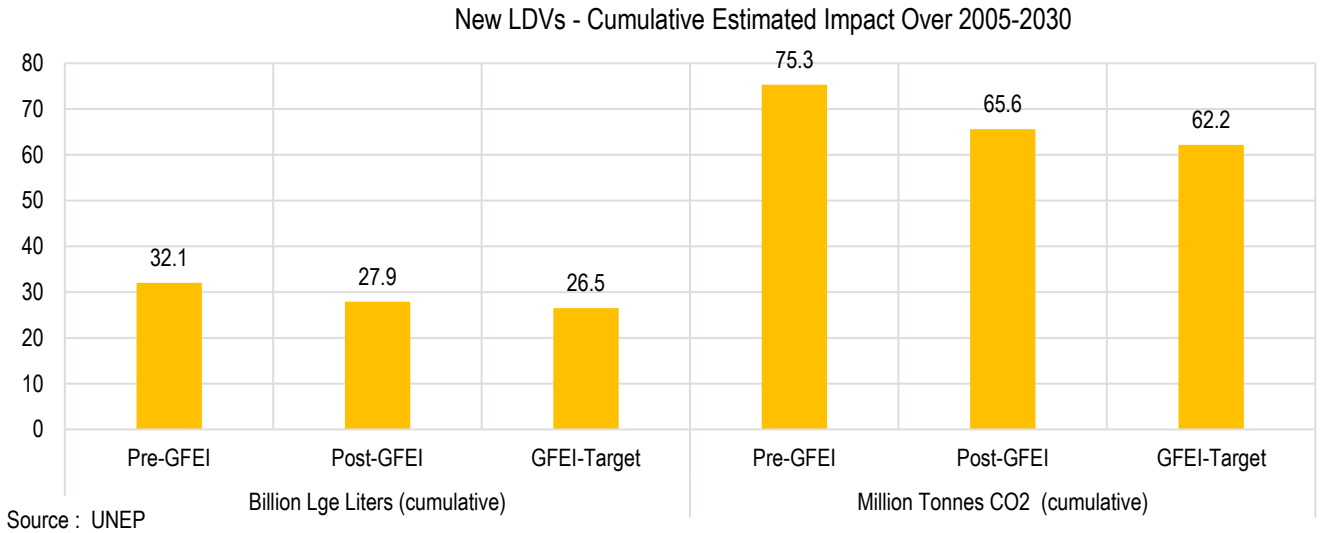
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-1.8%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-4.8%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

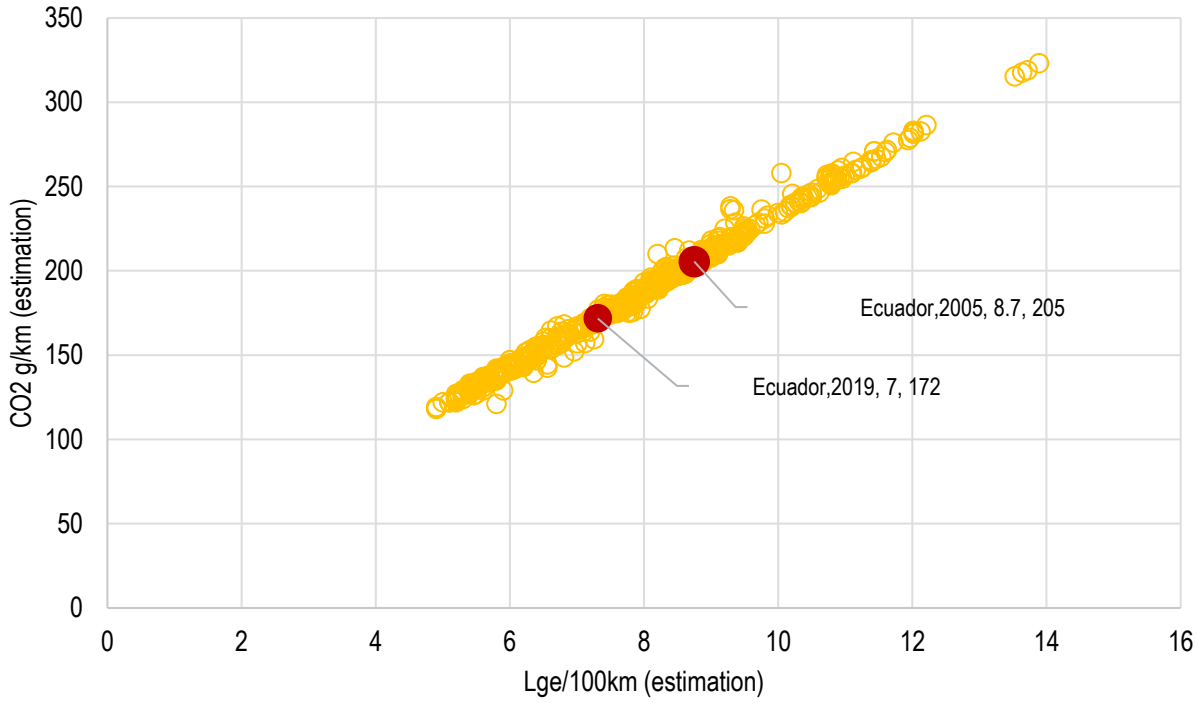
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

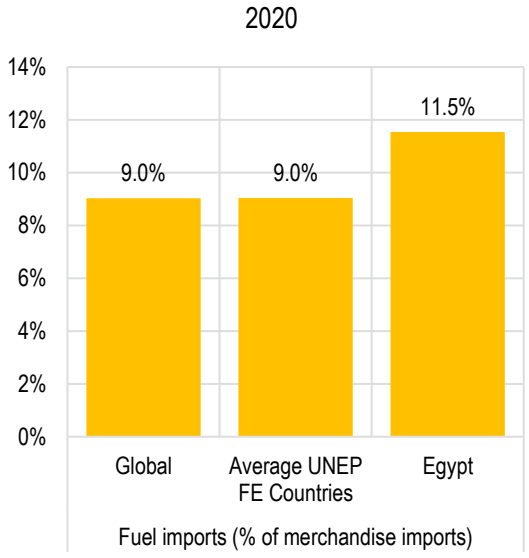
Source : UNEP

The Energy Efficiency National Plan 2016-2035 (PLANEE) presents the national vision for energy efficiency, policies in transport, industry, residence, production, generation and all energy consumption sectors. The main objective of the plan is that by 2035, the transportation sector will have generated an accumulated savings of 339.6 Mboe. Some of the measures considered include - to replace inefficient transportation technologies, implement energy labelling and hold training on efficient driving techniques, To optimise transportation infrastructure to contribute to a reduction in fuel consumption, To replace energy sources used as fuels, improve its quality and introduce new technologies etc.

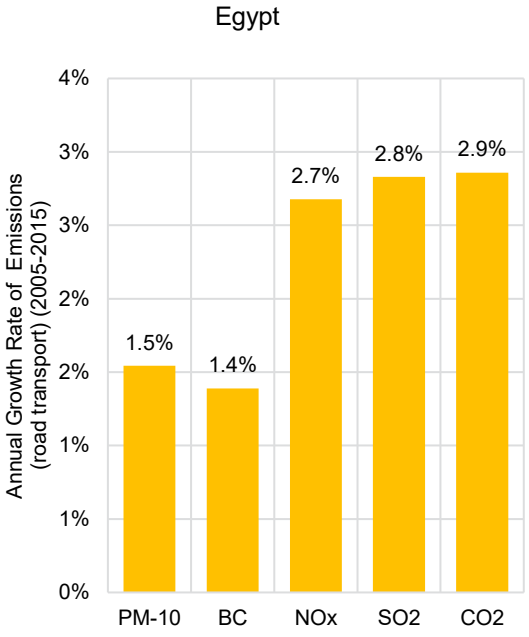
The assessment indicates that if Ecuador implements a fuel economy policy for first-time registered LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save about 7 billion litres of gasoline-equivalent & 16.8 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR EGYPT

		Year	Source
Population (million)	102	2020	7
Income Level Category	Lower middle income		7
GDP per Capita (PPP, Curent USD)	12602	2020	7
Motorisation (Cars/1000 population)	47	2020	10
Car Sales (000)	168	2020	6
Gasoline Price $/l	0.6	2020	2
Fossil Fuel Subsidy (Million $) 2019	5010	2019	4
Road Infrastructure Length/Capita (meters)	2.8	2018	13
Employment (Transport+,000)	2560	2019	11
Fuel Economy (Lge/100 km, WLTP) -	8	2019	1
Average CO2 emissions/kilometre (g/km, WLTP) -	184	2019	1
Average displacement (cm3) -	1760	2019	1
Average kerb weight (kg) -	1480	2019	1
Average power (kw) -	89	2019	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -	630		1
Diesel Share in LDV (sample,%)	25%	2005	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	No	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.069	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.084	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	5.2	2019	8
Transport CO2 Emissions per Capita (tonnes) -	2.5	2019	14
Road Transport PM Emissions per Capita (grams) -	138.9	2015	14
Road Transport NOx Emissions per Capita (grams)-	2940.8	2015	14
Road Transport BC Emissions per Capita (grams)-	67.1	2015	14
LDV Emission Standards -	Euro 2	2019	1
Diesel Sulphur Levels (ppm) -	0	2019	1
Gasoline Sulphur Levels (ppm) -	0	2019	1
Annual rate of economy-wide energy intensity growth	0.6%	2000-18	16
Annual rate of transport energy consumption growth	3.5%	2000-18	16
LDV Import value (Million USD)	2752	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

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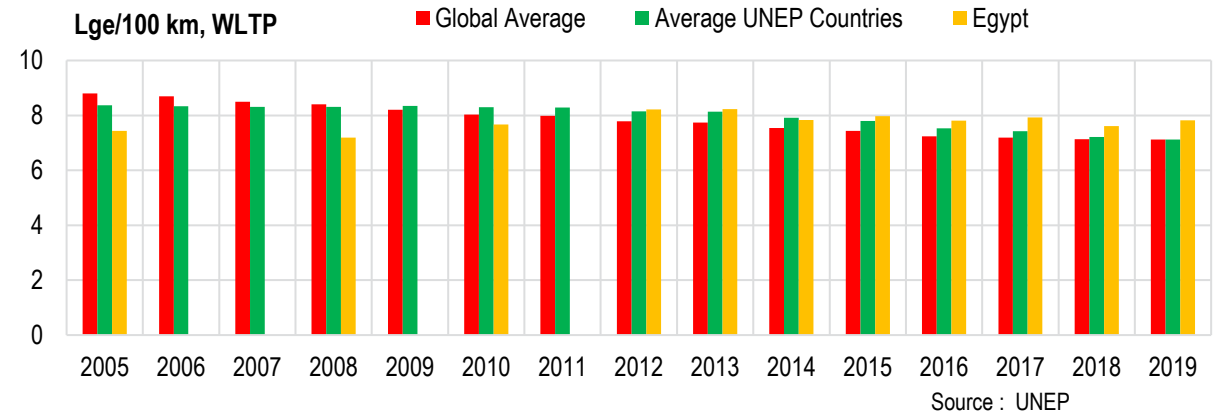
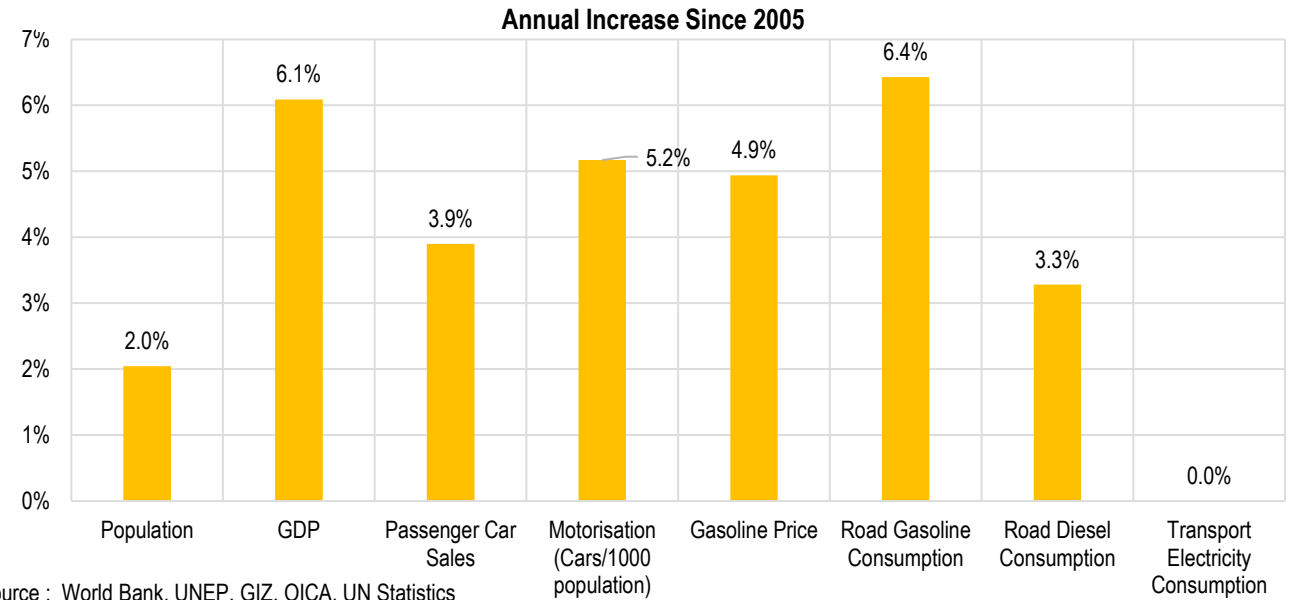
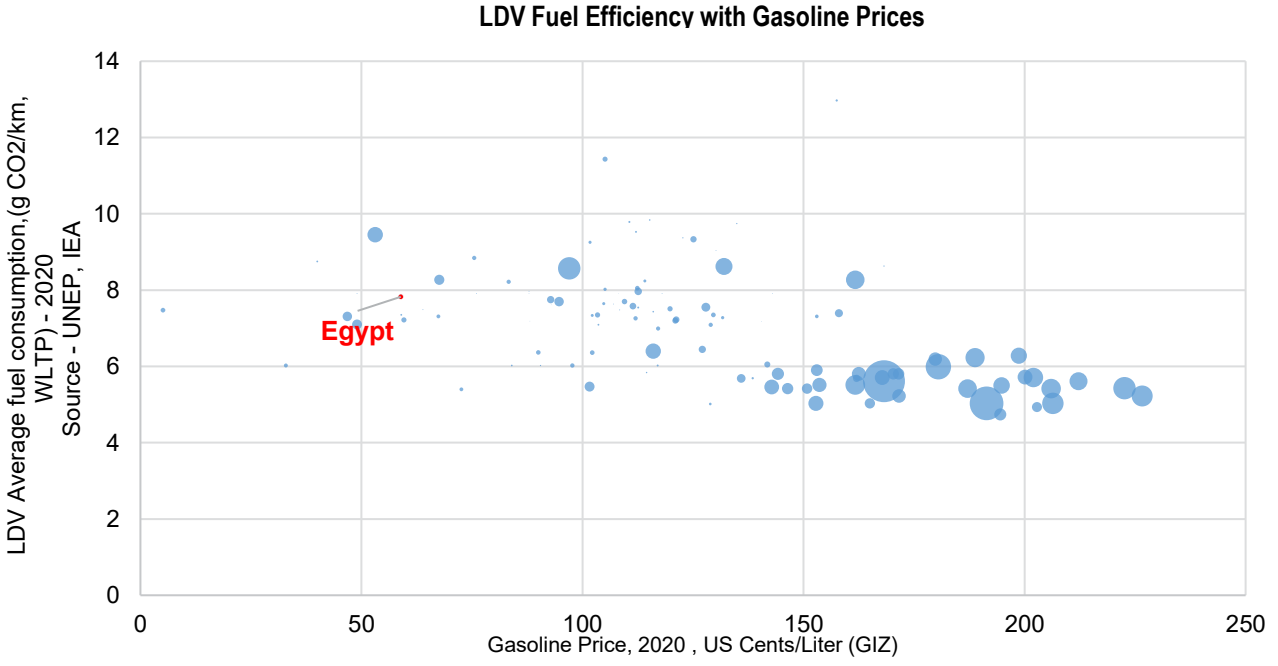
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

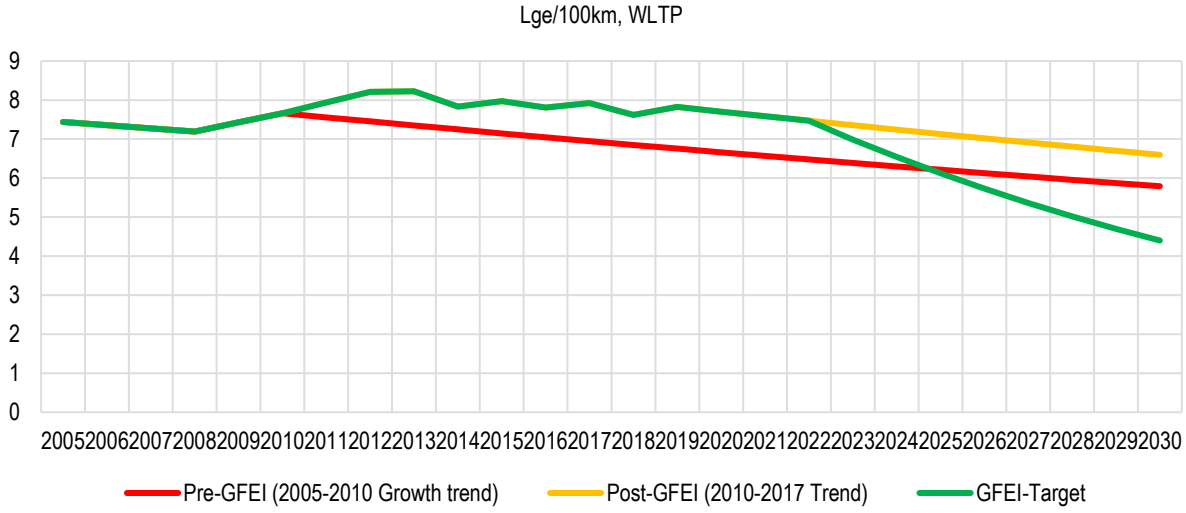
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

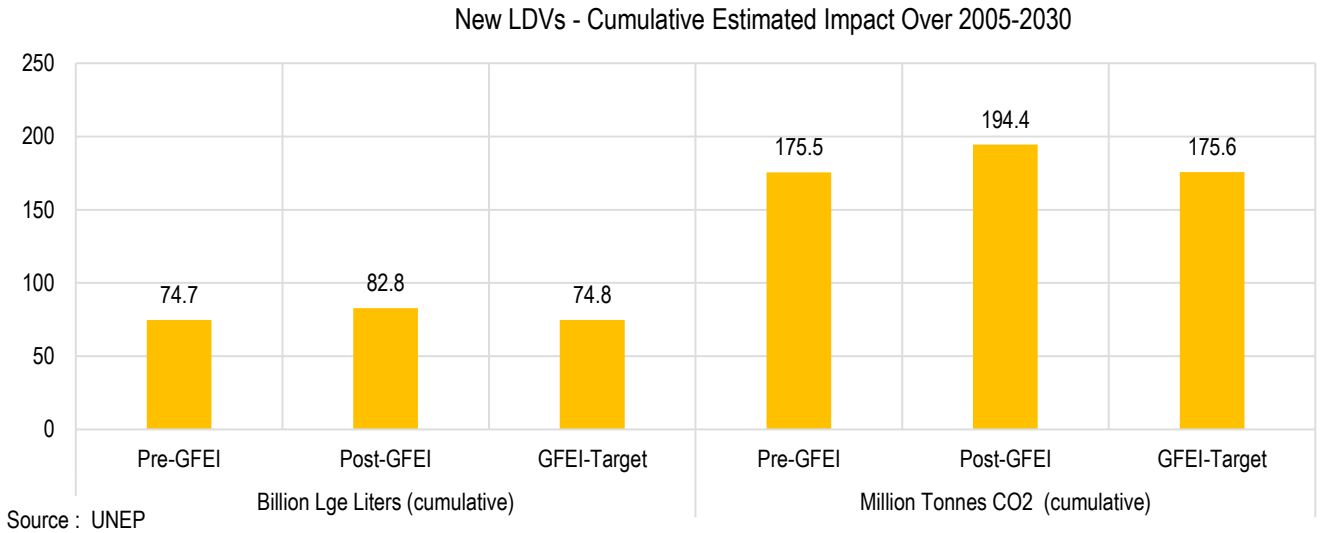
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **0.1%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-5.4%**



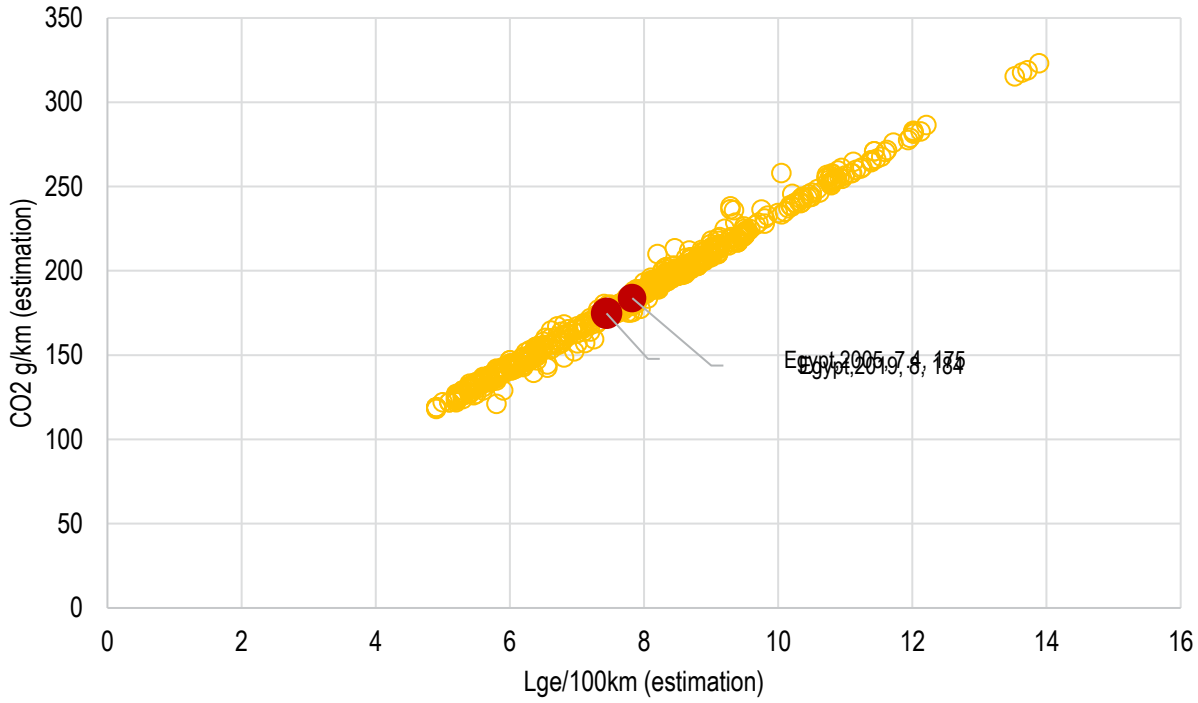
Source : UNEP



Source : UNEP

Notes:
1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions
2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth
3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend
4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030
5) The Impact assessment assumes
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km
b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/
c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge
d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

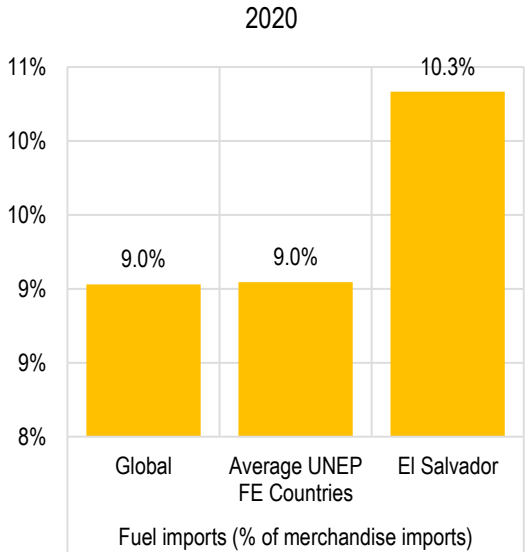
Source : UNEP

The GFEI project in Egypt started on 4 September 2013 with an agreement with the Centre for Environment and Development in the Arab Region and Europe (CEDARE). In this agreement, the fuel economy baseline analysis was carried out. A subsequent agreement was signed on 10 May 2016 to support the League of Arab States member countries in promoting cleaner and efficient fuels and vehicles in the region. CEDARE supported the development of fuel economy baselines for Egypt and three other countries in the region, and as well as fuel economy policy proposals for Egypt. As a build-up to previous fuel economy initiatives, Egypt continued to work on the electric mobility plan focusing on the impact of the introduced exemption allowing import of used vehicles. Through an electric mobility conference in 2019, stakeholders proposed, among other things, the introduction of fuel economy labelling schemes. The meeting was supported and organised by the Ministry of Environment of Egypt, CEDARE and Friedrich Ebert Stiftung Egypt (FES).

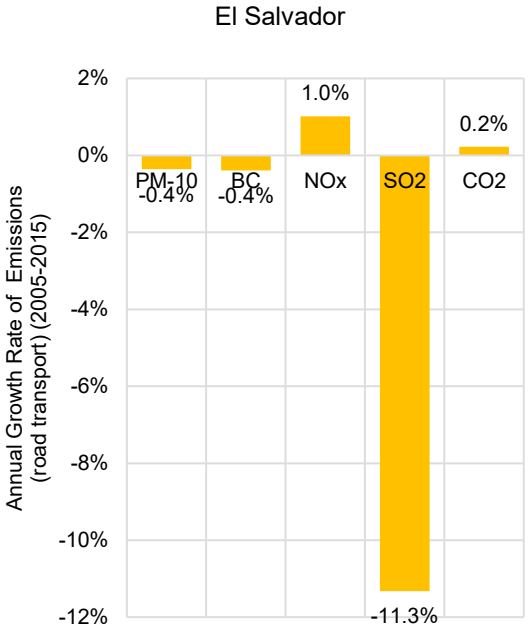
The assessment indicates that if Egypt implements a fuel economy policy for LDVs with a 2030 GFEI target, it could save 2.8 billion litres of gasoline-equivalent & 6.7 million tonnes of CO2 cumulative from newly registered LDVs. In the past, CEDARE had estimated saving of about
1 billion litres/yr of gasoline and 2.4 million tons of CO2 emissions/yr by 2030.

LDV FUEL ECONOMY COUNTRY REPORT FOR EL SALVADOR

		Year	Source
Population (million)	6	2020	7
Income Level Category	Lower middle income		7
GDP per Capita (PPP, Curent USD)	8417	2020	7
Motorisation (Cars/1000 population)	17	2020	10
Car Sales (000)	18	2020	6
Gasoline Price $/l	1.0	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	4.3	2018	13
Employment (Transport+,000)	136	2019	11
Fuel Economy (Lge/100 km, WLTP) -	8	2016	1
Average CO2 emissions/kilometre (g/km, WLTP) -	179	2016	1
Average displacement (cm3) -	2033	2016	1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -	128		1
Diesel Share in LDV (sample,%)	7%	2016	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.113	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.072	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	81.8	2019	8
Transport CO2 Emissions per Capita (tonnes) -	1.1	2019	14
Road Transport PM Emissions per Capita (grams) -	85.2	2015	14
Road Transport NOx Emissions per Capita (grams)-	2850.9	2015	14
Road Transport BC Emissions per Capita (grams)-	42.0	2015	14
LDV Emission Standards -	Euro 1	2019	1
Diesel Sulphur Levels (ppm) -	500	2019	1
Gasoline Sulphur Levels (ppm) -	1000	2019	1
Annual rate of economy-wide energy intensity growth	-0.3%	2000-18	16
Annual rate of transport energy consumption growth	2.2%	2000-18	16
LDV Import value (Million USD)	167	2020	3



Source : World Bank

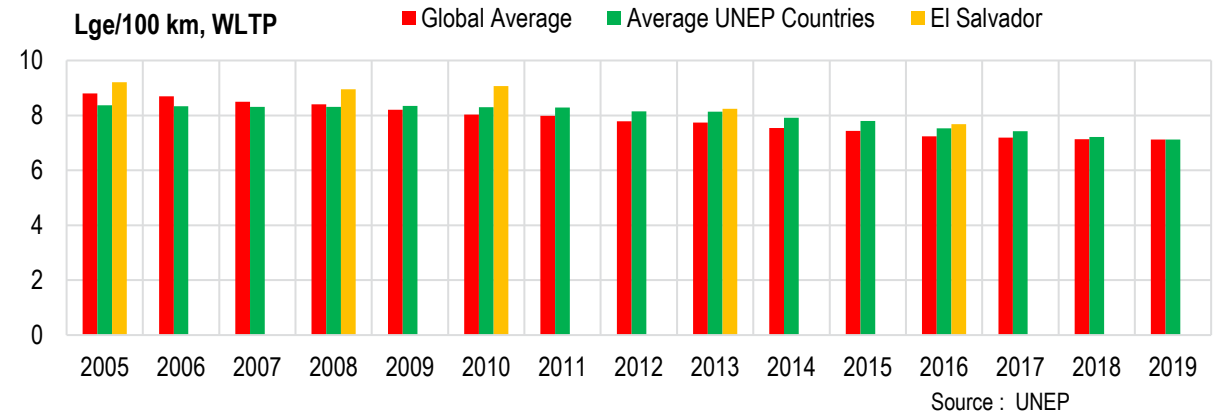


Source : IIASA

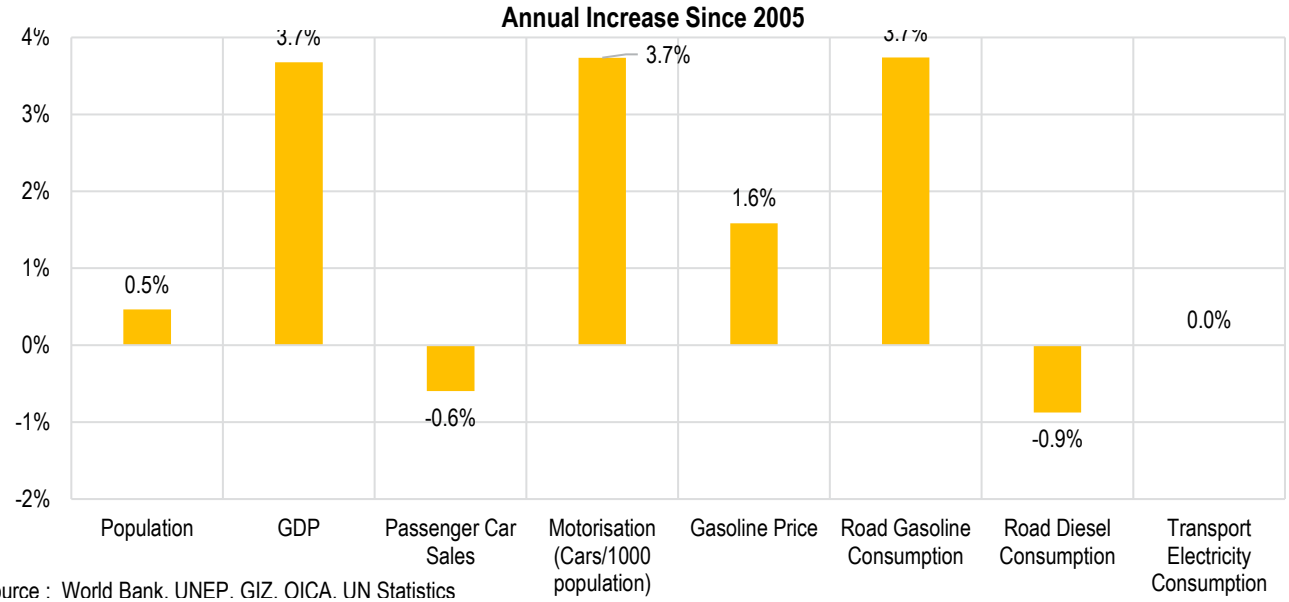
Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
7 World Bank
8 UN Statistics Division
9 SLOCAT &GIZ
10 Estimated using growth and sales data
11 Employment is for Transport; storage and communication, ILO
12 International Transport Forum
13 Koks, E.E. et al. A global multi-hazard risk analysis of road
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

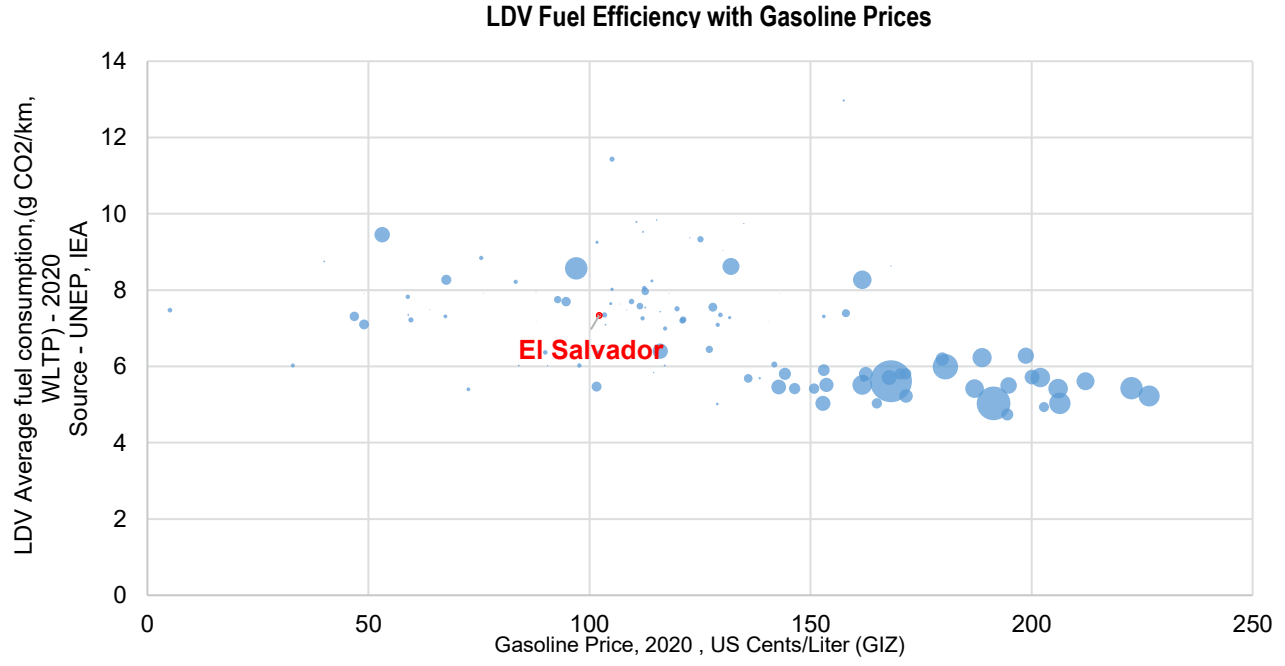
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

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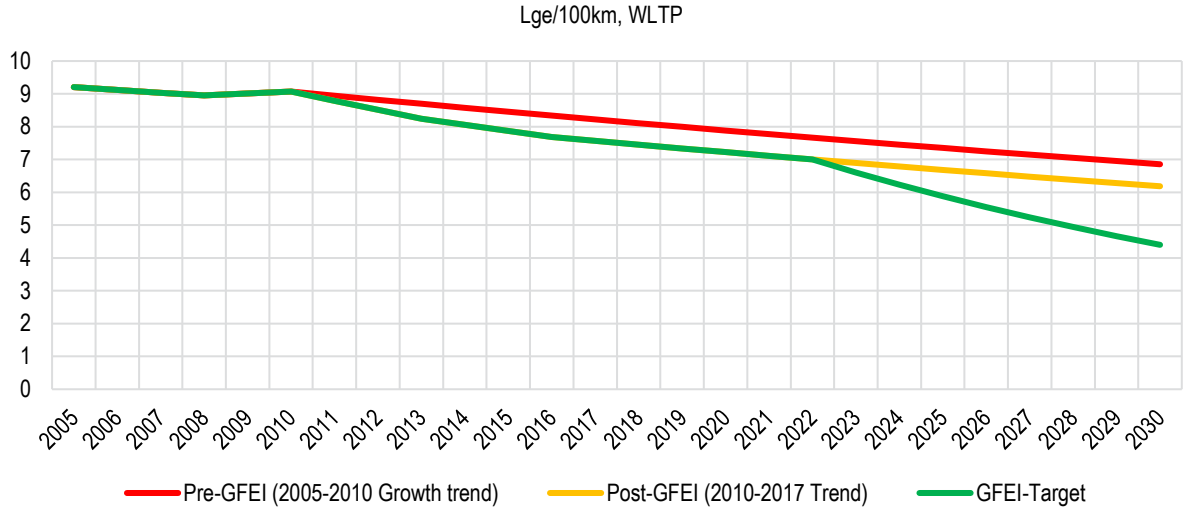
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

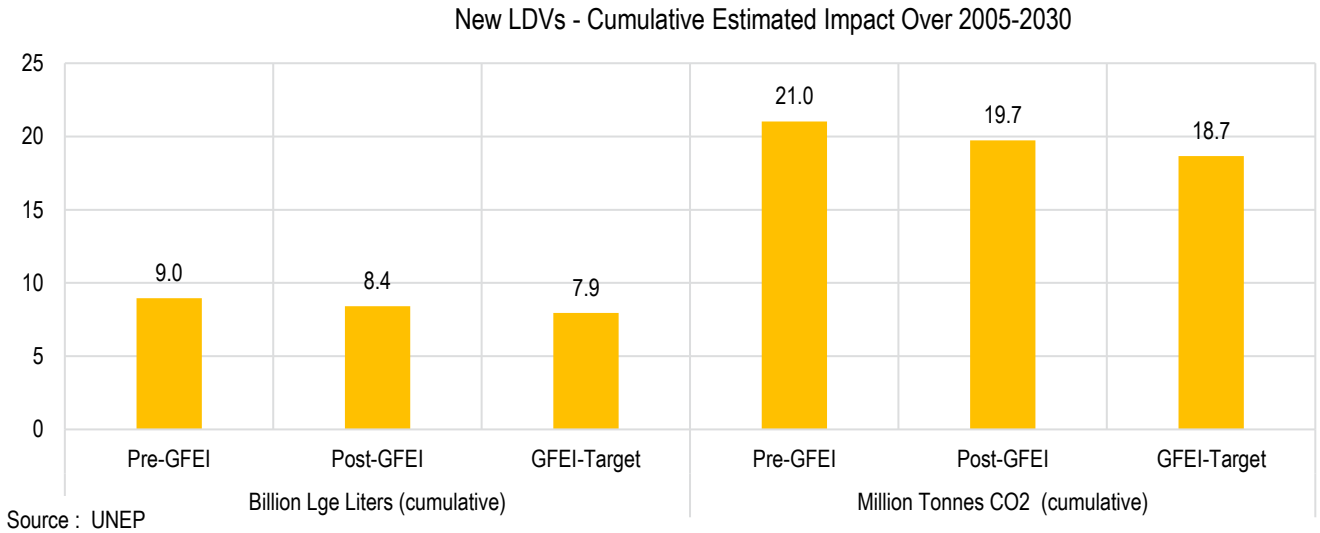
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-2.3%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-4.8%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

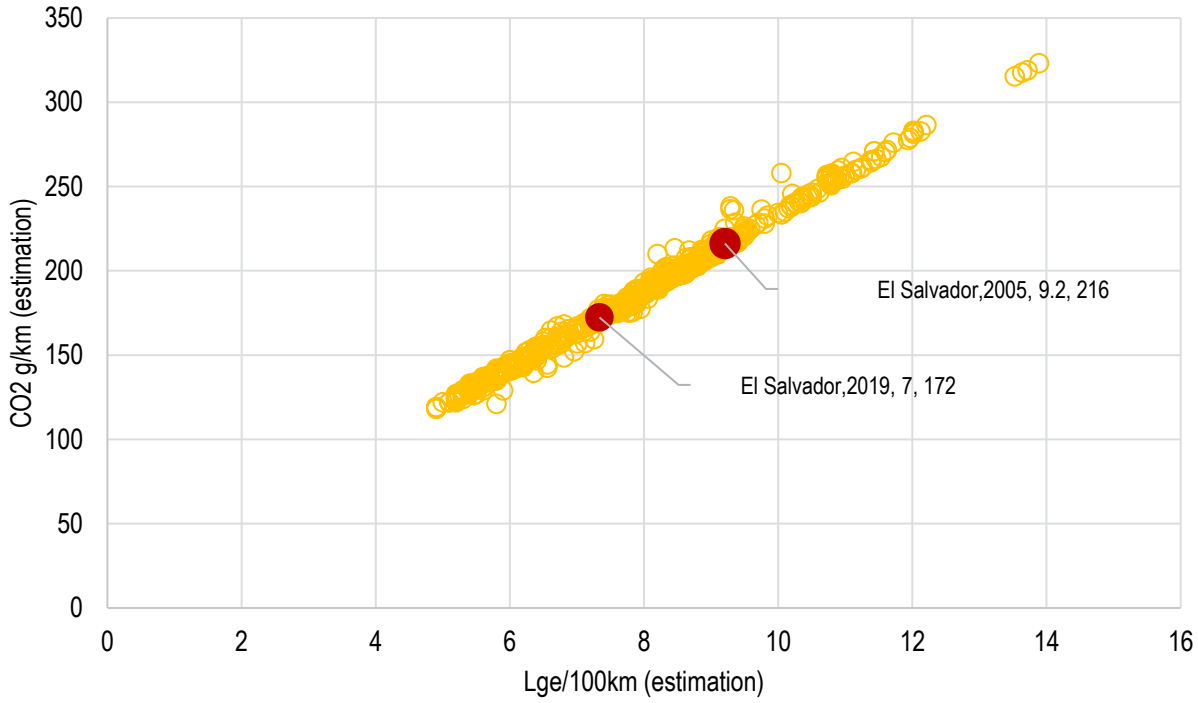
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

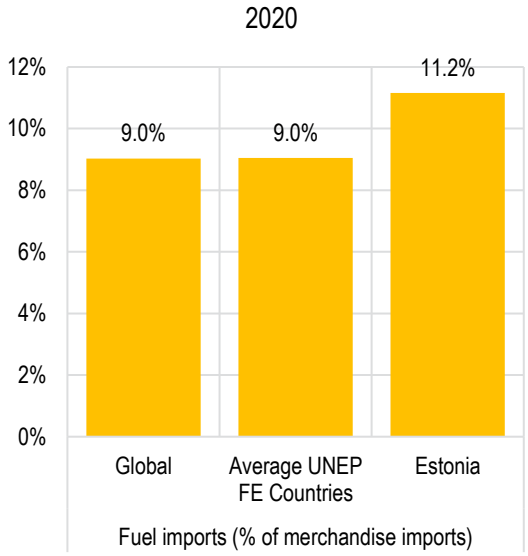
Source : UNEP

The fuel economy baseline country project for El Salvador was part of an agreement signed with Centro de Gestion Tecnologica E Informatica Industrial (CEGESTI) on 15 August 2016. The project was launched in February 2017, and the national fuel economy baseline analysis commenced, coordinated by the Ministry of Environment and Natural Resources.

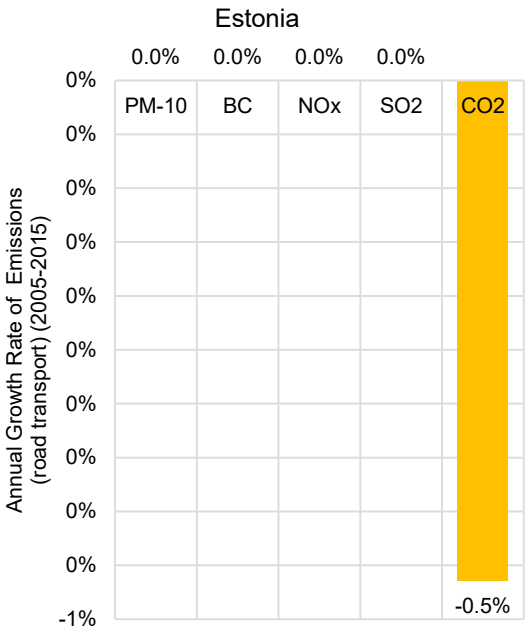
The assessment indicates that if El Salvador implements a fuel economy policy for first-time registered LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 1.2 billion litres of gasoline-equivalent & 2.8 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR ESTONIA

		Year	Source
Population (million)	1	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	37925	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	27	2020	6
Gasoline Price $/l	1.8	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	38.7	2018	13
Employment (Transport+,000)	82	2019	11
Fuel Economy (Lge/100 km, WLTP) -	6	2016	1
Average CO2 emissions/kilometre (g/km, WLTP) -	150	2017	1
Average displacement (cm3) -	1697	2017	1
Average kerb weight (kg) -	1447	2017	1
Average power (kw) -	102	2017	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	No	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.204	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.390	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	42.1	2019	8
Transport CO2 Emissions per Capita (tonnes) -	13.9	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	-1.9%	2000-18	16
Annual rate of transport energy consumption growth	2.2%	2000-18	16
LDV Import value (Million USD)	895	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
7 World Bank
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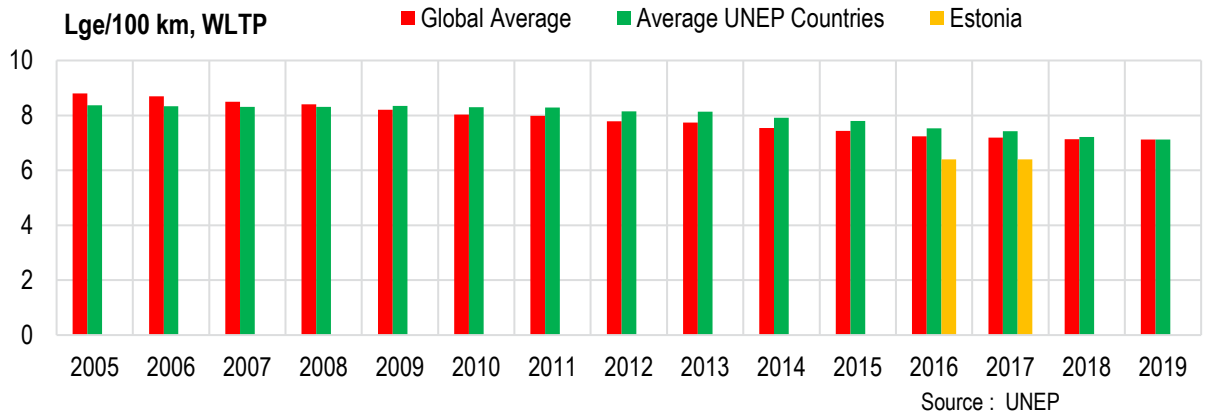
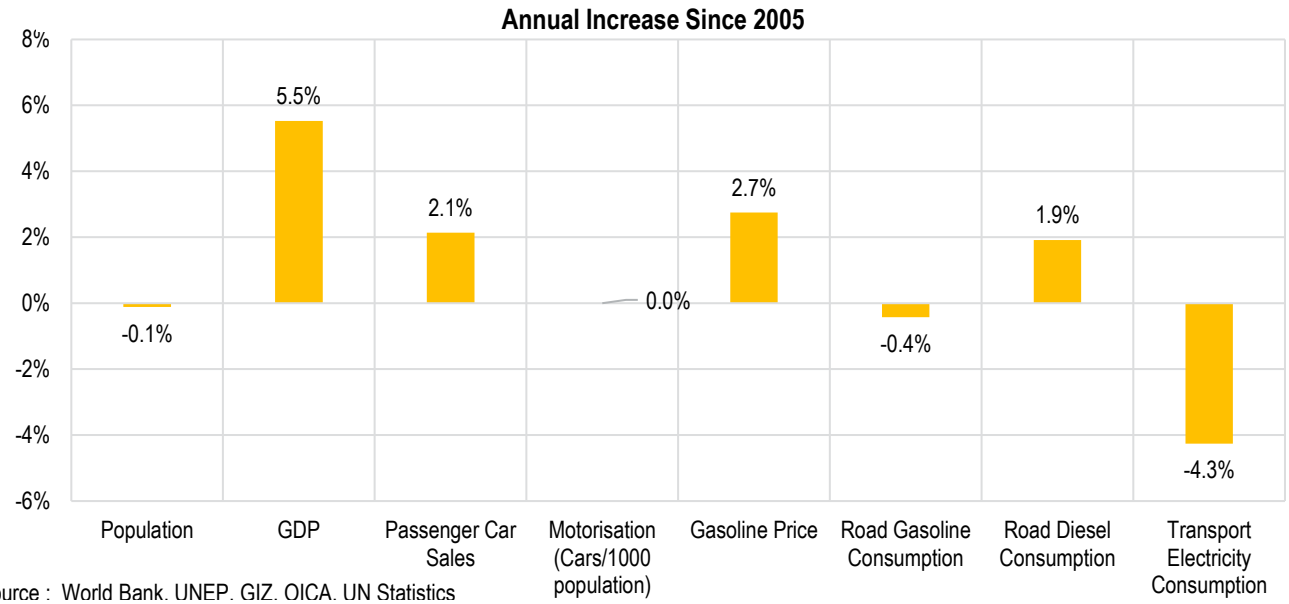
13 Koks, E.E. et al. A global multi-hazard risk analysis of road
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

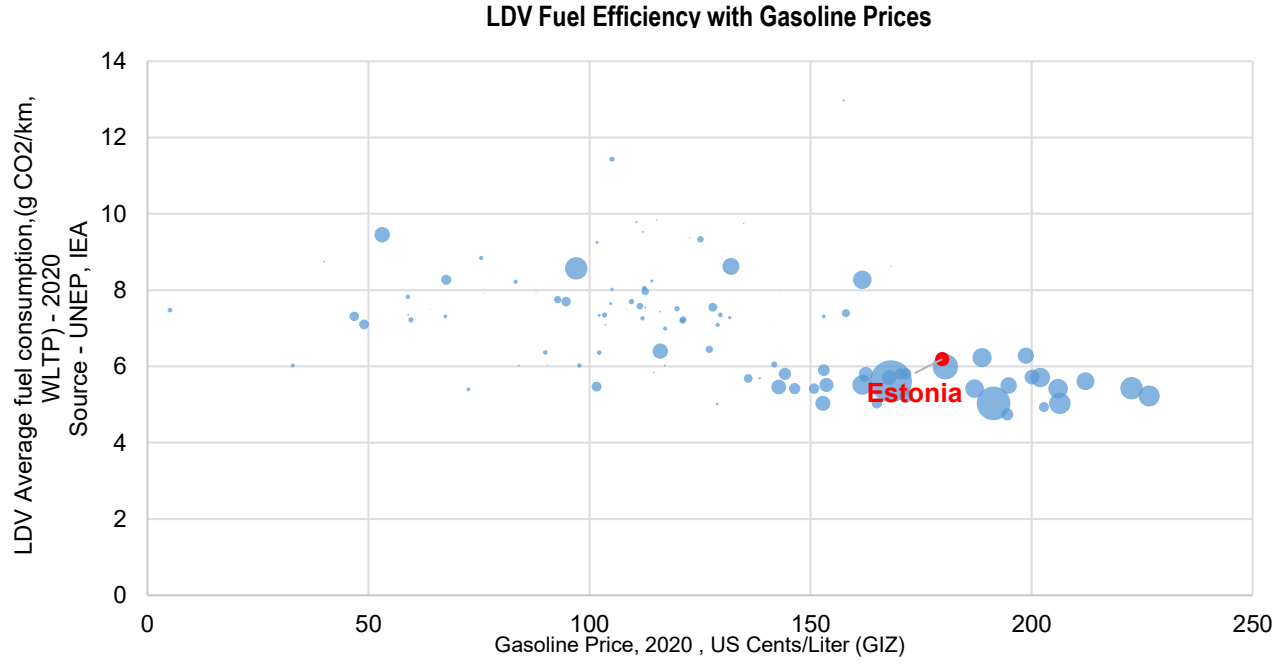
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

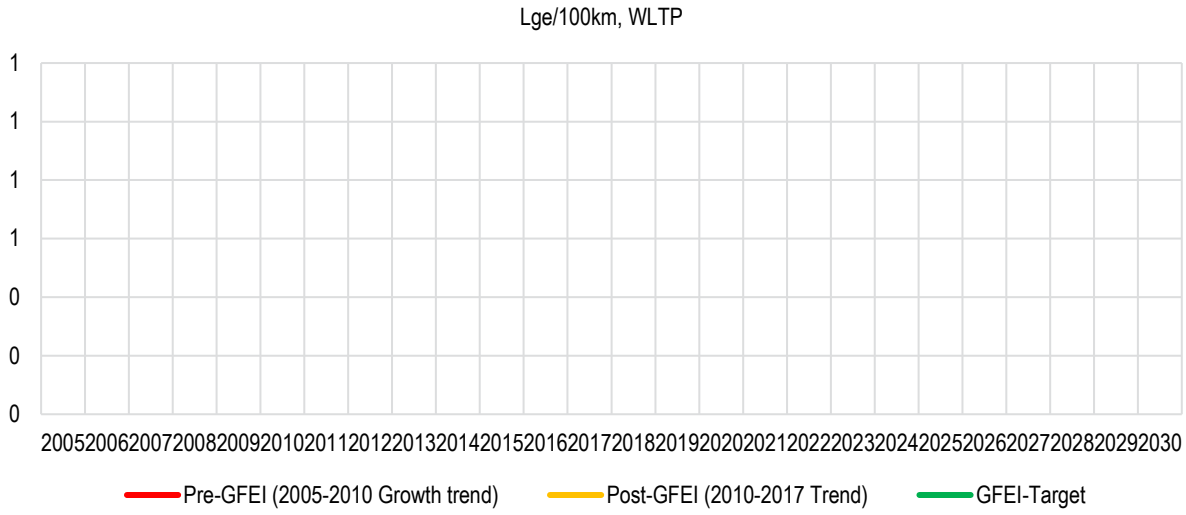
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

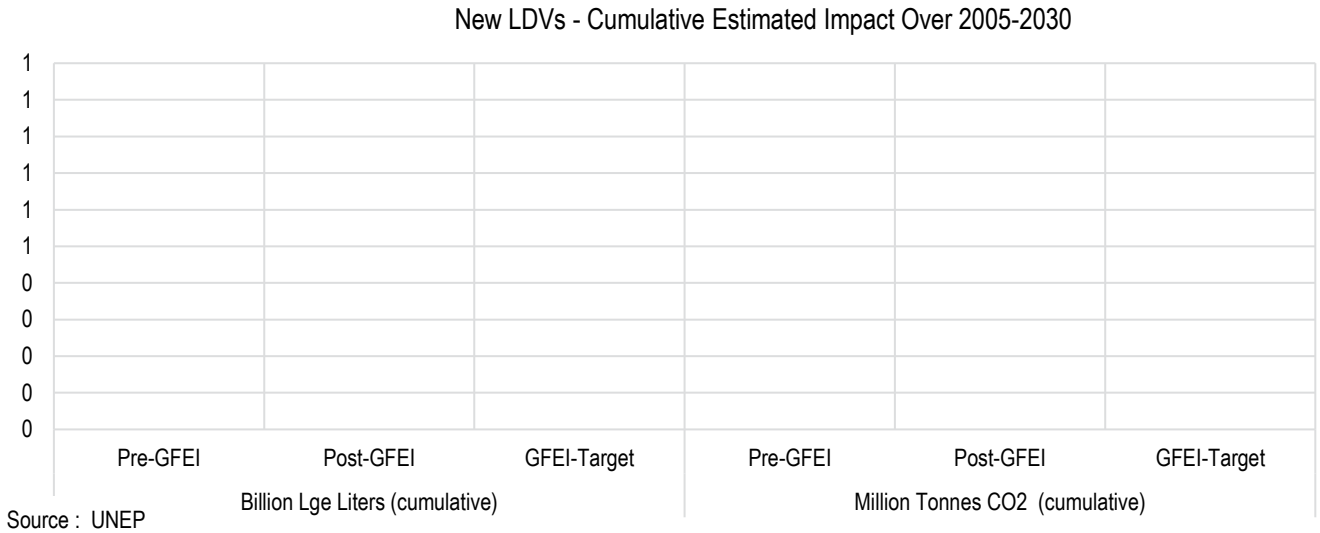
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

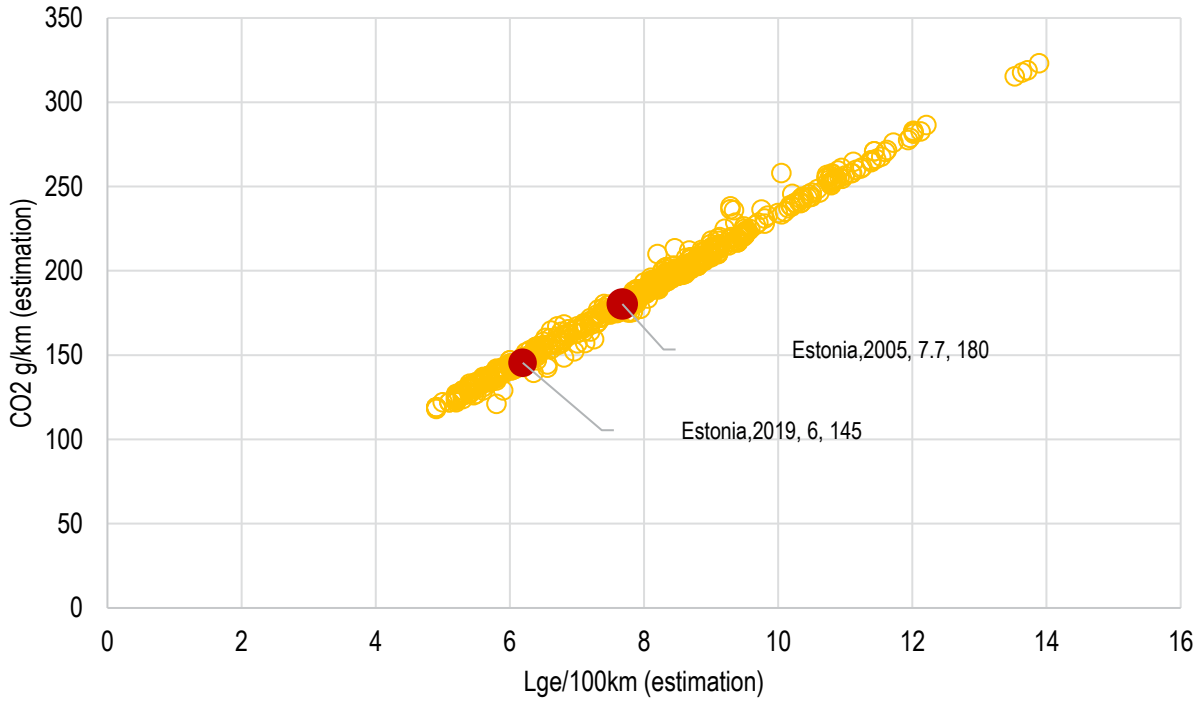
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



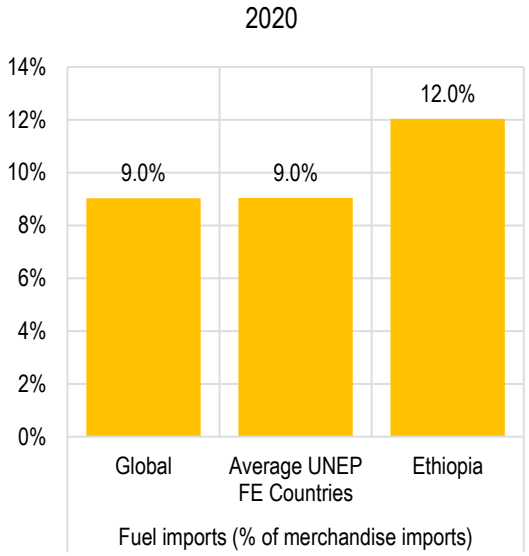
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

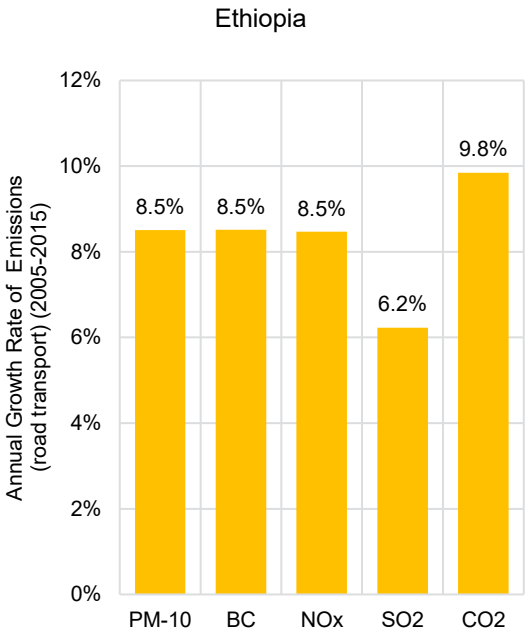
#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR ETHIOPIA

		Year	Source
Population (million)	115	2020	7
Income Level Category	Low income		7
GDP per Capita (PPP, Curent USD)	2422	2020	7
Motorisation (Cars/1000 population)	1	2020	10
Car Sales (000)	26	2020	6
Gasoline Price $/l	0.6	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	2.0	2018	13
Employment (Transport+,000)	752	2019	11
Fuel Economy (Lge/100 km, WLTP) -	9	2010	1
Average CO2 emissions/kilometre (g/km, WLTP) -	212	2010	1
Average displacement (cm3) -	2189	2010	1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	5	2010	1
Cumulative number of LDVs (total sample size,000) -	28		1
Diesel Share in LDV (sample,%)	42%	2010	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.004	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.017	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	0.5	2019	8
Transport CO2 Emissions per Capita (tonnes) -	0.2	2019	14
Road Transport PM Emissions per Capita (grams) -	28.5	2015	14
Road Transport NOx Emissions per Capita (grams)-	498.1	2015	14
Road Transport BC Emissions per Capita (grams)-	14.1	2015	14
LDV Emission Standards -	0	2019	1
Diesel Sulphur Levels (ppm) -	5000	2019	1
Gasoline Sulphur Levels (ppm) -	1000	2019	1
Annual rate of economy-wide energy intensity growth	-5.4%	2000-18	16
Annual rate of transport energy consumption growth	8.6%	2000-18	16
LDV Import value (Million USD)	417	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
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8 UN Statistics Division
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15 Fuel imports (% of merchandise imports) data is from World Bank
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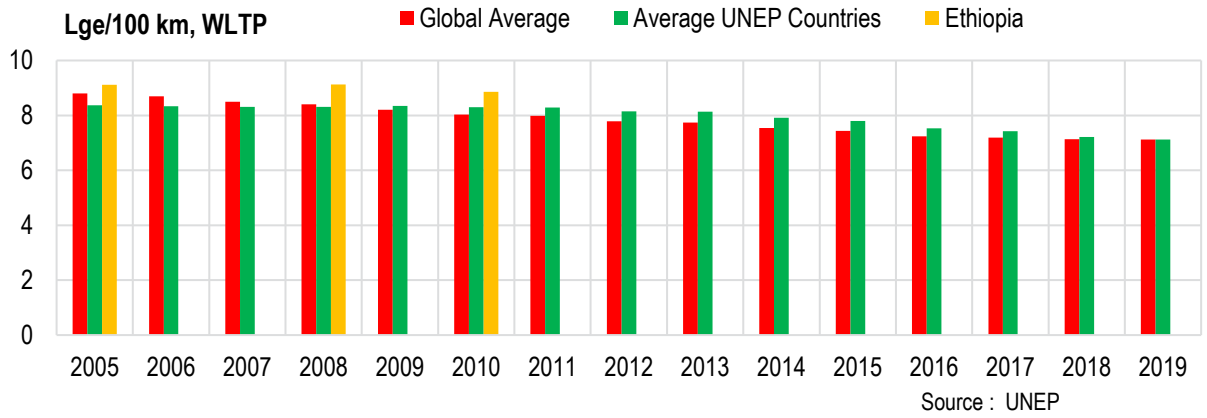
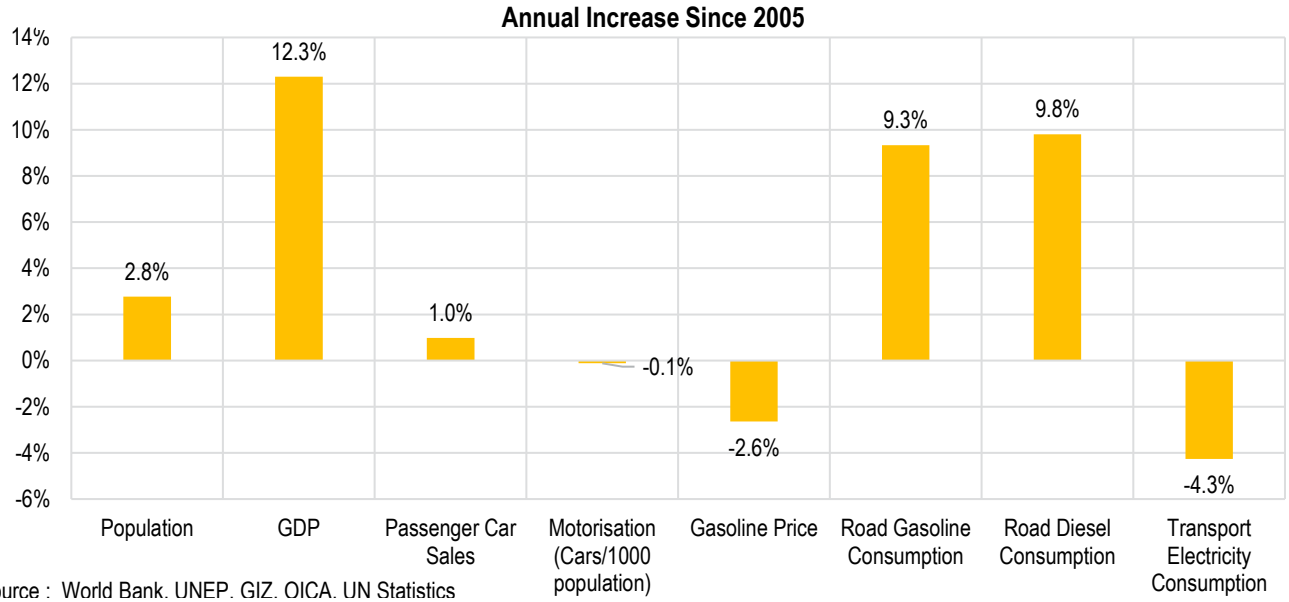
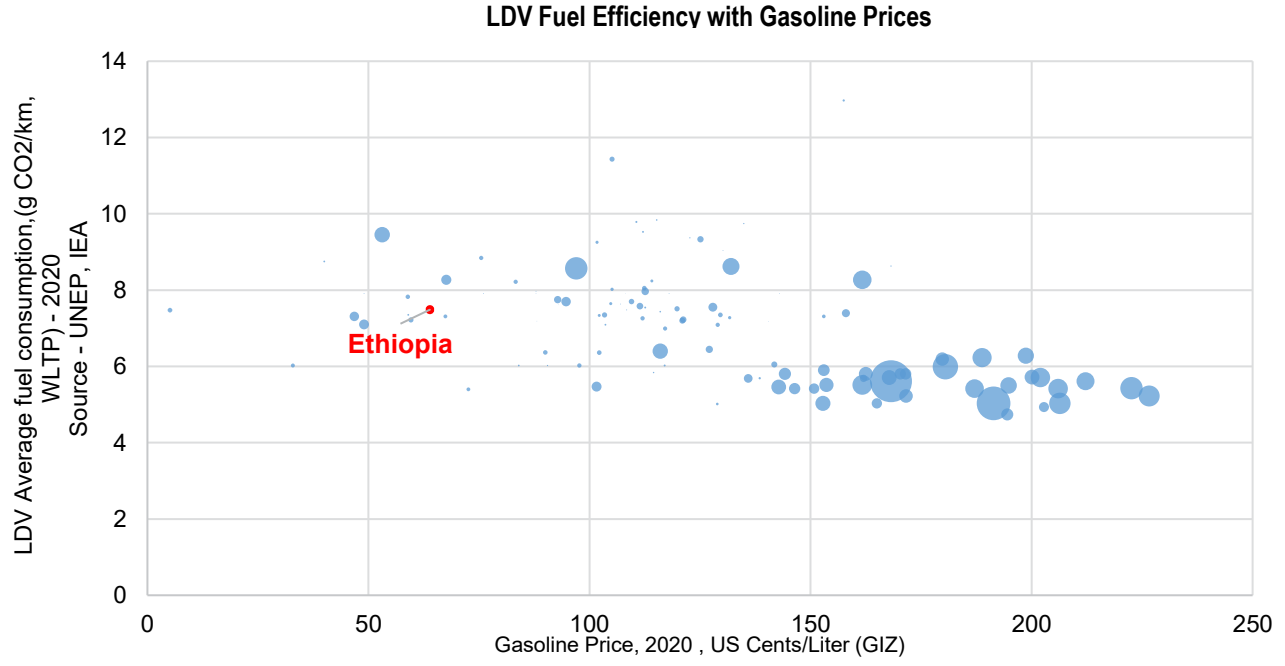
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

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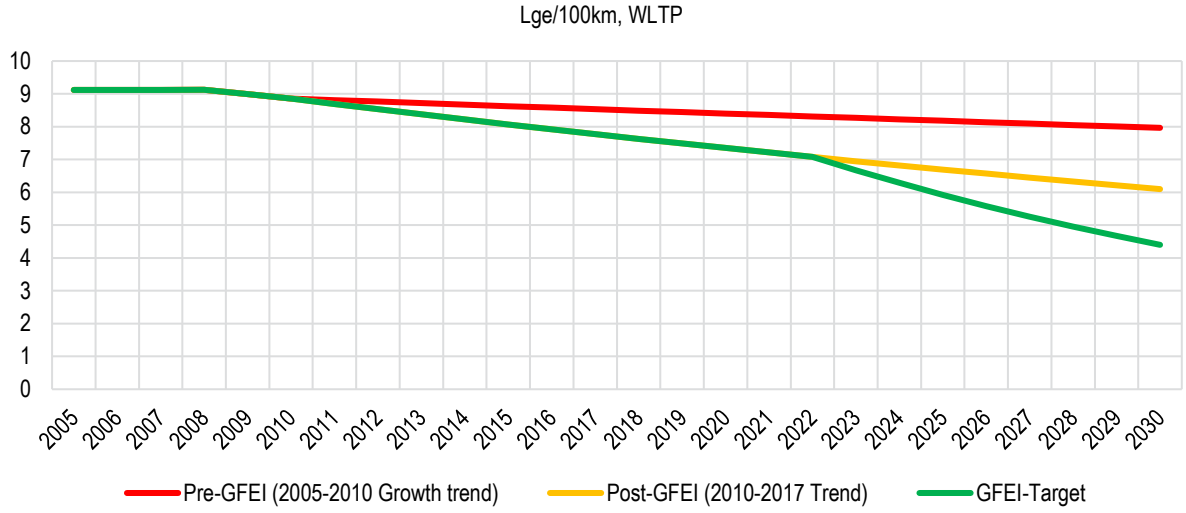
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

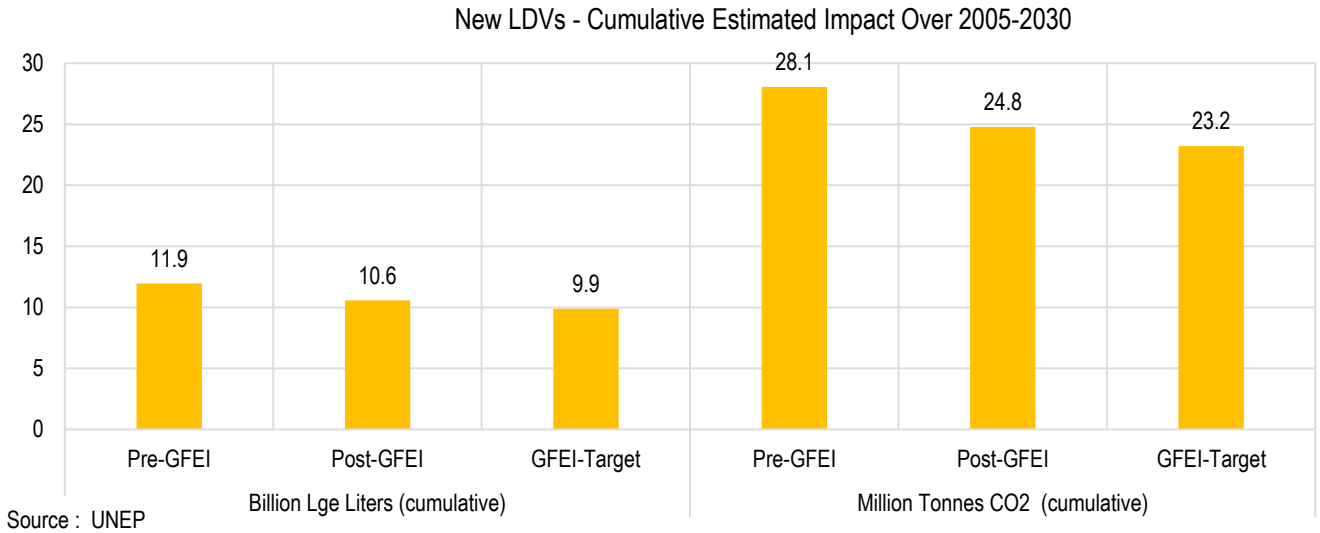
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-1.9%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-5.0%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

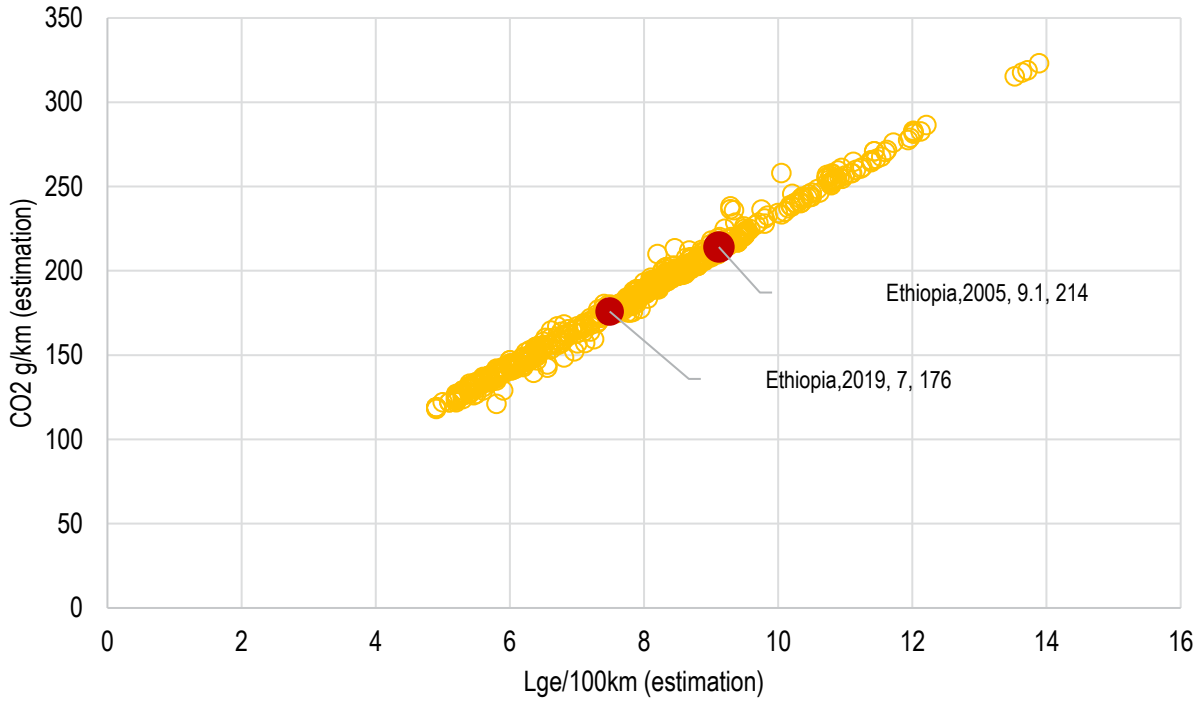
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

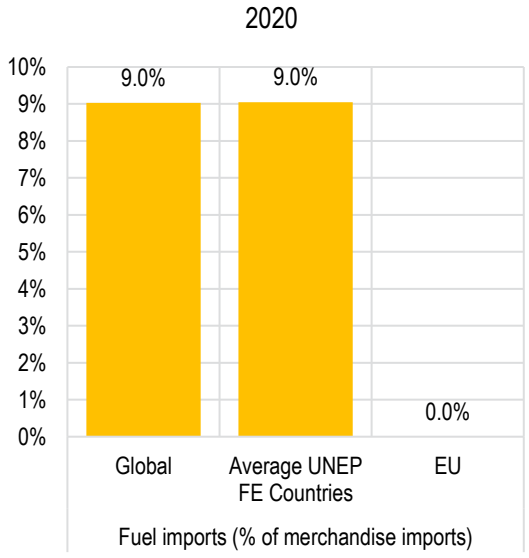
Ethiopia's Climate-Resilient Green Economy strategy has estimated that with existing transport policies, the carbon emissions from the motor vehicles will increase from 5 million tonnes CO2 in 2010 to million tonnes CO2 in 2030.

Ethiopia's nationally determined contribution under the Paris agreement proposes - leapfrogging to modern and energy-efficient technologies in transport, industry and building sectors.

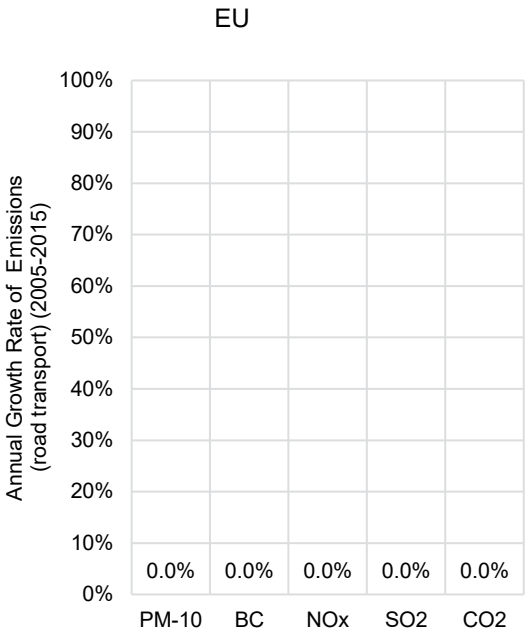
The assessment indicates that if Ethiopia implements a fuel economy policy for first-time registered LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save about 1.6 billion litres of gasoline-equivalent & 3.8 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR EU

		Year	Source
Population (million)	448	2020	7
Income Level Category	0.0		7
GDP per Capita (PPP, Curent USD)	44766	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	15097	2020	6
Gasoline Price $/l	0.0	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	#N/A	2018	13
Employment (Transport+,000)	0	2019	11
Fuel Economy (Lge/100 km, WLTP) -	6	2018	1
Average CO2 emissions/kilometre (g/km, WLTP) -	132	2018	1
Average displacement (cm3) -	1582	2017	1
Average kerb weight (kg) -	1582	2017	1
Average power (kw) -	97	2017	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	44%	2017	1
Is Fuel Economy included in NDC?	#N/A	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	#N/A	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.000	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.000	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	0.1	2019	8
Transport CO2 Emissions per Capita (tonnes) -	0.0	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	#N/A	2000-18	16
Annual rate of transport energy consumption growth	#DIV/0!	2000-18	16
LDV Import value (Million USD)	0	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
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8 UN Statistics Division
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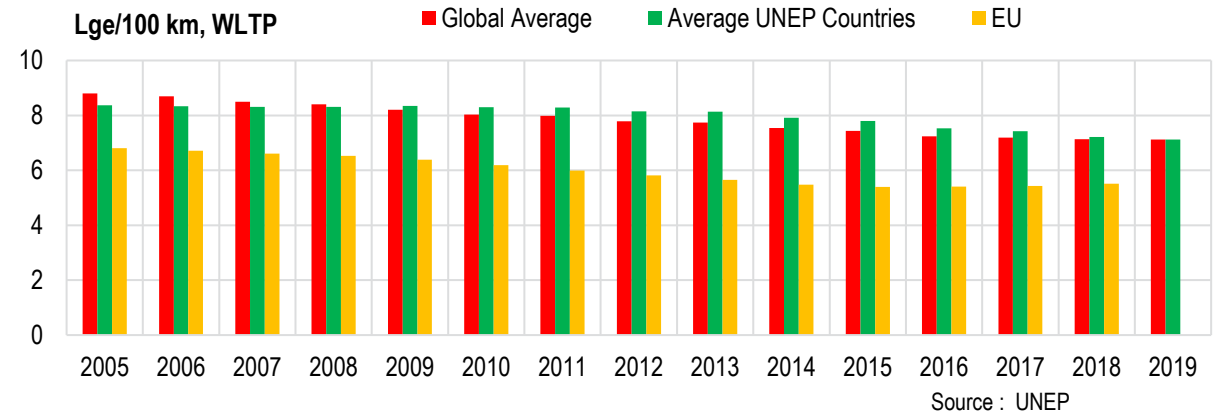
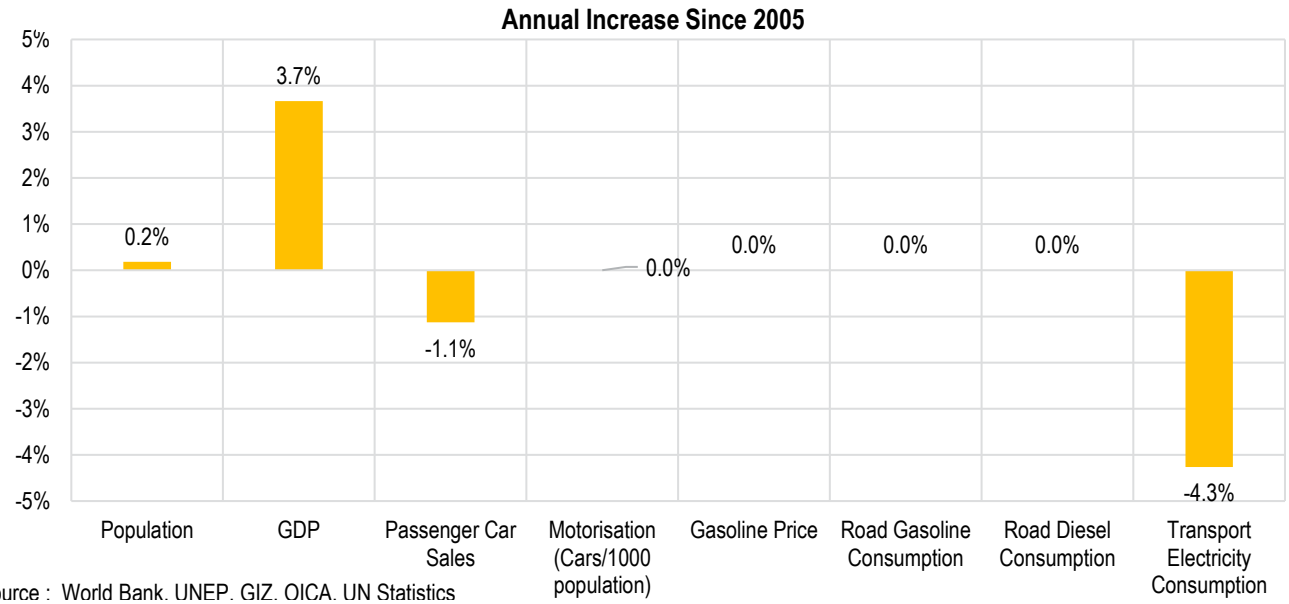
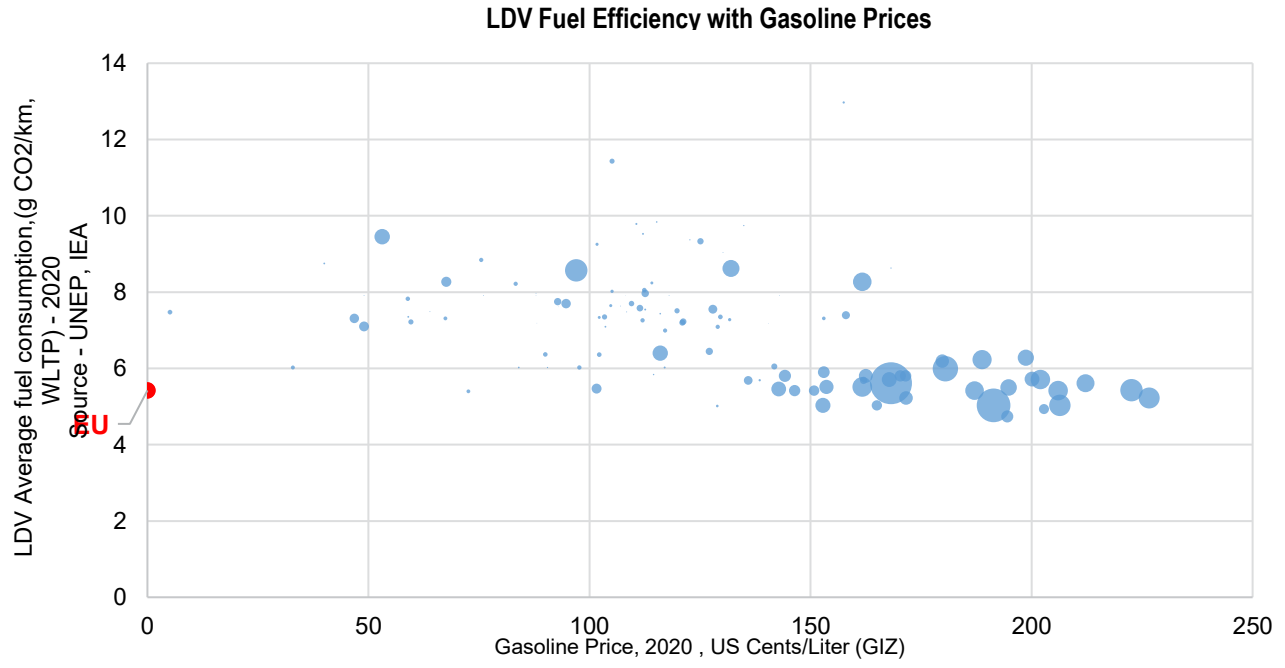
13 Koks, E.E. et al. A global multi-hazard risk analysis of road
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

FUEL ECONOMY TRENDS





Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

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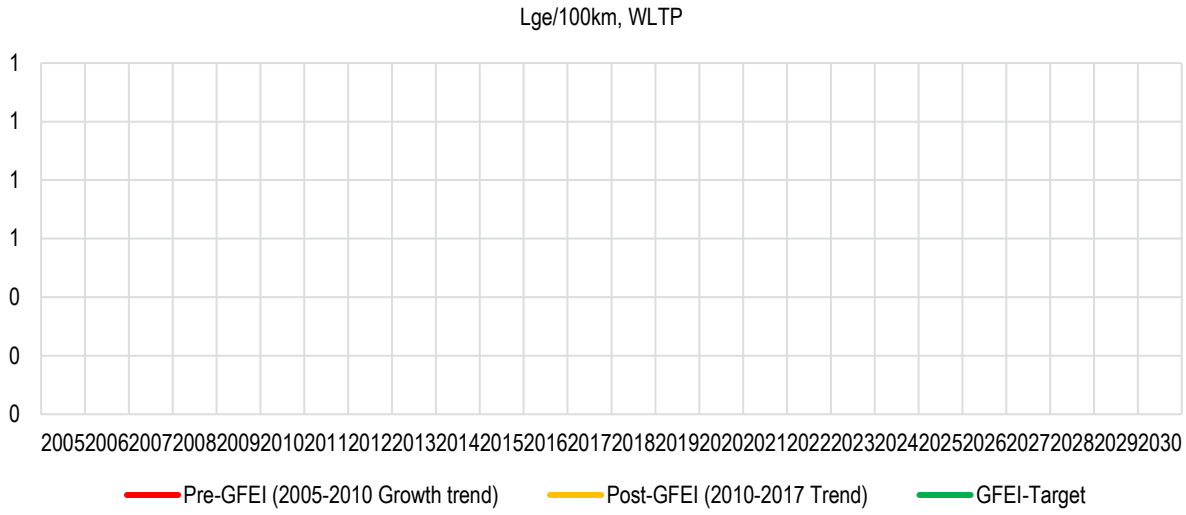
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

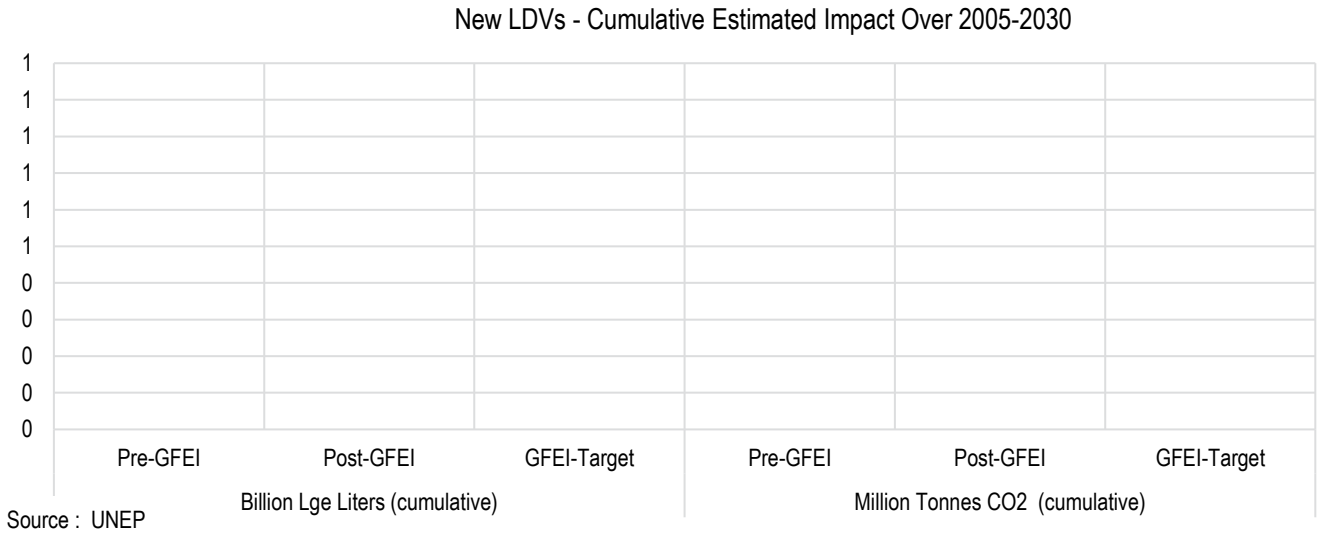
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

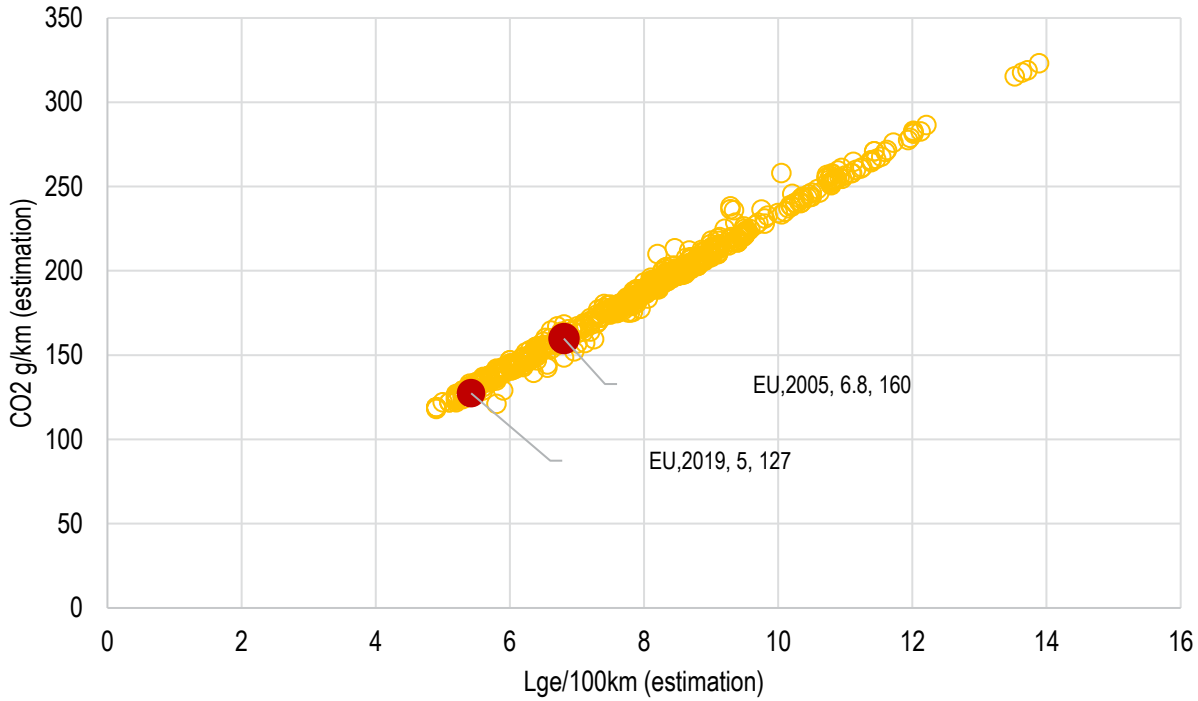
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



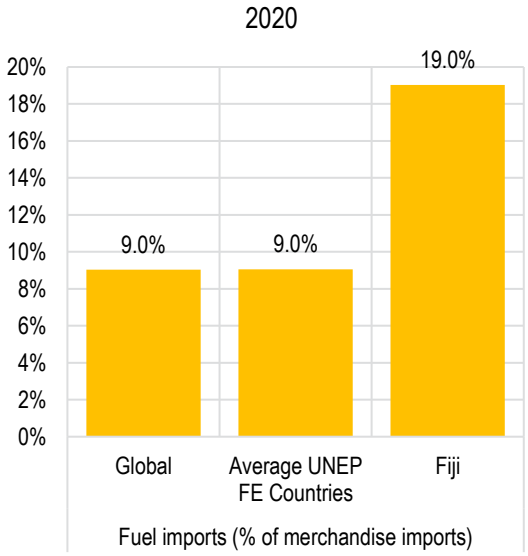
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

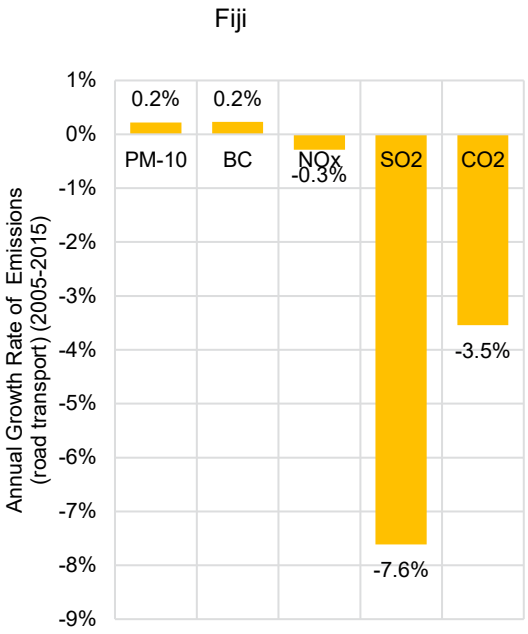
#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR FIJI

		Year	Source
Population (million)	1	2020	7
Income Level Category	Upper middle income		7
GDP per Capita (PPP, Curent USD)	12074	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	3	2020	6
Gasoline Price $/l	1.3	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	10.0	2018	13
Employment (Transport+,000)	26	2019	11
Fuel Economy (Lge/100 km, WLTP) -	7	2019	1
Average CO2 emissions/kilometre (g/km, WLTP) -	166	2019	1
Average displacement (cm3) -	1764	2019	1
Average kerb weight (kg) -	1344	2019	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	8	2018	1
Cumulative number of LDVs (total sample size,000) -	24		1
Diesel Share in LDV (sample,%)	9%	2019	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.093	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.073	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	62.5	2019	8
Transport CO2 Emissions per Capita (tonnes) -	1.5	2019	14
Road Transport PM Emissions per Capita (grams) -	95.4	2015	14
Road Transport NOx Emissions per Capita (grams)-	1723.7	2015	14
Road Transport BC Emissions per Capita (grams)-	49.1	2015	14
LDV Emission Standards -	0	2019	1
Diesel Sulphur Levels (ppm) -	500	2019	1
Gasoline Sulphur Levels (ppm) -	0	2019	1
Annual rate of economy-wide energy intensity growth	-1.7%	2000-18	16
Annual rate of transport energy consumption growth	2.6%	2000-18	16
LDV Import value (Million USD)	34	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

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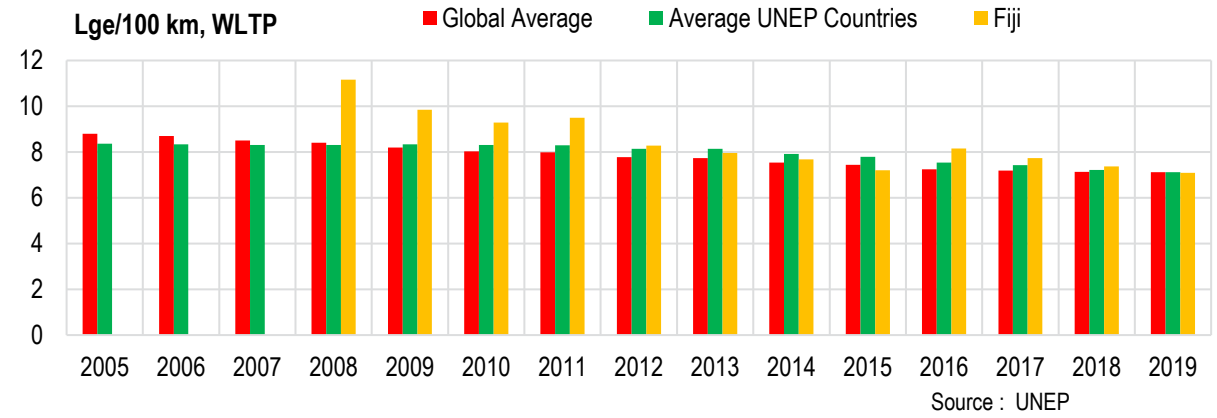
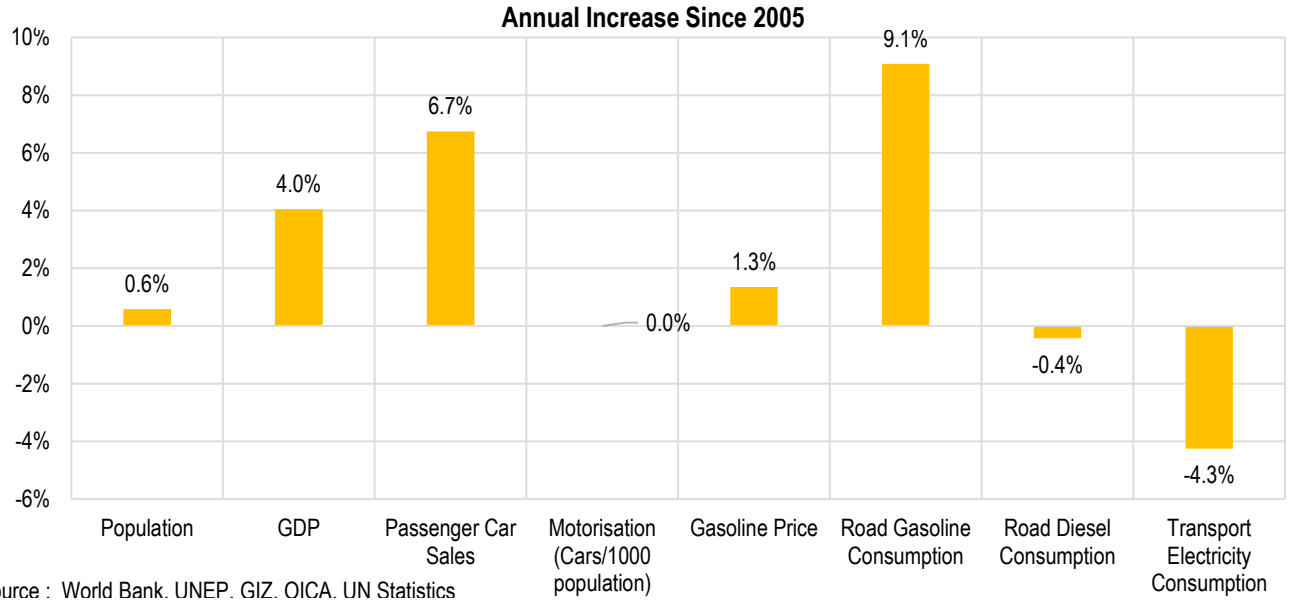
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

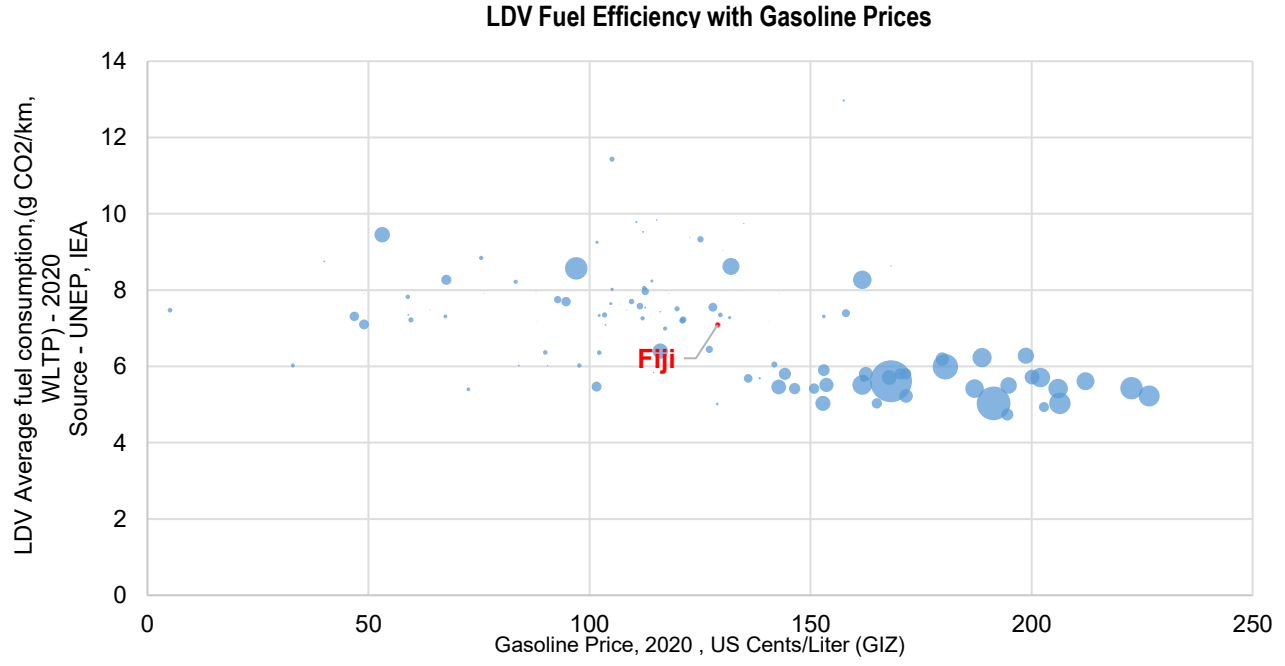
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

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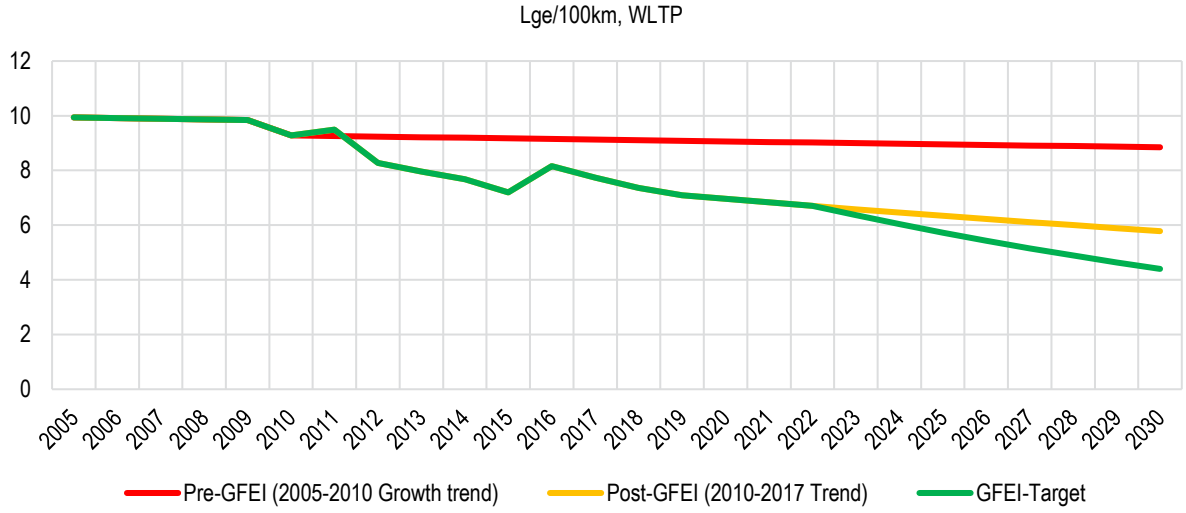
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

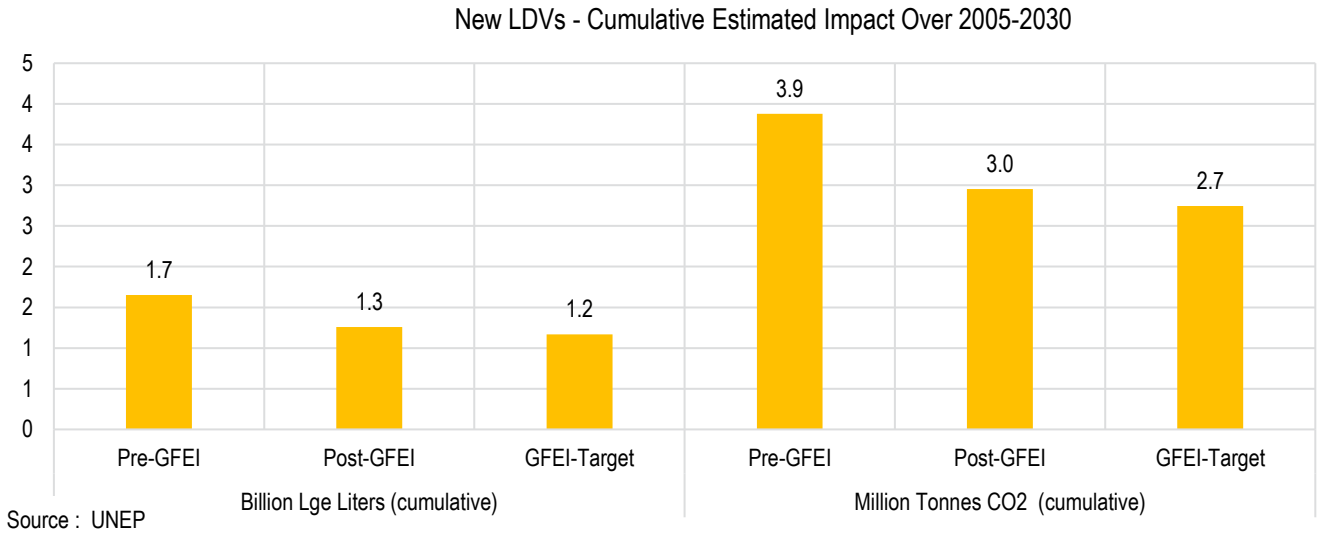
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-2.8%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-4.5%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

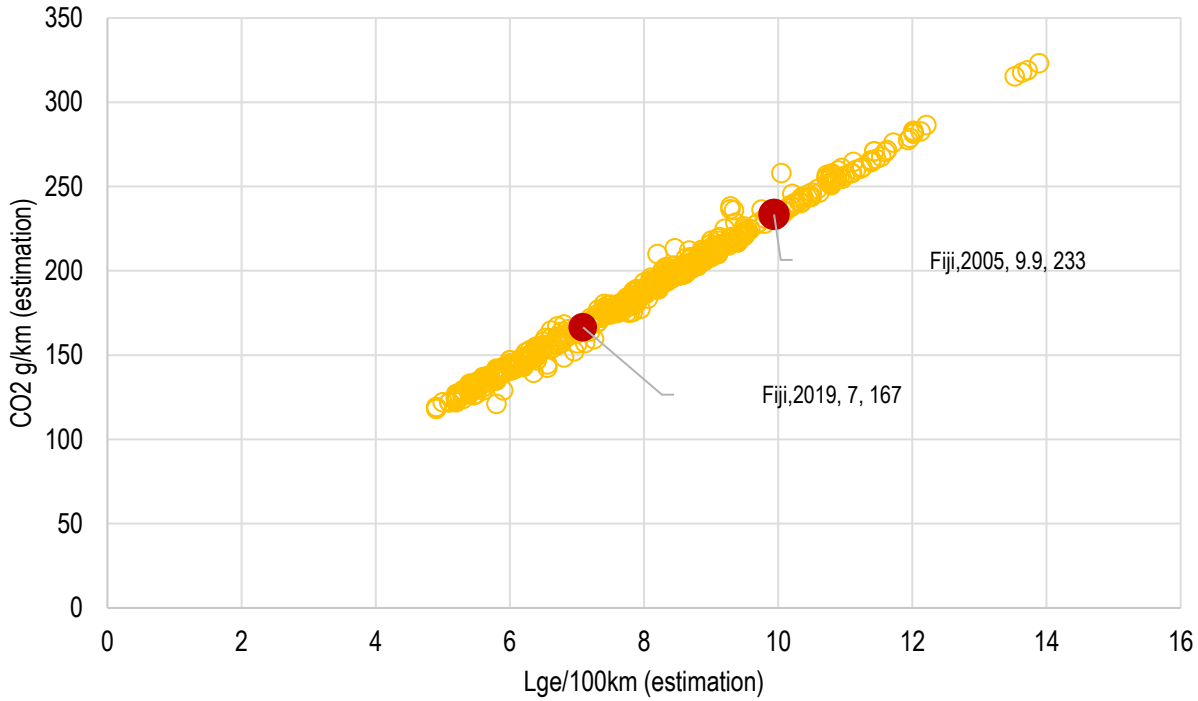
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

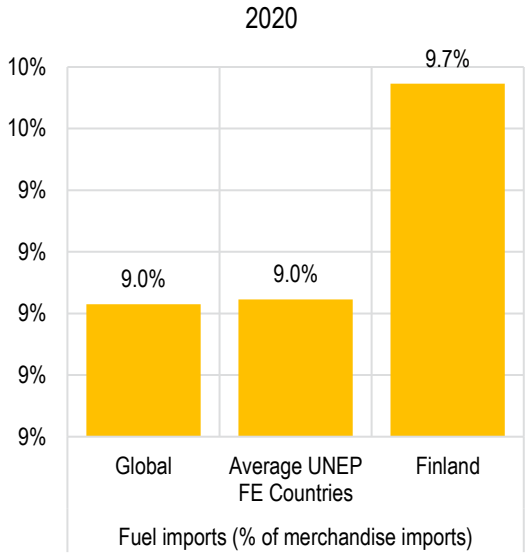
GFEI pursued the development of a fuel economy baseline for Fiji; however, due to difficulties in getting a good partner in Fiji, the project implementation was delayed. In May 2019, an agreement was signed with the University of South Pacific in Suva to conduct the fuel economy baseline analysis. The fuel economy baseline report was completed and finalised in December 2019.

The Fiji Low Emission Development Strategy (LEDS) 2018-2050 provides pathways to achieve low emission development in Fiji until 2050. As the central goal of this LEDS, Fiji aims to reach net-zero carbon emissions by 2050 across all sectors of its economy. The strategy considers various scenarios and an option of reducing GHG emissions by 30% by 2030 on a conditional basis as outlined in the NDC Implementation Roadmap. The analysis shows that LDV emissions could be reduced by about 0.2 million tonnes by 2030 (when compared with BAU), i.e. 46% by BAU in 2030.

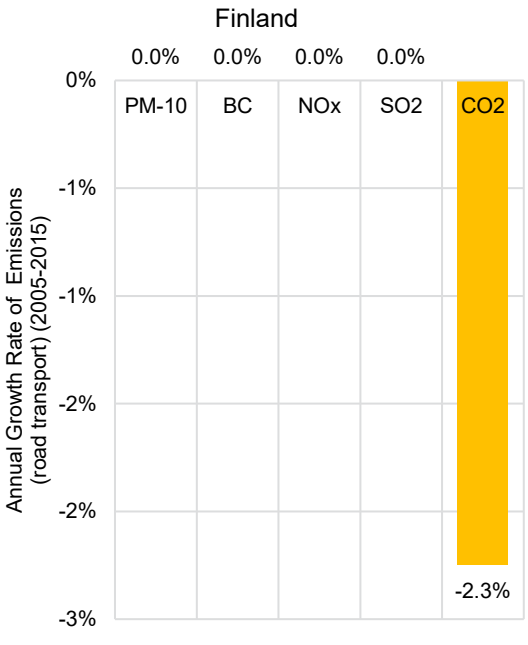
The assessment indicates that if Fiji implements a fuel economy policy for LDVs with a 2030 GFEI target, it could save 382 million litres of gasoline-equivalent & 0.9 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR FINLAND

		Year	Source
Population (million)	6	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	50811	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	96	2020	6
Gasoline Price $/l	2.1	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	53.5	2018	13
Employment (Transport+,000)	265	2019	11
Fuel Economy (Lge/100 km, WLTP) -	6	2016	1
Average CO2 emissions/kilometre (g/km, WLTP) -	135	2017	1
Average displacement (cm3) -	1593	2017	1
Average kerb weight (kg) -	1450	2017	1
Average power (kw) -	100	2017	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.243	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.469	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	155.3	2019	8
Transport CO2 Emissions per Capita (tonnes) -	7.9	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	-1.1%	2000-18	16
Annual rate of transport energy consumption growth	0.3%	2000-18	16
LDV Import value (Million USD)	3066	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
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3 UNCOMTRADE & ITC
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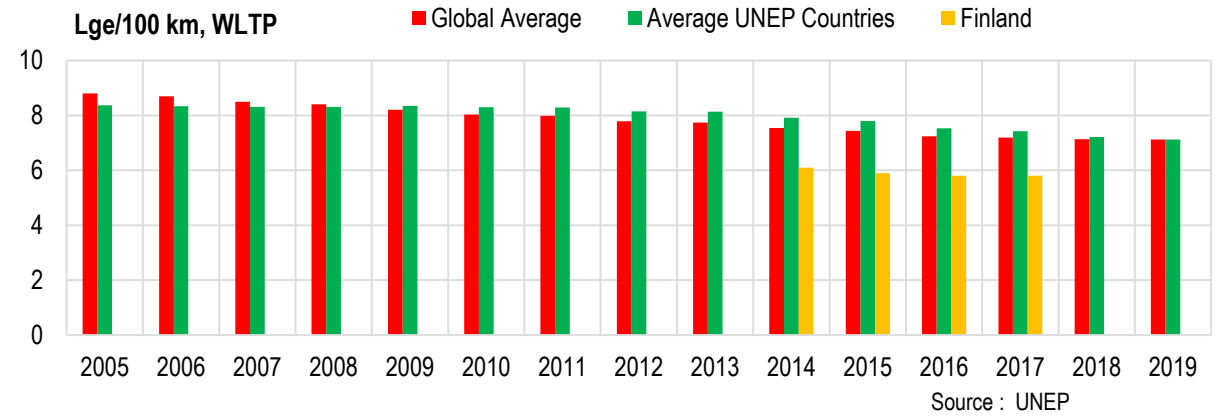
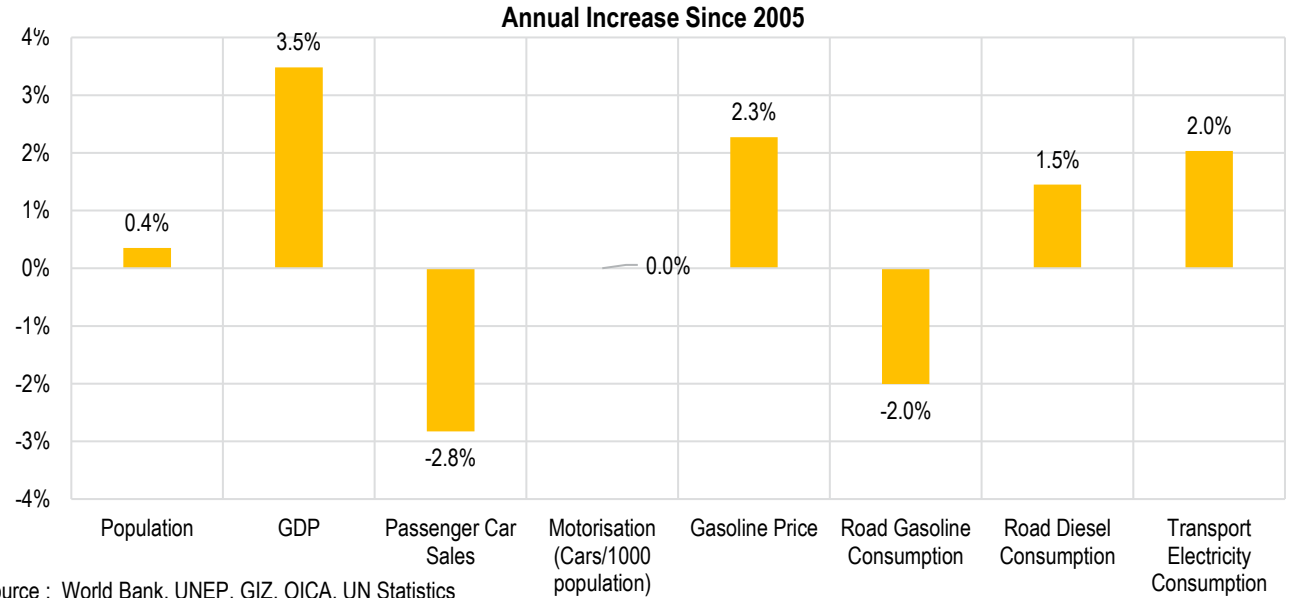
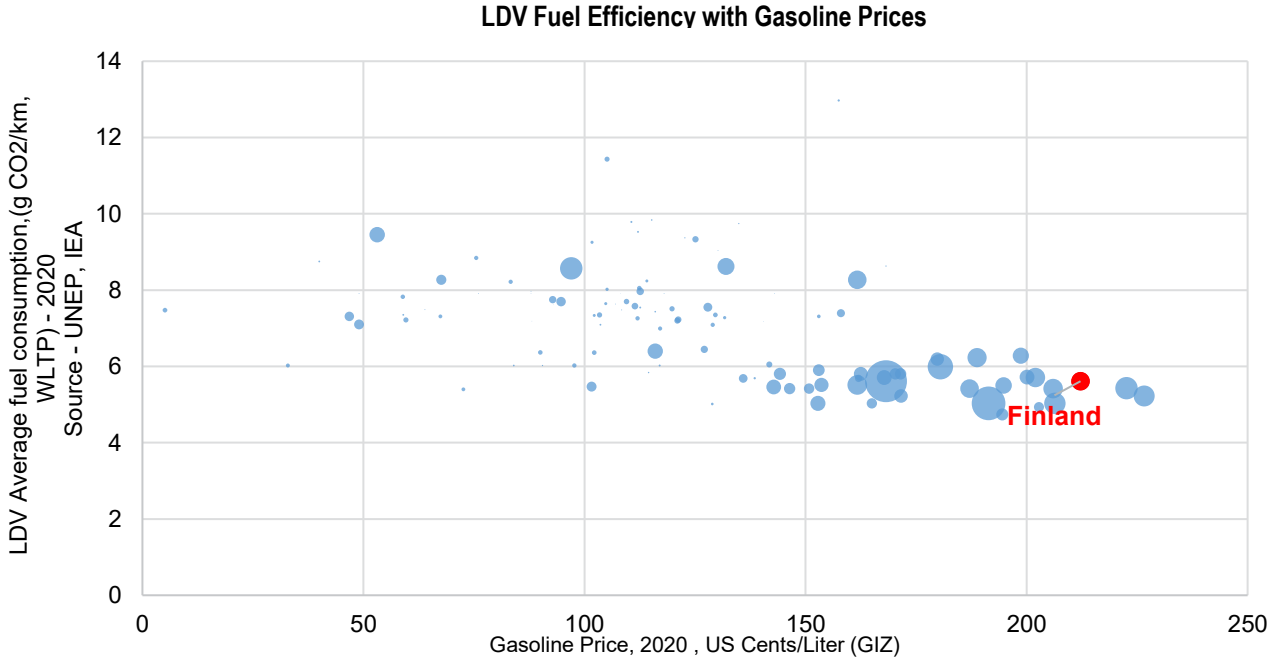
FUEL ECONOMY TRENDS





Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

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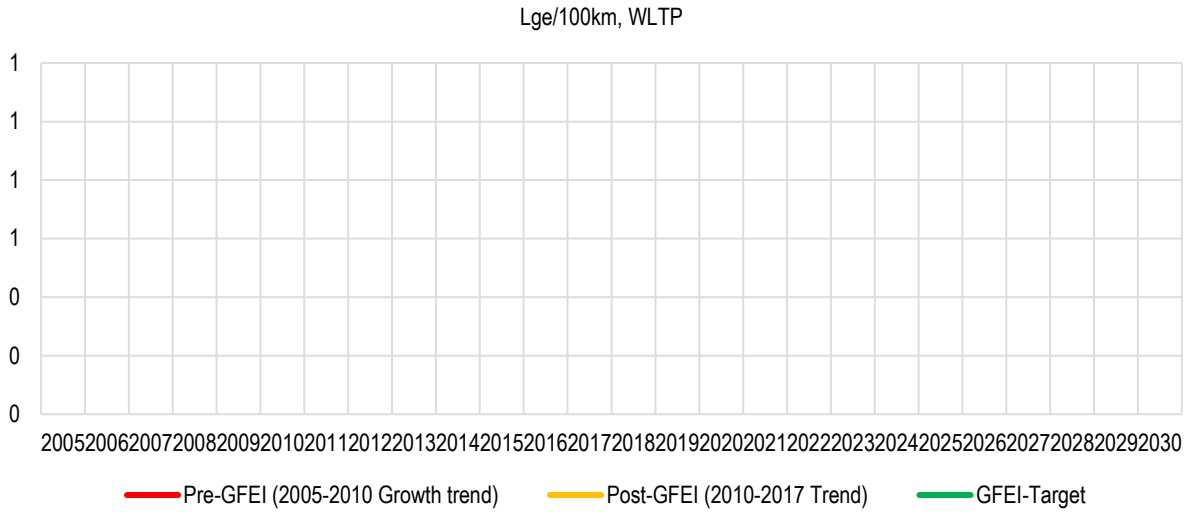
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



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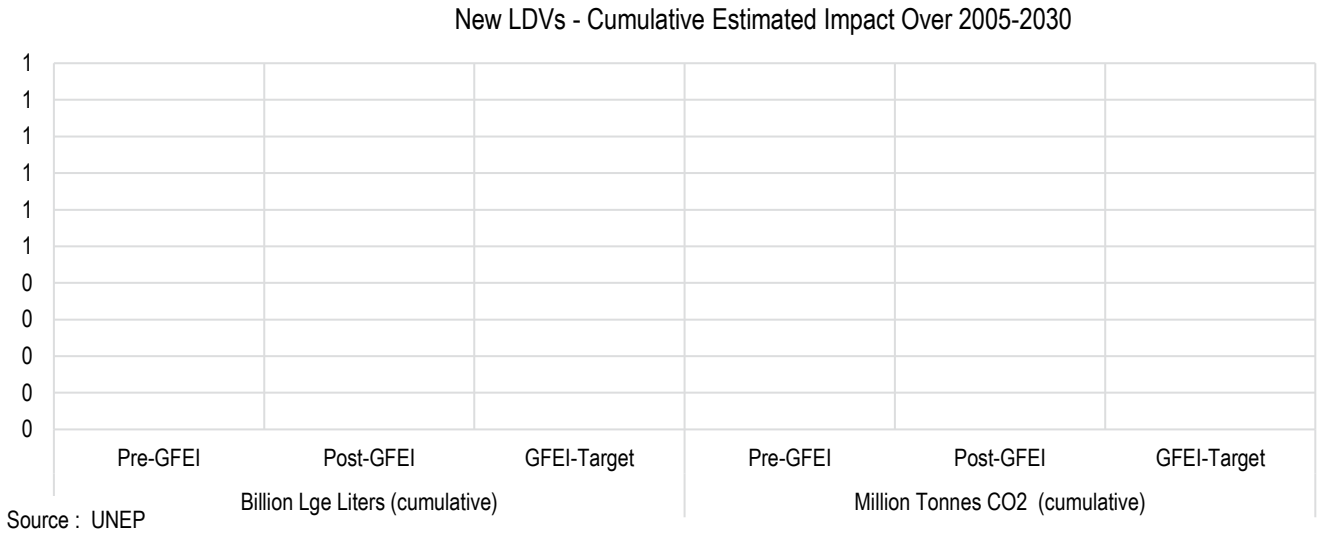

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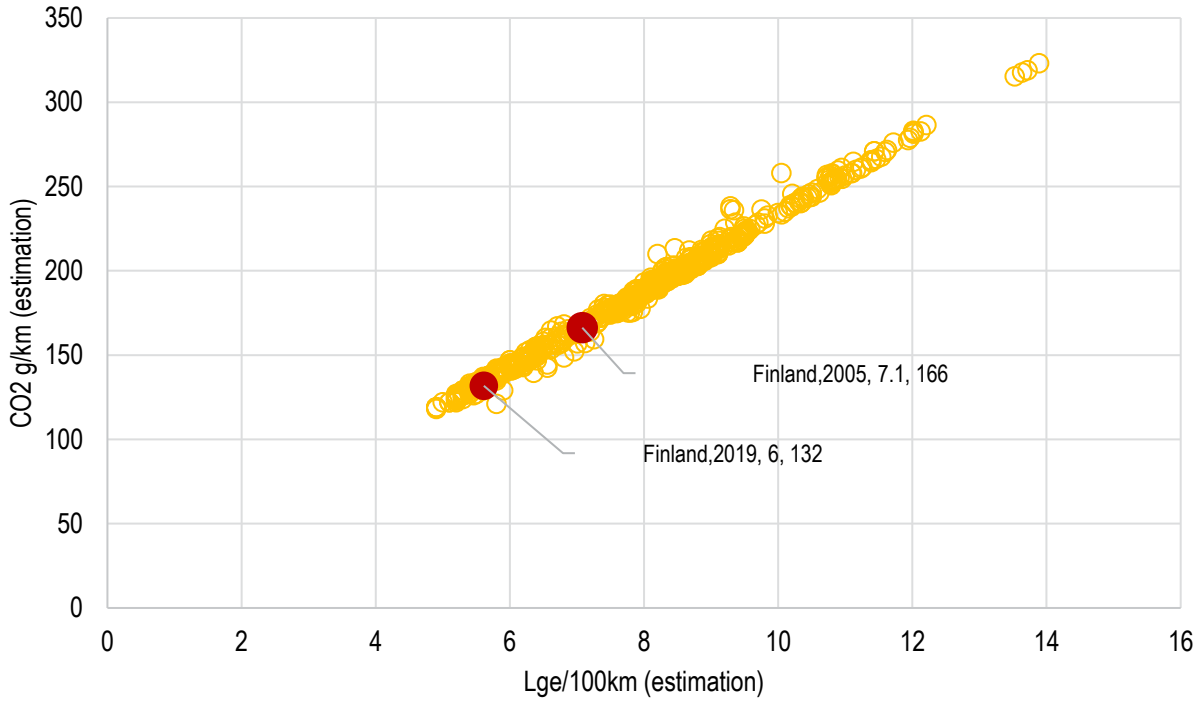
FUEL ECONOMY DESCRIPTION



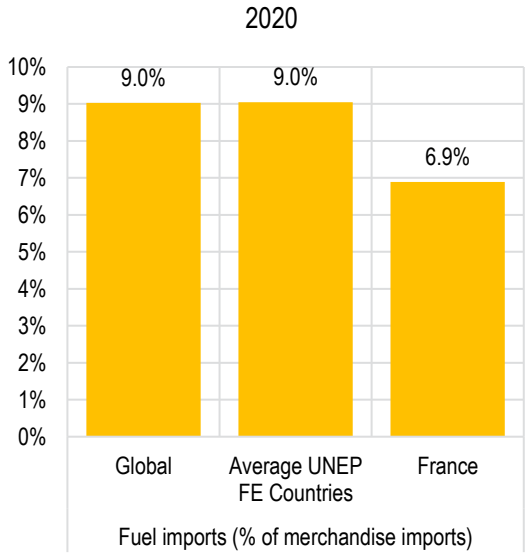
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

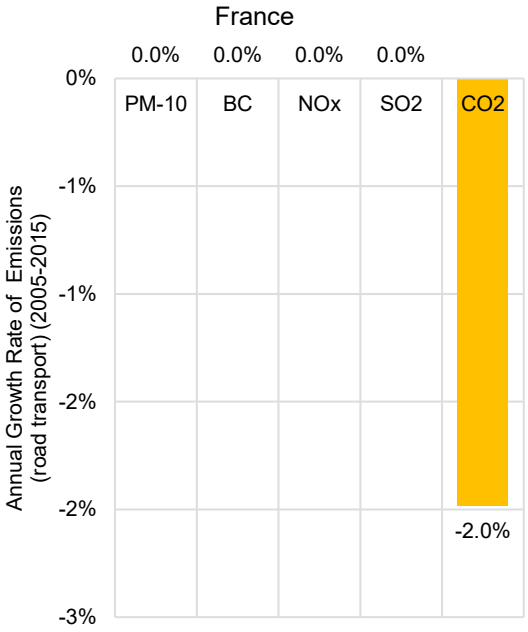
#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR FRANCE

		Year	Source
Population (million)	67	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	46712	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	1650	2020	6
Gasoline Price $/l	1.9	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	20.7	2018	13
Employment (Transport+,000)	2417	2019	11
Fuel Economy (Lge/100 km, WLTP) -	6	2019	1
Average CO2 emissions/kilometre (g/km, WLTP) -	130	2019	1
Average displacement (cm3) -	1451	2019	1
Average kerb weight (kg) -	1359	2019	1
Average power (kw) -	89	2019	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.130	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.494	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	149.6	2019	8
Transport CO2 Emissions per Capita (tonnes) -	4.7	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	-1.4%	2000-18	16
Annual rate of transport energy consumption growth	0.1%	2000-18	16
LDV Import value (Million USD)	36554	2020	3



Source : World Bank



Source : IIASA

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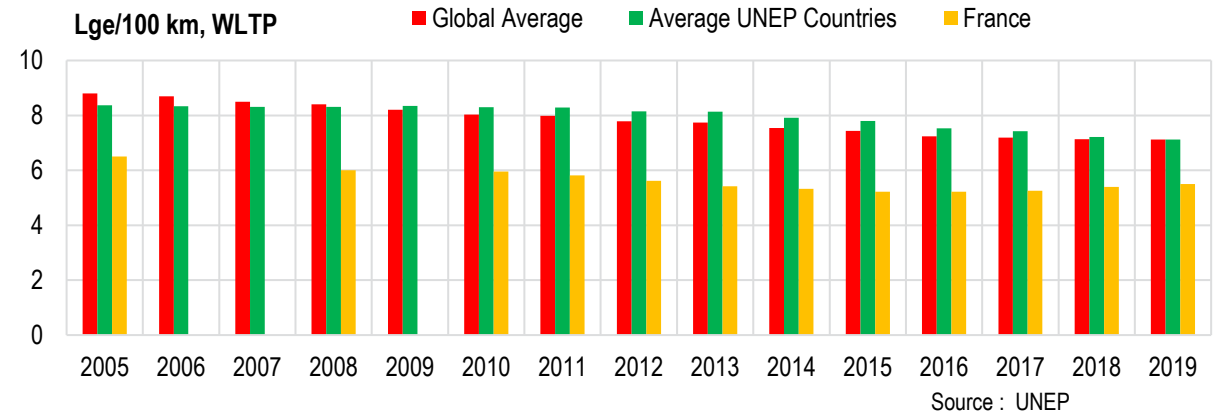
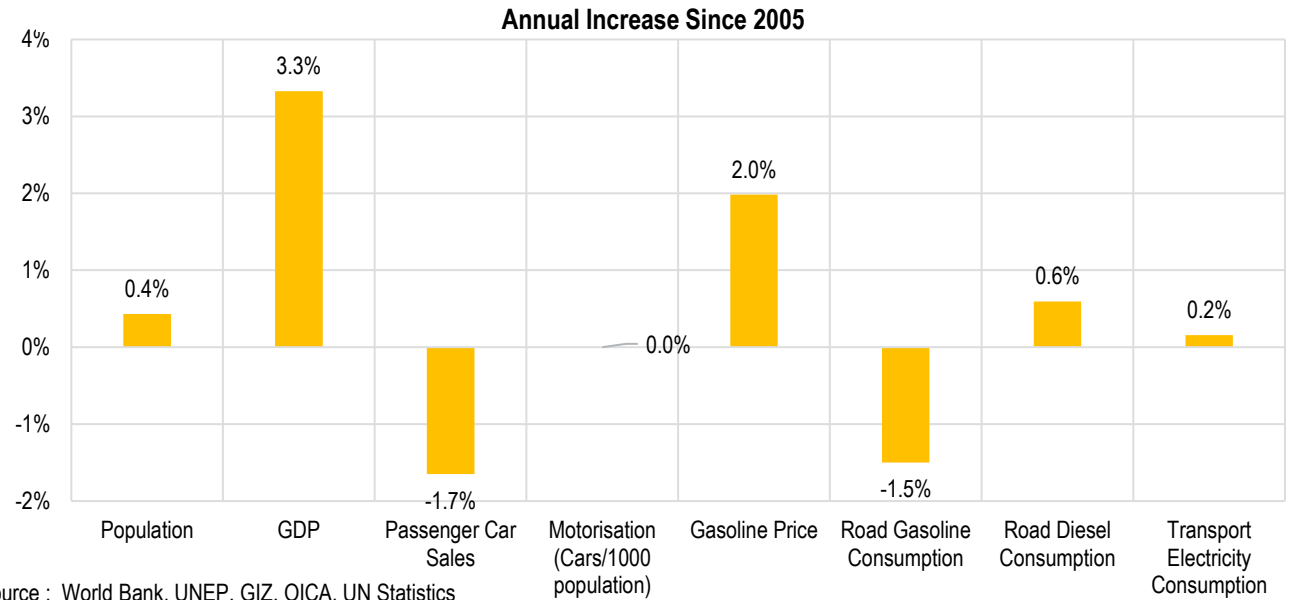
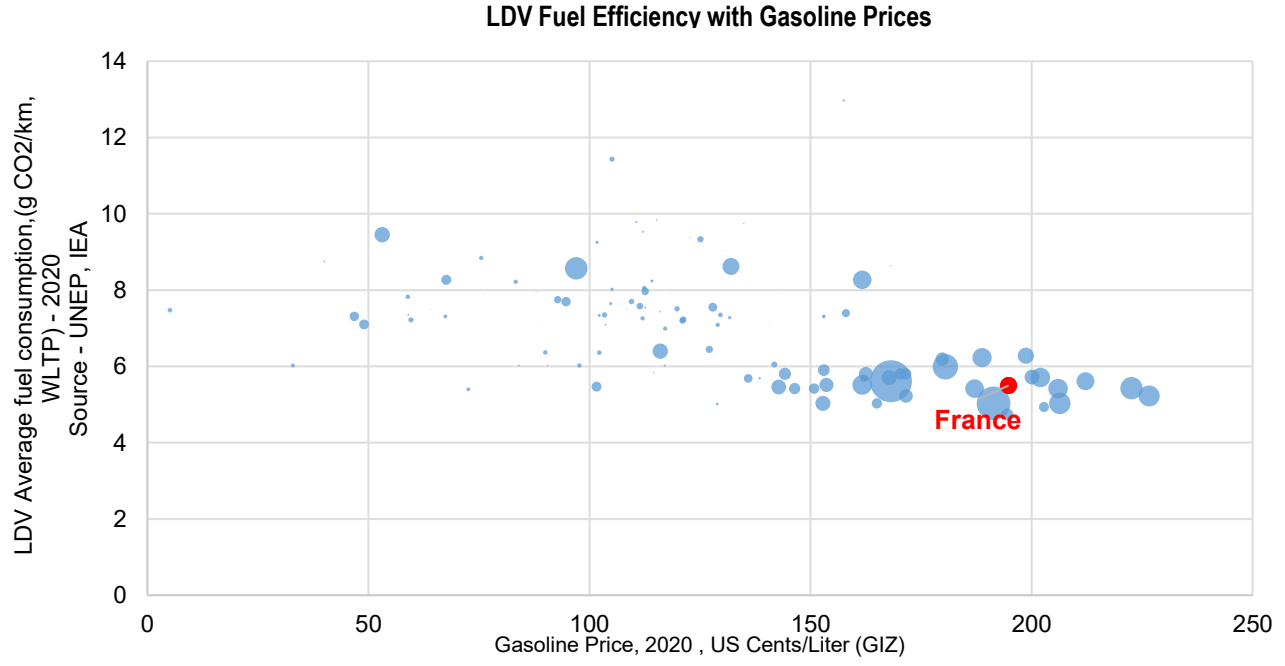
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

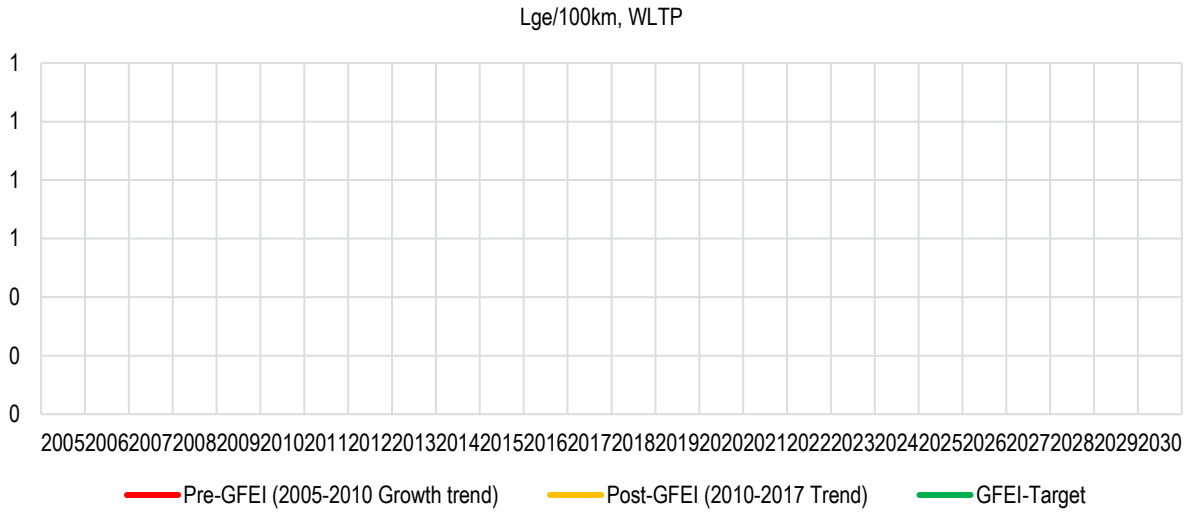
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

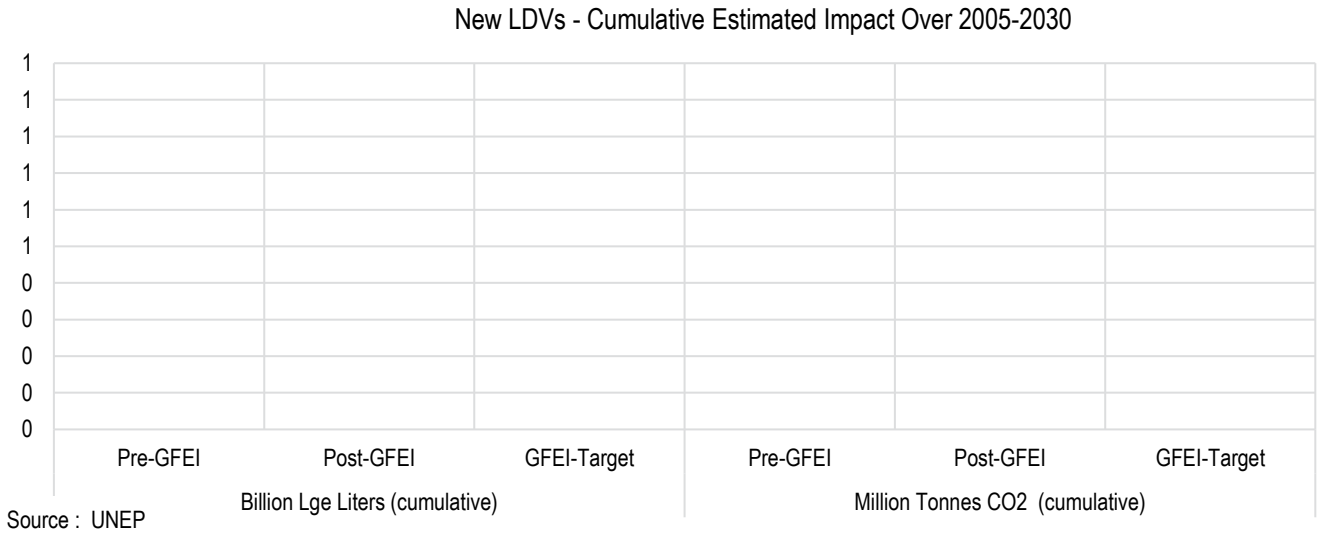
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

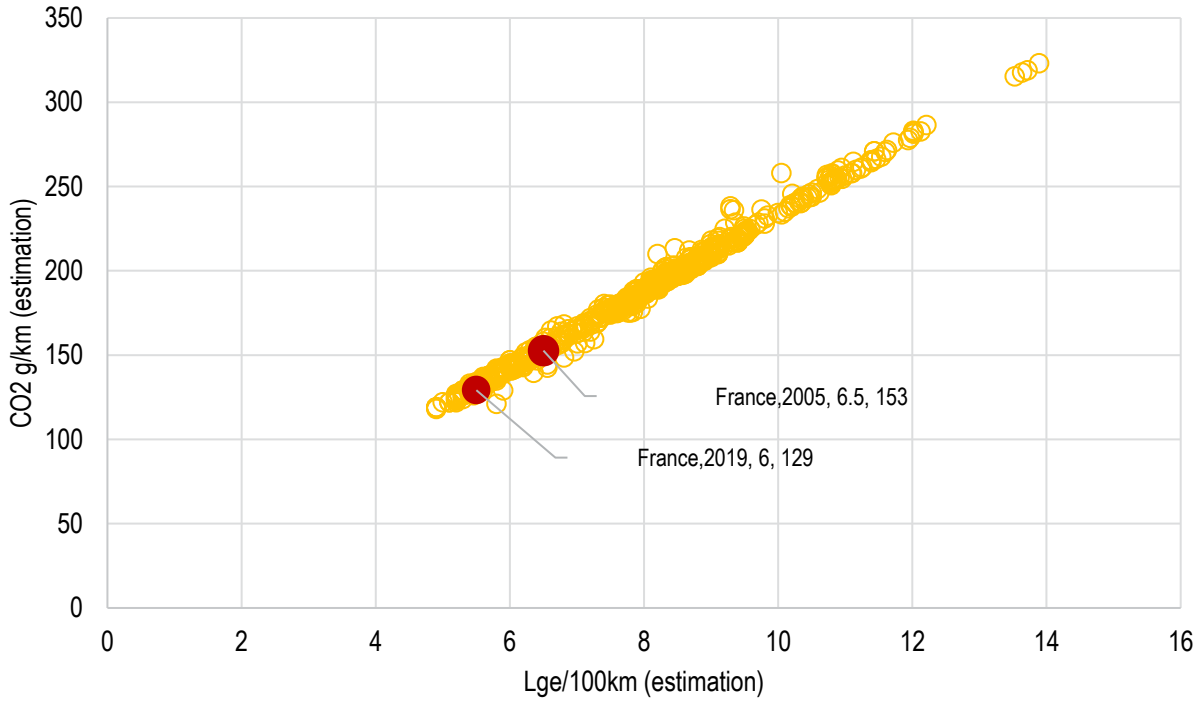
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



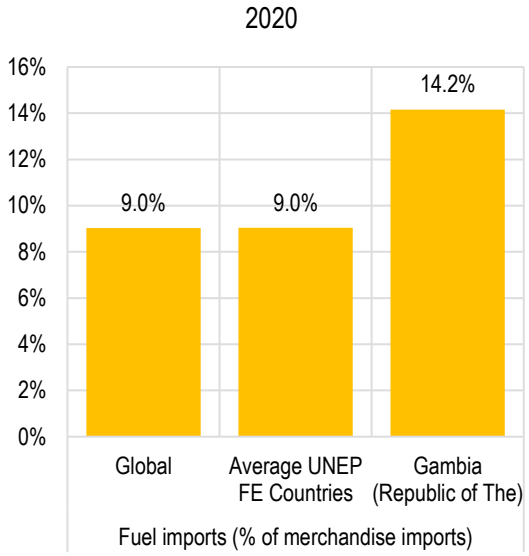
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

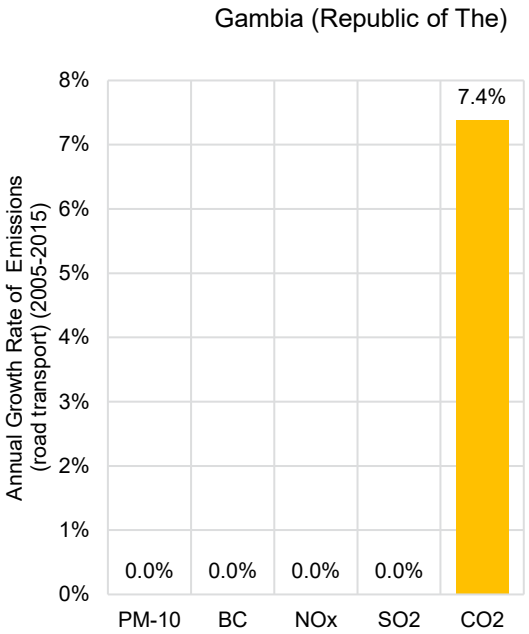
#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR GAMBIA (REPUBLIC OF THE)

		Year	Source
Population (million)	2	2020	7
Income Level Category	Low-income		7
GDP per Capita (PPP, Curent USD)	2274	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	0	2020	6
Gasoline Price $/l	0.8	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	5.5	2018	13
Employment (Transport+,000)	45	2019	11
Fuel Economy (Lge/100 km, WLTP) -	#N/A	#N/A	1
Average CO2 emissions/kilometre (g/km, WLTP) -	#N/A	#N/A	1
Average displacement (cm3) -			1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.010	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.000	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	0.0	2019	8
Transport CO2 Emissions per Capita (tonnes) -	0.3	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	0	2019	1
Diesel Sulphur Levels (ppm) -	0	2019	1
Gasoline Sulphur Levels (ppm) -	0	2019	1
Annual rate of economy-wide energy intensity growth	#N/A	2000-18	16
Annual rate of transport energy consumption growth	-0.8%	2000-18	16
LDV Import value (Million USD)	45	2020	3



Source : World Bank

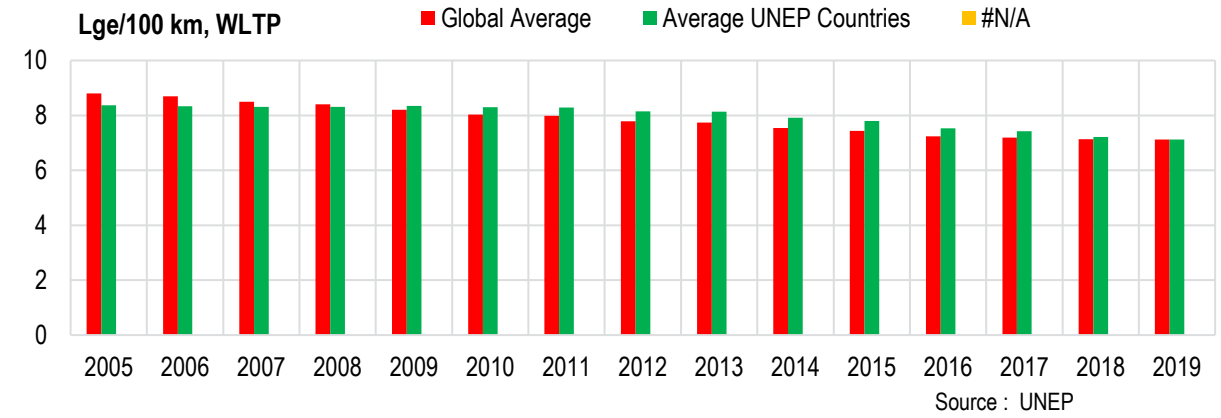


Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
7 World Bank
8 UN Statistics Division
9 SLOCAT &GIZ
10 Estimated using growth and sales data
11 Employment is for Transport; storage and communication, ILO
12 International Transport Forum
13 Koks, E.E. et al. A global multi-hazard risk analysis of road
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

FUEL ECONOMY TRENDS



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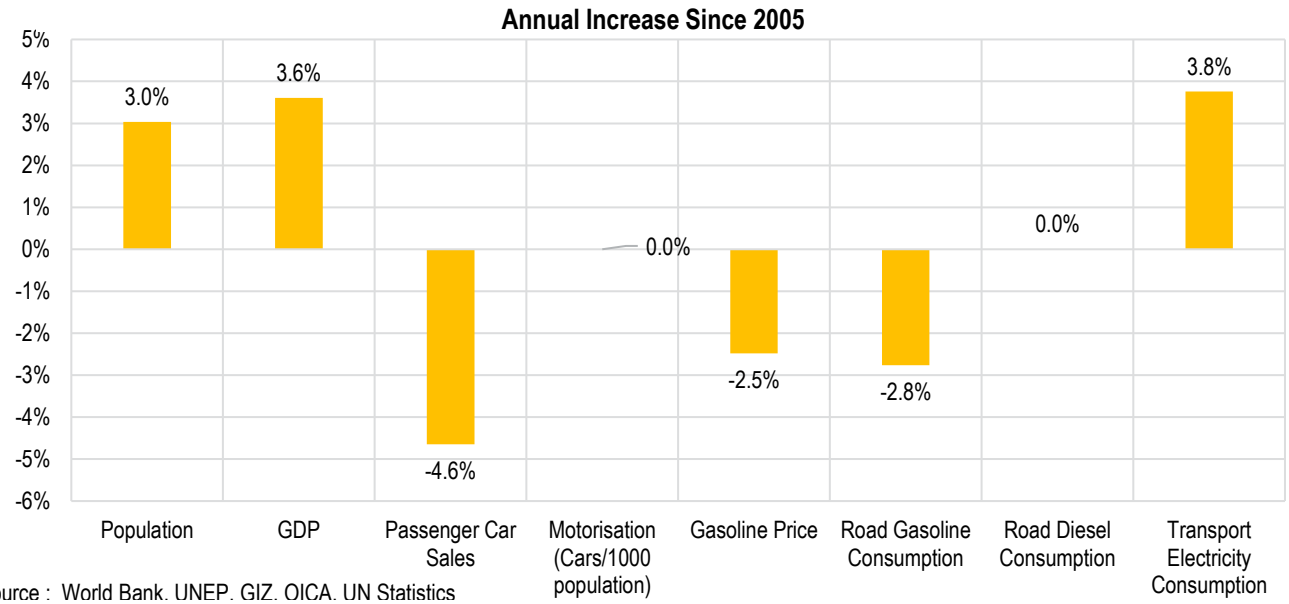
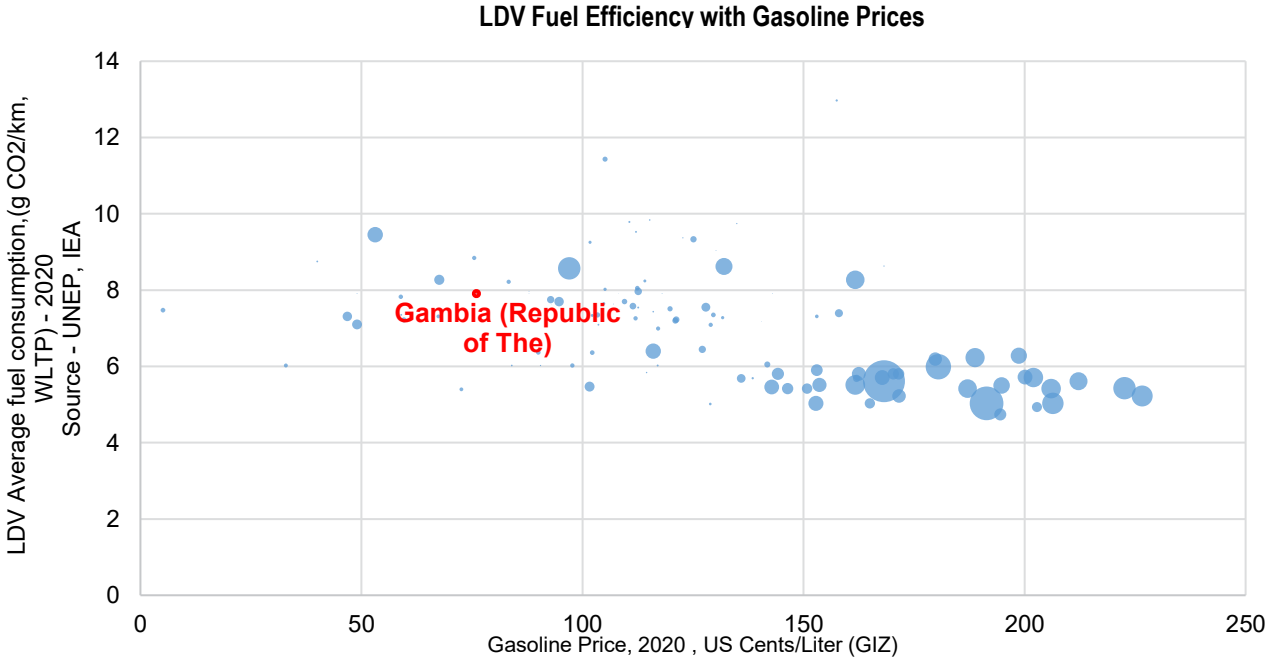


Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

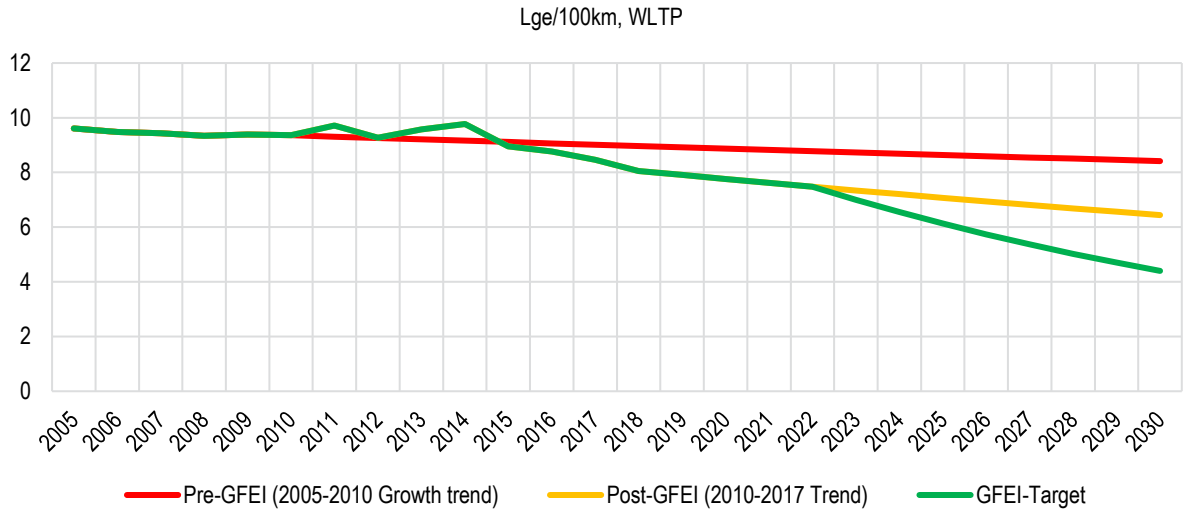
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-1.9%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-5.5%**



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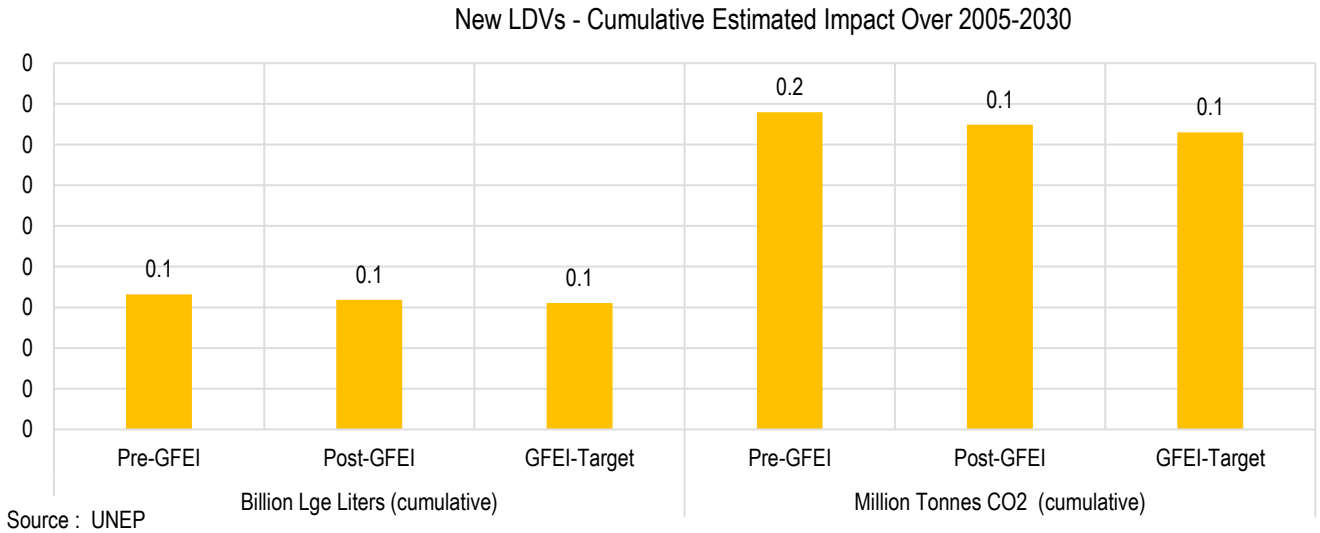


Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

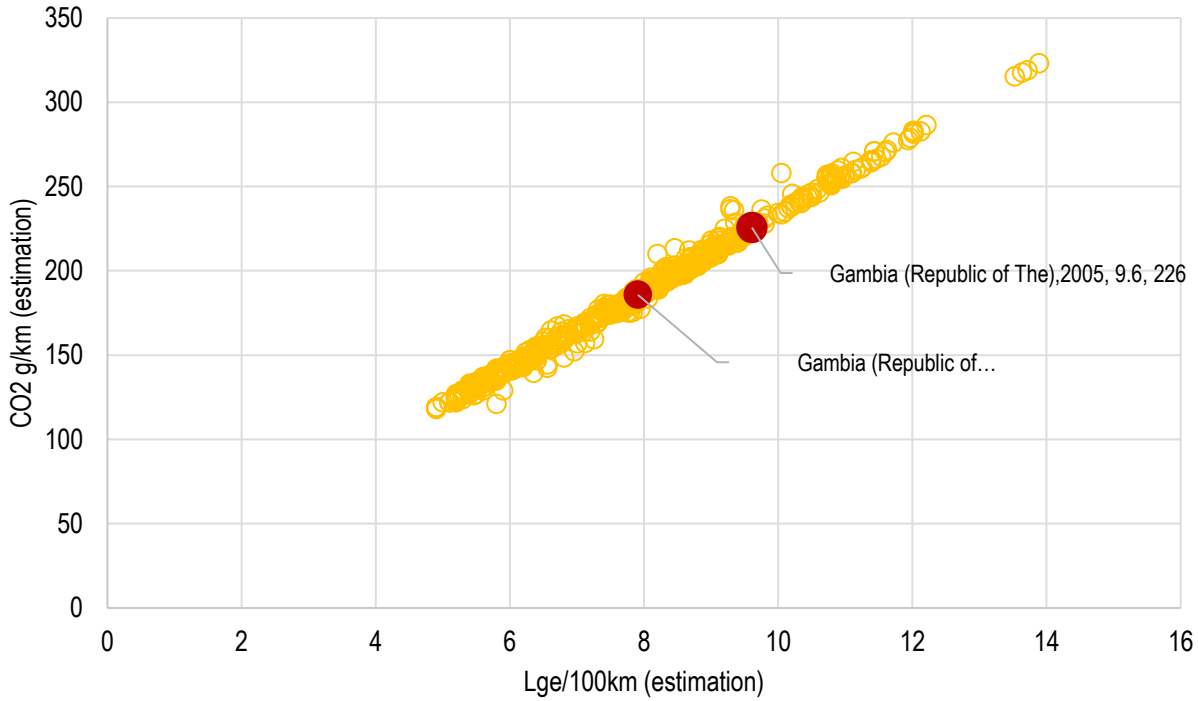
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



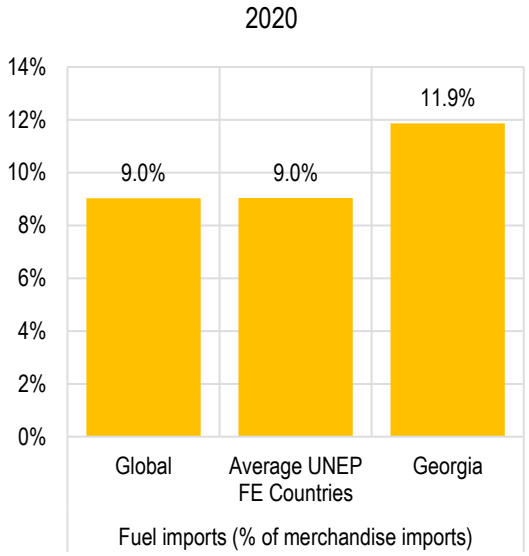
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

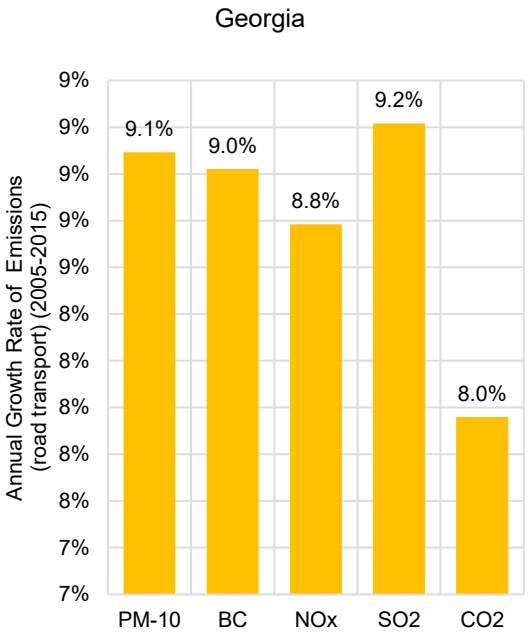
0

LDV FUEL ECONOMY COUNTRY REPORT FOR GEORGIA

		Year	Source
Population (million)	4	2020	7
Income Level Category	Upper middle income		7
GDP per Capita (PPP, Curent USD)	14761	2020	7
Motorisation (Cars/1000 population)	240	2020	10
Car Sales (000)	34	2020	6
Gasoline Price $/l	1.0	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	15.3	2018	13
Employment (Transport+,000)	104	2019	11
Fuel Economy (Lge/100 km, WLTP) -	8	2012	1
Average CO2 emissions/kilometre (g/km, WLTP) -	196	2012	1
Average displacement (cm3) -	2158	2012	1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	12	2012	1
Cumulative number of LDVs (total sample size,000) -	122		1
Diesel Share in LDV (sample,%)	18%	2012	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	No	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.148	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.128	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	112.8	2019	8
Transport CO2 Emissions per Capita (tonnes) -	3.6	2019	14
Road Transport PM Emissions per Capita (grams) -	162.4	2015	14
Road Transport NOx Emissions per Capita (grams)-	6058.9	2015	14
Road Transport BC Emissions per Capita (grams)-	82.1	2015	14
LDV Emission Standards -	no policy	2019	1
Diesel Sulphur Levels (ppm) -	100	2019	1
Gasoline Sulphur Levels (ppm) -	50	2019	1
Annual rate of economy-wide energy intensity growth	-2.5%	2000-18	16
Annual rate of transport energy consumption growth	7.5%	2000-18	16
LDV Import value (Million USD)	0	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
7 World Bank
8 UN Statistics Division
9 SLOCAT &GIZ
10 Estimated using growth and sales data
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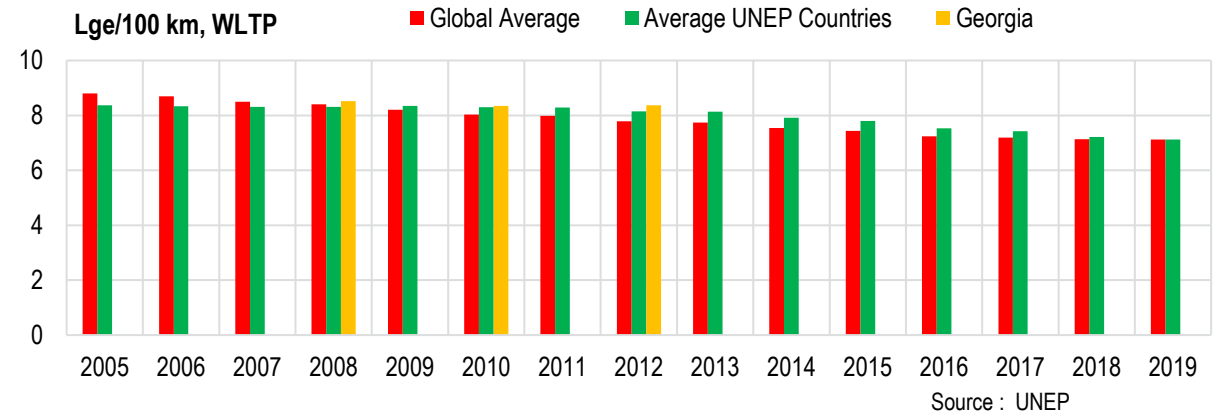
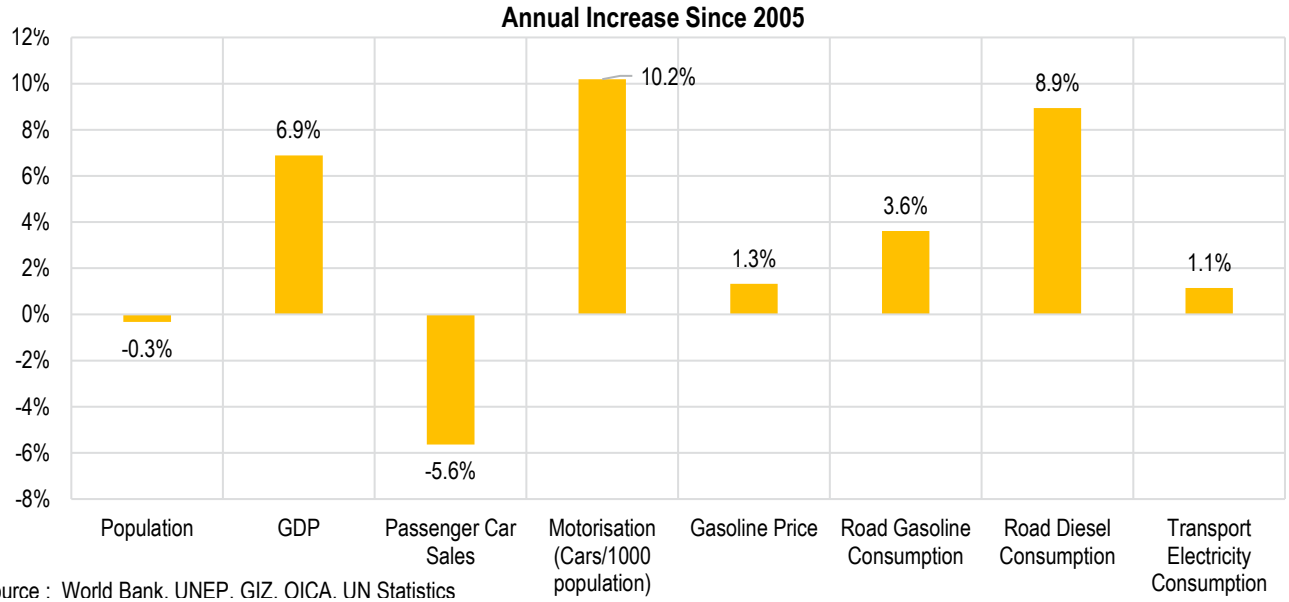
13 Koks, E.E. et al. A global multi-hazard risk analysis of road
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

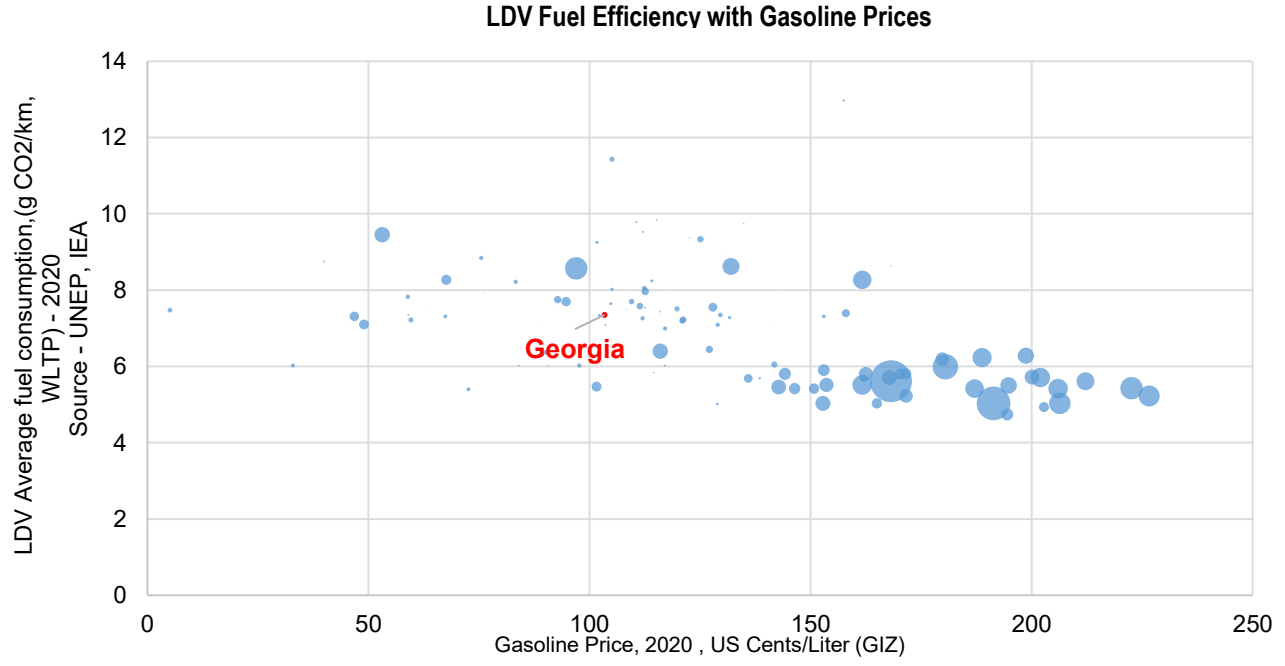
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

page 2/4

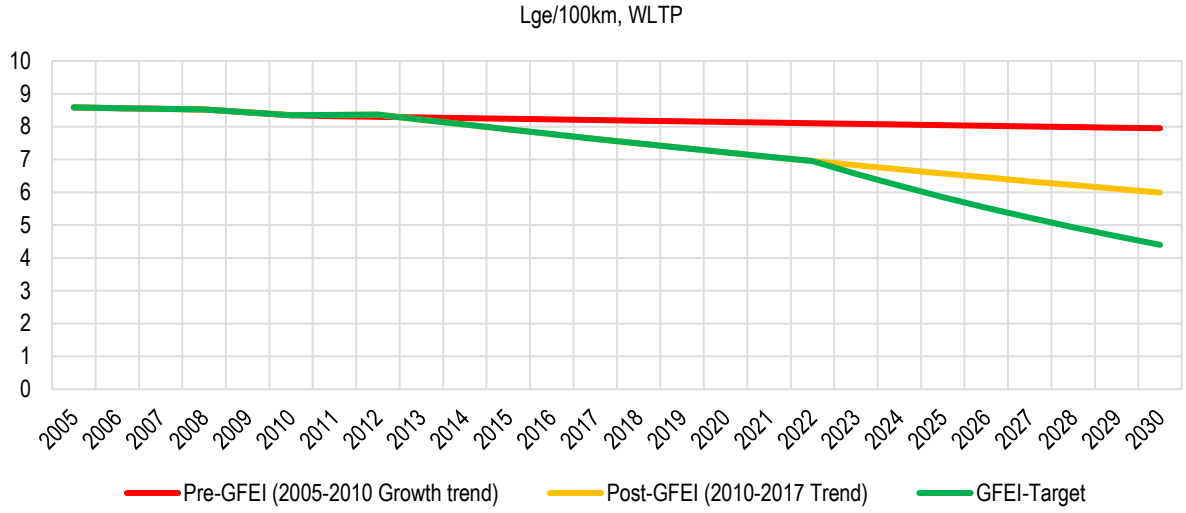
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

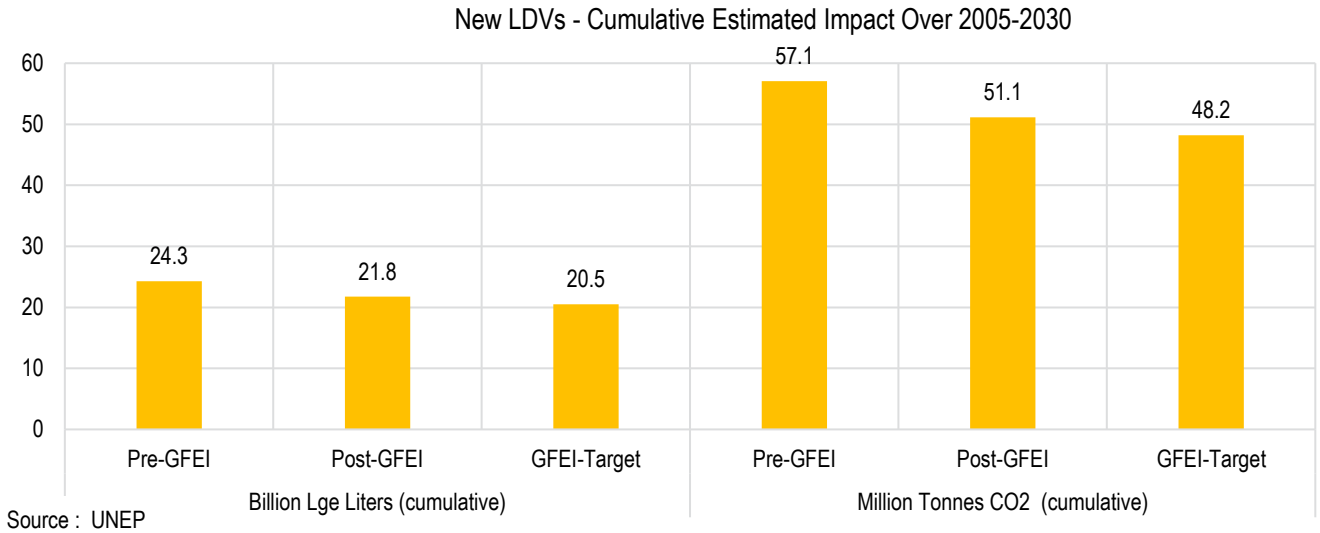
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-1.4%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-4.8%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

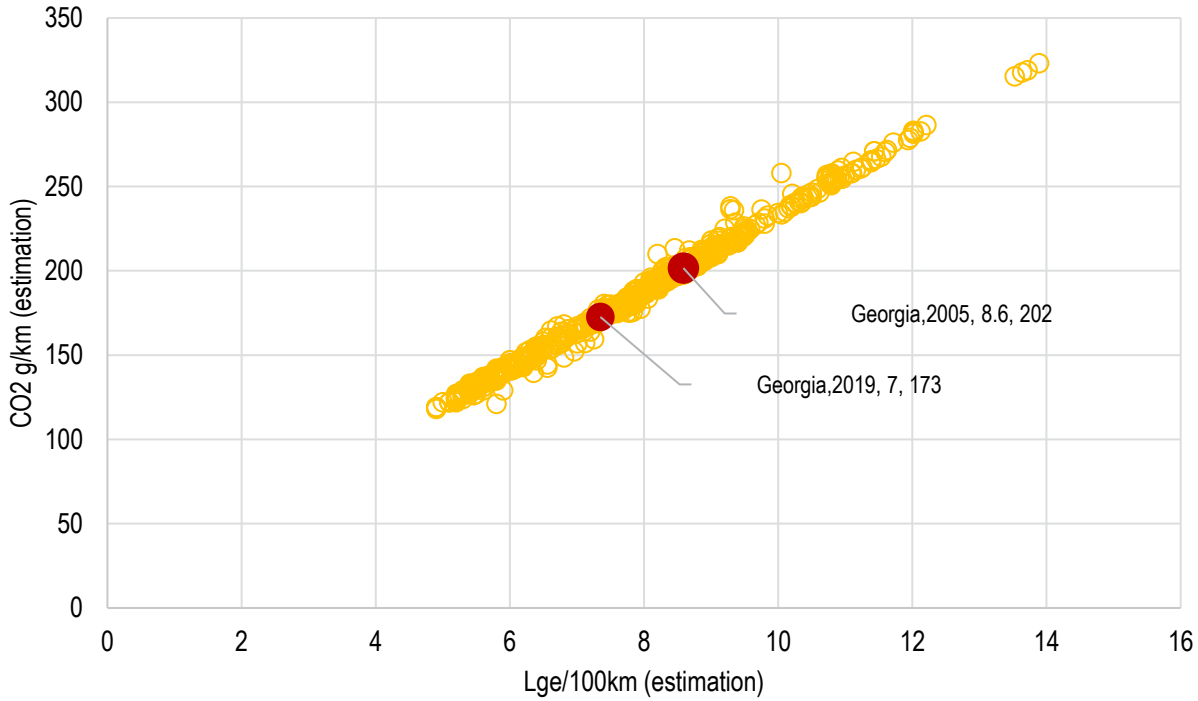
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

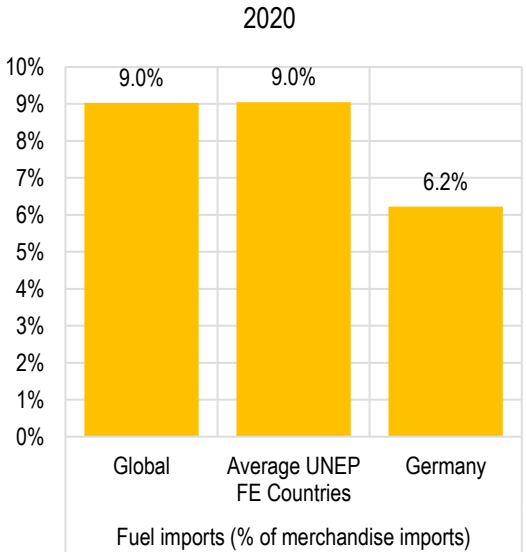
The project assisted the Government of Georgia in harmonising Georgian legislation with EU requirements for vehicle emission standards, in line with Georgia's current and planned fuel quality. With support from UNEP, the Caucasus Environmental NGO Network (CENN) to the Ministry of Environment Protection and Agriculture (MEPA), the project also included identifying applicable enforcement mechanisms of emission standards for imported vehicles. This includes vehicle imports and enforcement of any proposed vehicle emission standards. The Ministry together with CENN and UNEP, worked to secure funding for a cost-benefit analysis building on the CTCN-funded CBA TOR's for Georgia's vehicle emission standards. The final draft of the technical regulation prepared by the expert and in close cooperation with MEPA and members of the National Steering Committee, including representatives from MEPA, the Ministry of Economy and Sustainable Development of Georgia, the Ministry of Internal Affairs of Georgia, has been submitted to MEPA.

Draft National Sustainable Energy Action Plan of Georgia quantifies the impact of the increase of hybrid and electric vehicles, mandatory periodic roadworthiness tests for motor vehicle and information campaign for transport to be about 180000 tonnes by 2030. The world bank has estimated that by 2030, with avoid, shift and improve strategies close to 5 million tonnes of CO2 could be reduced when compared with the baseline.

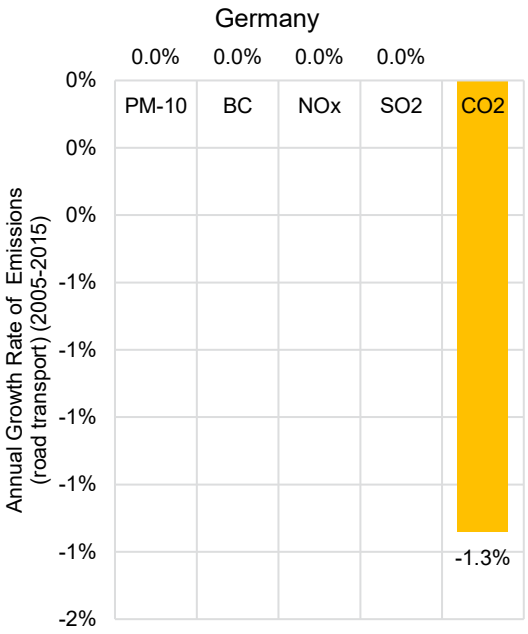
The assessment indicates that if Georgia implements a fuel economy policy for first-time registered LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 3 billion litres of gasoline-equivalent & 7 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR GERMANY

		Year	Source
Population (million)	83	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	54264	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	2918	2020	6
Gasoline Price $/l	1.9	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	12.9	2018	13
Employment (Transport+,000)	3573	2019	11
Fuel Economy (Lge/100 km, WLTP) -	6	2019	1
Average CO2 emissions/kilometre (g/km, WLTP) -	146	2019	1
Average displacement (cm3) -	1675	2019	1
Average kerb weight (kg) -	1503	2019	1
Average power (kw) -	116	2019	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.212	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.424	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	139.4	2019	8
Transport CO2 Emissions per Capita (tonnes) -	8.5	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	-1.9%	2000-18	16
Annual rate of transport energy consumption growth	-0.2%	2000-18	16
LDV Import value (Million USD)	66427	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

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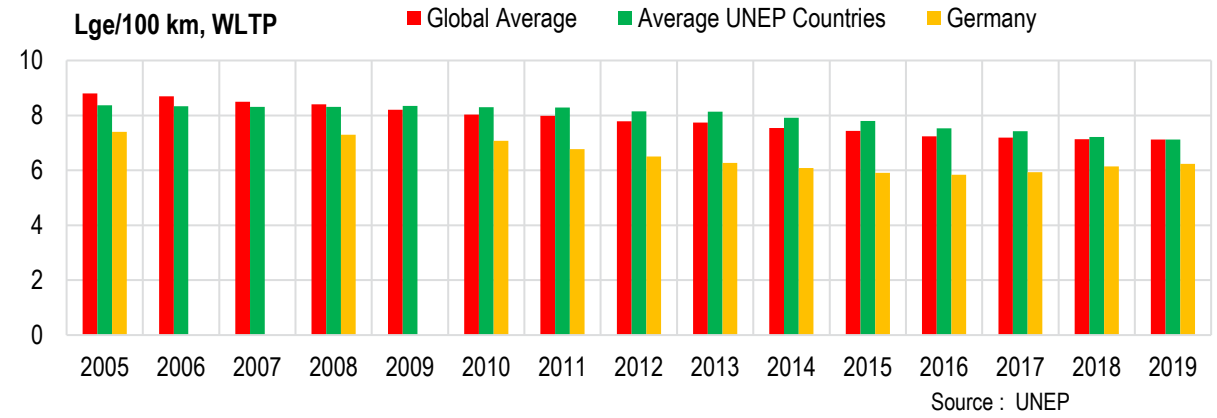
FUEL ECONOMY TRENDS



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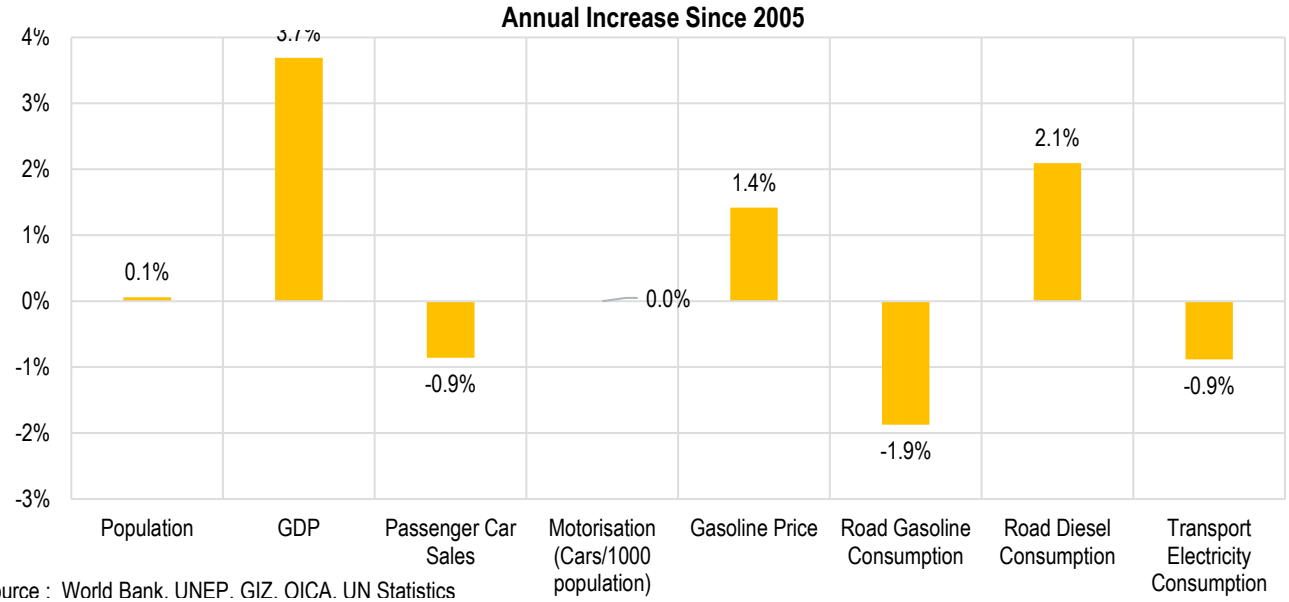

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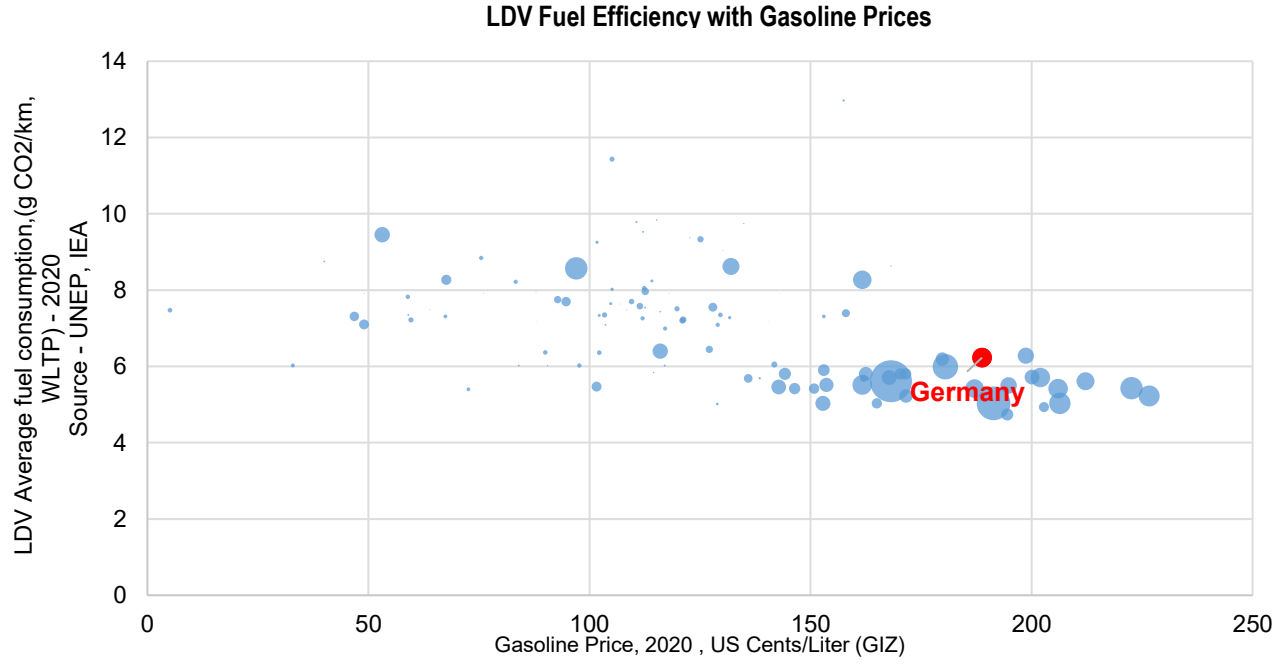

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Note : size of the circle is proportional to the GDP per capita

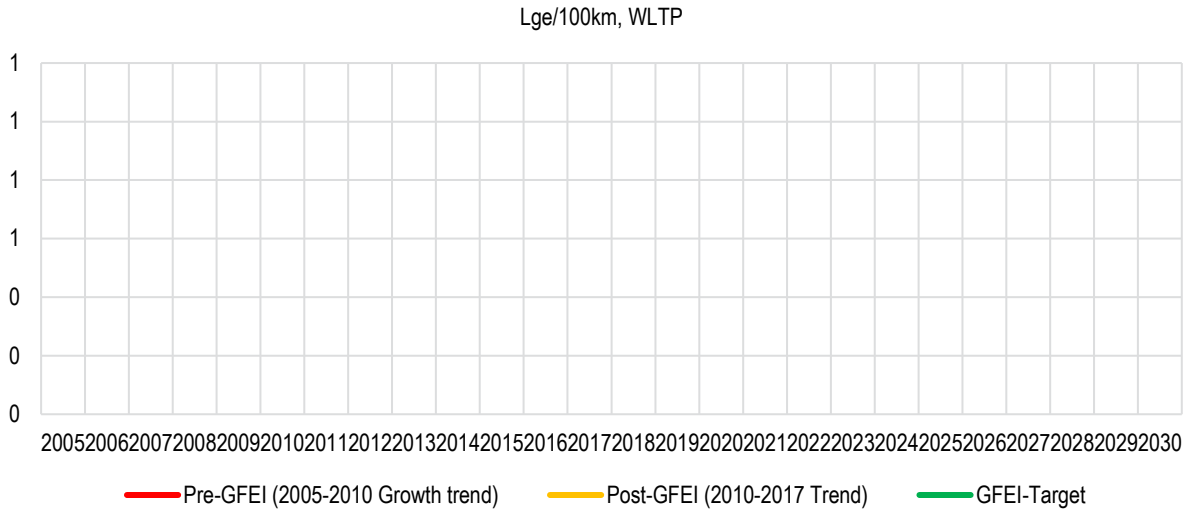
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



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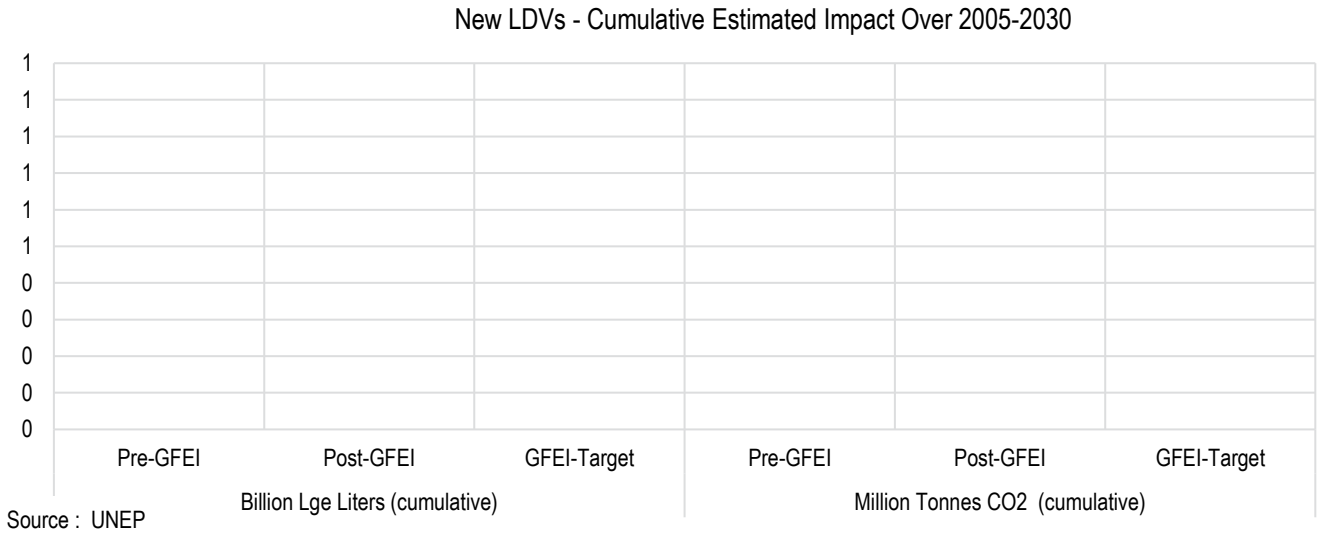


Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

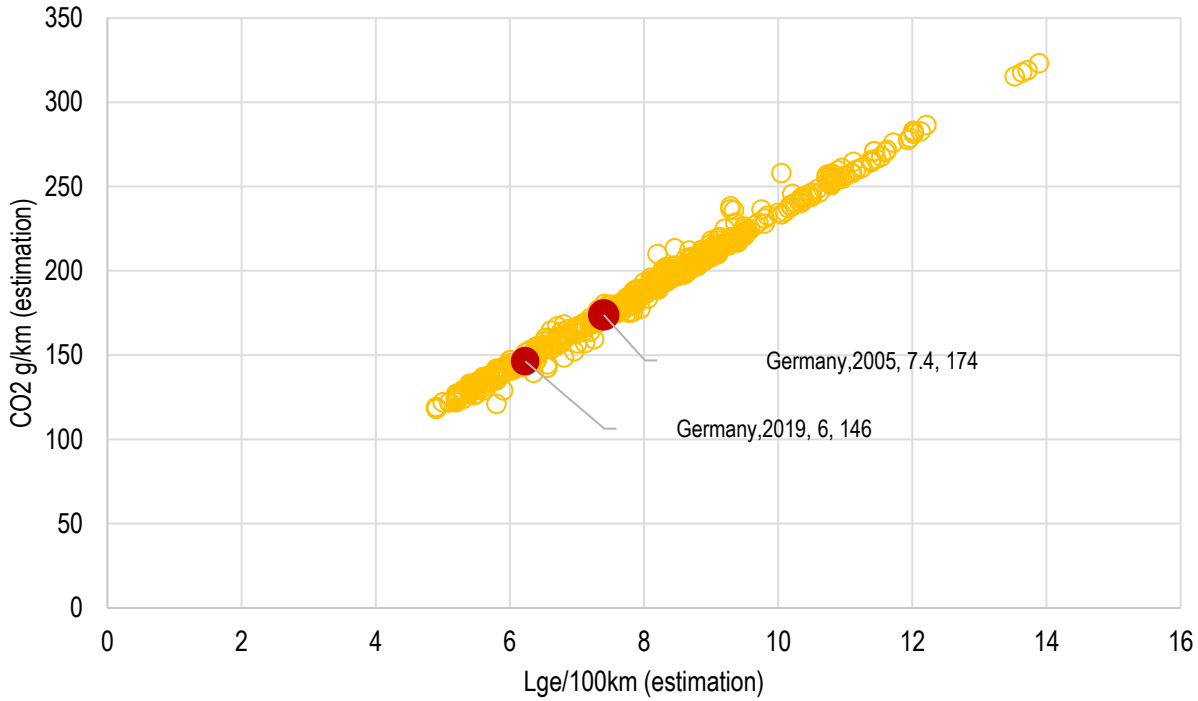
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



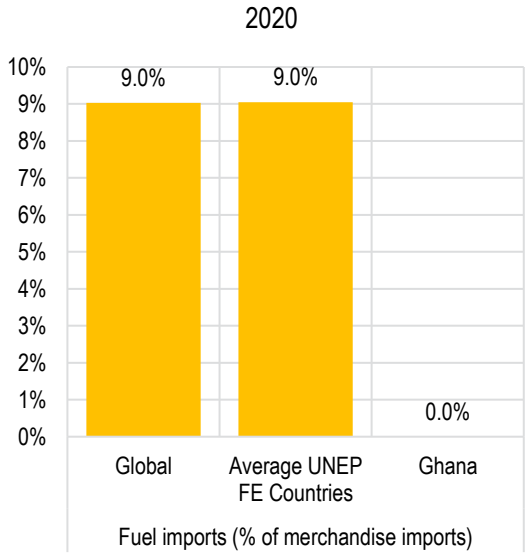
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

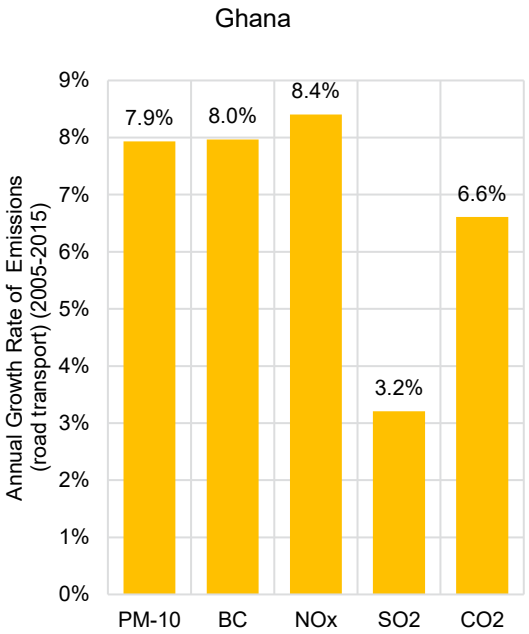
#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR GHANA

		Year	Source
Population (million)	31	2020	7
Income Level Category	Lower middle income		7
GDP per Capita (PPP, Curent USD)	5742	2020	7
Motorisation (Cars/1000 population)	20	2020	10
Car Sales (000)	67	2020	6
Gasoline Price $/l	1.1	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	3.9	2018	13
Employment (Transport+,000)	430	2019	11
Fuel Economy (Lge/100 km, WLTP) -	10	2016	1
Average CO2 emissions/kilometre (g/km, WLTP) -	240	2016	1
Average displacement (cm3) -	2141	2016	1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	5	2016	1
Cumulative number of LDVs (total sample size,000) -	150		1
Diesel Share in LDV (sample,%)	13%	2016	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	No	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.049	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.051	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	0.3	2019	8
Transport CO2 Emissions per Capita (tonnes) -	0.6	2019	14
Road Transport PM Emissions per Capita (grams) -	112.6	2015	14
Road Transport NOx Emissions per Capita (grams)-	2540.3	2015	14
Road Transport BC Emissions per Capita (grams)-	53.8	2015	14
LDV Emission Standards -	0	2019	1
Diesel Sulphur Levels (ppm) -	50	2019	1
Gasoline Sulphur Levels (ppm) -	1000	2019	1
Annual rate of economy-wide energy intensity growth	-3.5%	2000-18	16
Annual rate of transport energy consumption growth	6.3%	2000-18	16
LDV Import value (Million USD)	498	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
7 World Bank
8 UN Statistics Division
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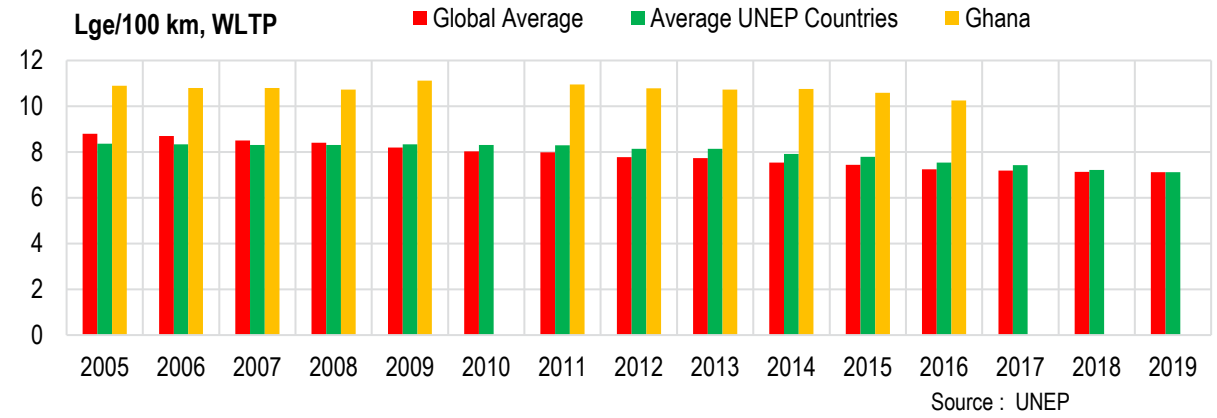
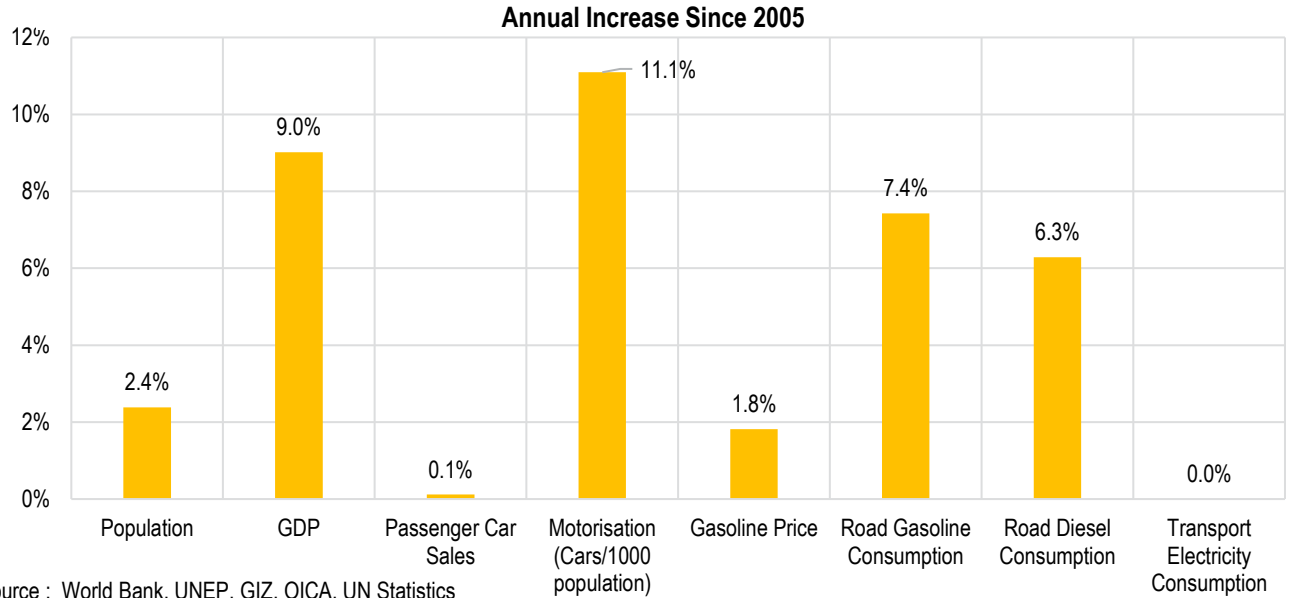
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

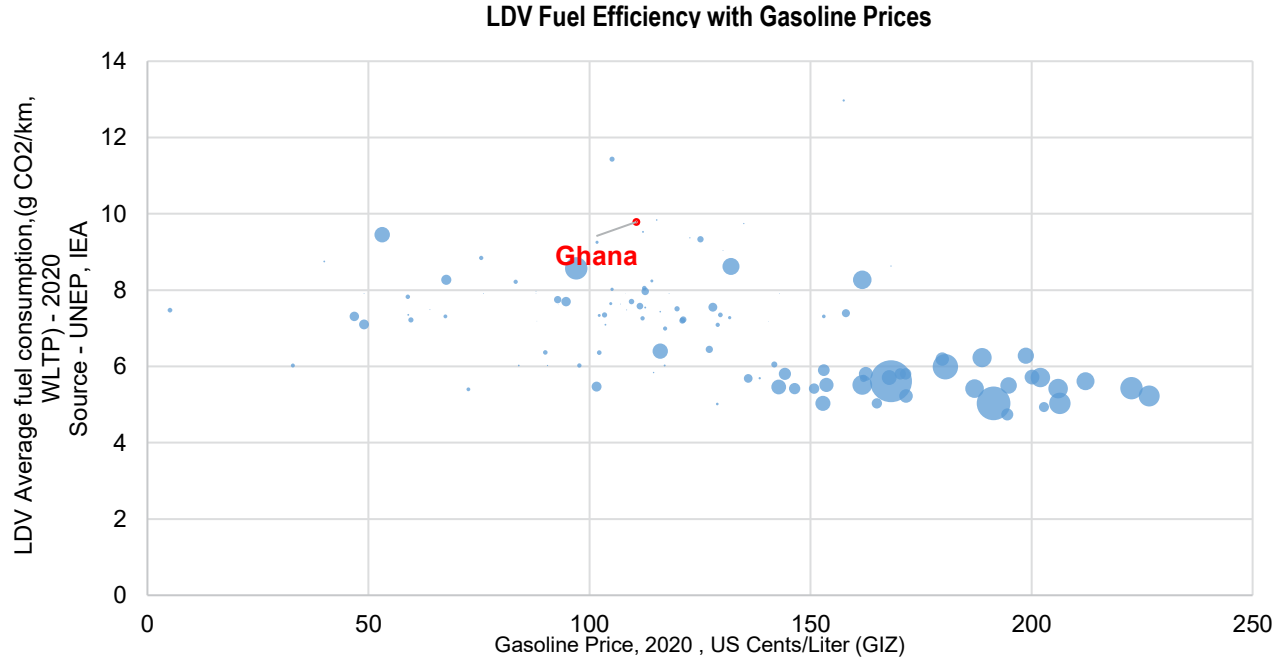
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

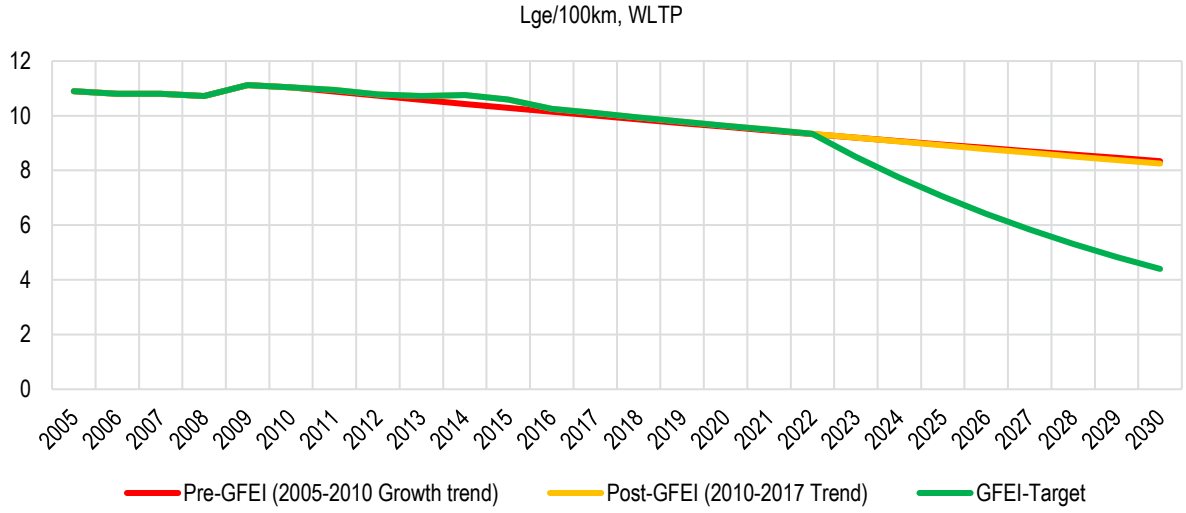
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

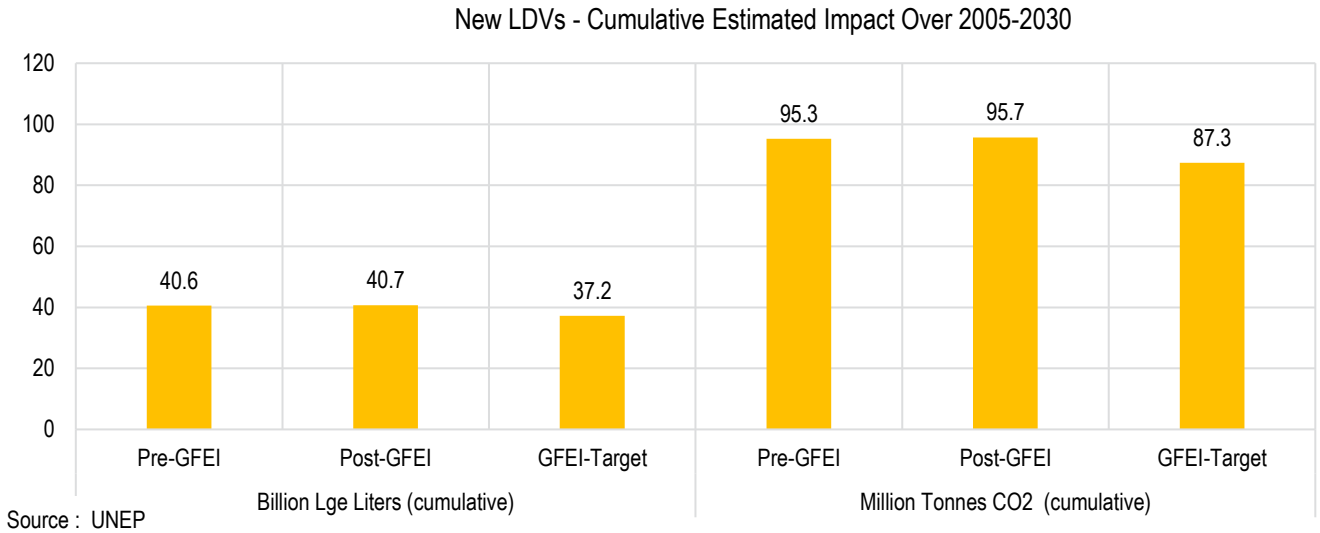
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-1.3%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-7.5%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

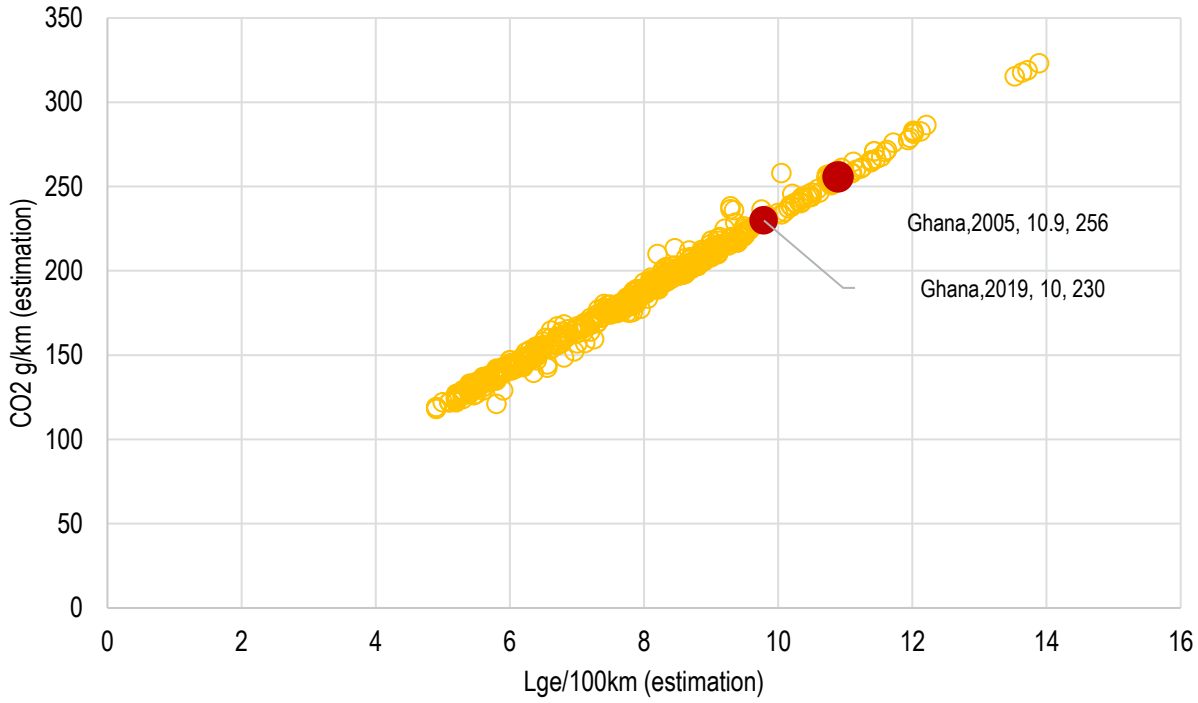
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

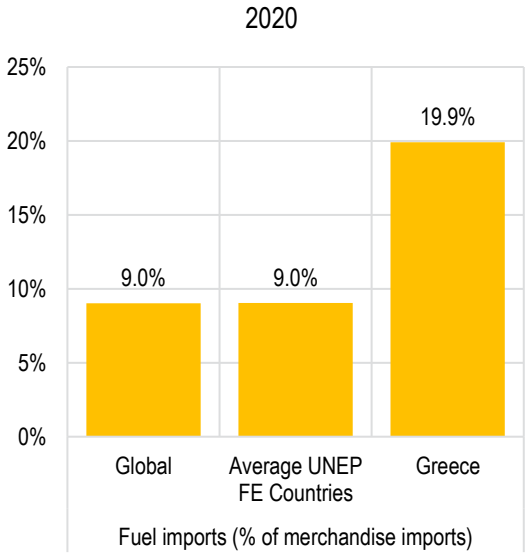
Source : UNEP

The UNEP signed an agreement with the Environmental Protection Agency (EPA Ghana) on 14 March 2017 for the promotion of vehicle fuel economy, electric mobility and development to vehicle emission standards in Ghana. EPA Ghana led the vehicle inventory study for Ghana discussed at a project inception workshop held in October 2016. The baseline report and proposed policy options were then shared with stakeholders for validation on 23 January 2018. Among the policies considered were - a CO2-based vehicle registration tax/ feebate scheme, CO2-based vehicle circulation tax/ feebate scheme, and Fuel taxation. A preliminary cost-benefit analysis of the policy proposals was undertaken, and the draft policies proposals were after that submitted to the government for adoption. The country has also drafted vehicle emission standards that are under discussion. On 20 November 2018 at the Institute of Environmental Studies in Amasaman, EPA Ghana provided a platform for learning and sharing experiences on electric mobility among over 60 experts and stakeholders from the transport, finance, energy petroleum and environment sectors (both public and private) as well as from the media. Recently, the Energy Commission in collaboration with the Ministry of Energy, rolled out a "Drive Electric Initiative" to promote electric vehicles on Ghana's roads. The initiative seeks to promote and create demand for electric vehicles with a target of having over 100 electric cars and at least ten public charging outlets in Ghana by 2020.

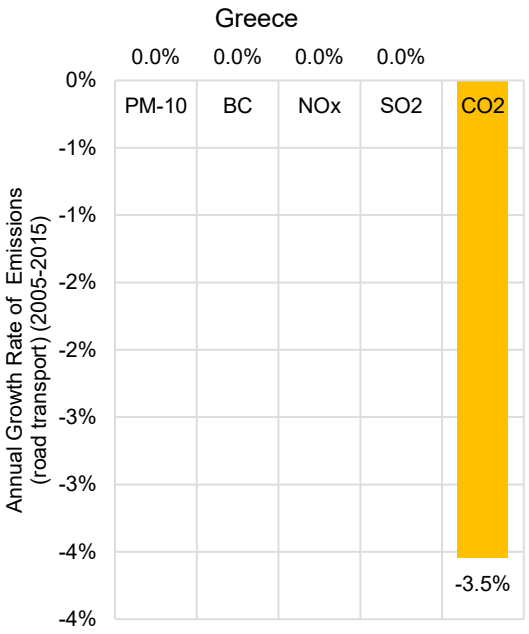
The assessment indicates that if Ghana implements a fuel economy policy for LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 4.9 billion litres of gasoline-equivalent & 11.5 million tonnes of CO2 cumulative from newly registered LDVs. Local stakeholders have estimated that the annual fuel consumption is valued at about GHC1.4 billion and projected total benefits of fuel economy policies over 20 years is approximately USD2.5 billion.

LDV FUEL ECONOMY COUNTRY REPORT FOR GREECE

		Year	Source
Population (million)	11	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	28377	2020	7
Motorisation (Cars/1000 population)	472	2020	10
Car Sales (000)	81	2020	6
Gasoline Price $/l	2.0	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	17.7	2018	13
Employment (Transport+,000)	293	2019	11
Fuel Economy (Lge/100 km, WLTP) -	5	2014	1
Average CO2 emissions/kilometre (g/km, WLTP) -	122	2014	1
Average displacement (cm3) -	1413	2014	1
Average kerb weight (kg) -	1225	2017	1
Average power (kw) -	77	2016	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	No	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.212	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.262	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	18.9	2019	8
Transport CO2 Emissions per Capita (tonnes) -	6.1	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	-1.1%	2000-18	16
Annual rate of transport energy consumption growth	-0.3%	2000-18	16
LDV Import value (Million USD)	1413	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

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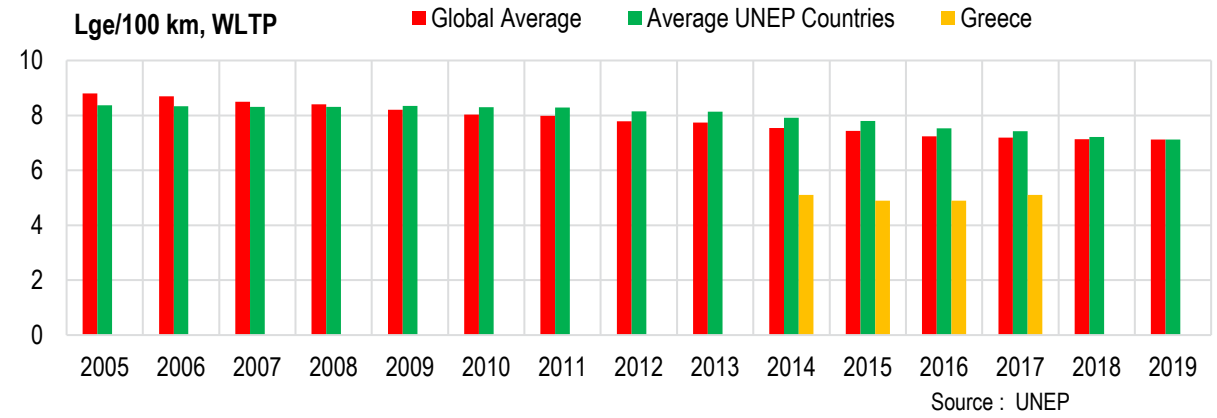
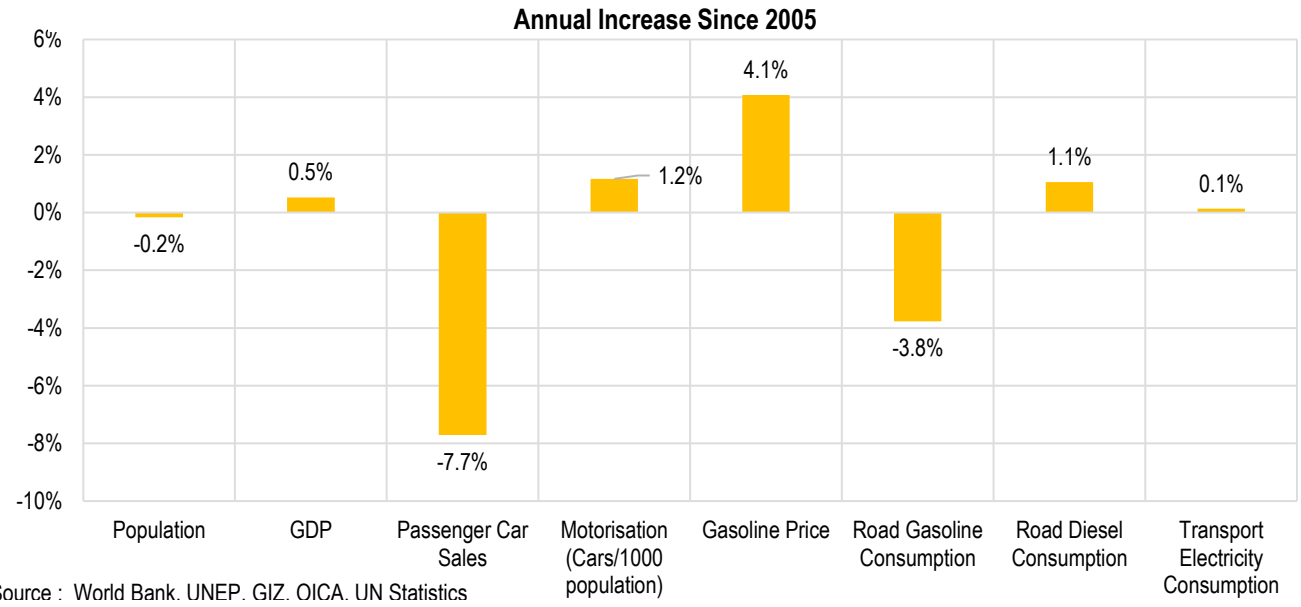
FUEL ECONOMY TRENDS





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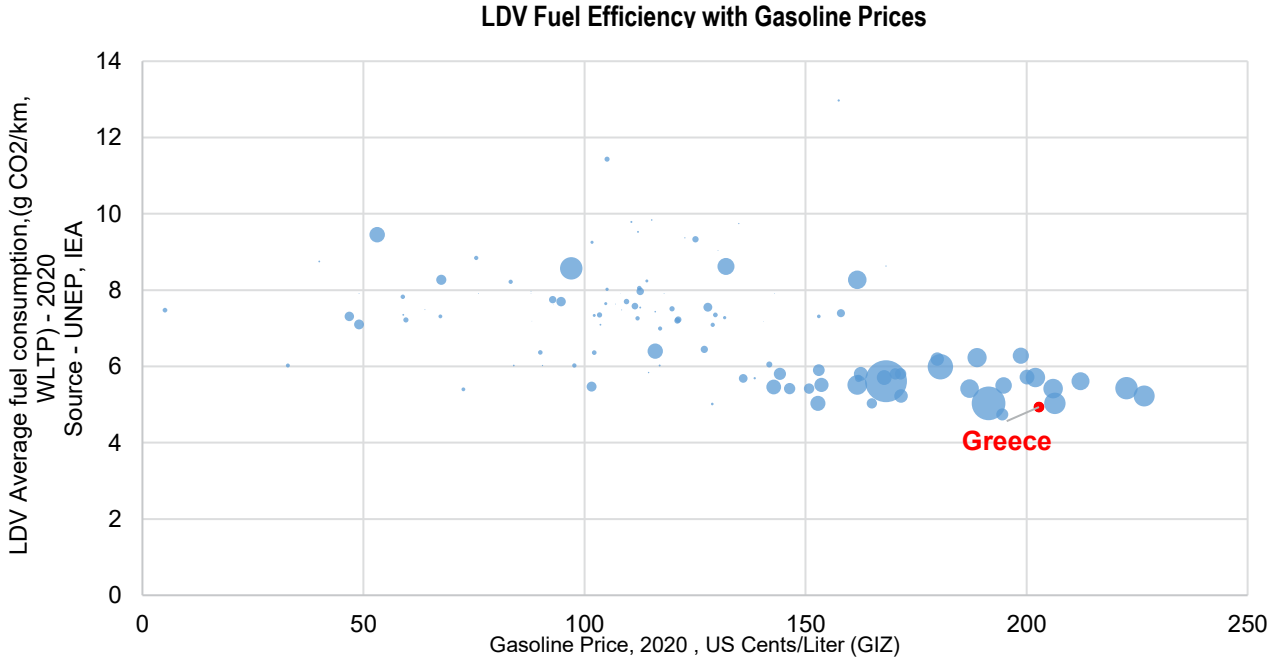


Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

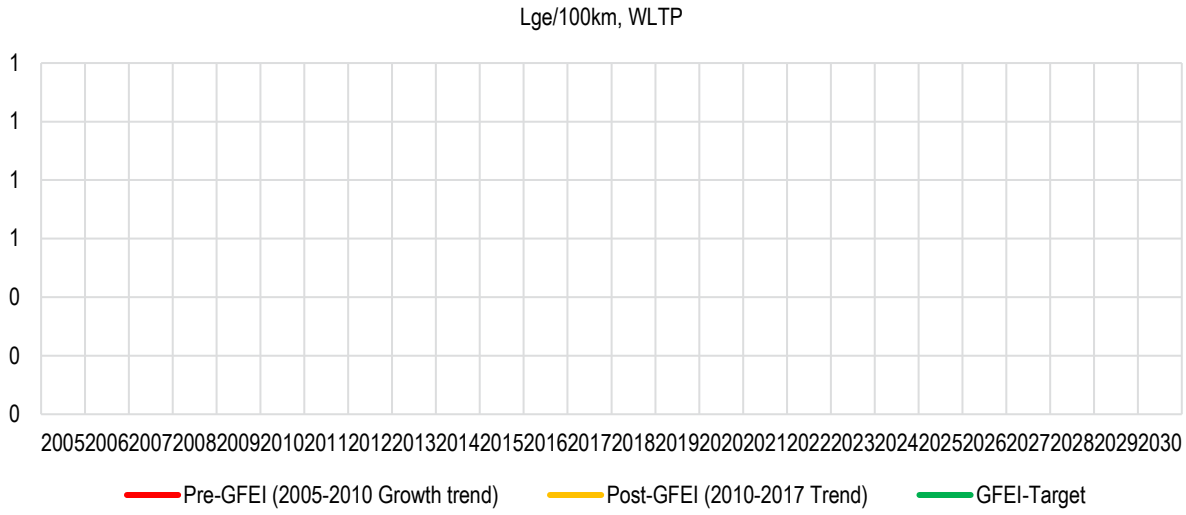
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

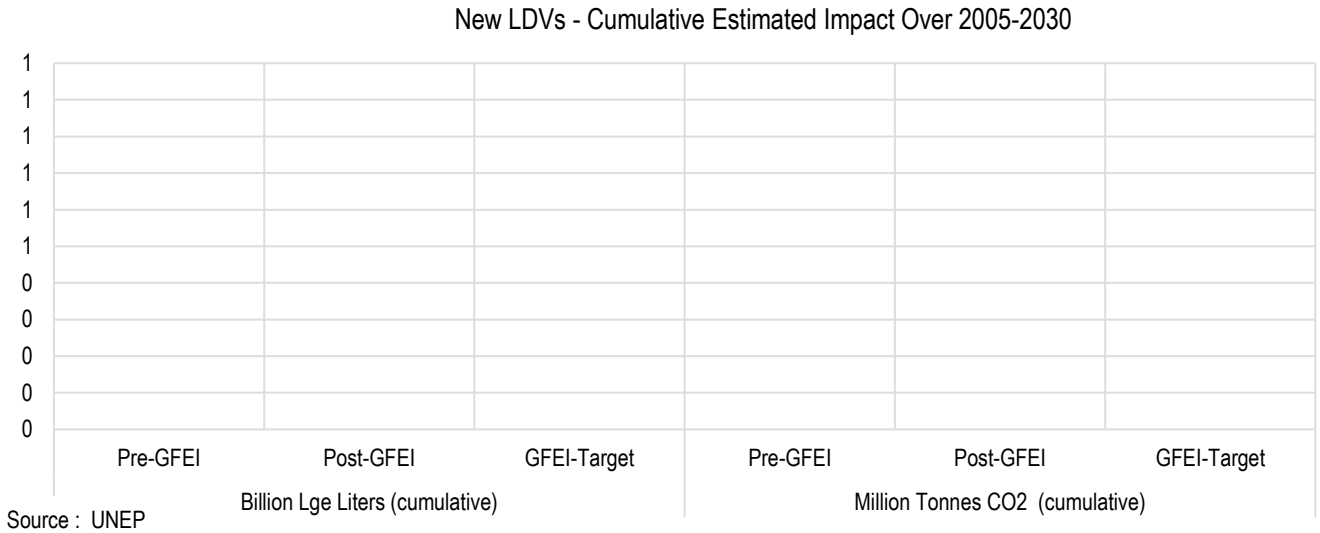
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

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5) The Impact assessment assumes

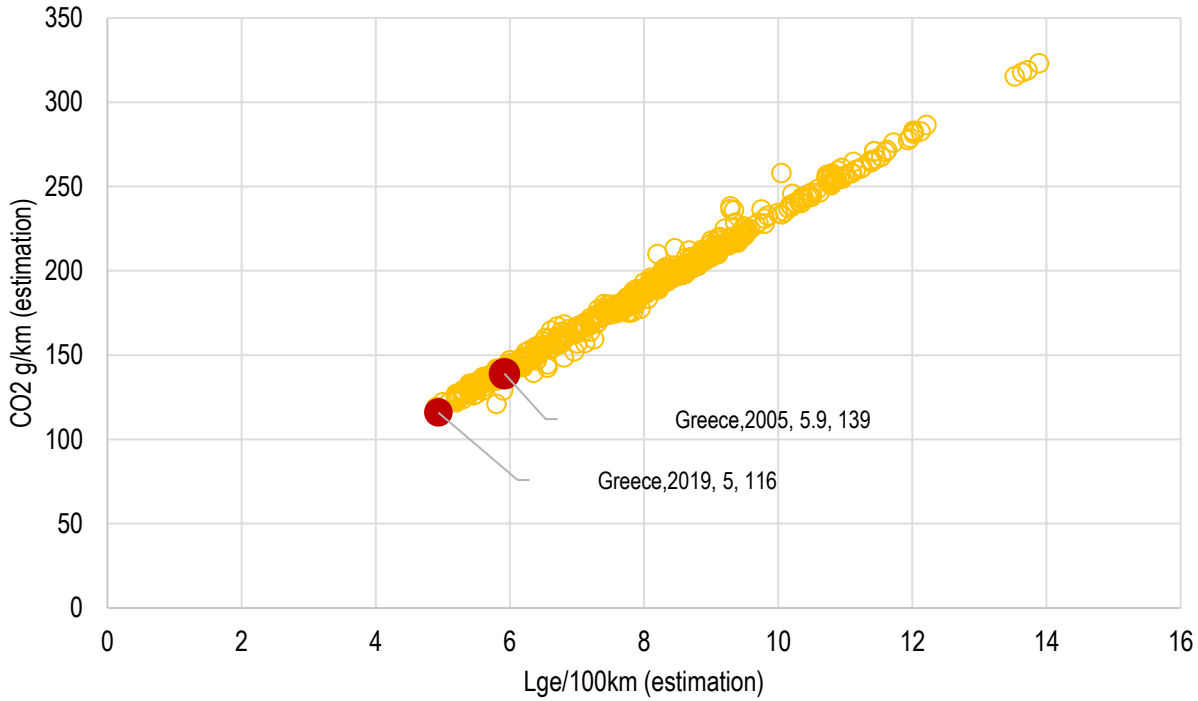
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



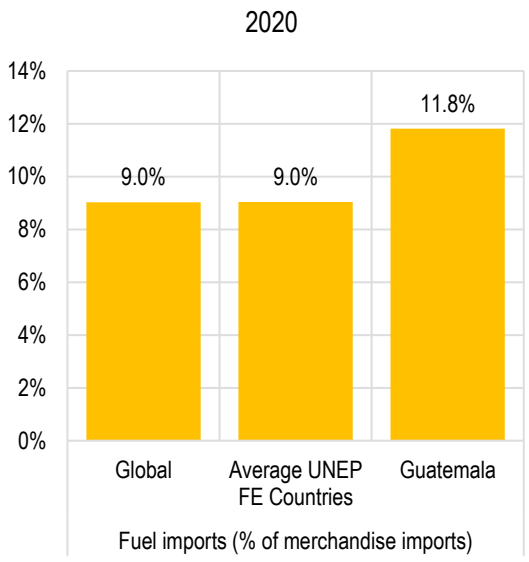
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

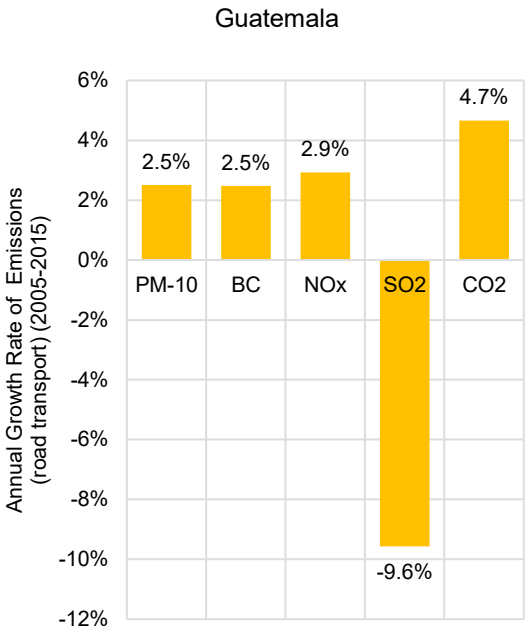
#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR GUATEMALA

		Year	Source
Population (million)	17	2020	7
Income Level Category	Upper middle income		7
GDP per Capita (PPP, Curent USD)	8850	2020	7
Motorisation (Cars/1000 population)	45	2020	10
Car Sales (000)	11	2020	6
Gasoline Price $/l	1.0	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	3.4	2018	13
Employment (Transport+,000)	309	2019	11
Fuel Economy (Lge/100 km, WLTP) -	10	2014	1
Average CO2 emissions/kilometre (g/km, WLTP) -	237	2014	1
Average displacement (cm3) -			1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -	287		1
Diesel Share in LDV (sample,%)	11%	2014	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.095	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.069	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	12.0	2019	8
Transport CO2 Emissions per Capita (tonnes) -	1.3	2019	14
Road Transport PM Emissions per Capita (grams) -	71.3	2015	14
Road Transport NOx Emissions per Capita (grams)-	2350.1	2015	14
Road Transport BC Emissions per Capita (grams)-	35.1	2015	14
LDV Emission Standards -	no policy	2019	1
Diesel Sulphur Levels (ppm) -	500	2019	1
Gasoline Sulphur Levels (ppm) -	1000	2019	1
Annual rate of economy-wide energy intensity growth	0.3%	2000-18	16
Annual rate of transport energy consumption growth	4.6%	2000-18	16
LDV Import value (Million USD)	412	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

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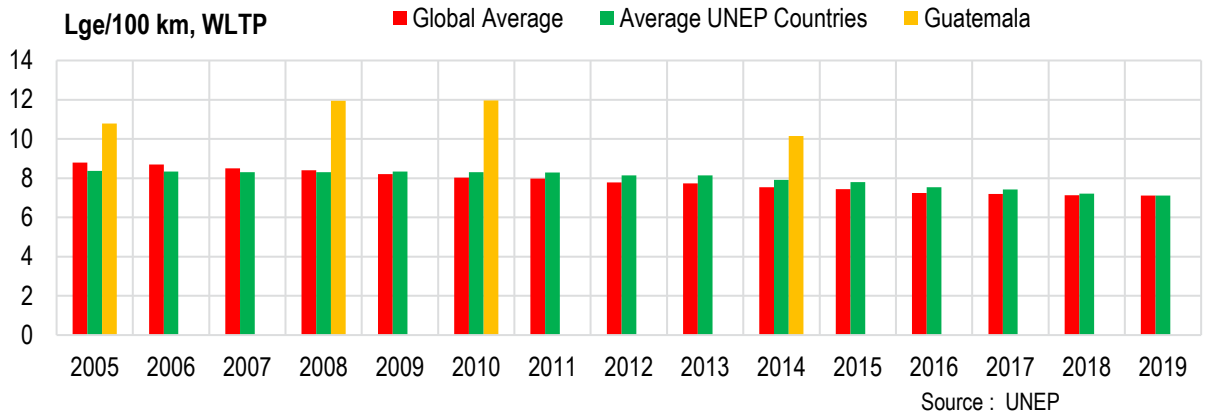
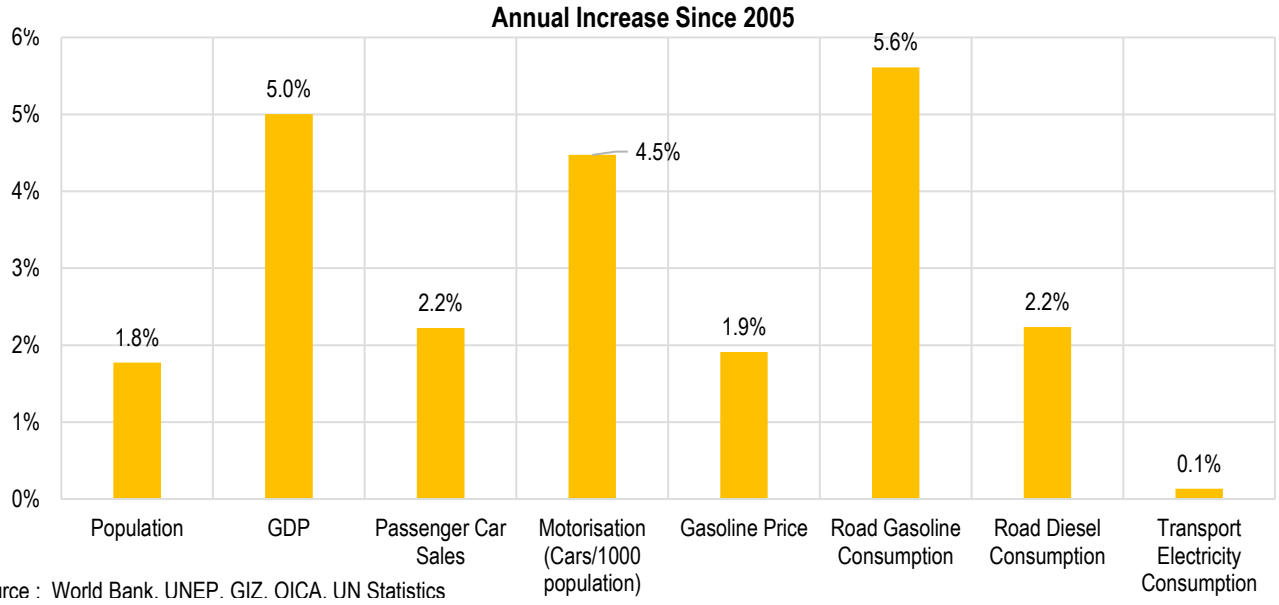
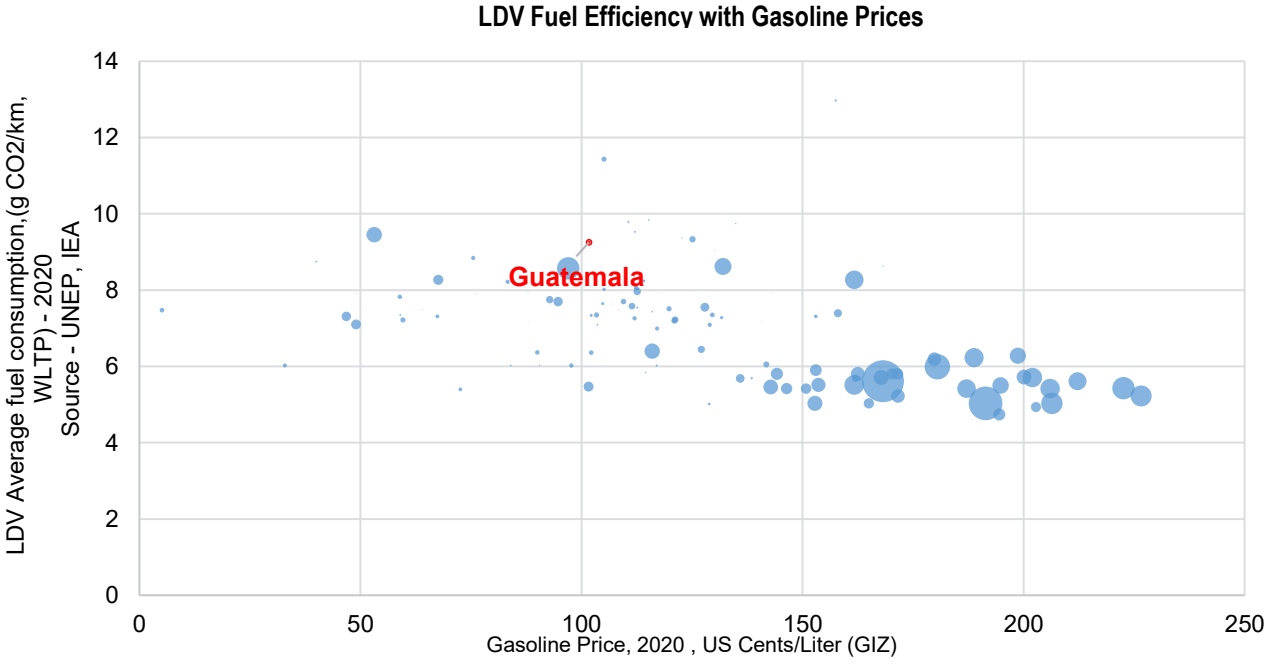
FUEL ECONOMY TRENDS





Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

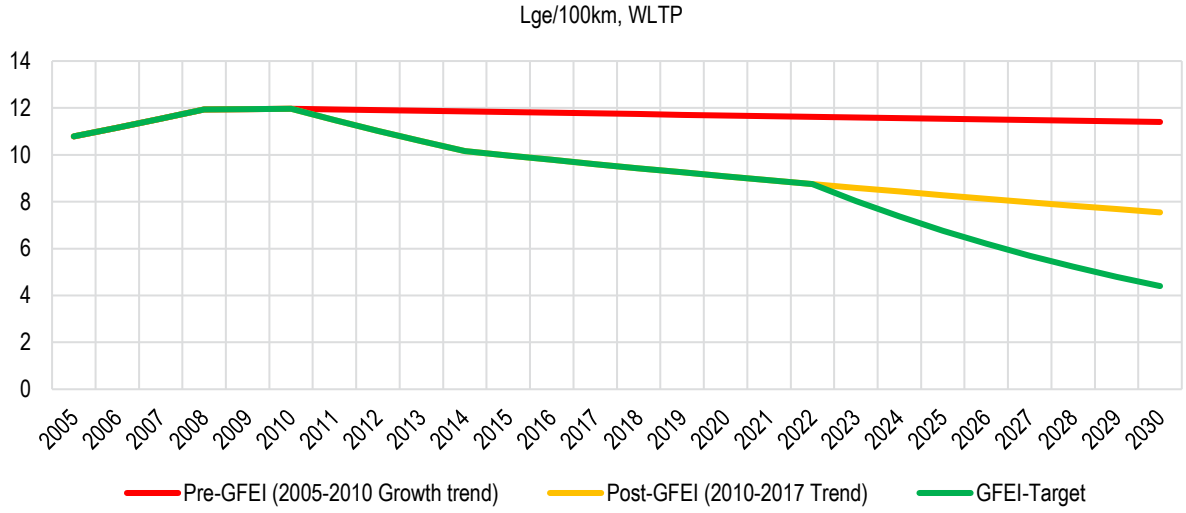
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-2.7%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-7.0%**



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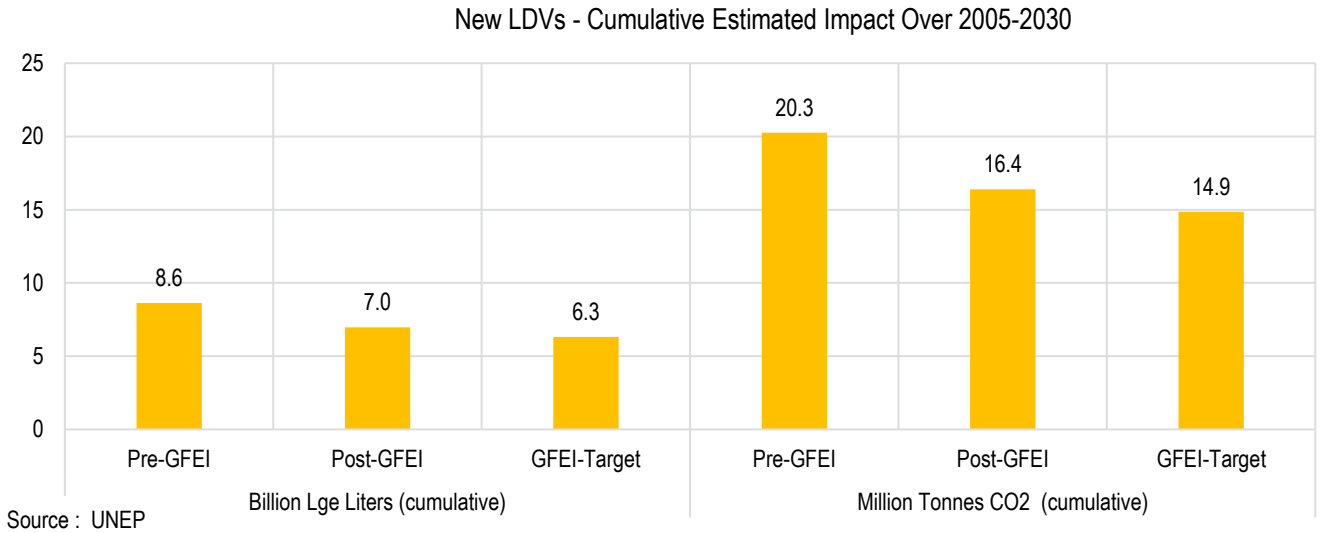

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Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

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a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

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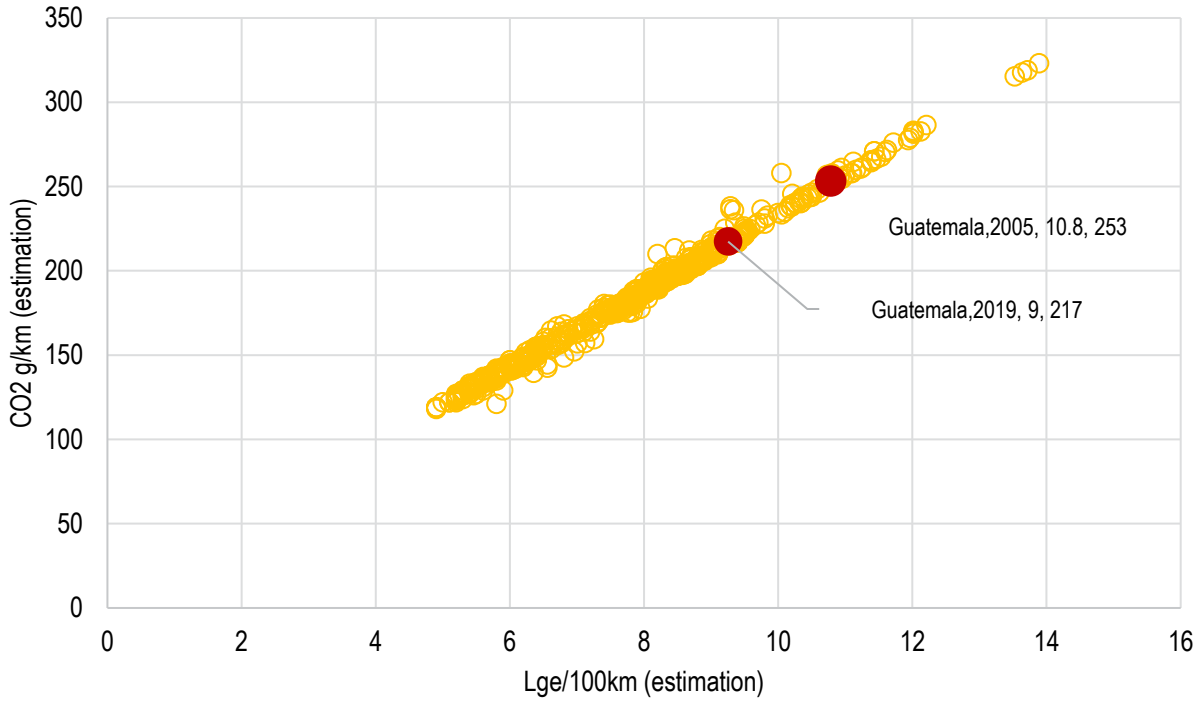
c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

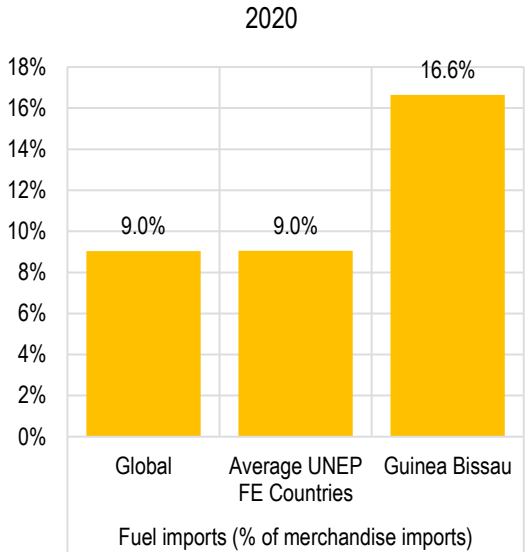
The fuel economy baseline country project for Guatemala was part of the agreement with Centro de Gestion Tecnologica E Informatica Industrial (CEGESTI) signed on 15 August 2016. The GFEI project was launched in Guatemala in February 2017, and the national fuel economy baseline analysis was led by the Ministry of Environment and Natural Resources. The fuel economy baseline report was presented in February 2018.

The National Energy Plan promotes renewable energy and priorities the promotion of technologies for energy efficiency and saving, and the reduction of greenhouse gases.

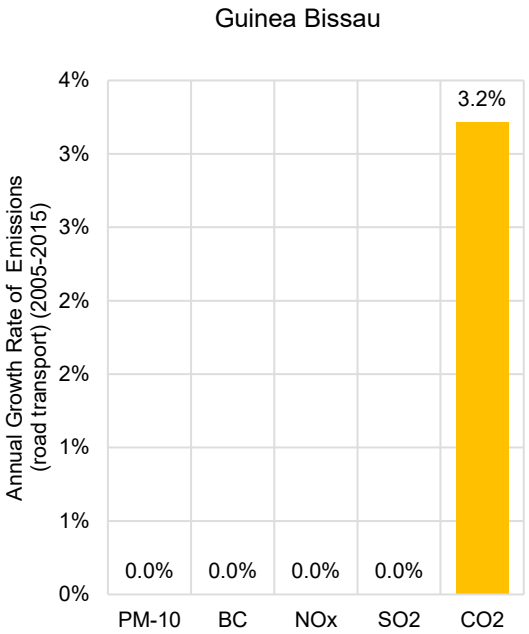
The assessment indicates that if Guatemala implements a fuel economy policy for LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 2.1 billion litres of gasoline-equivalent & 4.9 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR GUINEA BISSAU

		Year	Source
Population (million)	2	2020	7
Income Level Category	Low-income		7
GDP per Capita (PPP, Curent USD)	1948	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	0	2020	6
Gasoline Price $/l	1.4	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	4.2	2018	13
Employment (Transport+,000)	15	2019	11
Fuel Economy (Lge/100 km, WLTP) -	#N/A	#N/A	1
Average CO2 emissions/kilometre (g/km, WLTP) -	#N/A	#N/A	1
Average displacement (cm3) -			1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	No	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.001	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.018	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	0.0	2019	8
Transport CO2 Emissions per Capita (tonnes) -	0.2	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	0	2019	1
Diesel Sulphur Levels (ppm) -	0	2019	1
Gasoline Sulphur Levels (ppm) -	0	2019	1
Annual rate of economy-wide energy intensity growth	#N/A	2000-18	16
Annual rate of transport energy consumption growth	8.6%	2000-18	16
LDV Import value (Million USD)	5	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
7 World Bank
8 UN Statistics Division
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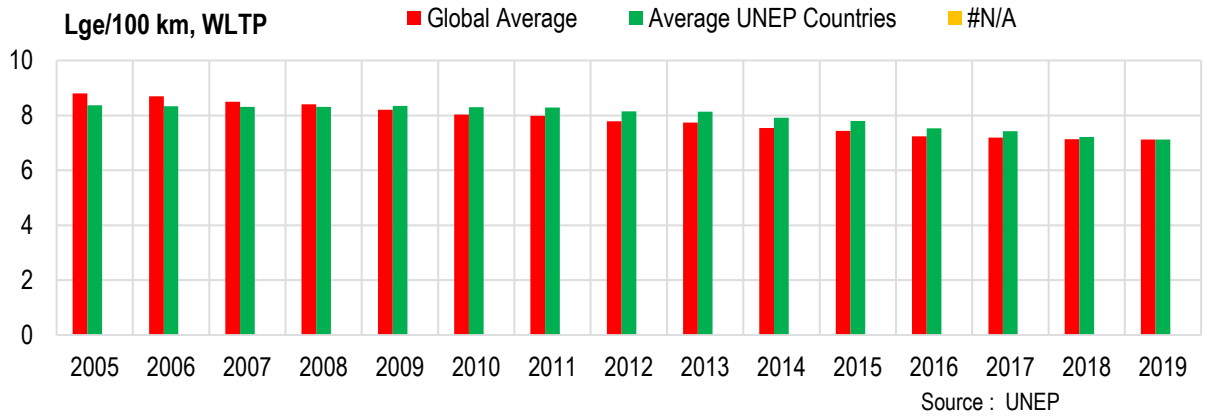
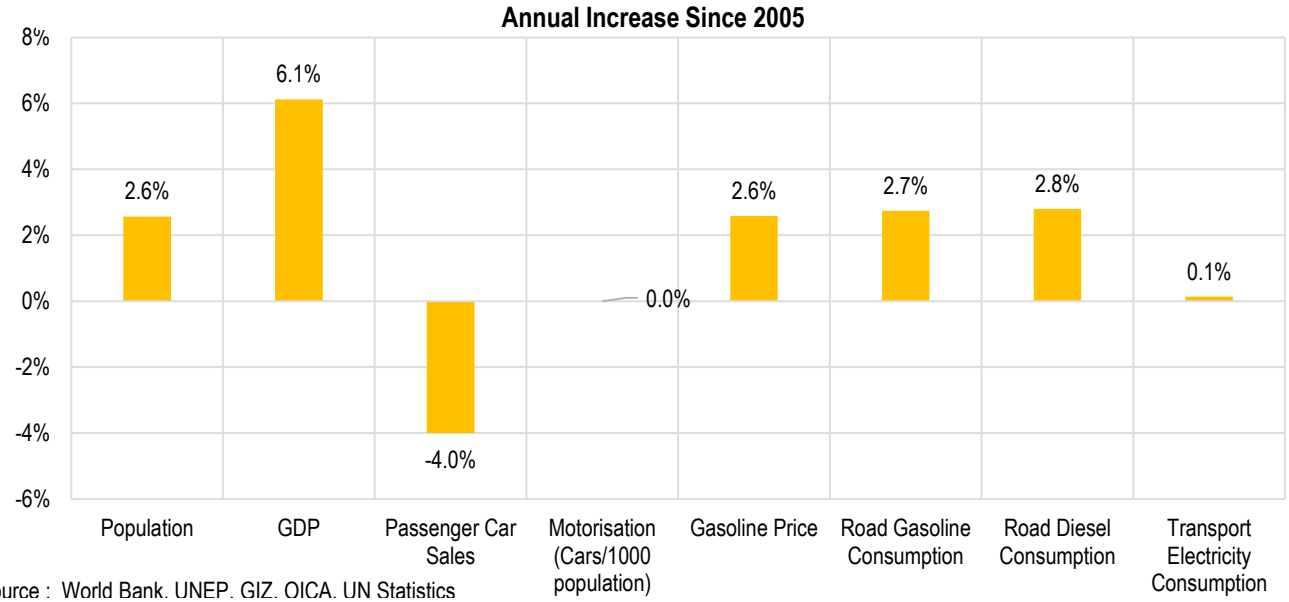
13 Koks, E.E. et al. A global multi-hazard risk analysis of road
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

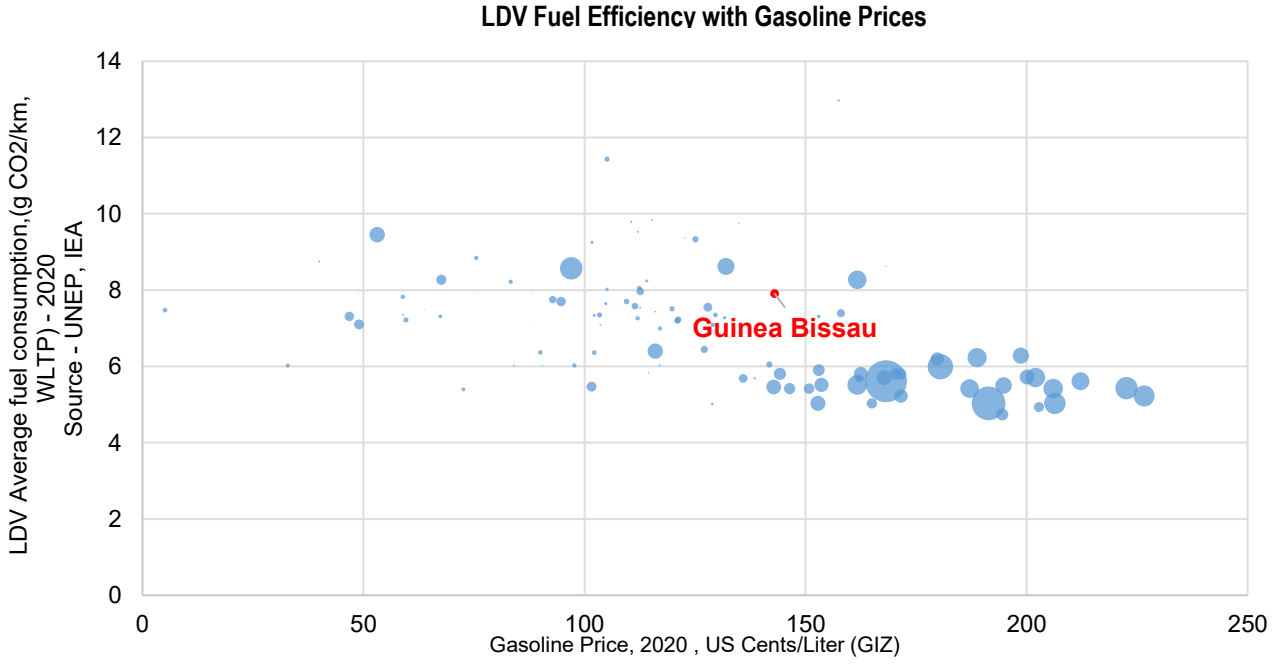
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

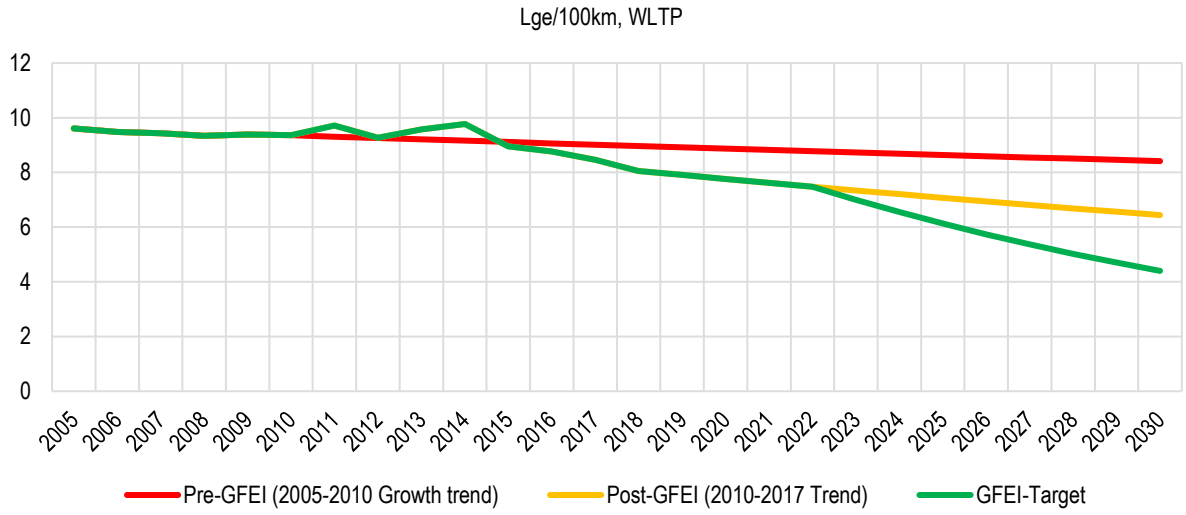
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

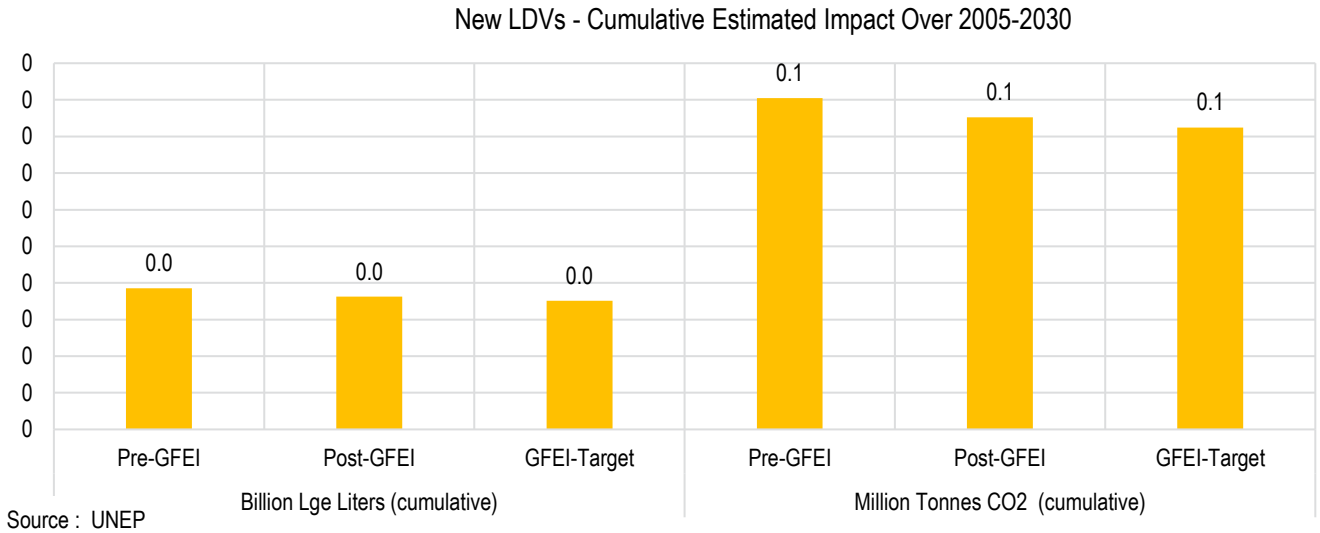
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-1.9%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-5.5%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

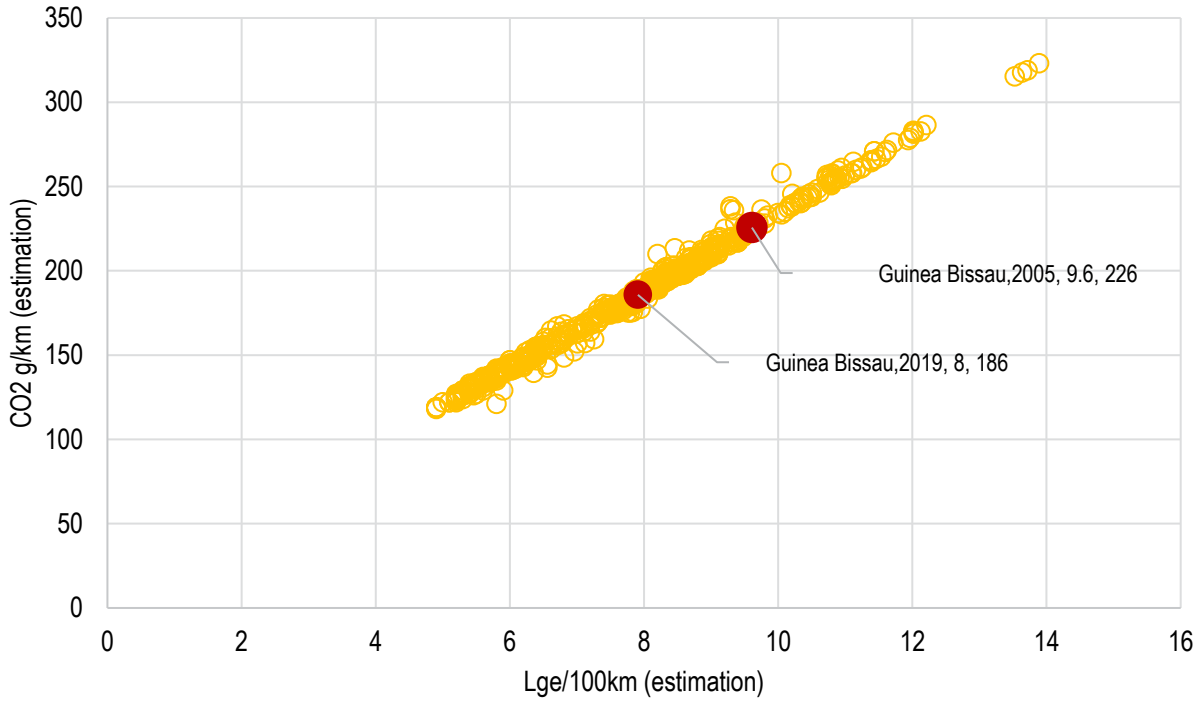
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



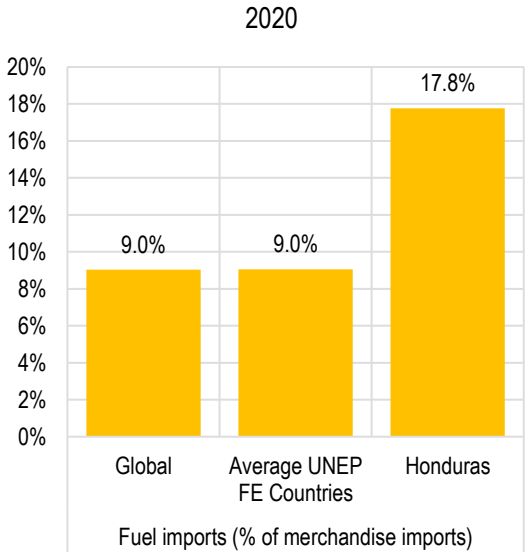
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

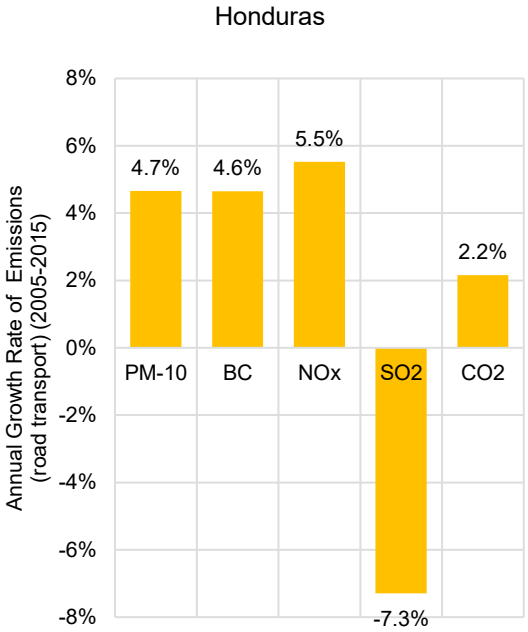
0

LDV FUEL ECONOMY COUNTRY REPORT FOR HONDURAS

		Year	Source
Population (million)	10	2020	7
Income Level Category	Lower middle income		7
GDP per Capita (PPP, Curent USD)	5418	2020	7
Motorisation (Cars/1000 population)	4	2020	10
Car Sales (000)	10	2020	6
Gasoline Price $/l	1.1	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	4.3	2018	13
Employment (Transport+,000)	192	2019	11
Fuel Economy (Lge/100 km, WLTP) -	10	2013	1
Average CO2 emissions/kilometre (g/km, WLTP) -	246	2013	1
Average displacement (cm3) -	2278	2013	1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -	108		1
Diesel Share in LDV (sample,%)	21%	2013	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.069	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.054	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	20.5	2019	8
Transport CO2 Emissions per Capita (tonnes) -	1.1	2019	14
Road Transport PM Emissions per Capita (grams) -	169.5	2015	14
Road Transport NOx Emissions per Capita (grams)-	5109.1	2015	14
Road Transport BC Emissions per Capita (grams)-	84.5	2015	14
LDV Emission Standards -	no policy	2019	1
Diesel Sulphur Levels (ppm) -	500	2019	1
Gasoline Sulphur Levels (ppm) -	1000	2019	1
Annual rate of economy-wide energy intensity growth	-0.1%	2000-18	16
Annual rate of transport energy consumption growth	4.0%	2000-18	16
LDV Import value (Million USD)	80	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

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2 GIZ
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4 International Energy Agency
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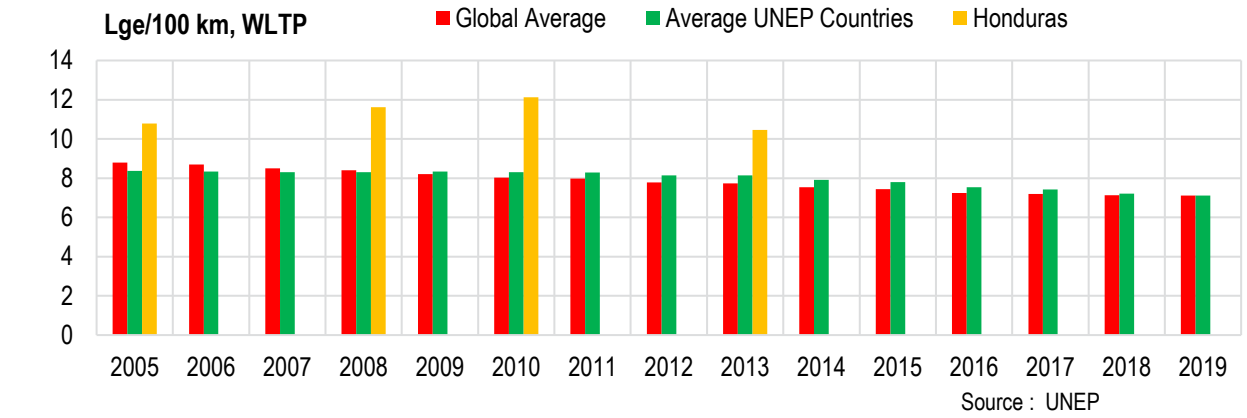
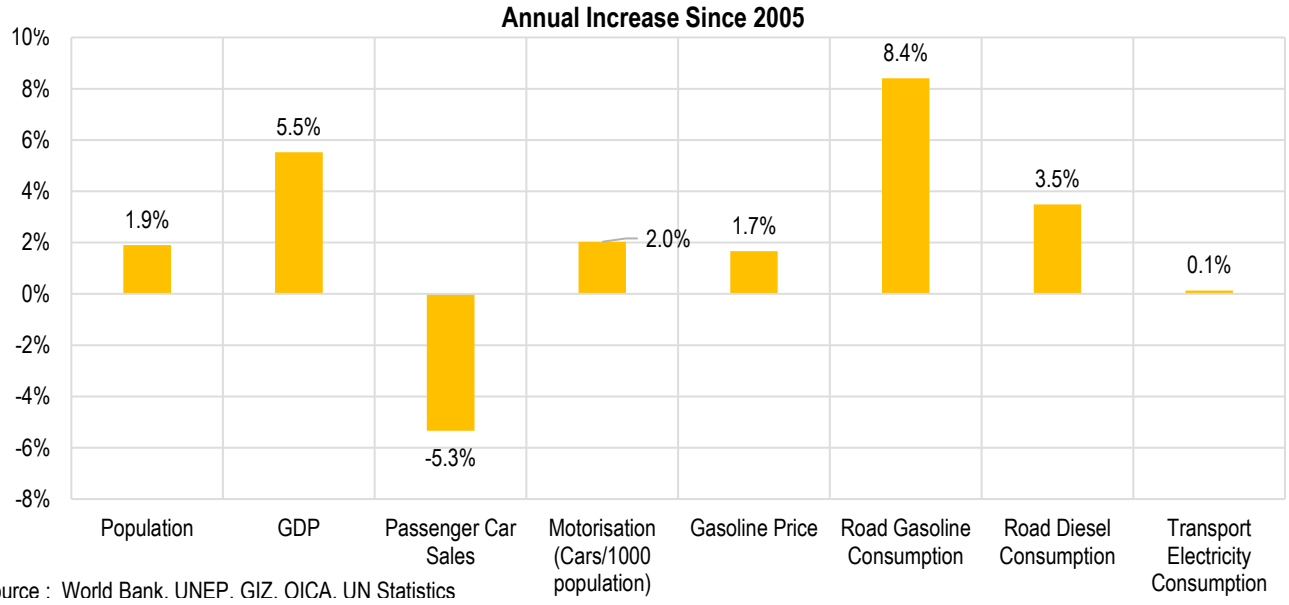
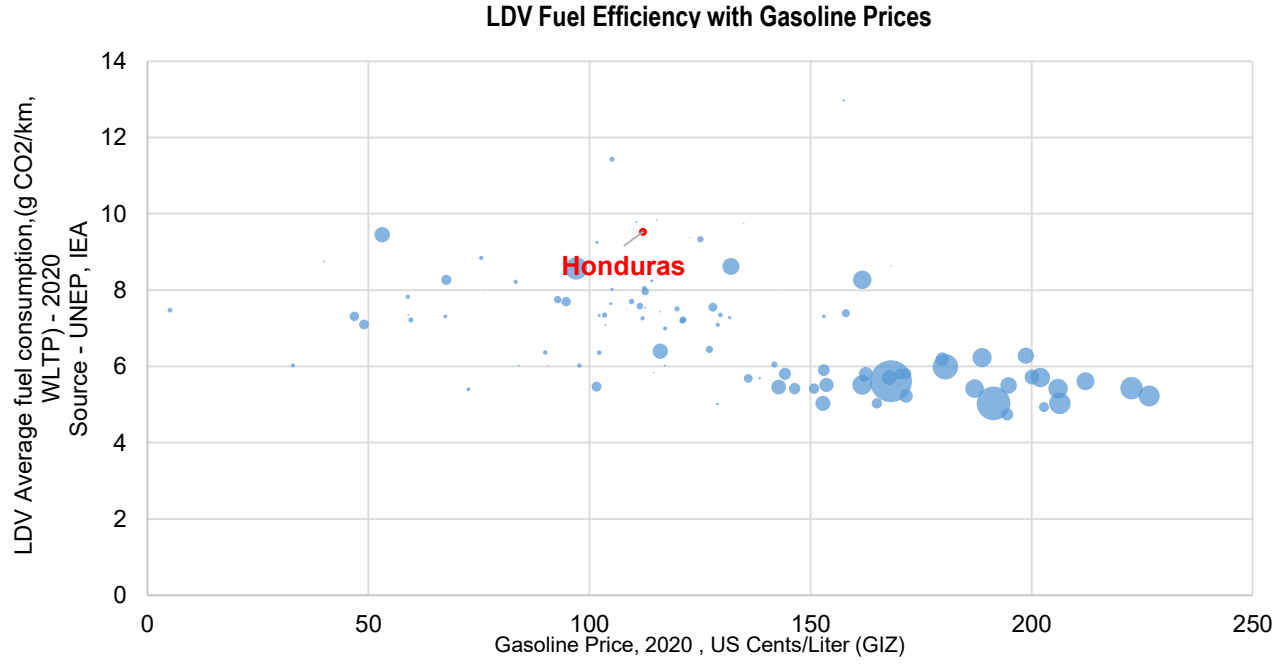
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

FUEL ECONOMY TRENDS





Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

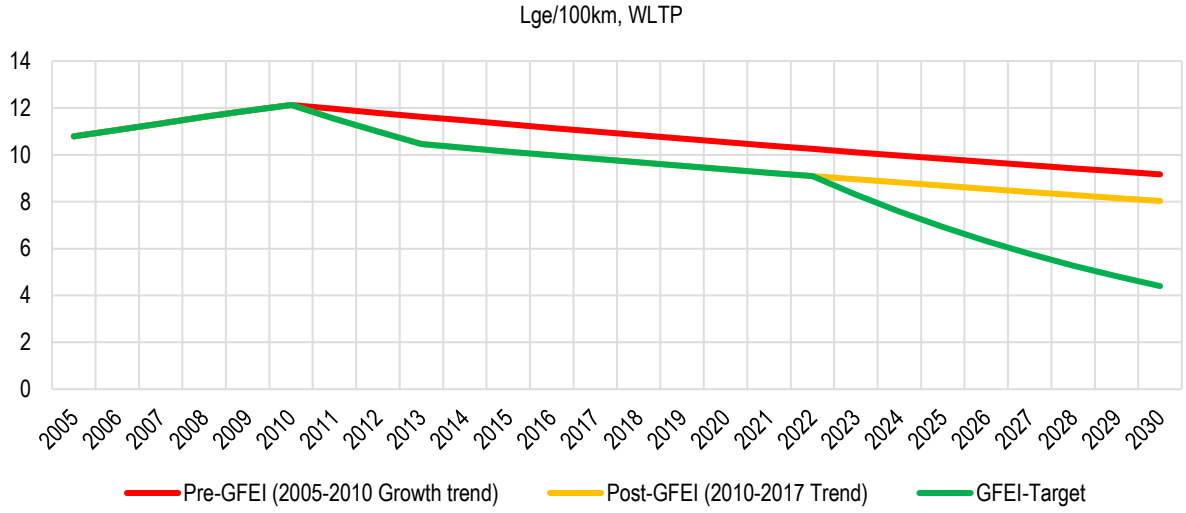
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

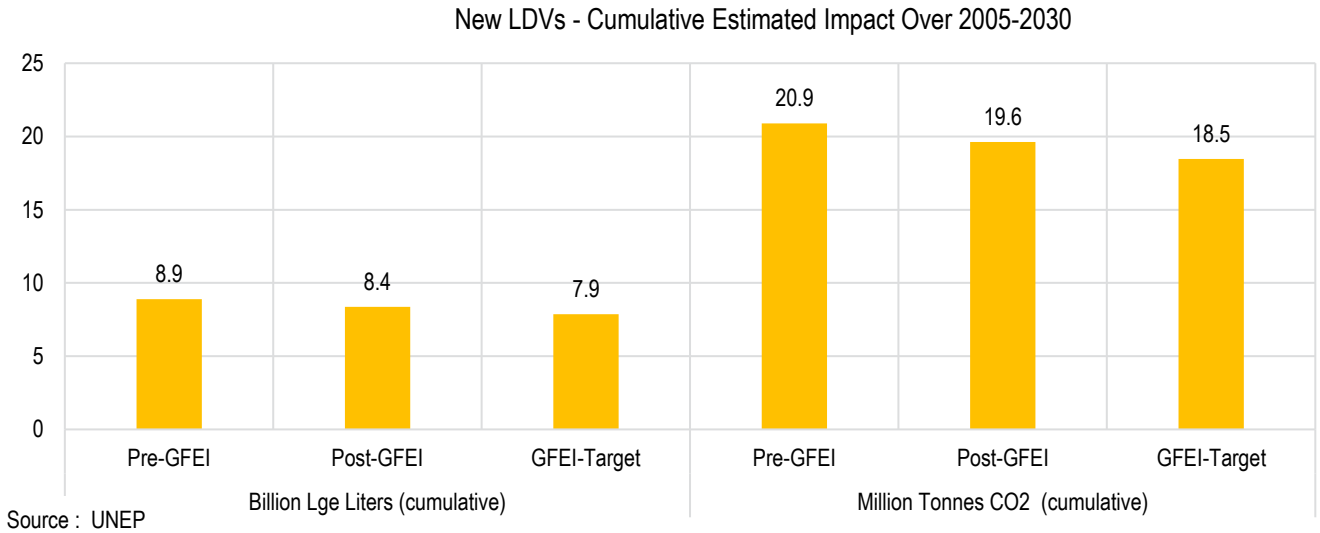
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-2.5%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-7.3%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

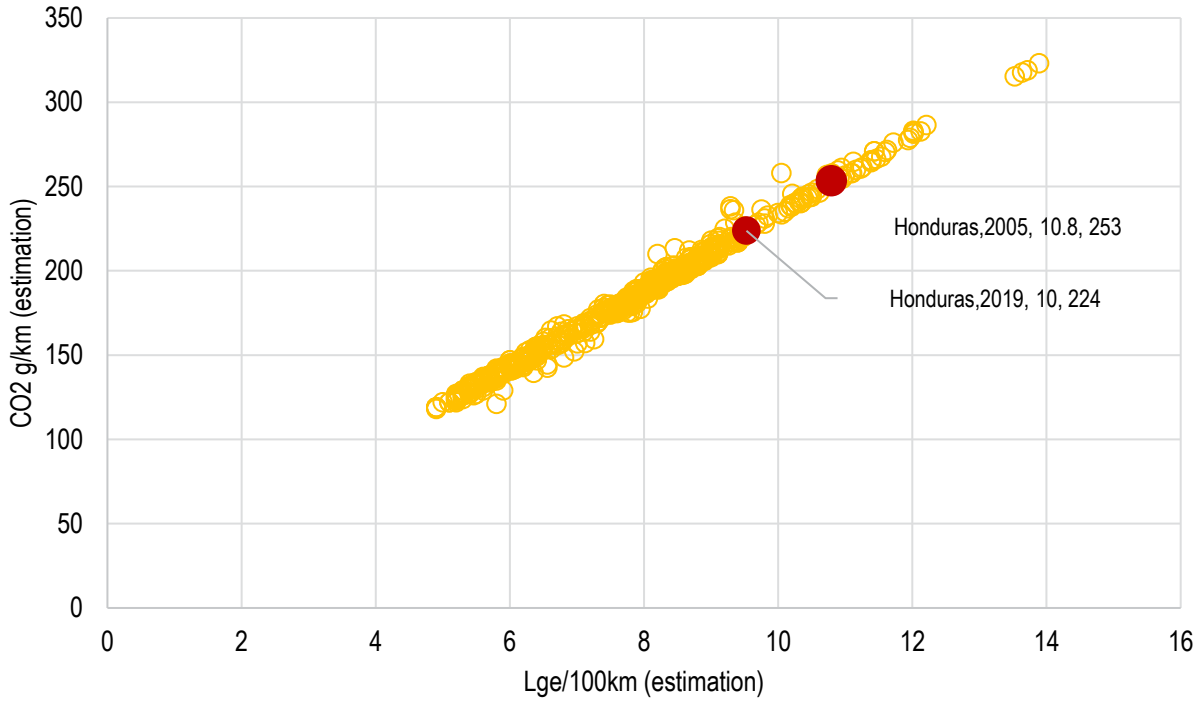
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

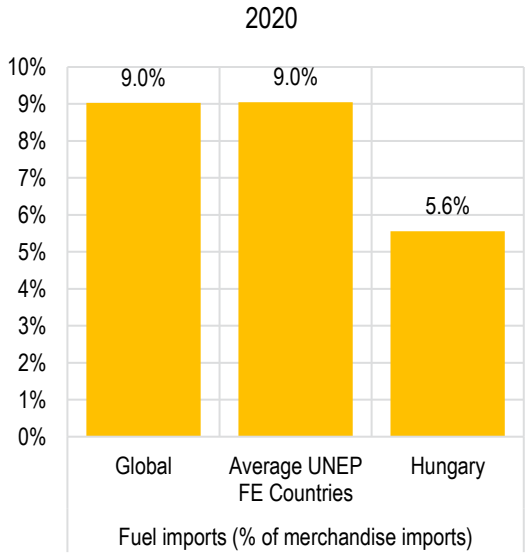
Source : UNEP

The Honduras fuel economy baseline country project was also part of the agreement signed between UNEP and Centro de Gestion Tecnologica E Informatica Industrial (CEGESTI) on 15 August 2016. The GFEI project was launched in February 2017, and the national fuel economy baseline analysis commenced as led by the Ministry of Natural Resources and Environment.

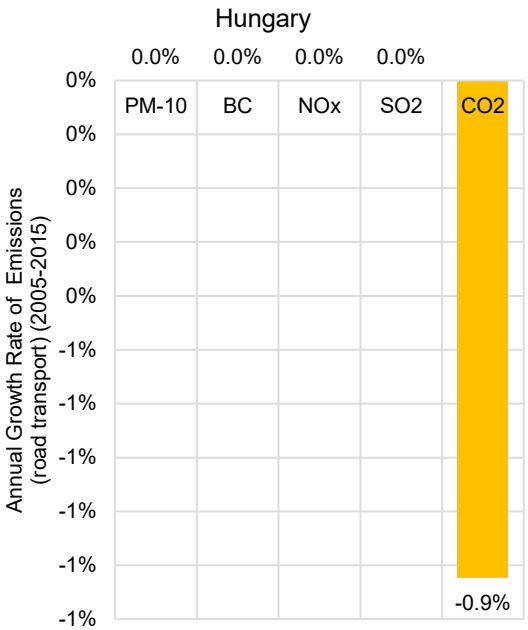
The assessment indicates that if Honduras implements a fuel economy policy for LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save about 1.3 billion litres of gasoline-equivalent & 3 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR HUNGARY

		Year	Source
Population (million)	10	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	33254	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	128	2020	6
Gasoline Price $/l	1.5	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	12.7	2018	13
Employment (Transport+,000)	416	2019	11
Fuel Economy (Lge/100 km, WLTP) -	6	2016	1
Average CO2 emissions/kilometre (g/km, WLTP) -	143	2017	1
Average displacement (cm3) -	1646	2017	1
Average kerb weight (kg) -	1390	2017	1
Average power (kw) -	97	2017	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.155	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.333	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	122.0	2019	8
Transport CO2 Emissions per Capita (tonnes) -	5.4	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	-1.9%	2000-18	16
Annual rate of transport energy consumption growth	2.8%	2000-18	16
LDV Import value (Million USD)	3267	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

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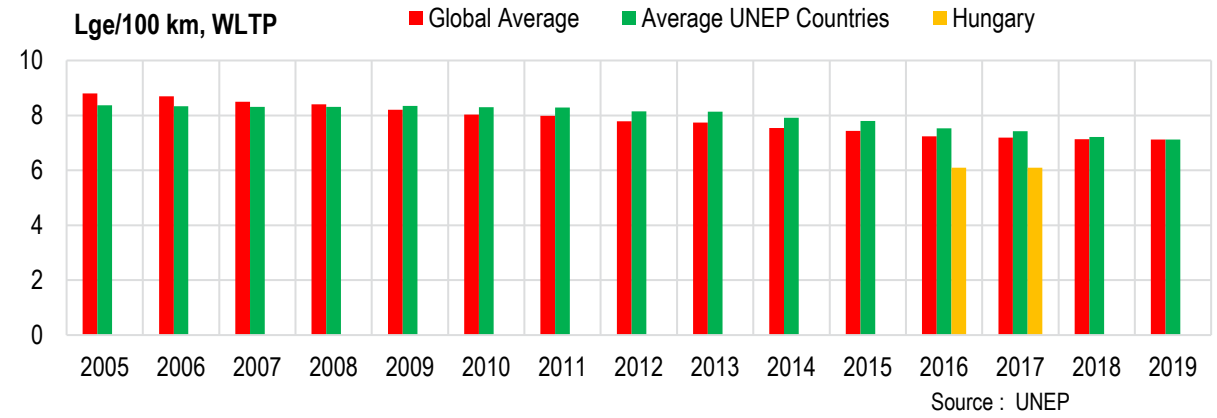
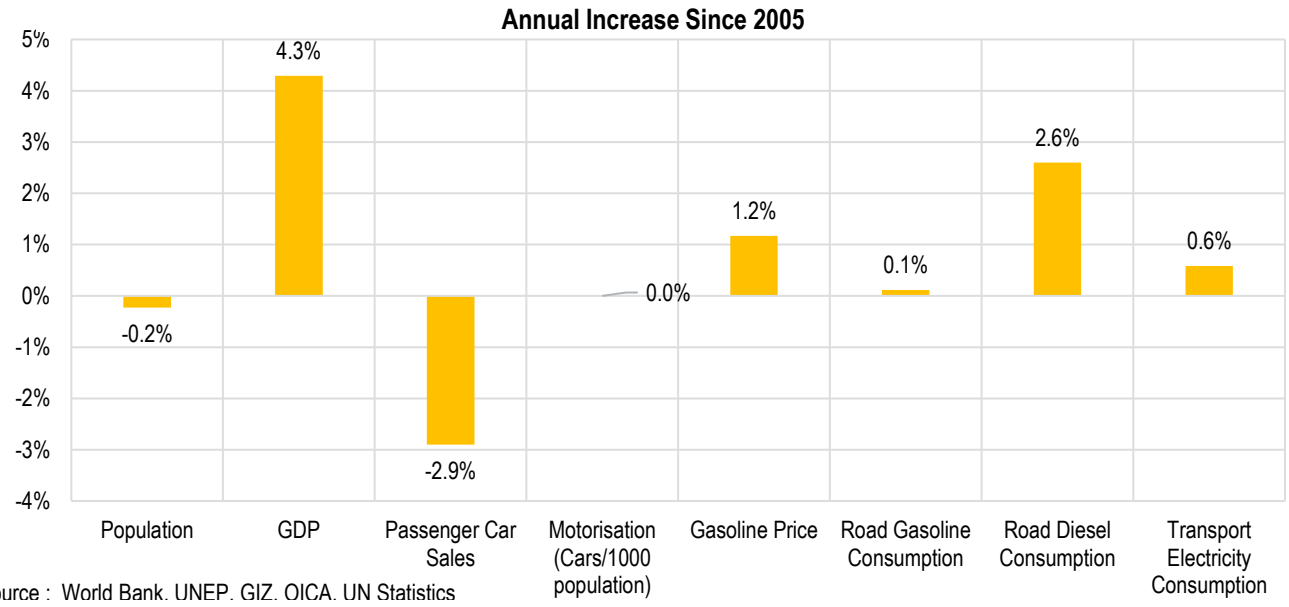
FUEL ECONOMY TRENDS





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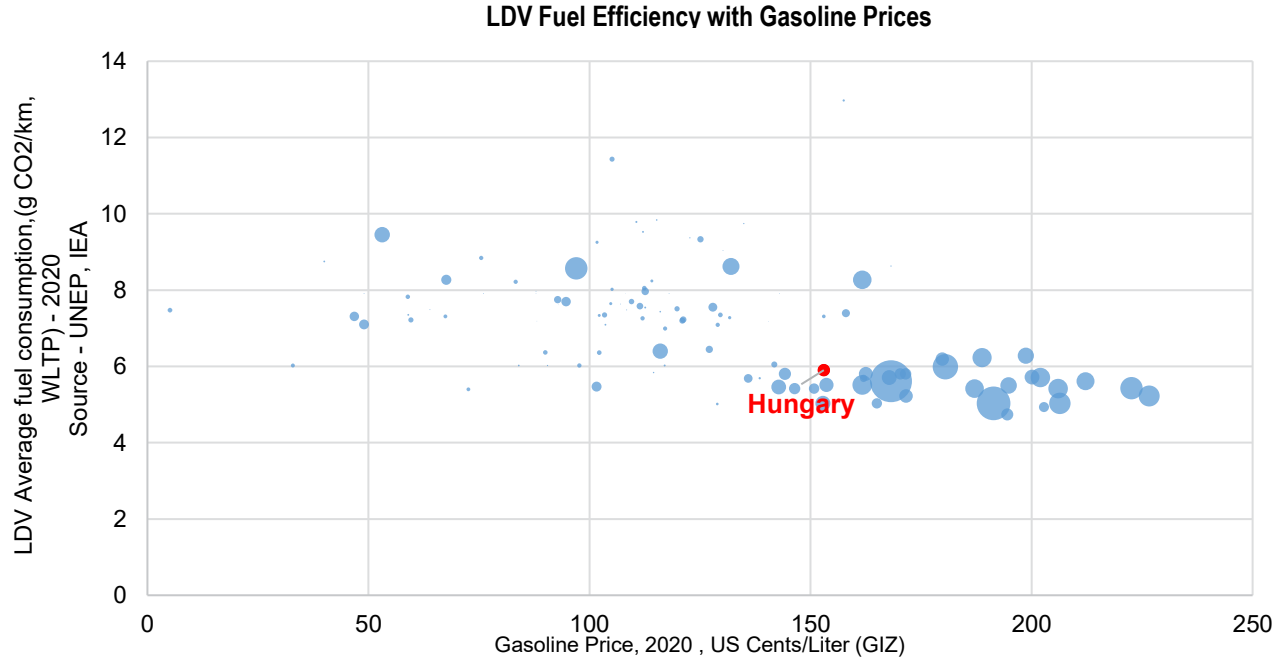


Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

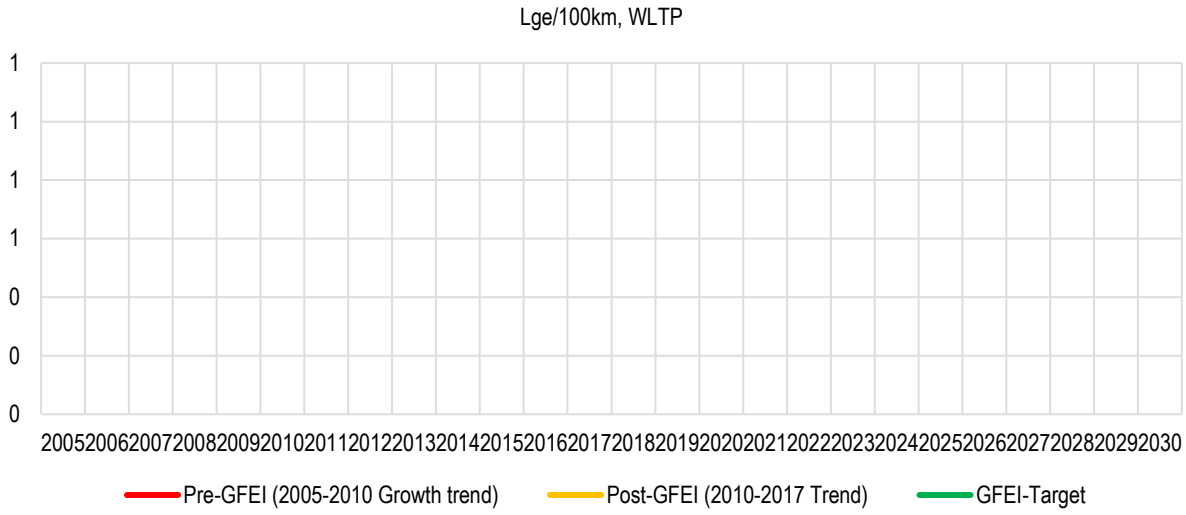
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



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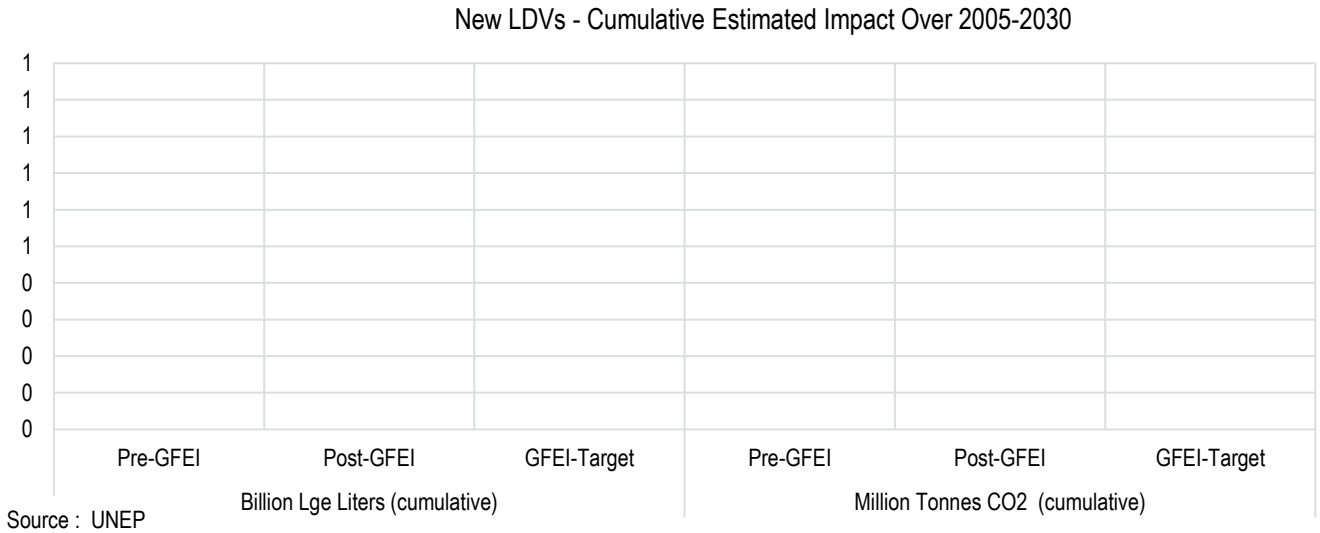

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Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

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c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

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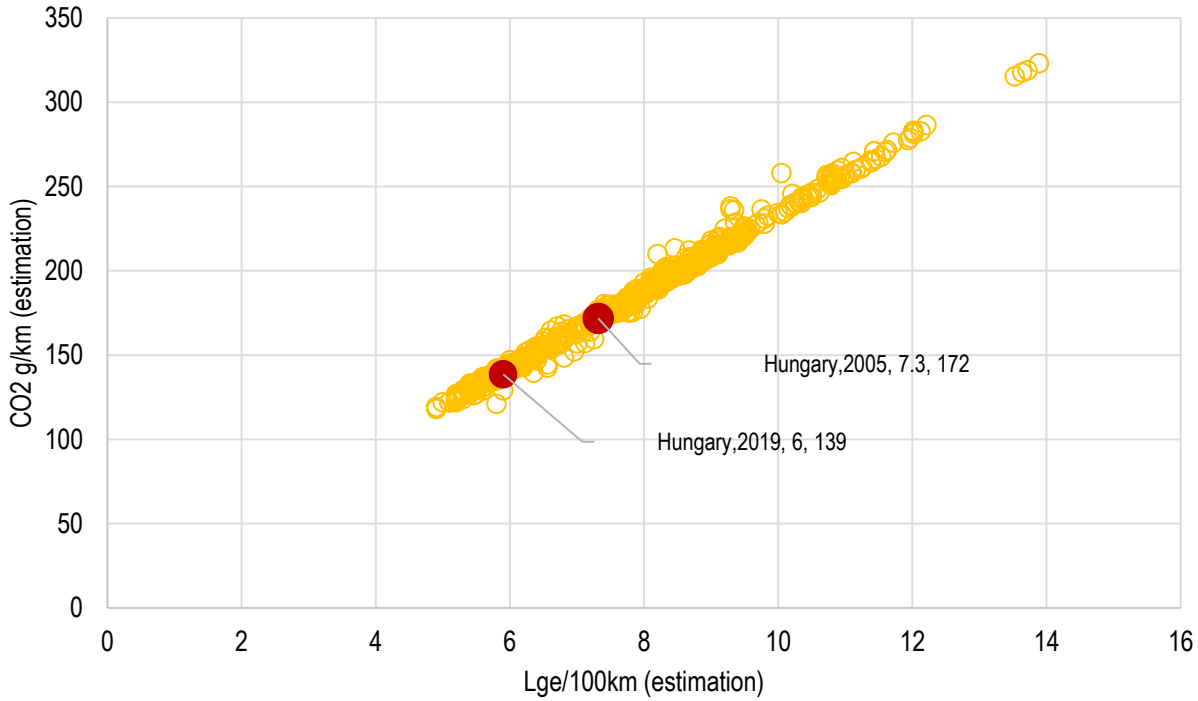
FUEL ECONOMY DESCRIPTION



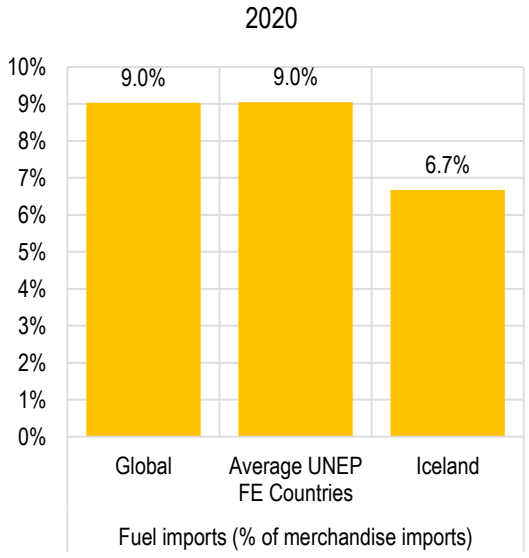
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR ICELAND

		Year	Source
Population (million)	0	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	55225	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	10	2020	6
Gasoline Price $/l	2.1	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	61.4	2018	13
Employment (Transport+,000)	24	2019	11
Fuel Economy (Lge/100 km, WLTP) -	6	2017	1
Average CO2 emissions/kilometre (g/km, WLTP) -	129	2017	1
Average displacement (cm3) -	1647	2017	1
Average kerb weight (kg) -	1444	2017	1
Average power (kw) -	96	2017	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.341	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.567	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	61.6	2019	8
Transport CO2 Emissions per Capita (tonnes) -	10.9	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	0.7%	2000-18	16
Annual rate of transport energy consumption growth	2.8%	2000-18	16
LDV Import value (Million USD)	340	2020	3



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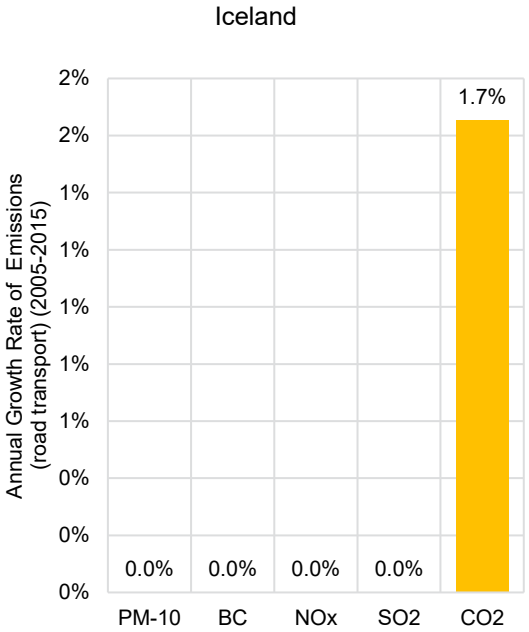

Source : IIASA

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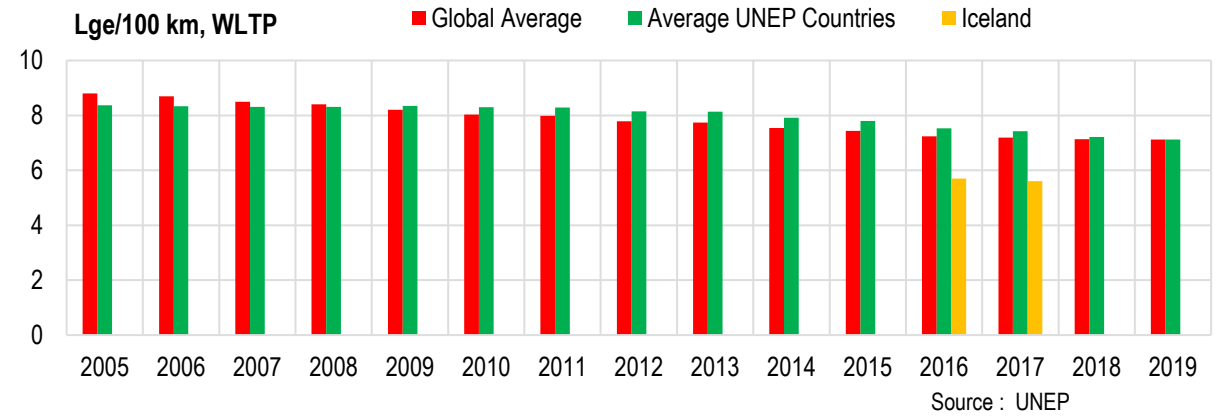
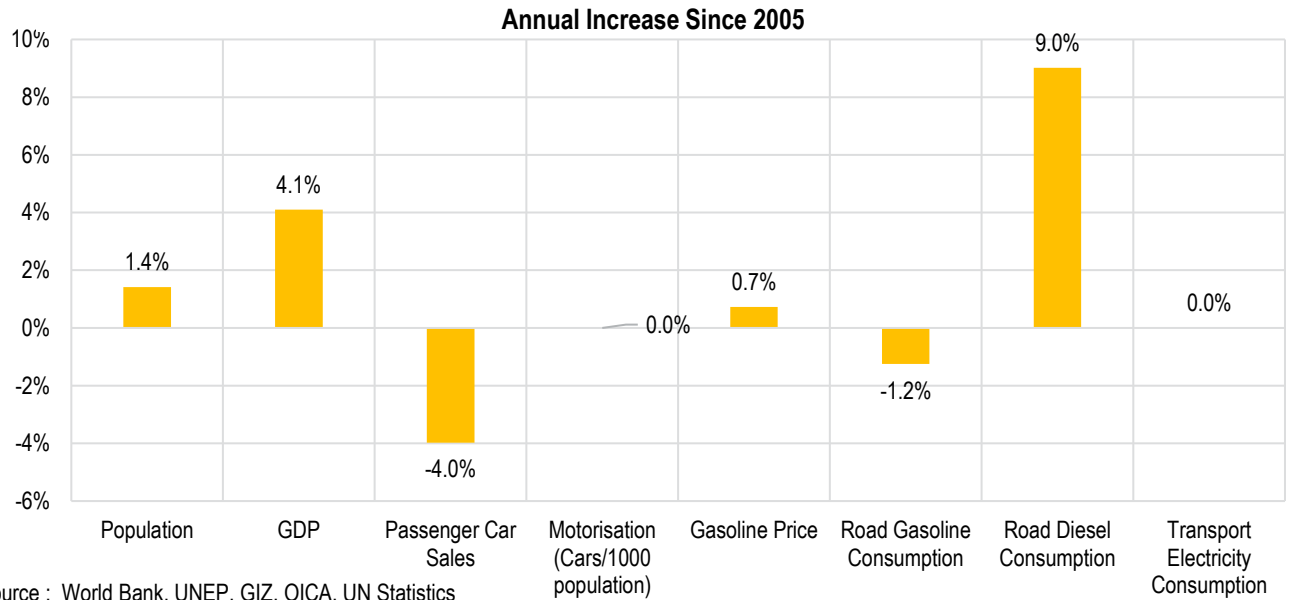
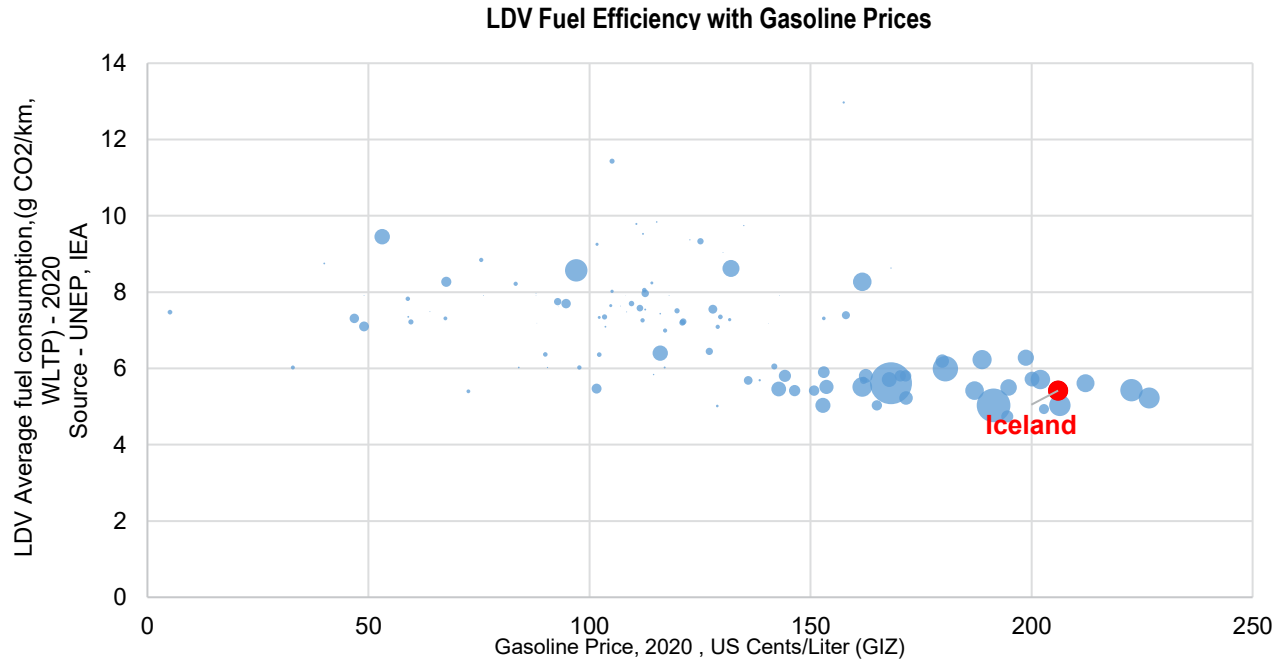
16 Tracking SDG7: The Energy Progress Report

FUEL ECONOMY TRENDS





Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

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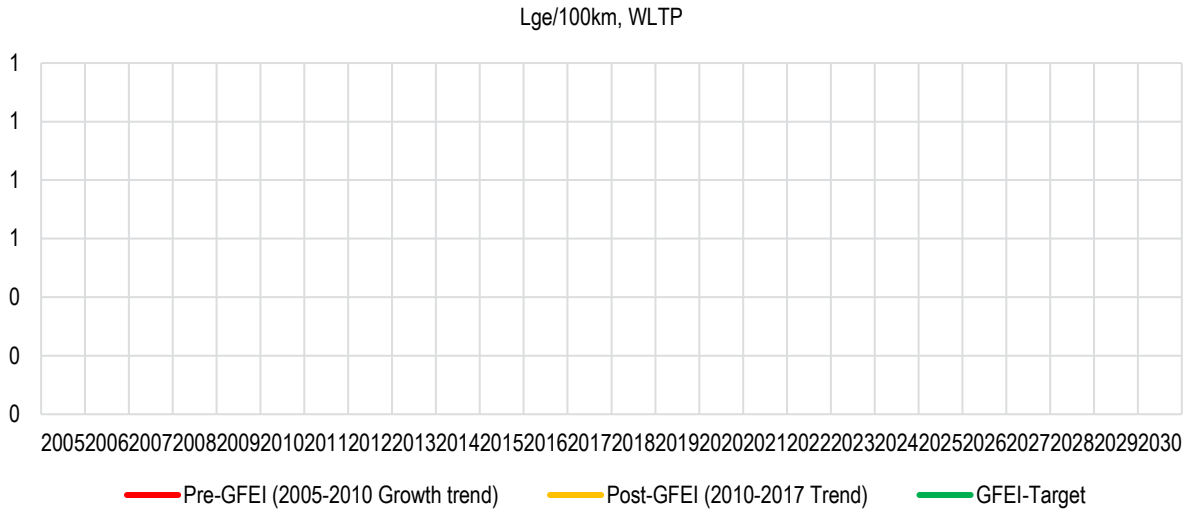
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

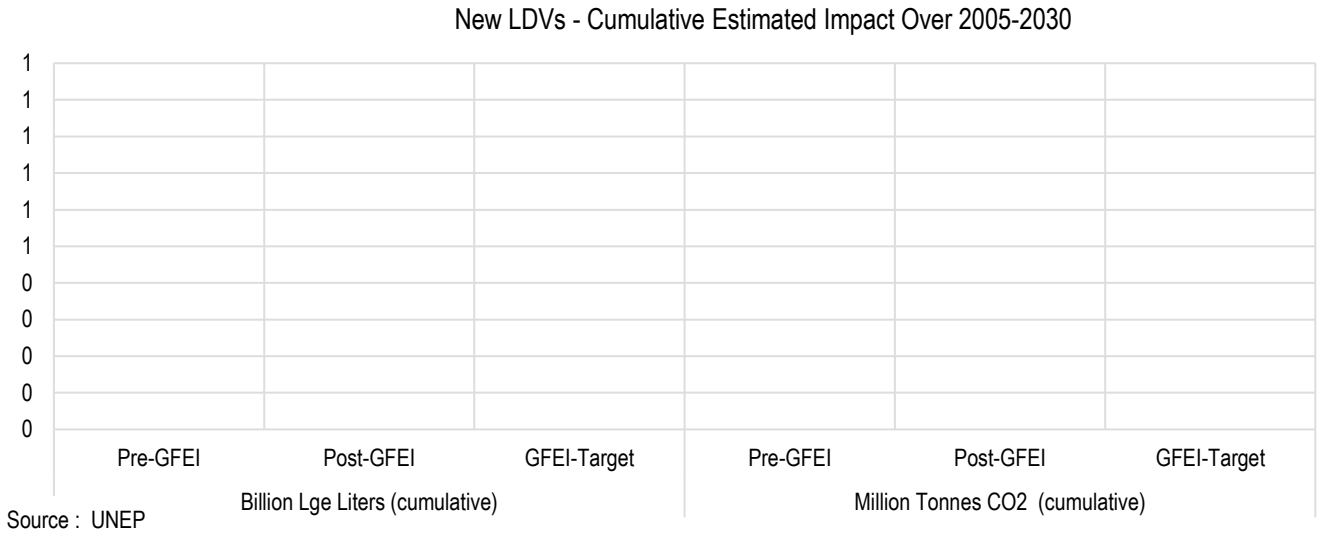
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

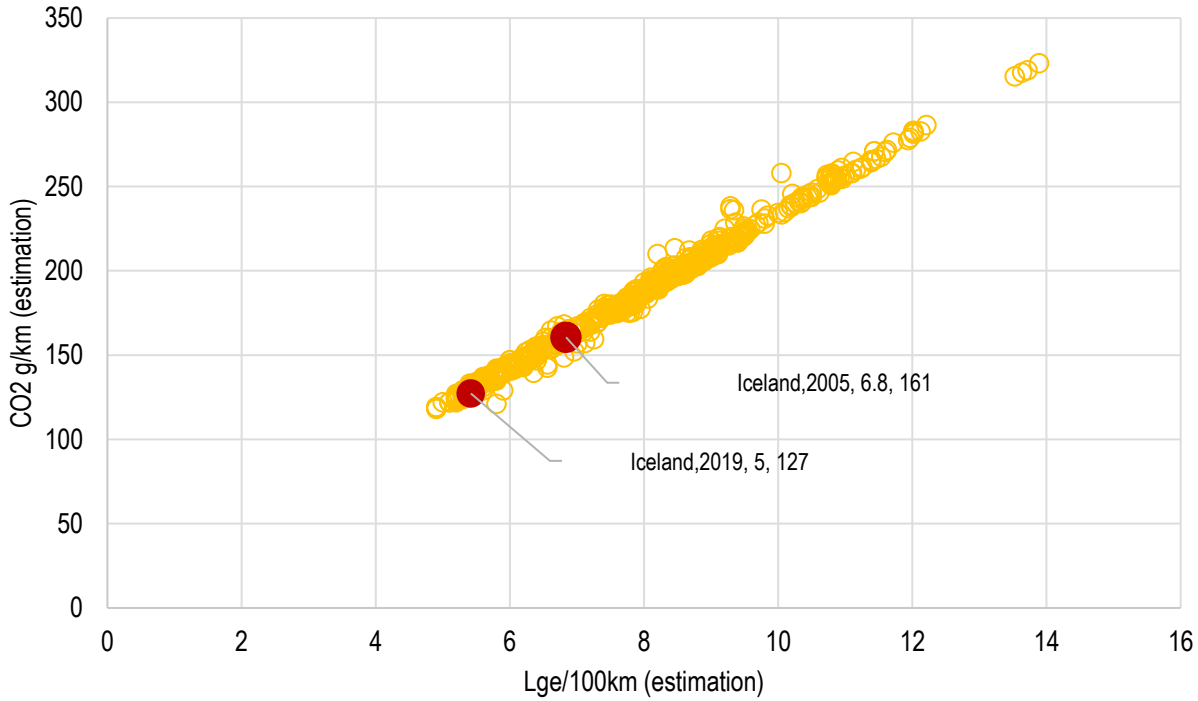
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



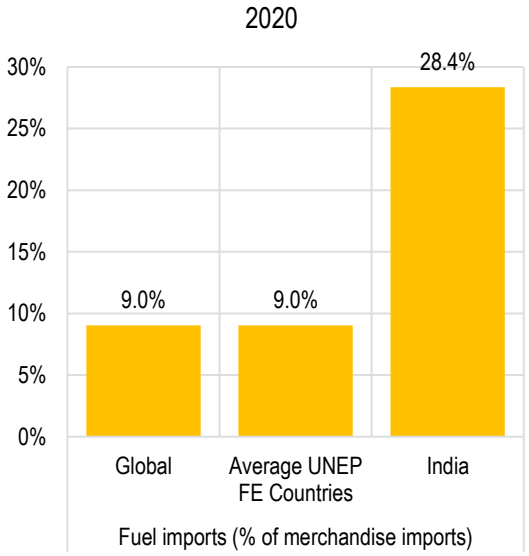
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

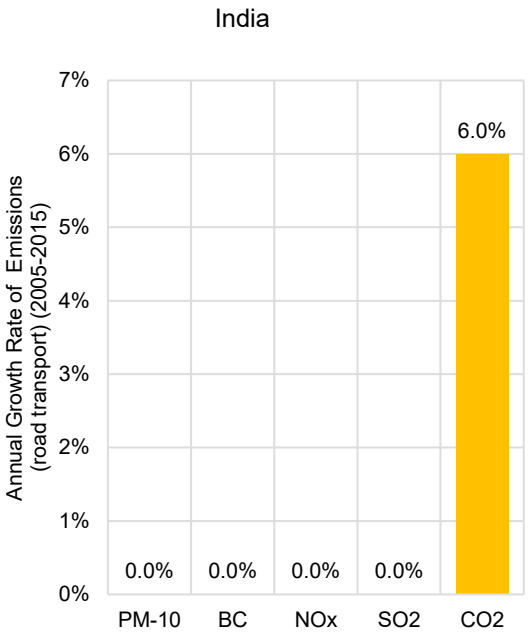
#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR INDIA

		Year	Source
Population (million)	1380	2020	7
Income Level Category	Lower middle income		7
GDP per Capita (PPP, Curent USD)	6502	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	2433	2020	6
Gasoline Price $/l	1.4	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	1.3	2018	13
Employment (Transport+,000)	29929	2019	11
Fuel Economy (Lge/100 km, WLTP) -	6	2019	1
Average CO2 emissions/kilometre (g/km, WLTP) -	136	2019	1
Average displacement (cm3) -	1367	2019	1
Average kerb weight (kg) -	1129	2019	1
Average power (kw) -	64	2019	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.022	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.004	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	14.2	2019	8
Transport CO2 Emissions per Capita (tonnes) -	1.9	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	-2.4%	2000-18	16
Annual rate of transport energy consumption growth	2.7%	2000-18	16
LDV Import value (Million USD)	175	2020	3



Source : World Bank

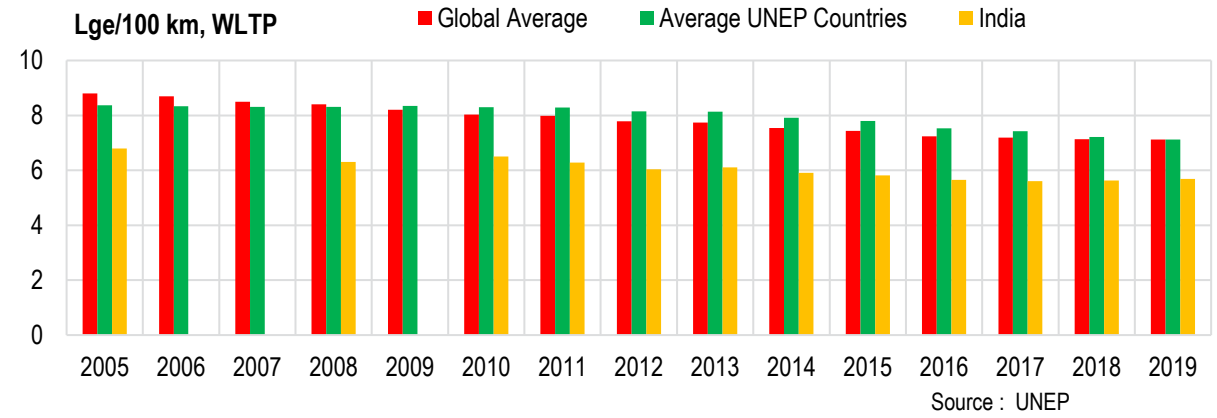


Source : IIASA

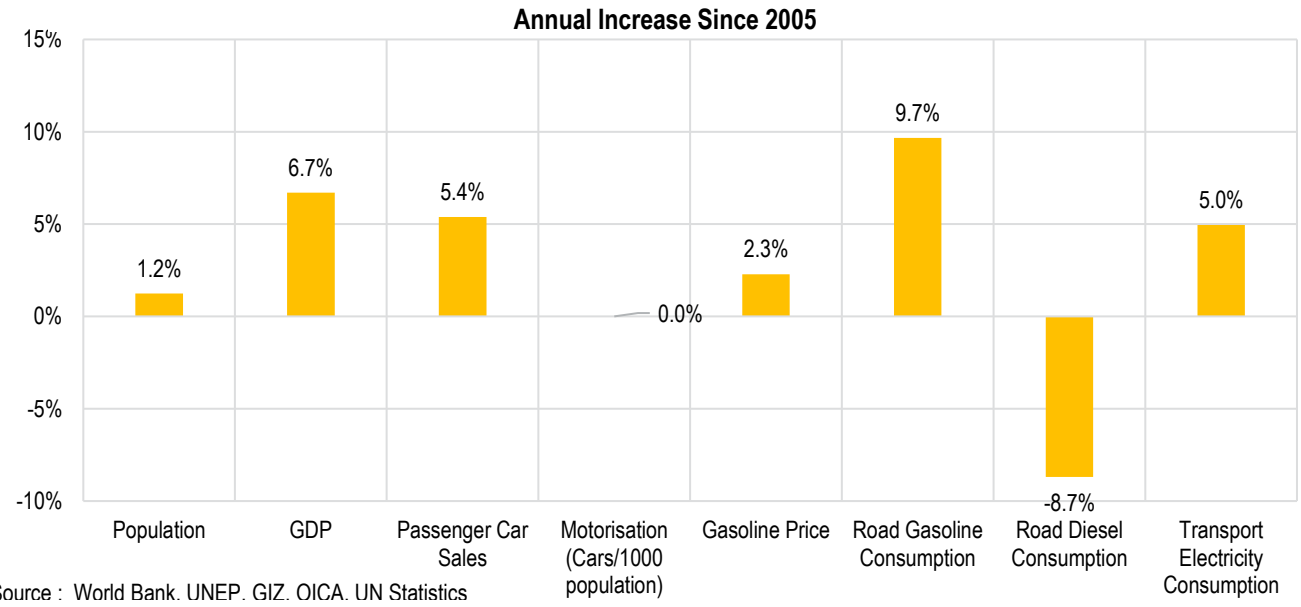
Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
7 World Bank
8 UN Statistics Division
9 SLOCAT &GIZ
10 Estimated using growth and sales data
11 Employment is for Transport; storage and communication, ILO
12 International Transport Forum
13 Koks, E.E. et al. A global multi-hazard risk analysis of road
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

FUEL ECONOMY TRENDS



Source : UNEP



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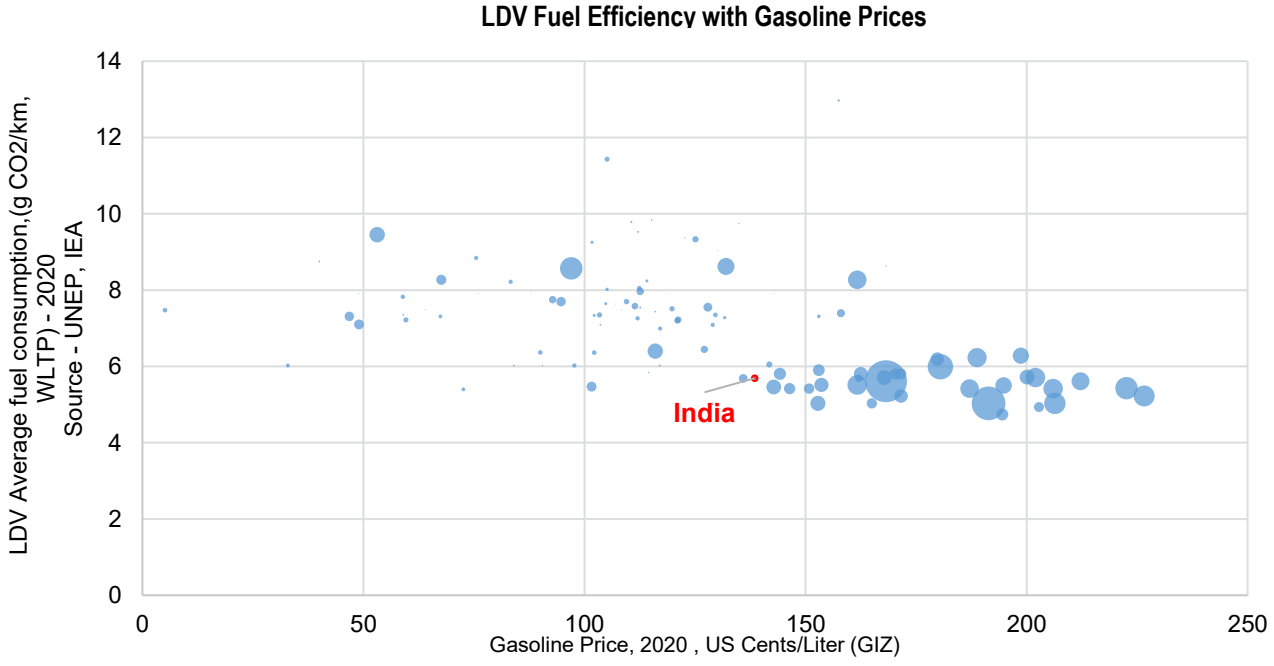

Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

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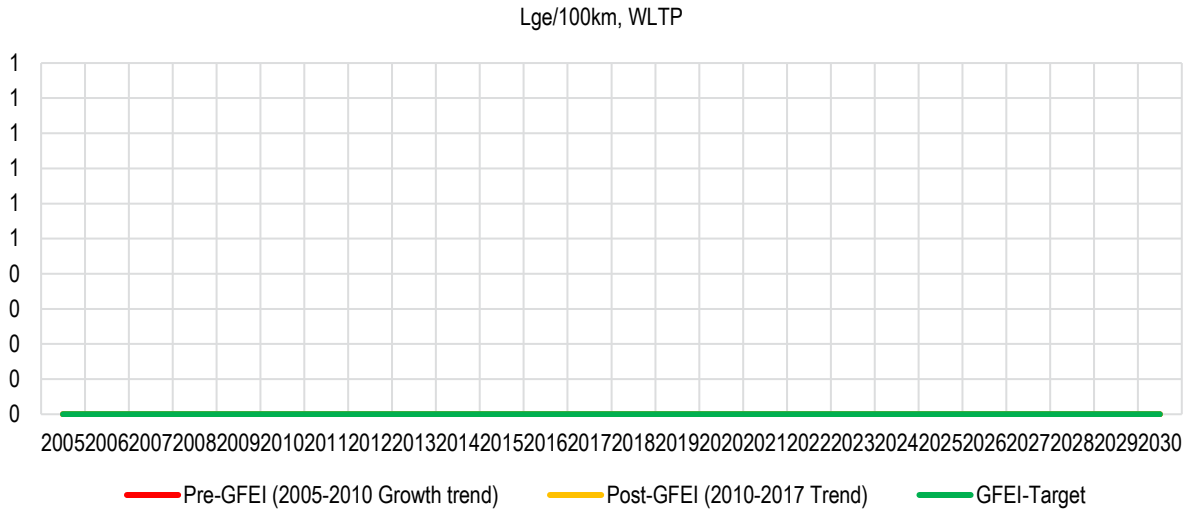
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

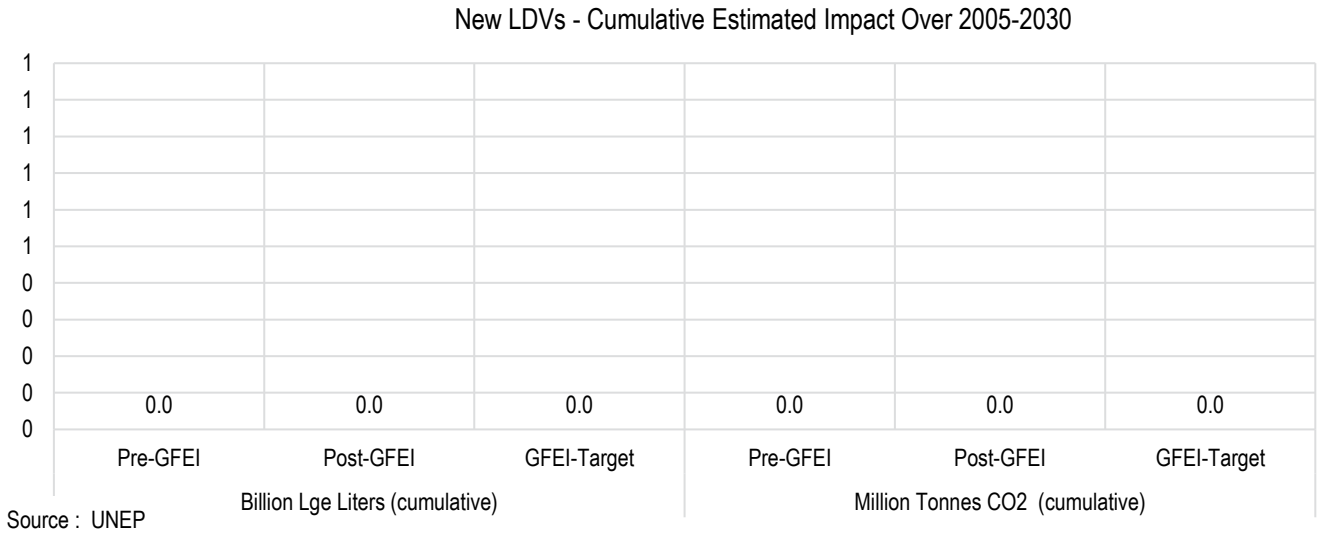
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **#DIV/0!**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **#DIV/0!**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

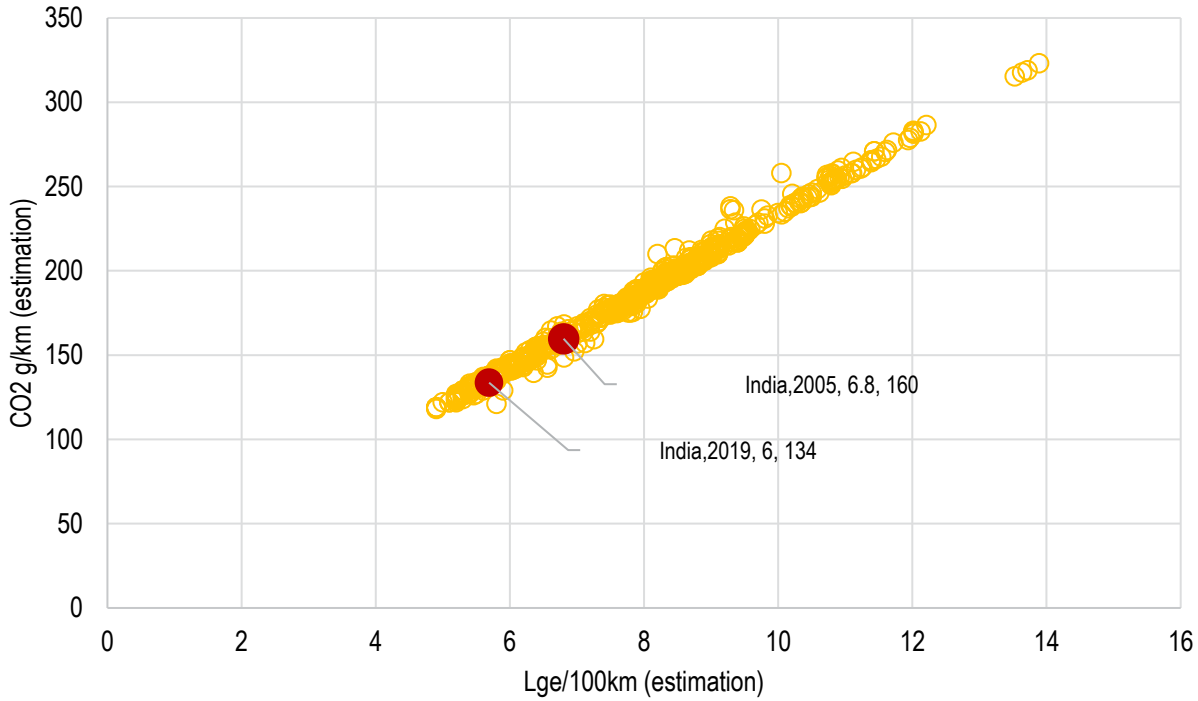
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



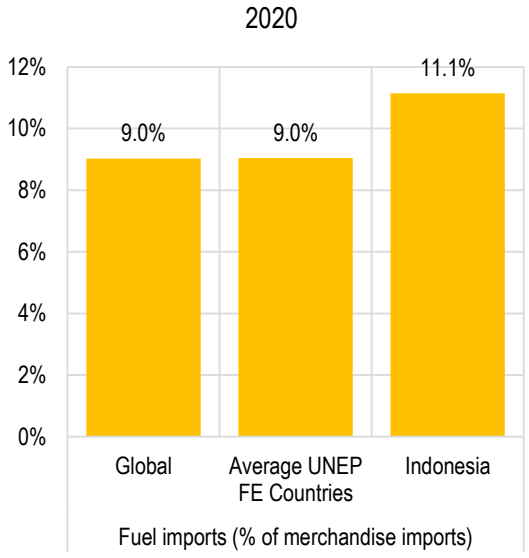
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

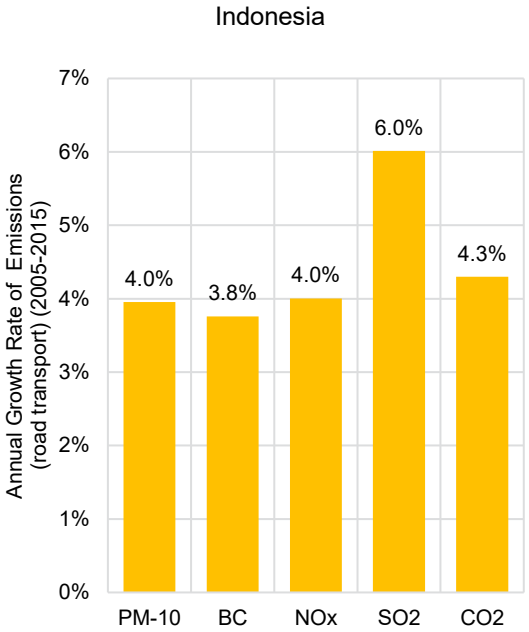
#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR INDONESIA

		Year	Source
Population (million)	274	2020	7
Income Level Category	Upper middle income		7
GDP per Capita (PPP, Curent USD)	12068	2020	7
Motorisation (Cars/1000 population)	52	2020	10
Car Sales (000)	389	2020	6
Gasoline Price $/l	0.8	2020	2
Fossil Fuel Subsidy (Million $) 2019	11692	2019	4
Road Infrastructure Length/Capita (meters)	4.1	2018	13
Employment (Transport+,000)	6660	2019	11
Fuel Economy (Lge/100 km, WLTP) -	8	2019	1
Average CO2 emissions/kilometre (g/km, WLTP) -	189	2019	1
Average displacement (cm3) -	1552	2019	1
Average kerb weight (kg) -	1276	2019	1
Average power (kw) -	79	2011	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.029	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.037	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	1.0	2019	8
Transport CO2 Emissions per Capita (tonnes) -	2.3	2019	14
Road Transport PM Emissions per Capita (grams) -	278.3	2015	14
Road Transport NOx Emissions per Capita (grams)-	2496.9	2015	14
Road Transport BC Emissions per Capita (grams)-	107.7	2015	14
LDV Emission Standards -	Euro 2	2019	1
Diesel Sulphur Levels (ppm) -	2500	2019	1
Gasoline Sulphur Levels (ppm) -	500	2019	1
Annual rate of economy-wide energy intensity growth	-2.9%	2000-18	16
Annual rate of transport energy consumption growth	0.9%	2000-18	16
LDV Import value (Million USD)	612	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

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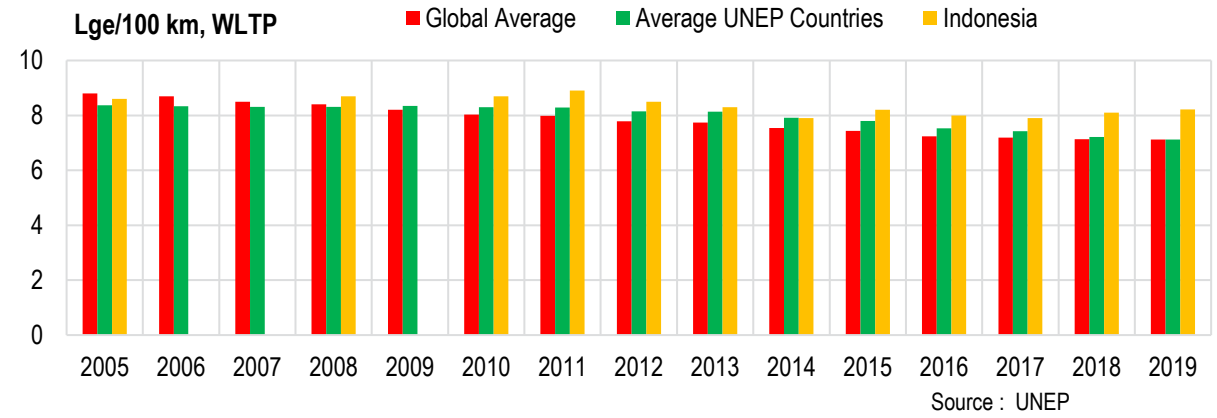
FUEL ECONOMY TRENDS



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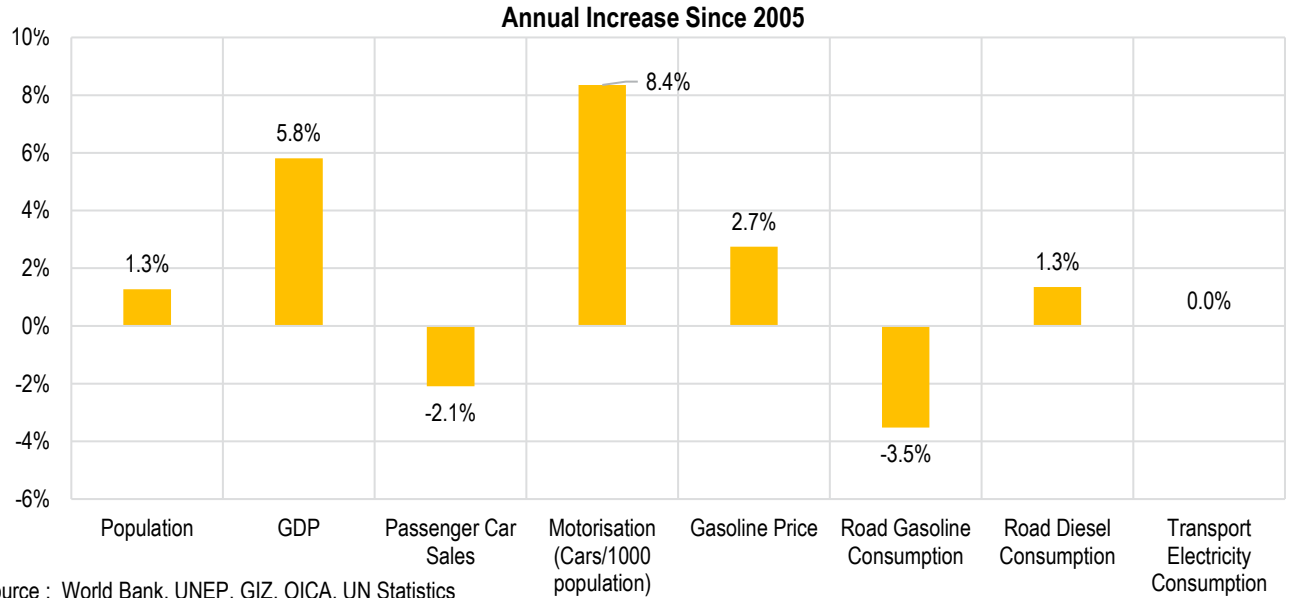
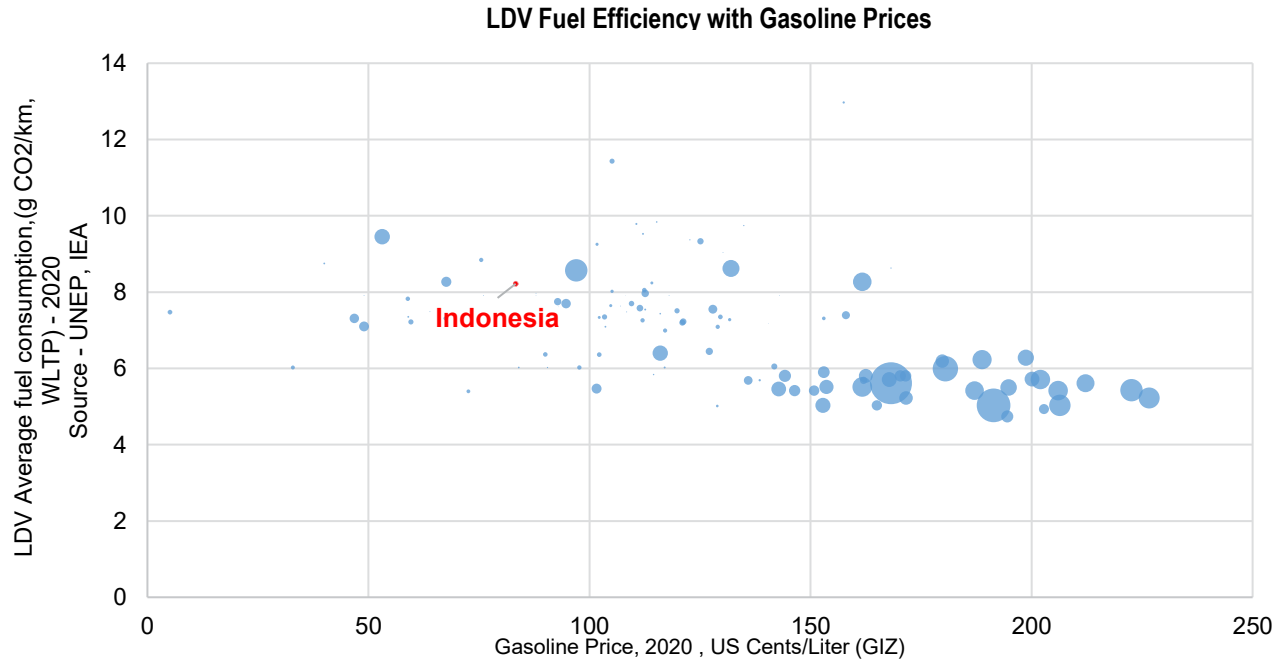


Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

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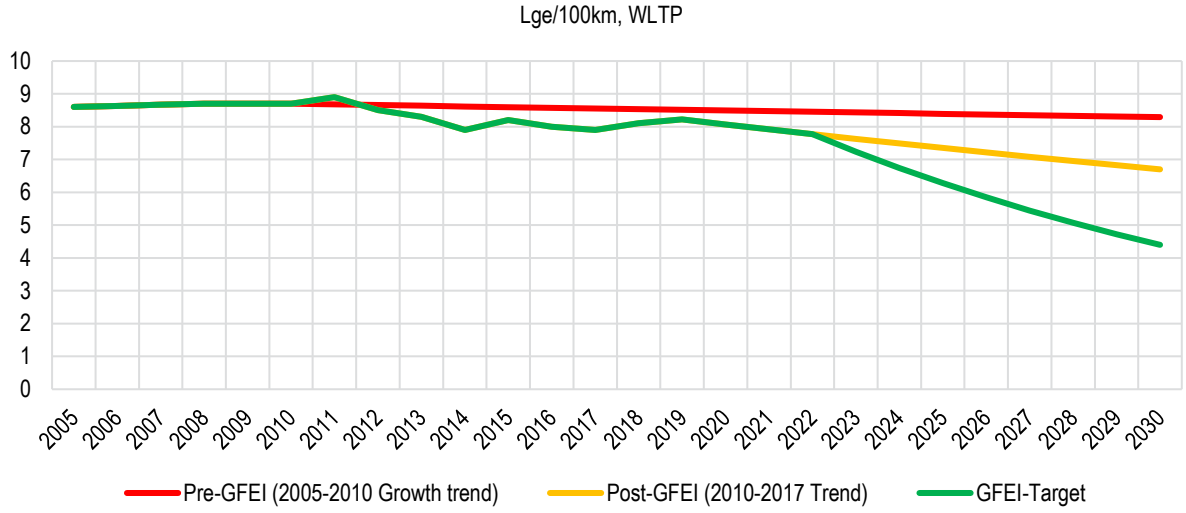
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-0.8%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-5.9%**



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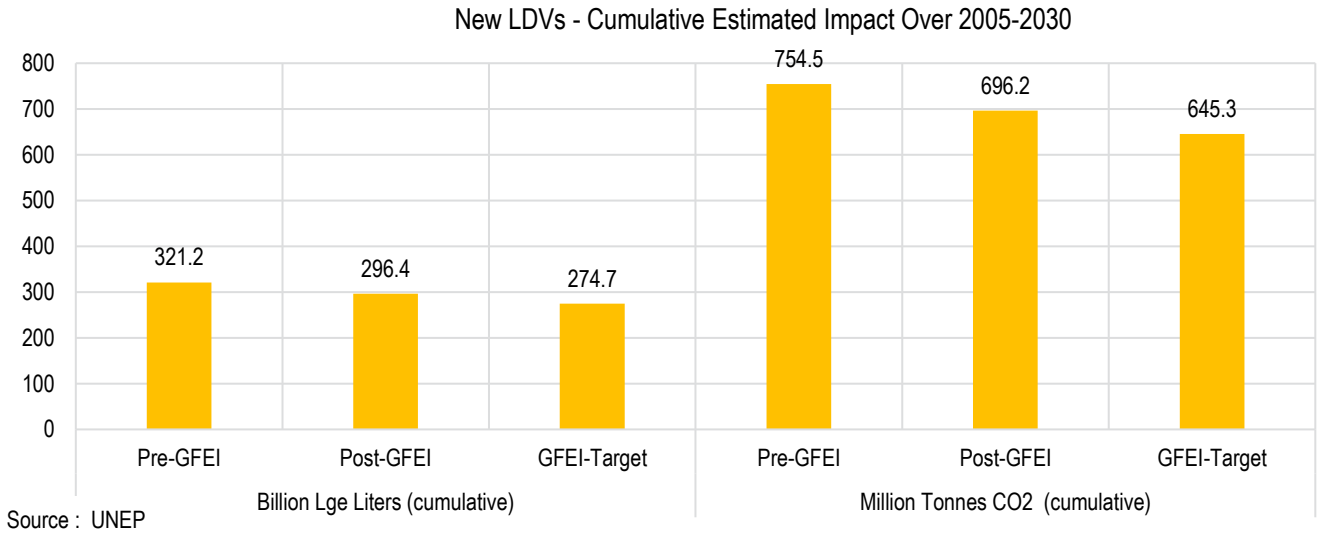

Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

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a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

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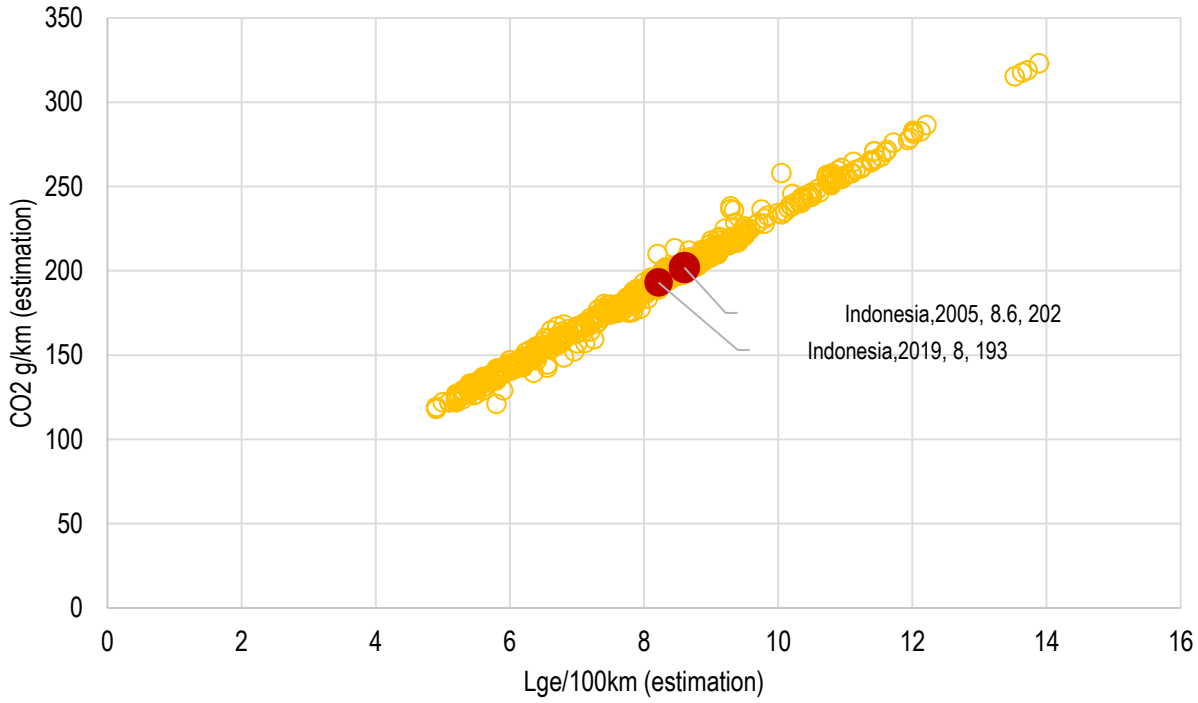
c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

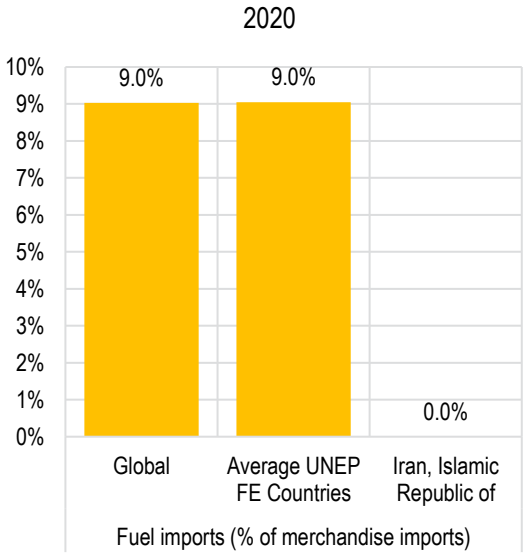
Indonesia has also endorsed the ASEAN Fuel Economy Roadmap for Transport Sector 2018 – 2025: with Focus on Light-Duty Vehicles. The roadmap sets six aspirational goals for ASEAN. The headline goal is an aspirational target to reduce the average fuel consumption of new light-duty vehicles sold in ASEAN by 26% between 2015 and 2025, which leads to an improvement in average fuel economy to around 5.3 LGe/100km by 2025, from an estimated 7.2 LGe/100km in 2015. This improvement leads to about 17% reduction in annual LDVs CO2 emissions by 2030.

ICCT has estimated that road transport energy consumption in Indonesia from 2020–2050 is projected to increase by a factor of 2.3 for gasoline and 1.8 for diesel. International energy agency has estimated that 104 PJ of energy consumption could be avoided by 2030 by promoting electric two-wheelers and implementing HDV fuel efficiency standards.

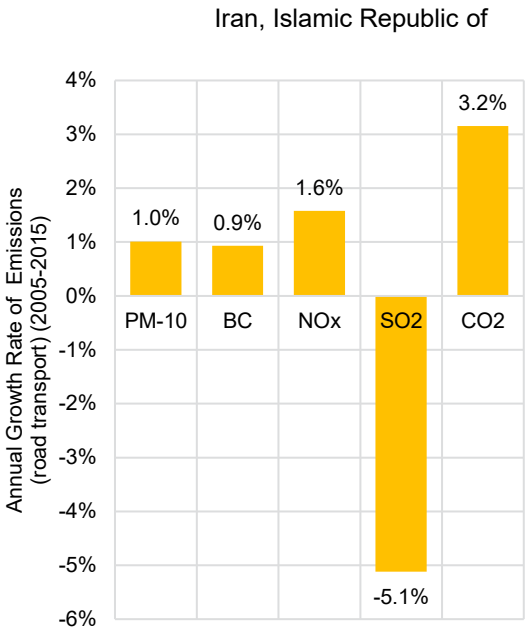
The assessment indicates that if Indonesia implements a fuel economy policy for LDVs with a 2030 GFEI target, it could save 98 billion litres of gasoline-equivalent & 230 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR IRAN, ISLAMIC REPUBLIC OF

		Year	Source
Population (million)	84	2020	7
Income Level Category	Upper middle income		7
GDP per Capita (PPP, Curent USD)	13333	2020	7
Motorisation (Cars/1000 population)	162	2020	10
Car Sales (000)	520	2020	6
Gasoline Price $/l	0.1	2020	2
Fossil Fuel Subsidy (Million $) 2019	10283	2019	4
Road Infrastructure Length/Capita (meters)	6.3	2018	13
Employment (Transport+,000)	2740	2019	11
Fuel Economy (Lge/100 km, WLTP) -	8	2017	1
Average CO2 emissions/kilometre (g/km, WLTP) -	180	2017	1
Average displacement (cm3) -	1541	2017	1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -	6732		1
Diesel Share in LDV (sample,%)	21%	2017	1
Is Fuel Economy included in NDC?	#N/A	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	#N/A	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.261	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.194	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	6.1	2019	8
Transport CO2 Emissions per Capita (tonnes) -	8.5	2019	14
Road Transport PM Emissions per Capita (grams) -	351.3	2015	14
Road Transport NOx Emissions per Capita (grams)-	18290.0	2015	14
Road Transport BC Emissions per Capita (grams)-	169.1	2015	14
LDV Emission Standards -	Euro 2	2019	1
Diesel Sulphur Levels (ppm) -	0	2019	1
Gasoline Sulphur Levels (ppm) -	0	2019	1
Annual rate of economy-wide energy intensity growth	#N/A	2000-18	16
Annual rate of transport energy consumption growth	3.7%	2000-18	16
LDV Import value (Million USD)	47	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

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2 GIZ
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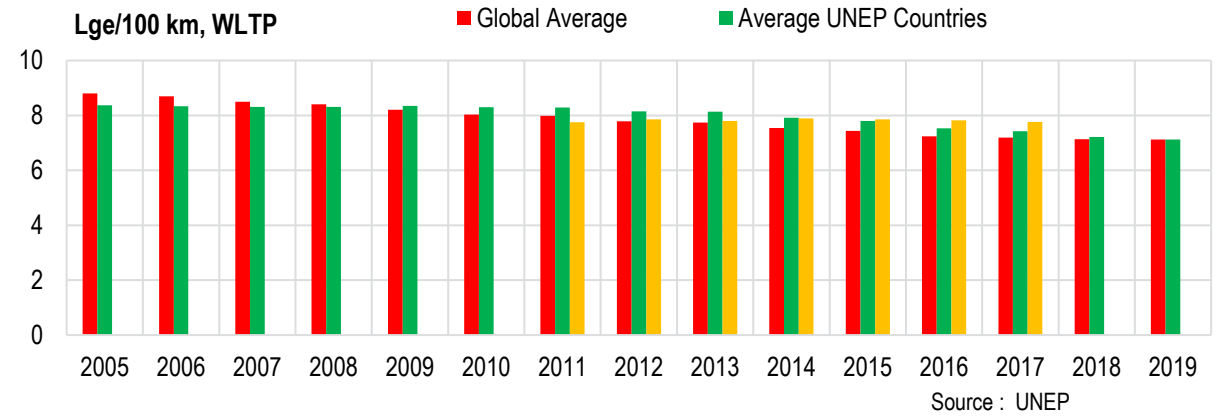
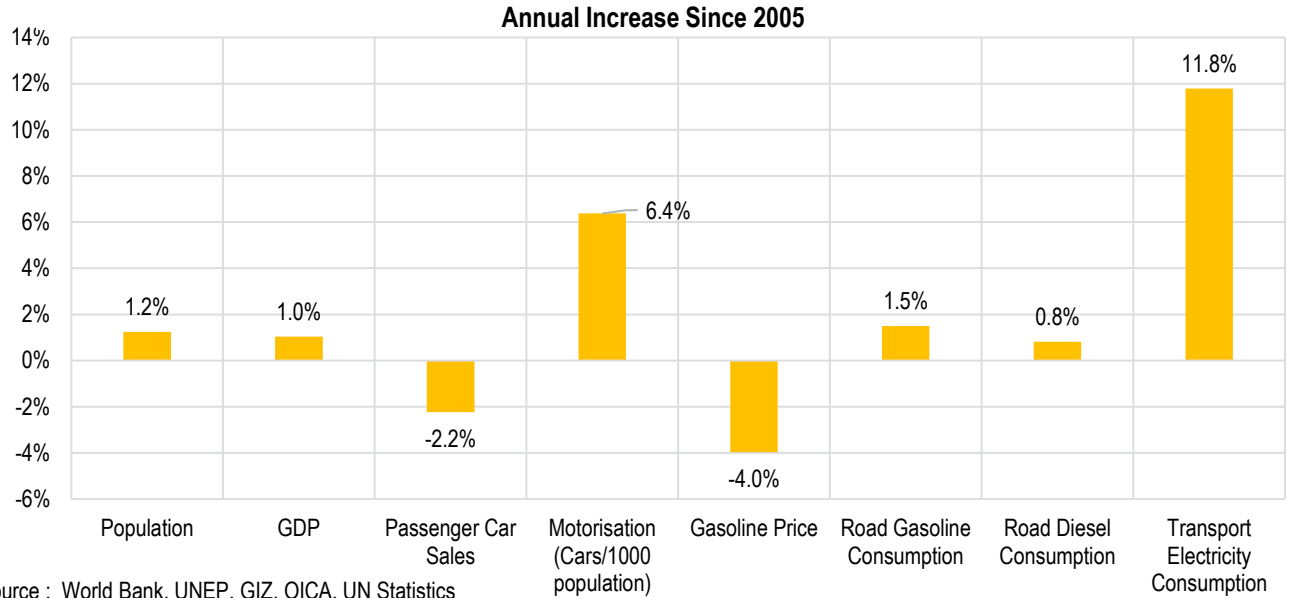
FUEL ECONOMY TRENDS





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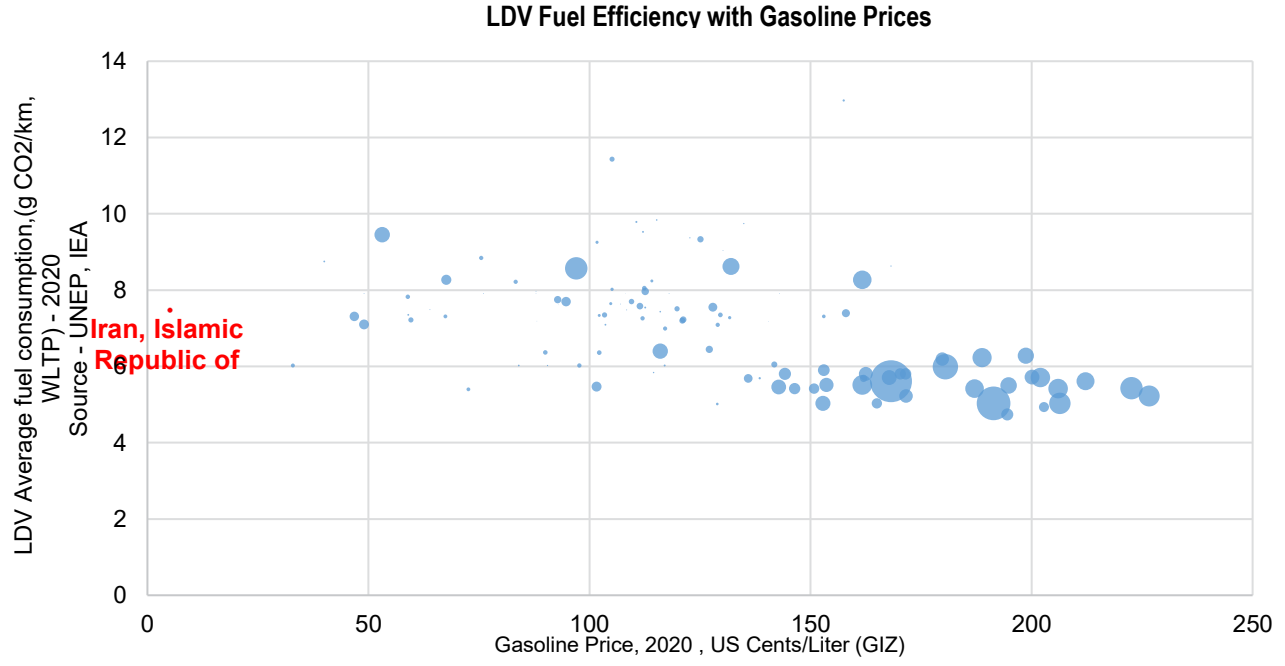


Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

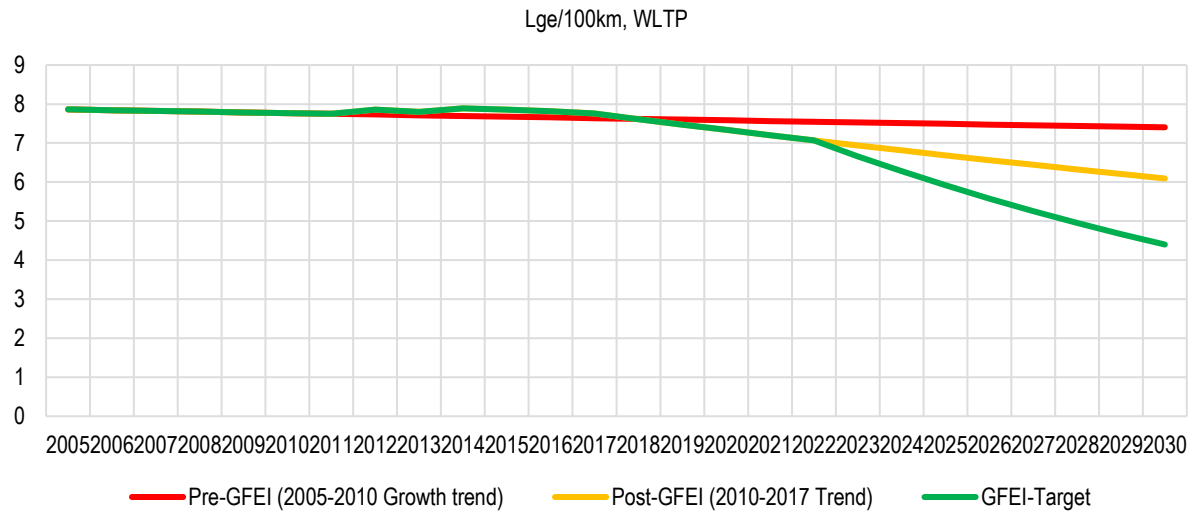
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

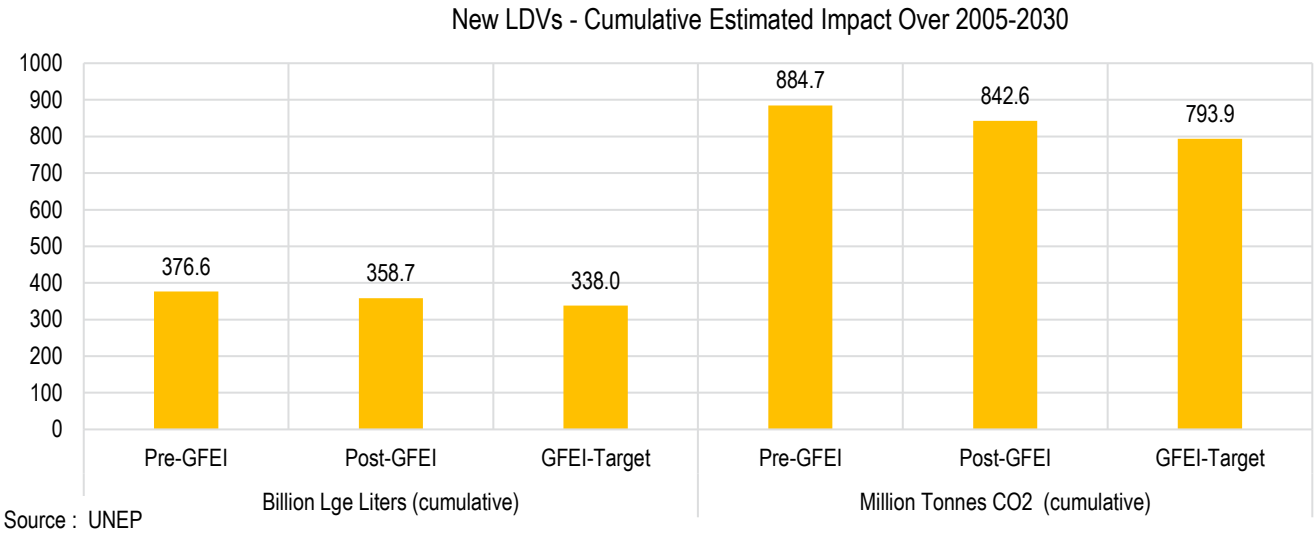
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-0.6%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-5.0%**



Source : UNEP



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2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

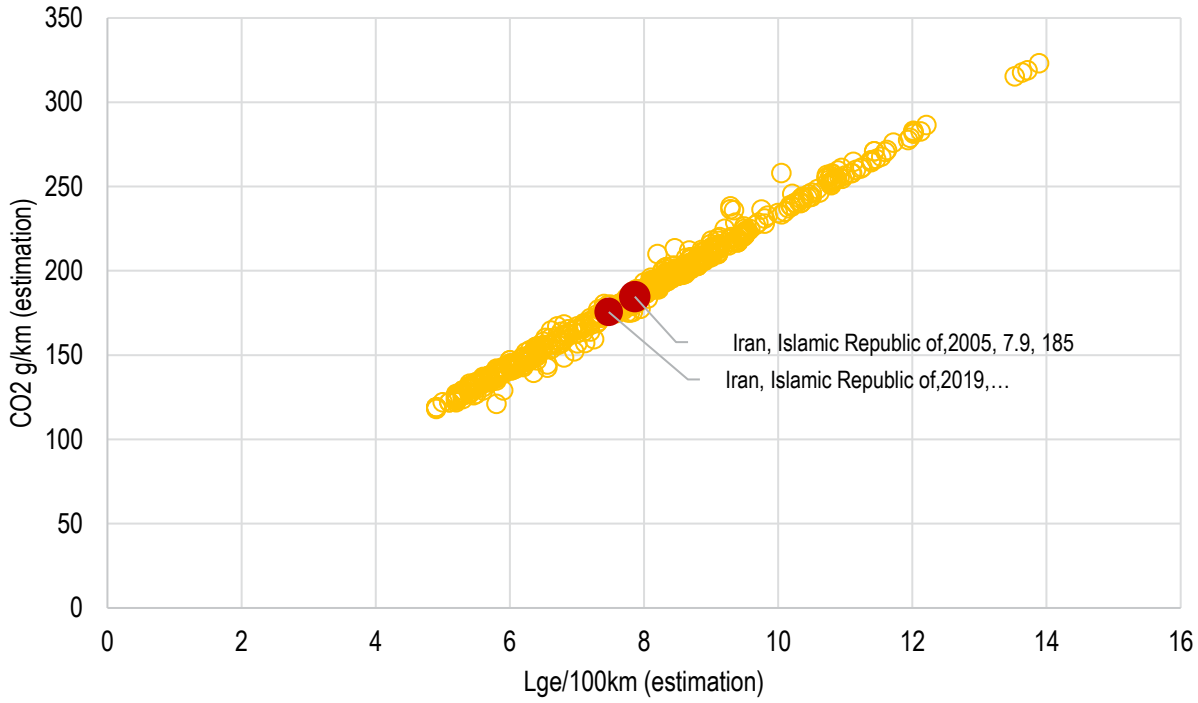
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

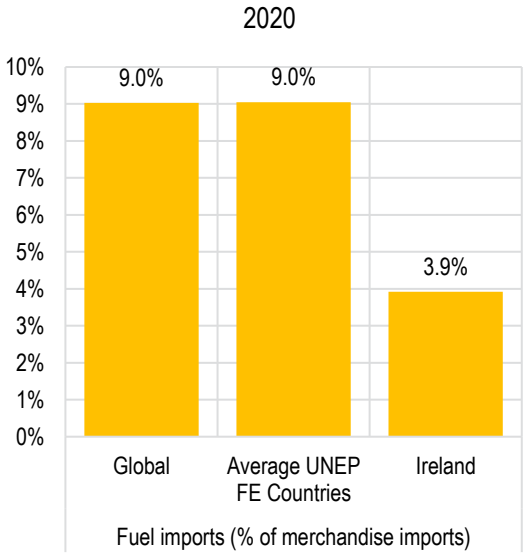
An agreement was developed with the United Nations Development Programme (UNDP) Iran to implement the project "Status and Challenges of Cleaner and Efficient Fuels and Vehicles in Iran" and signed on 15 November 2017. The School of Mechanical Engineering in the University of Tehran developed the vehicle inventory.

Research indicates that the transport sector is one of the significant energy consumption sectors and rapid economic growth can lead to high growth in LDV ownership with about 18.26 million cars in 2030 (from 6 million in 2005). Iran, in the past, has developed an energy efficiency target which includes the transport sector. The total gasoline consumption by LDVs could increase from 20,160 to 30,122(million litres). The "General Policies of Consumption Reform" (2011) targets energy intensity reduction, i.e. energy intensity should be halved until 2021 compared to the amount of the base year 2011.

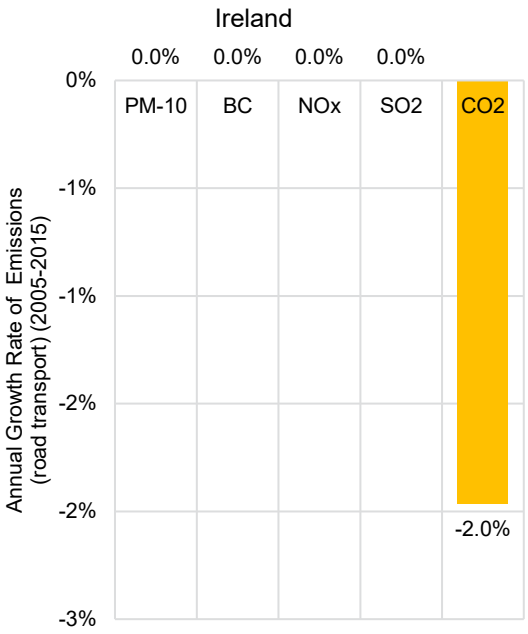
The assessment indicates that if Iran implements a fuel economy policy for LDVs with a 2030 GFEI target, it could save 27 billion litres of gasoline-equivalent & 27 million tonnes of CO2 cumulative from newly registered LDVs. Research indicates that with improved energy efficiency, the energy consumption could be reduced by about 35% from the business-as-usual scenario.

LDV FUEL ECONOMY COUNTRY REPORT FOR IRELAND

		Year	Source
Population (million)	5	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	95237	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	88	2020	6
Gasoline Price $/l	1.9	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	23.8	2018	13
Employment (Transport+,000)	228	2019	11
Fuel Economy (Lge/100 km, WLTP) -	5	2017	1
Average CO2 emissions/kilometre (g/km, WLTP) -	127	2017	1
Average displacement (cm3) -	1602	2017	1
Average kerb weight (kg) -	1418	2017	1
Average power (kw) -	86	2017	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	No	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.154	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.641	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	15.7	2019	8
Transport CO2 Emissions per Capita (tonnes) -	7.4	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	-4.4%	2000-18	16
Annual rate of transport energy consumption growth	0.9%	2000-18	16
LDV Import value (Million USD)	2178	2020	3



Source : World Bank

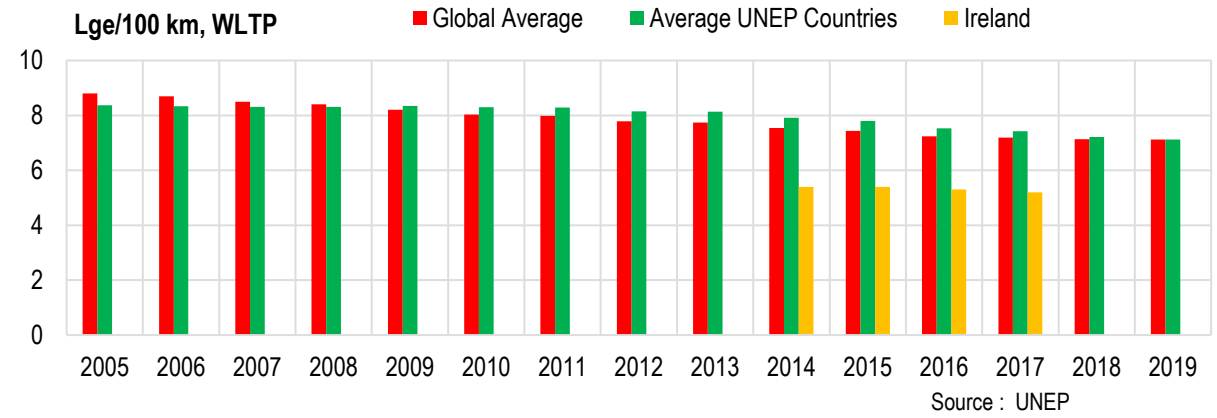


Source : IIASA

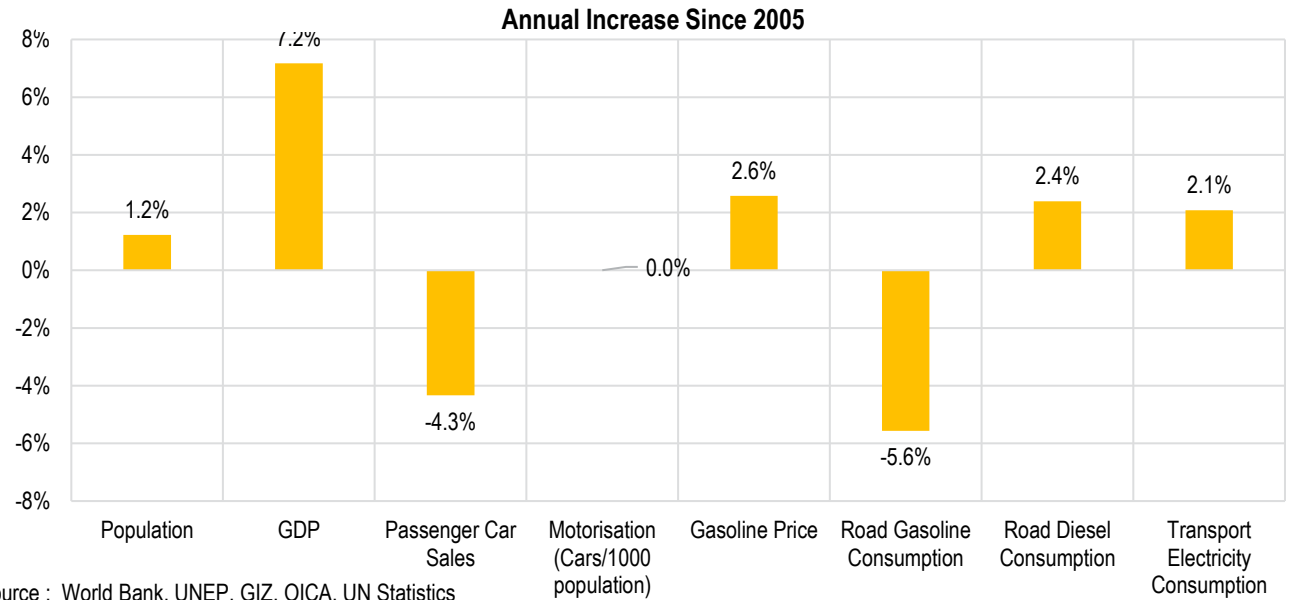
Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
7 World Bank
8 UN Statistics Division
9 SLOCAT &GIZ
10 Estimated using growth and sales data
11 Employment is for Transport; storage and communication, ILO
12 International Transport Forum
13 Koks, E.E. et al. A global multi-hazard risk analysis of road
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

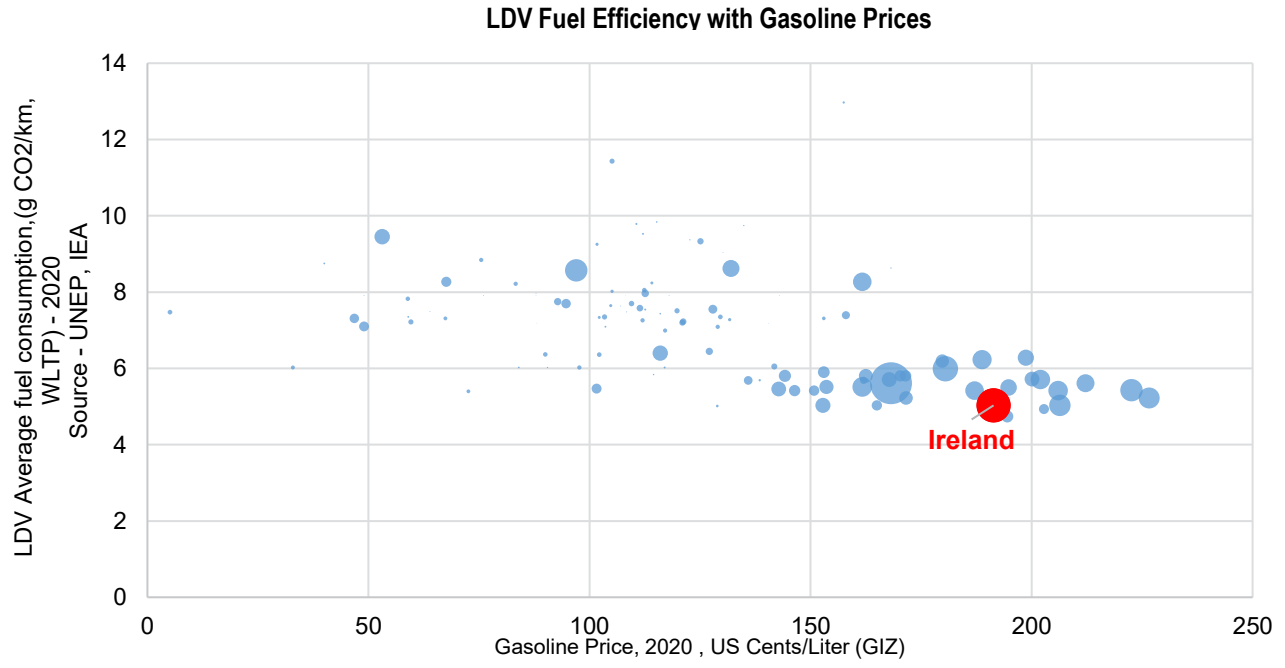
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

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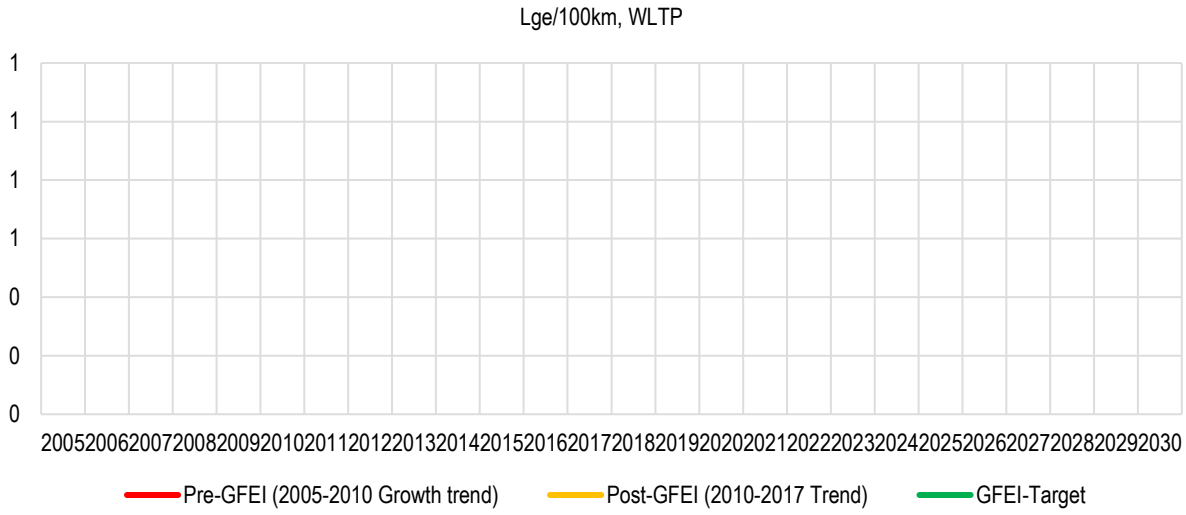
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

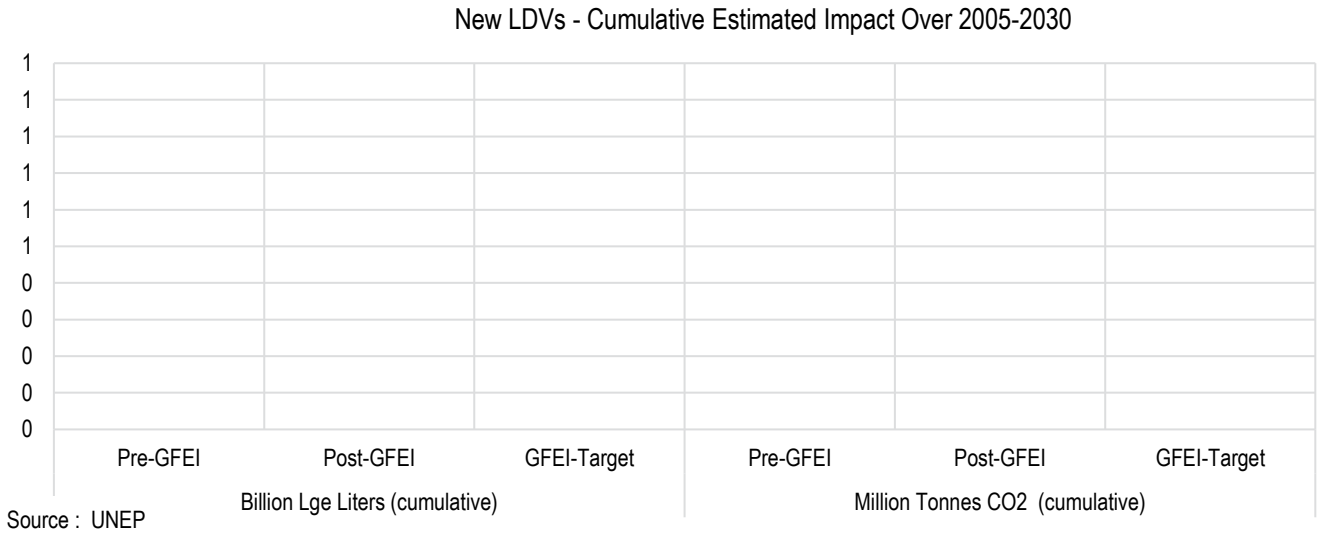
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

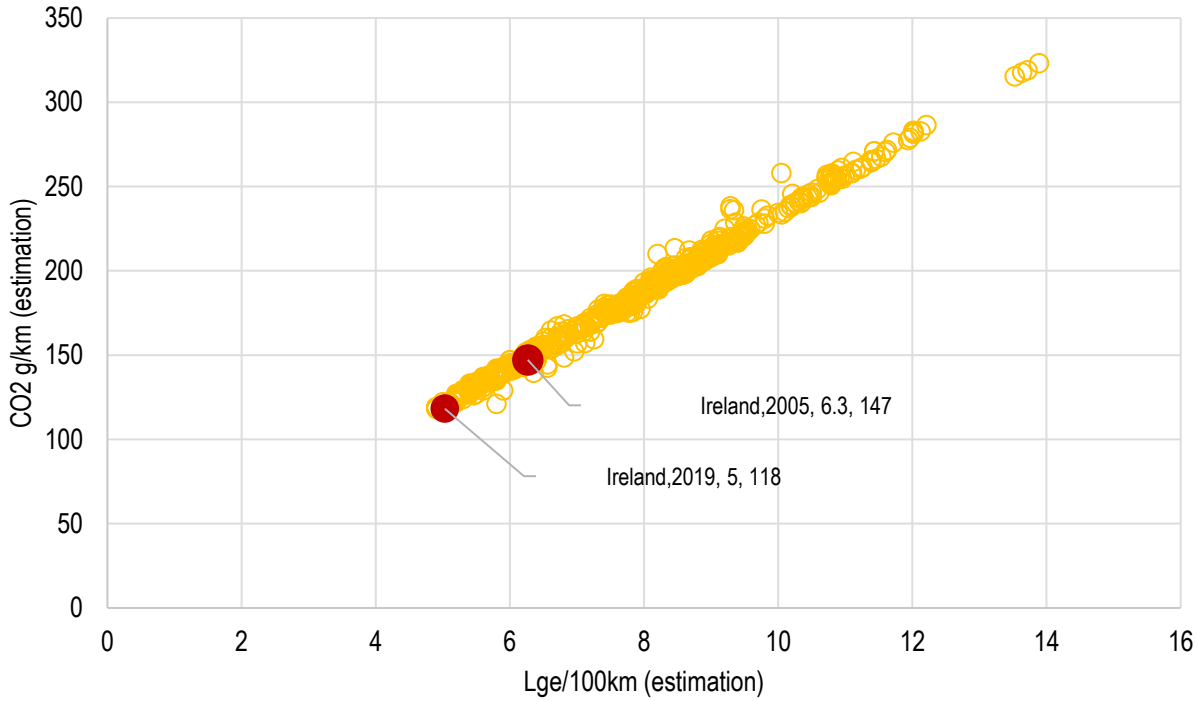
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



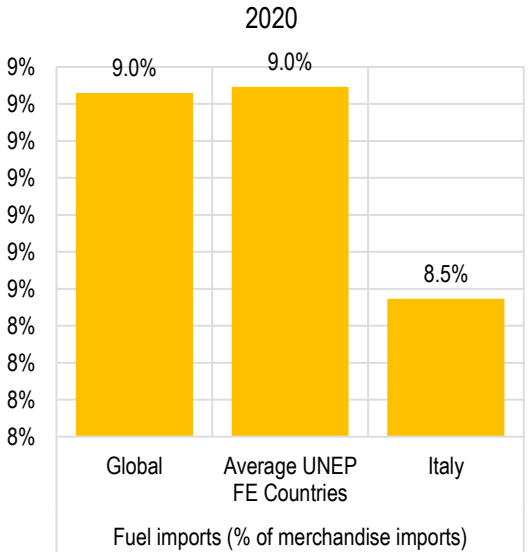
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

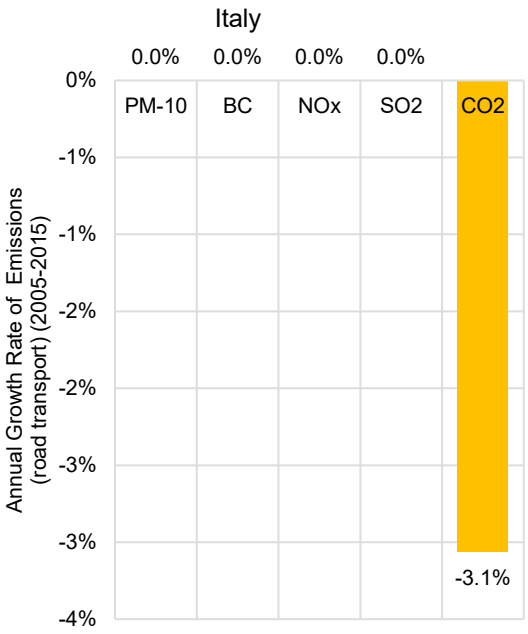
#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR ITALY

		Year	Source
Population (million)	60	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	41890	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	1381	2020	6
Gasoline Price $/l	2.0	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	11.7	2018	13
Employment (Transport+,000)	1791	2019	11
Fuel Economy (Lge/100 km, WLTP) -	6	2013	1
Average CO2 emissions/kilometre (g/km, WLTP) -	134	2019	1
Average displacement (cm3) -	1463	2019	1
Average kerb weight (kg) -	1333	2019	1
Average power (kw) -	84	2019	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	No	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.124	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.381	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	193.8	2019	8
Transport CO2 Emissions per Capita (tonnes) -	5.6	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	-0.9%	2000-18	16
Annual rate of transport energy consumption growth	-0.5%	2000-18	16
LDV Import value (Million USD)	22703	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
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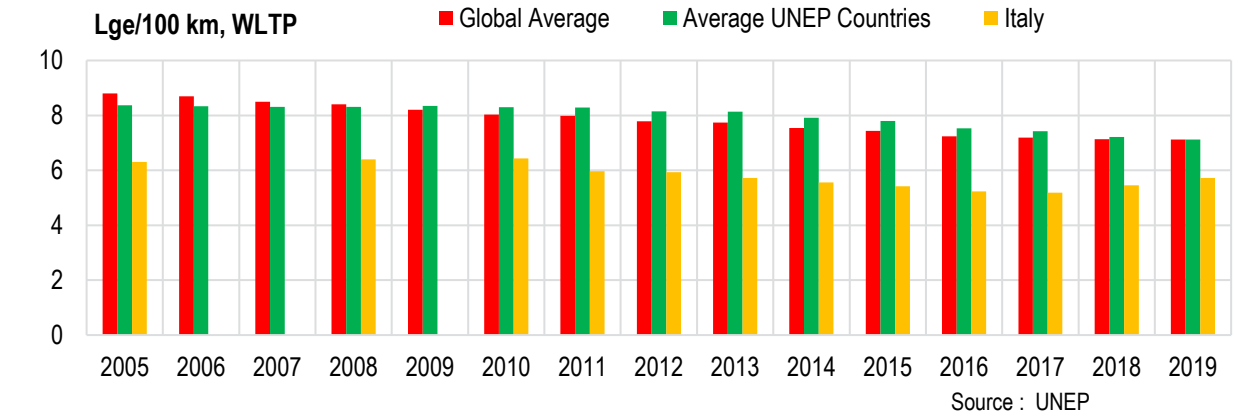
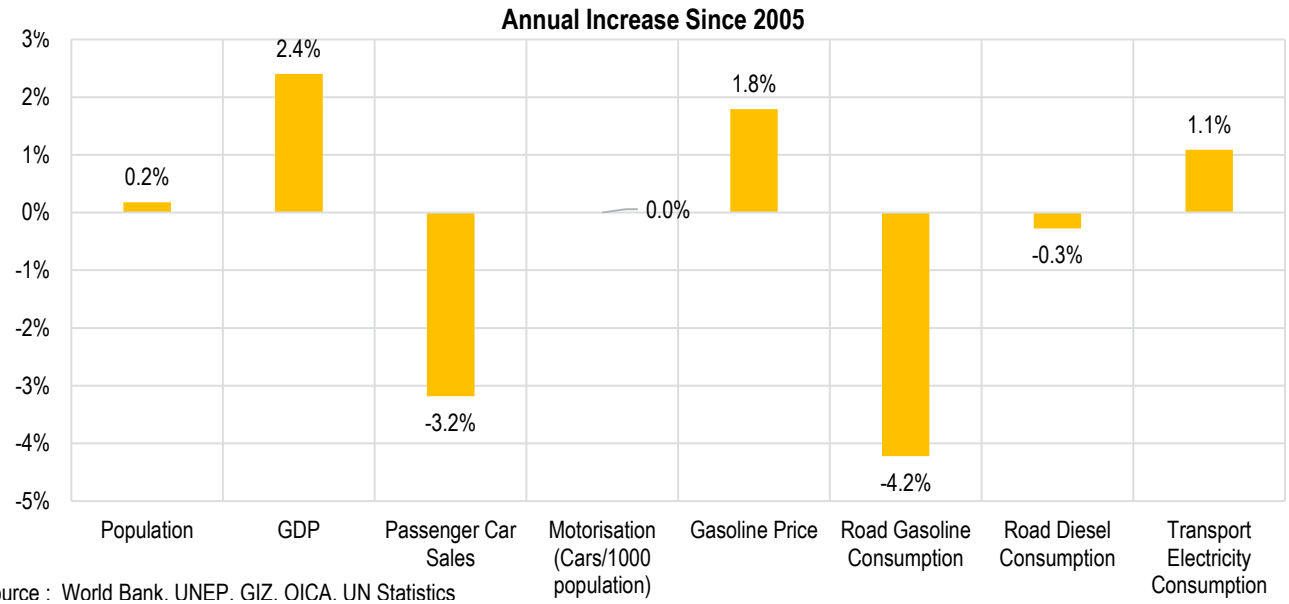
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

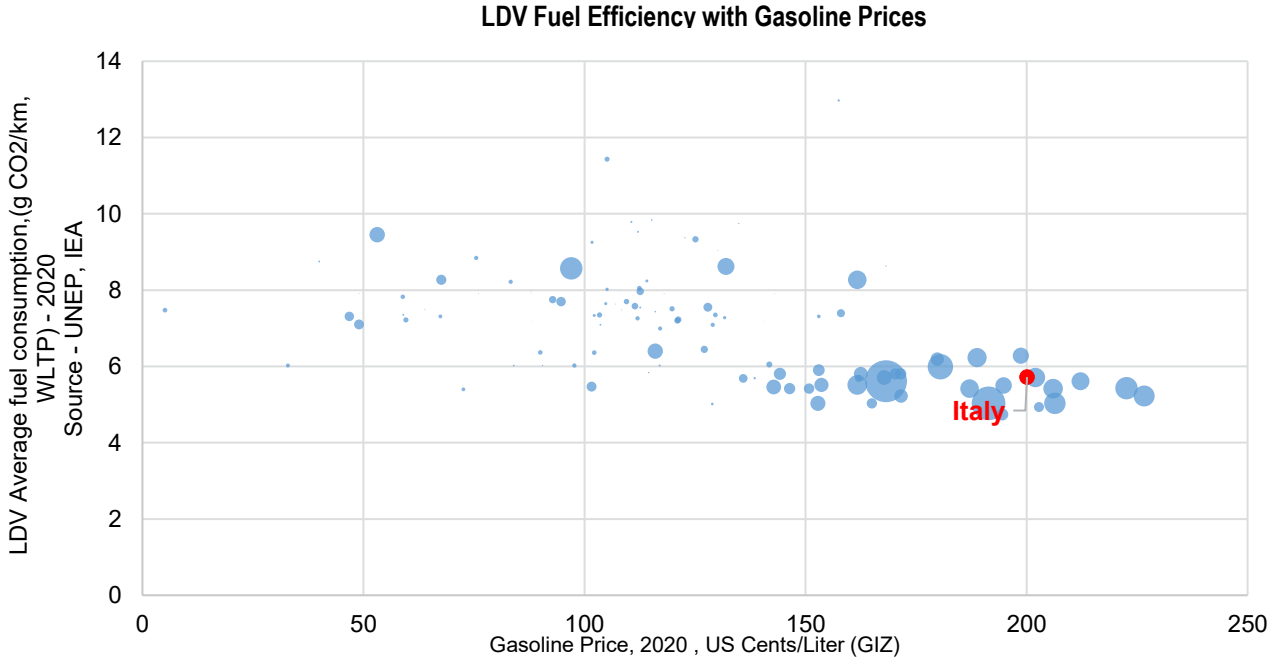
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

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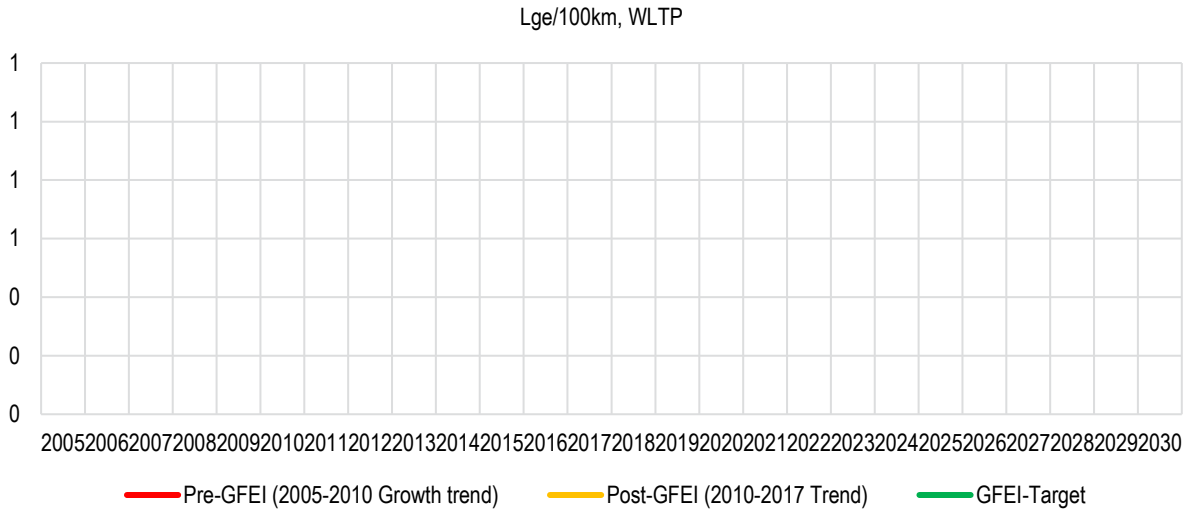
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

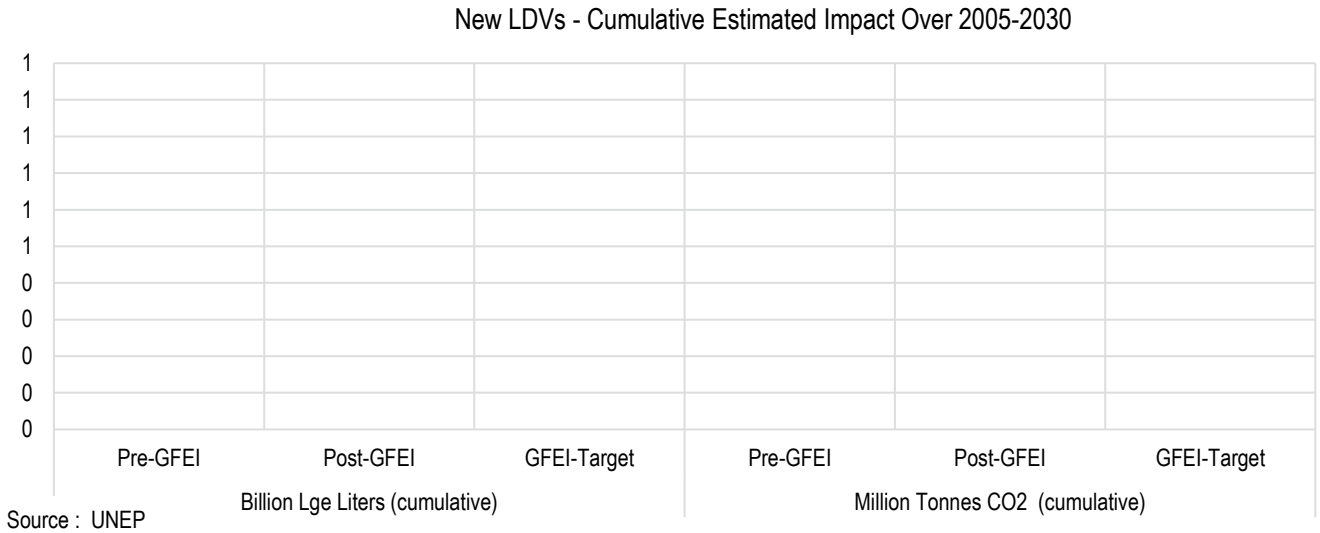
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

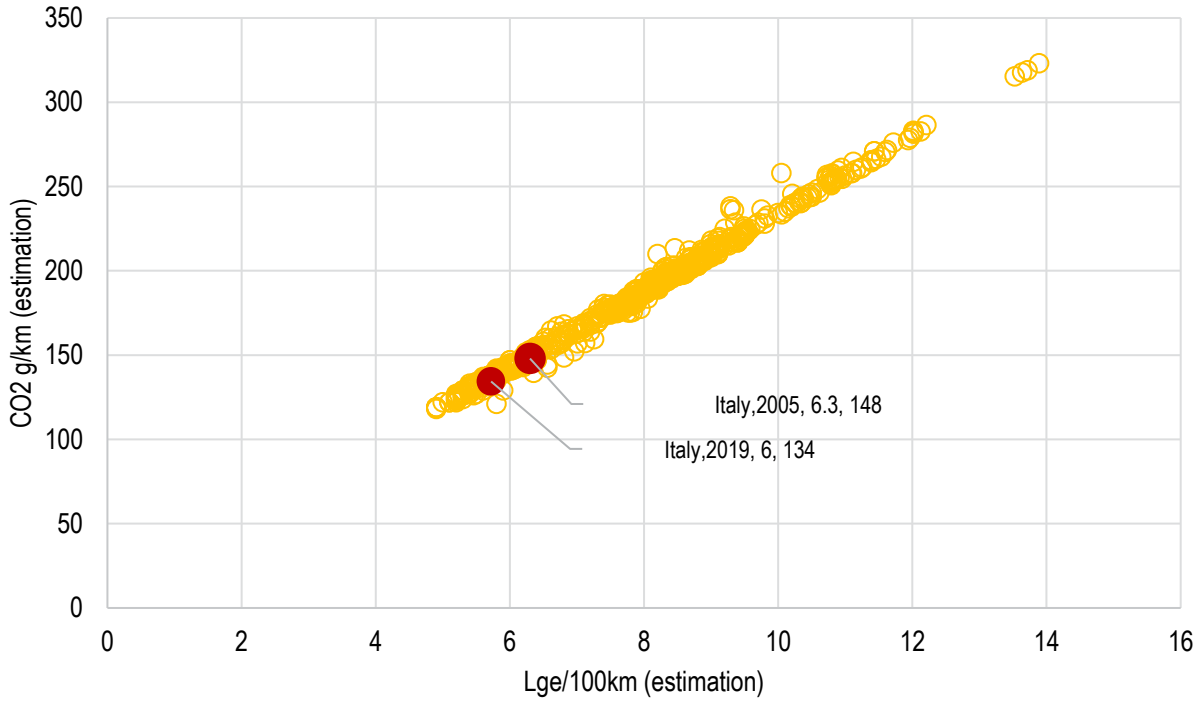
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



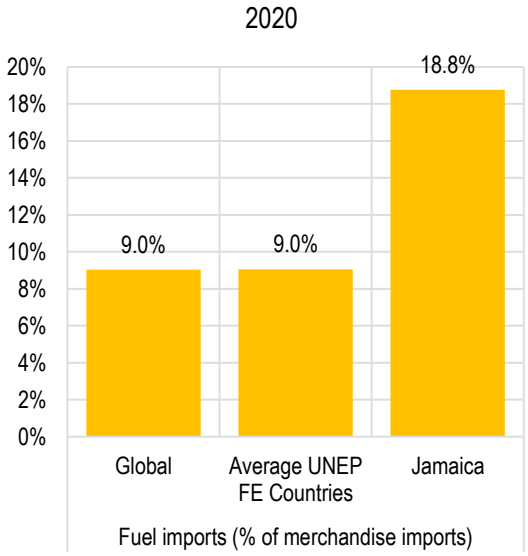
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

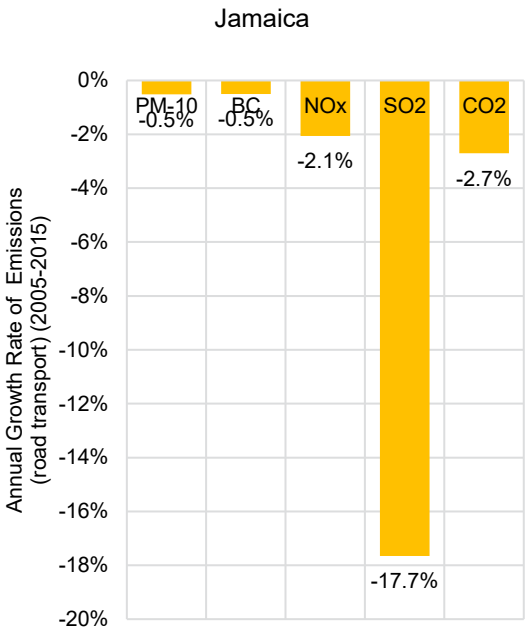
#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR JAMAICA

		Year	Source
Population (million)	3	2020	7
Income Level Category	Upper middle income		7
GDP per Capita (PPP, Curent USD)	9238	2020	7
Motorisation (Cars/1000 population)	52	2020	10
Car Sales (000)	14	2020	6
Gasoline Price $/l	1.3	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	6.4	2018	13
Employment (Transport+,000)	88	2019	11
Fuel Economy (Lge/100 km, WLTP) -	8	2016	1
Average CO2 emissions/kilometre (g/km, WLTP) -	179	2016	1
Average displacement (cm3) -	1646	2016	1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -	120		1
Diesel Share in LDV (sample,%)	6%	2016	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	No	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.095	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.100	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	3897.7	2019	8
Transport CO2 Emissions per Capita (tonnes) -	2.5	2019	14
Road Transport PM Emissions per Capita (grams) -	139.6	2015	14
Road Transport NOx Emissions per Capita (grams)-	6843.9	2015	14
Road Transport BC Emissions per Capita (grams)-	69.2	2015	14
LDV Emission Standards -	no policy	2019	1
Diesel Sulphur Levels (ppm) -	5000	2019	1
Gasoline Sulphur Levels (ppm) -	1500	2019	1
Annual rate of economy-wide energy intensity growth	-2.0%	2000-18	16
Annual rate of transport energy consumption growth	2.6%	2000-18	16
LDV Import value (Million USD)	261	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
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6 OICA
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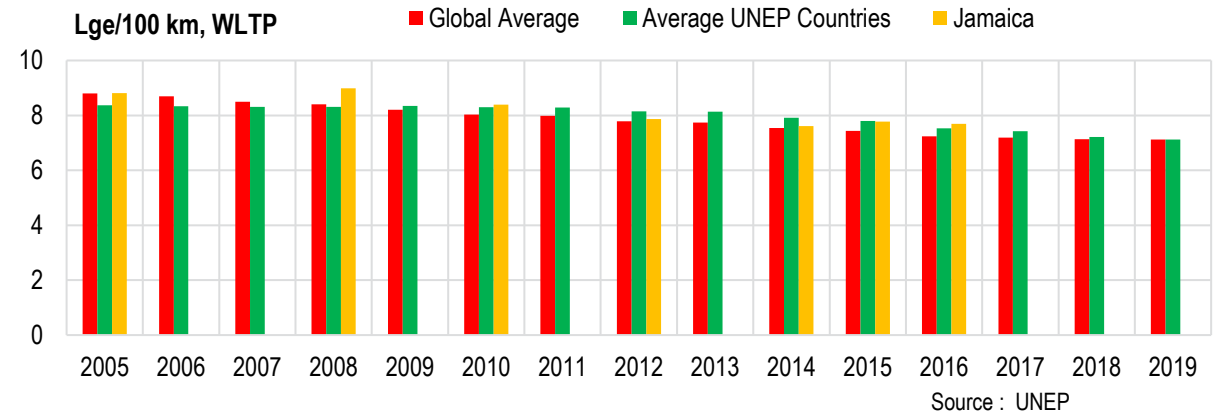
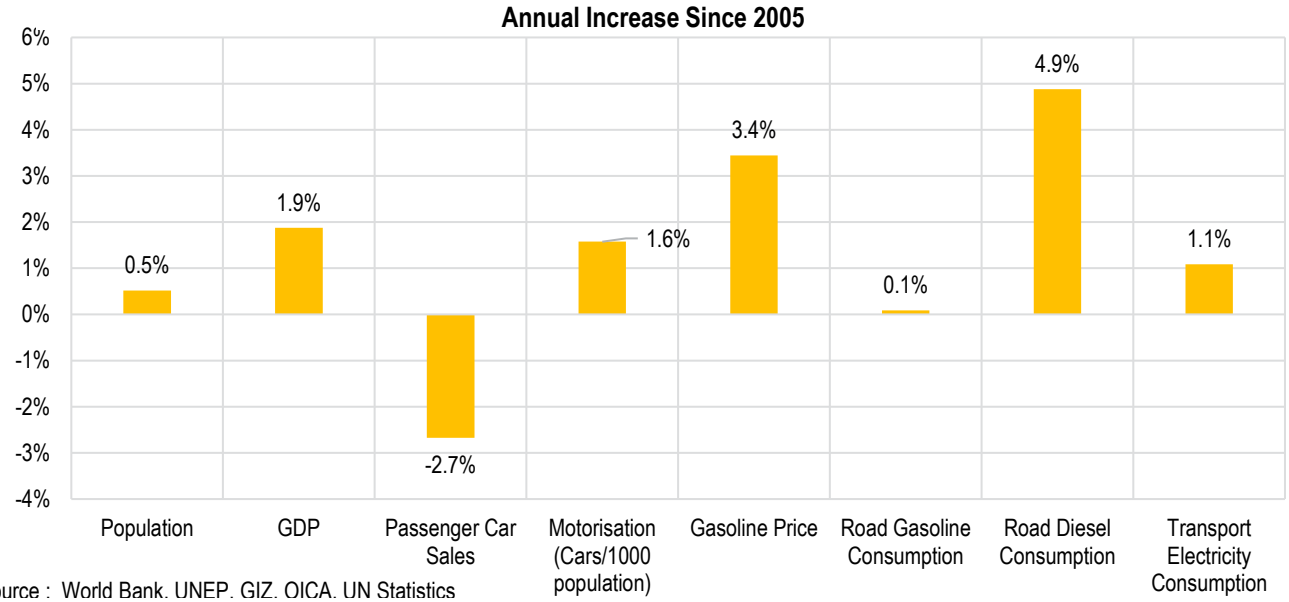
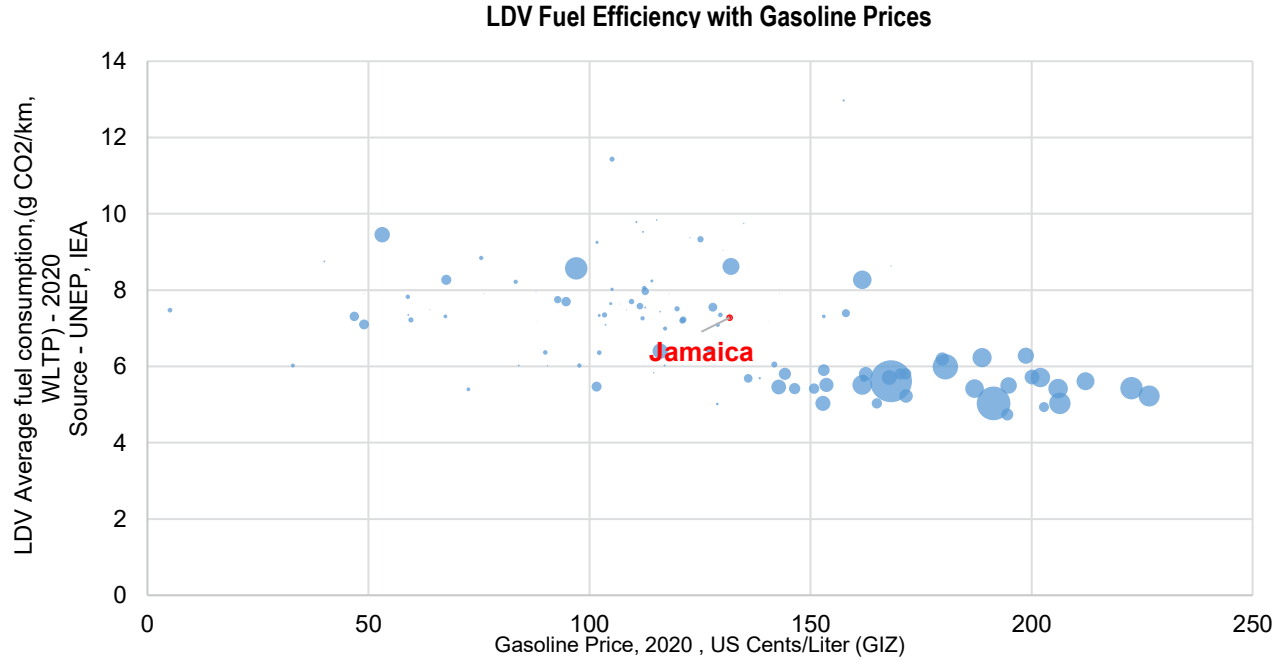
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

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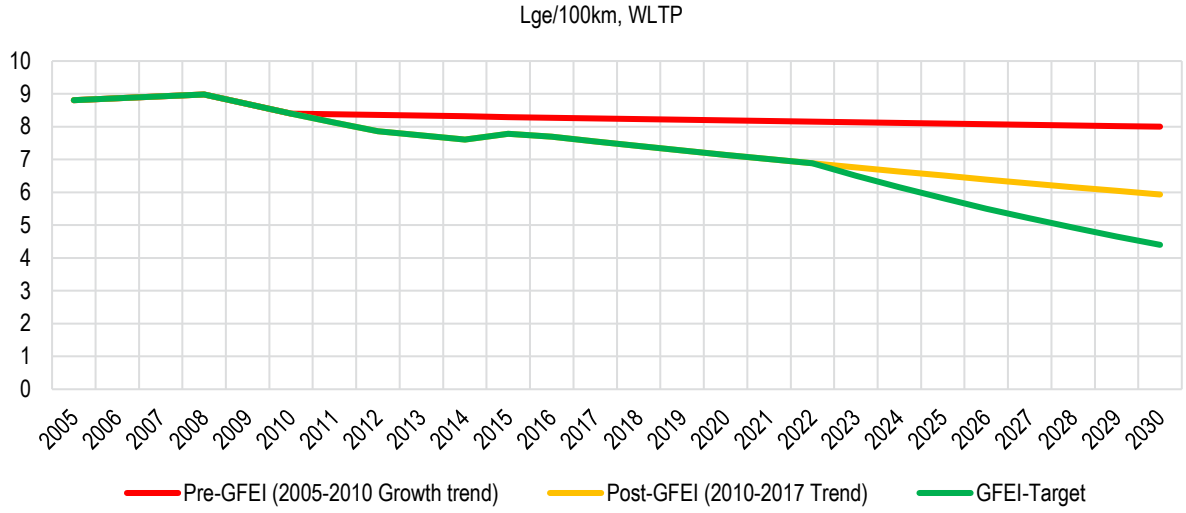
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-1.6%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-4.7%**



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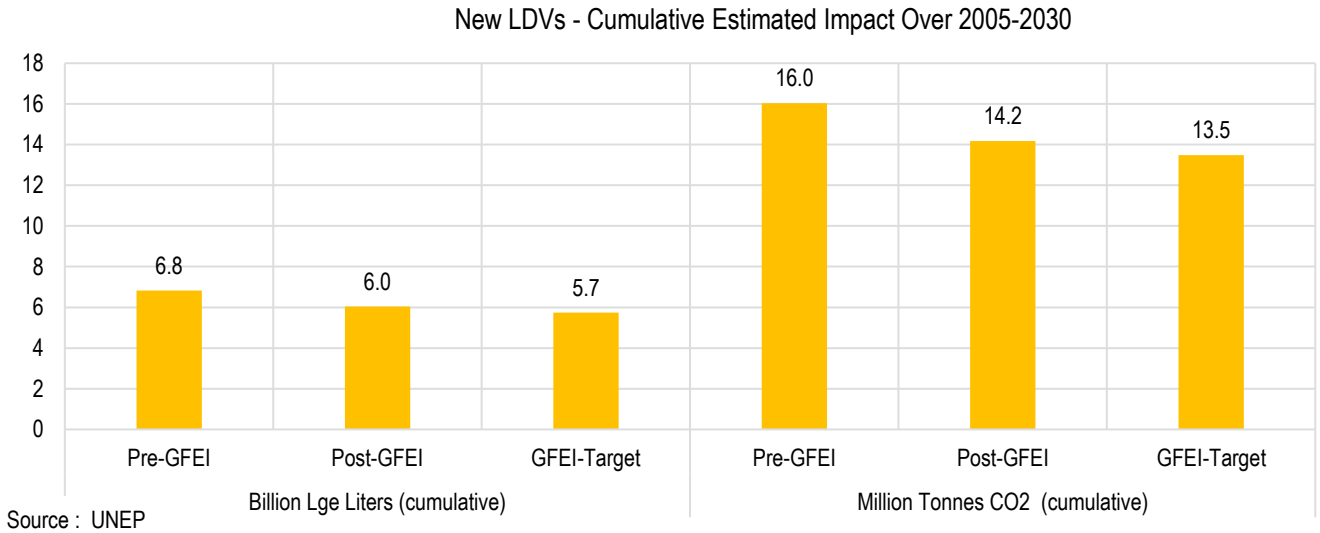


Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

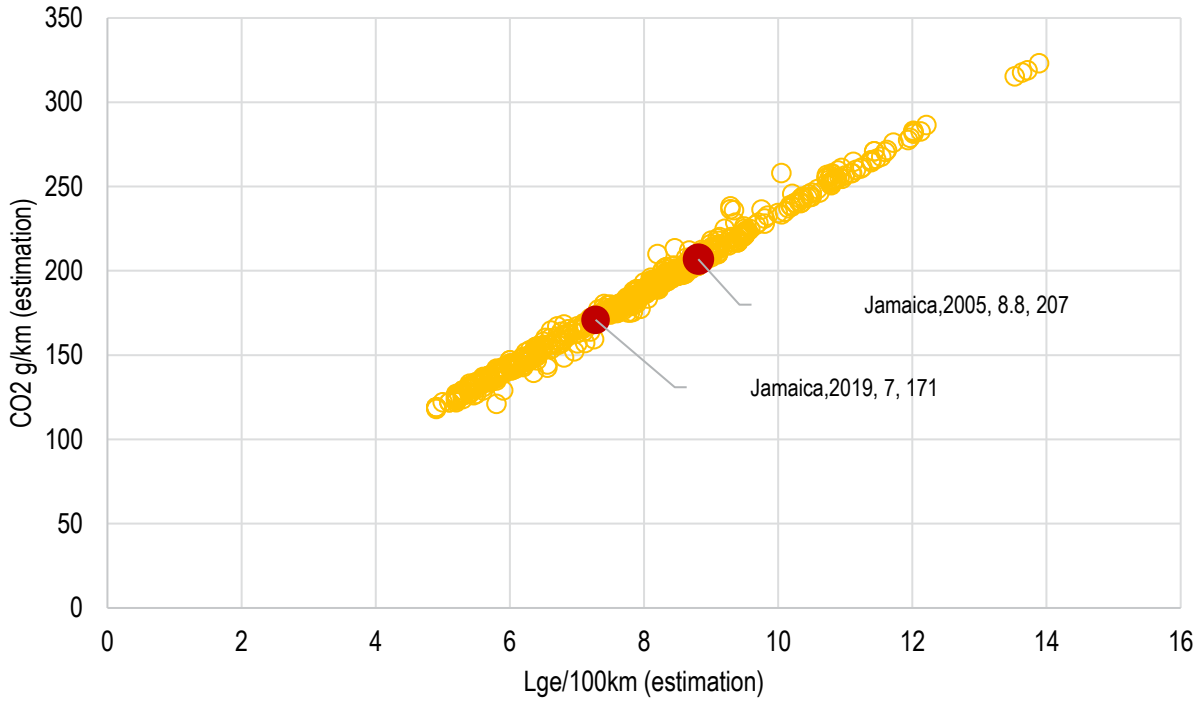
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

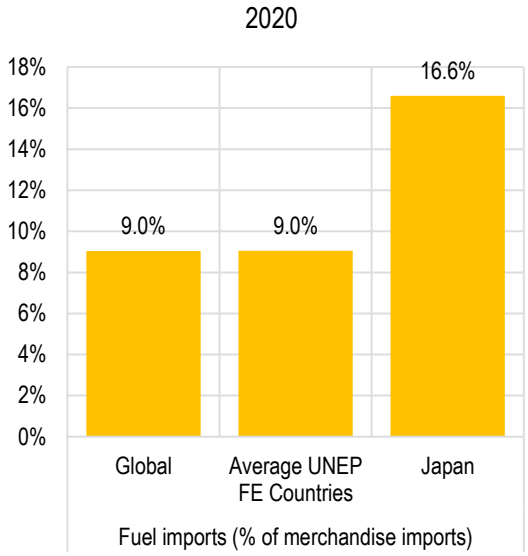
Source : UNEP

The GFEI activities in Jamaica started in 2016 with the development of the fuel economy baseline in 2016 (Phase I). Another agreement was signed on 6 June 2017 with the University of Technology of Jamaica (UTech Ja.) to develop fuel economy policies for the country (Phase II) and to update the existing fuel economy baseline. A national auto fuel economy database has been developed for the country and a report published and disseminated on the average auto fuel economy trends with policy recommendations for promoting fuel economy regulations. The National Workshop was convened to support the efforts being made to develop an Action Plan and the Sub-regional Workshop to discuss a Caribbean Sustainable Transportation Harmonized Road Map and Strategies. As a next step, Jamaica has committed USD 2 million to join the new GEF 7 Electric Mobility Programme. The project will develop institutional frameworks, support legislation arrangements, incentivise and establish mid and long-term strategies including, communication campaigns and capacity building to promote the uptake of electric mobility in Jamaica. A demonstration project with electric buses with integrated renewable power recharging for public transport will take place in Kingston. It will prepare context-specific finance schemes and business models to promote the active involvement of the private sector and public-private partnerships.

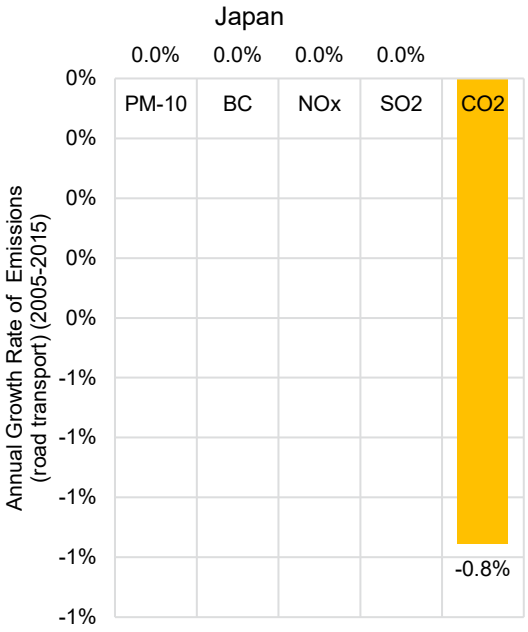
The assessment indicates that if Jamaica implements a fuel economy policy for LDVs with a 2030 GFEI target, it could save 1 billion litres of gasoline-equivalent & 2.4 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR JAPAN

		Year	Source
Population (million)	126	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	41733	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	3810	2020	6
Gasoline Price $/l	1.4	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	10.9	2018	13
Employment (Transport+,000)	5460	2019	11
Fuel Economy (Lge/100 km, WLTP) -	5	2019	1
Average CO2 emissions/kilometre (g/km, WLTP) -	126	2019	1
Average displacement (cm3) -	1604	2019	1
Average kerb weight (kg) -	1005	2019	1
Average power (kw) -	78	2011	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.287	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.181	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	139.4	2019	8
Transport CO2 Emissions per Capita (tonnes) -	9.1	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	-1.9%	2000-18	16
Annual rate of transport energy consumption growth	-1.3%	2000-18	16
LDV Import value (Million USD)	10159	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
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6 OICA
7 World Bank
8 UN Statistics Division
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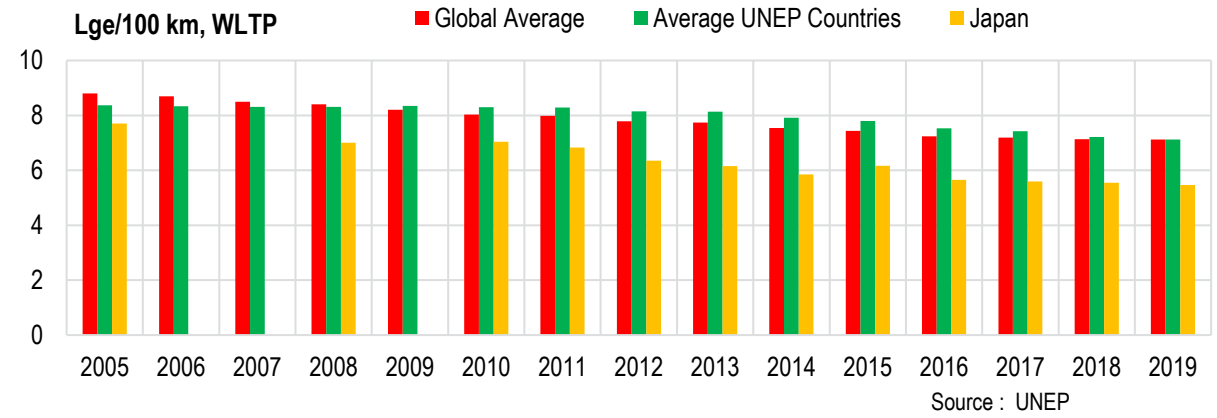
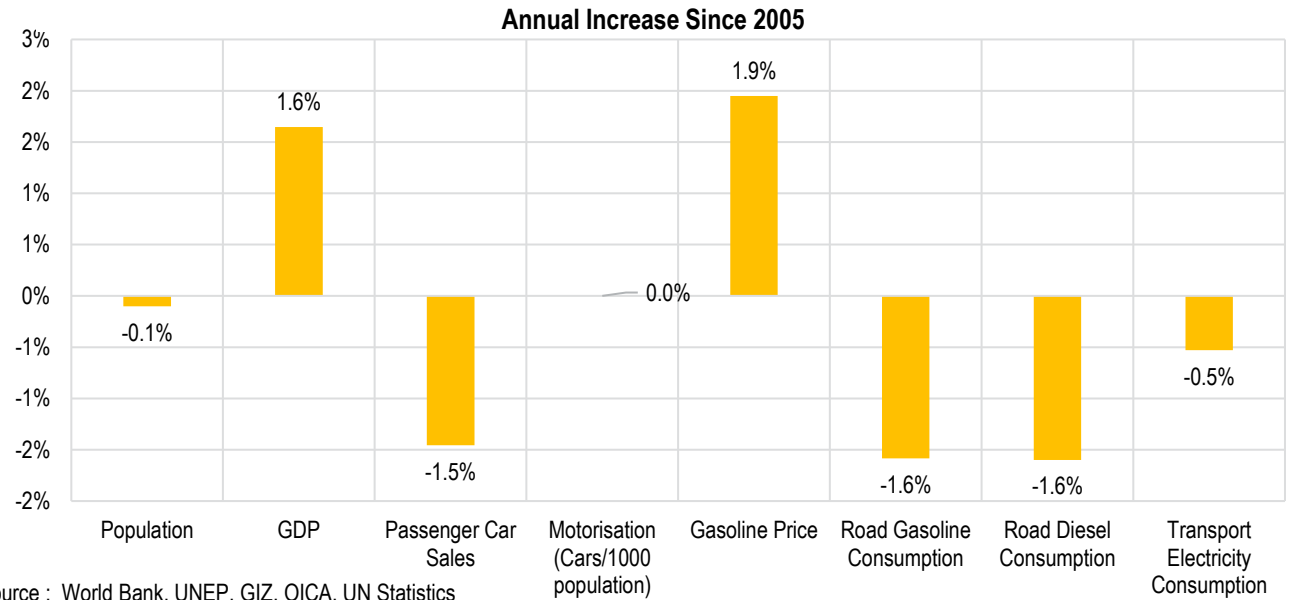
13 Koks, E.E. et al. A global multi-hazard risk analysis of road
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

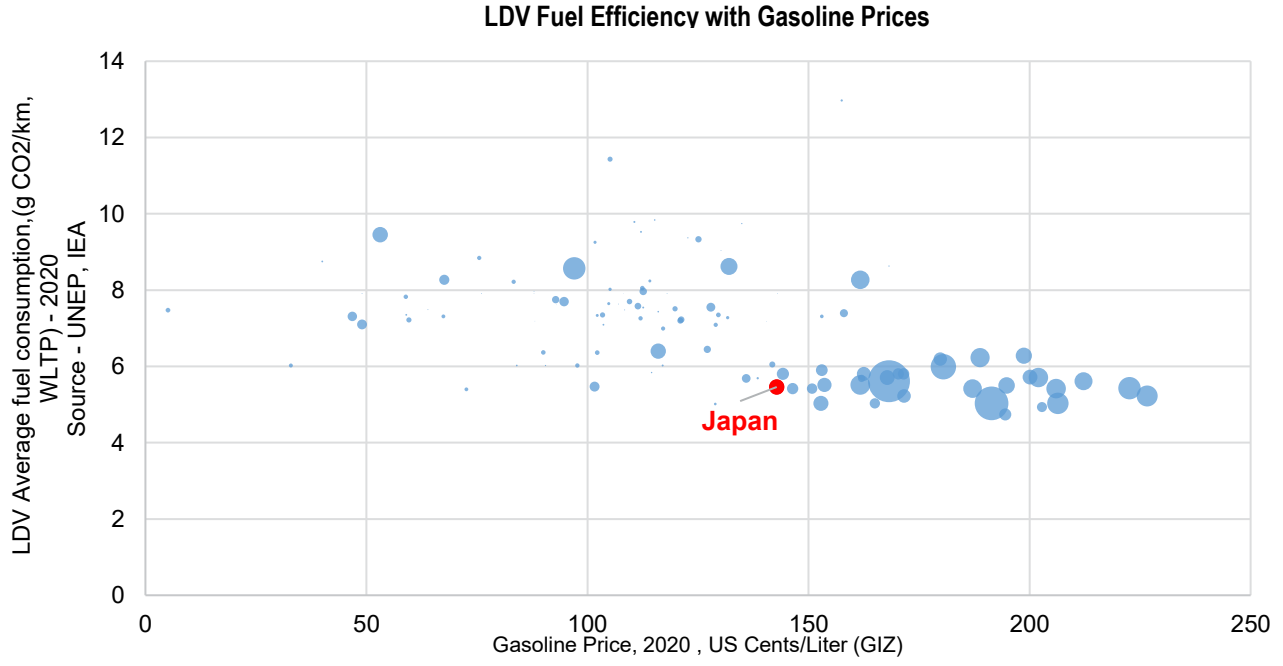
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

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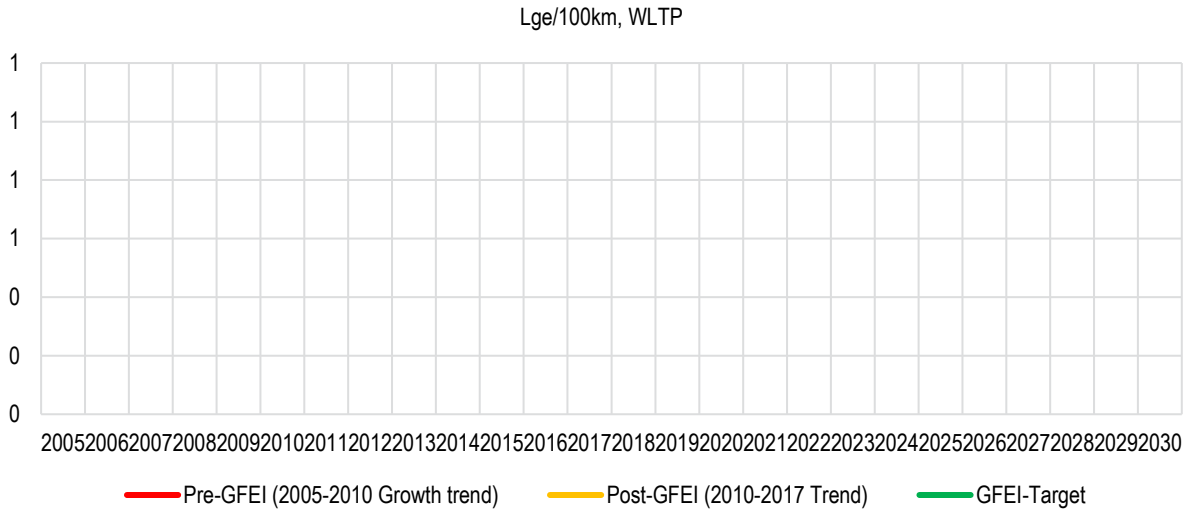
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



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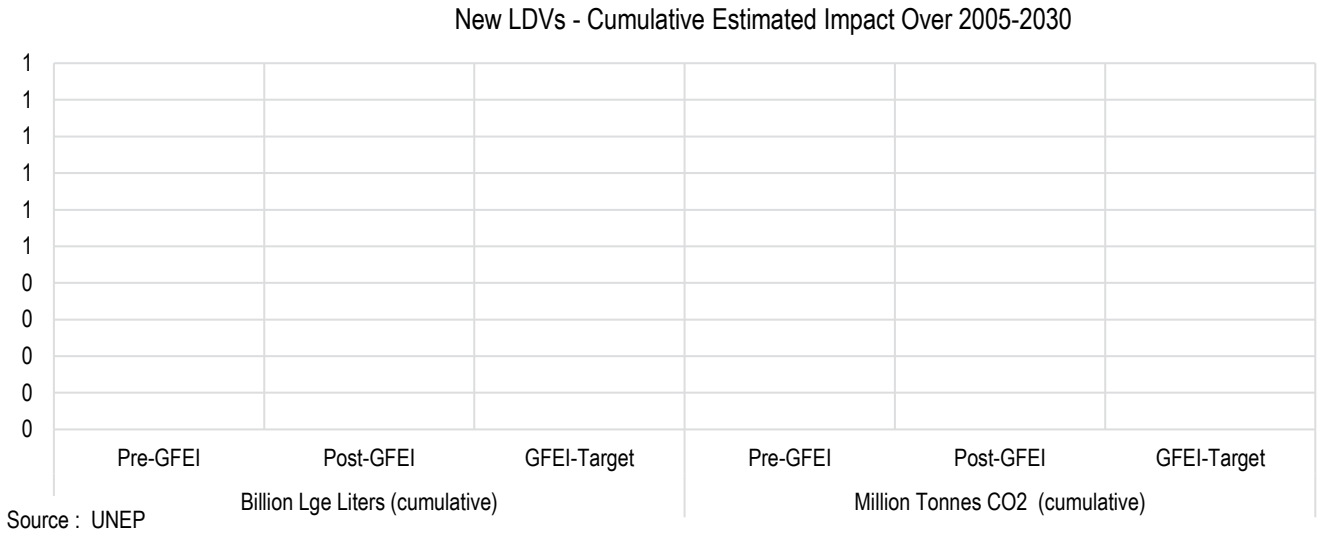


Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

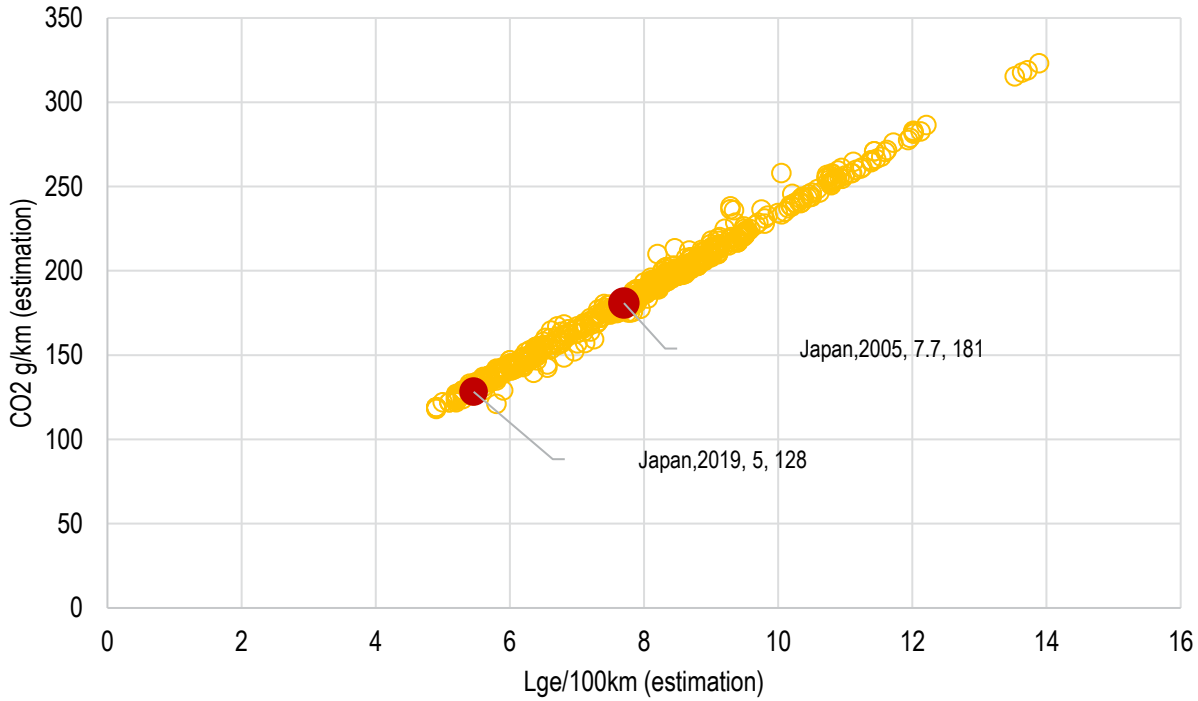
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



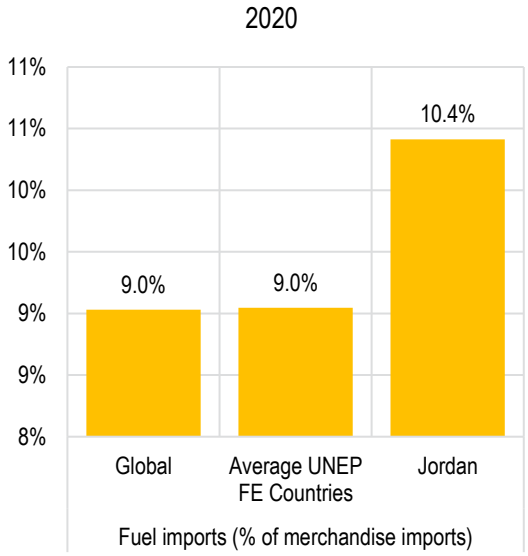
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

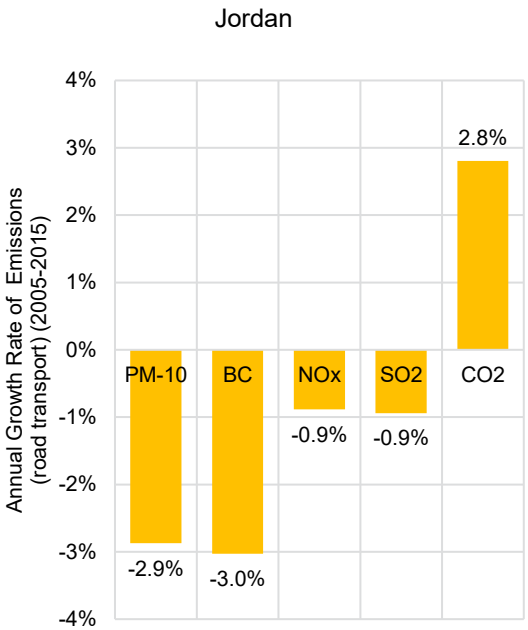
#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR JORDAN

		Year	Source
Population (million)	10	2020	7
Income Level Category	Upper middle income		7
GDP per Capita (PPP, Curent USD)	10351	2020	7
Motorisation (Cars/1000 population)	108	2020	10
Car Sales (000)	18	2020	6
Gasoline Price $/l	1.5	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	7.3	2018	13
Employment (Transport+,000)	214	2019	11
Fuel Economy (Lge/100 km, WLTP) -	#N/A	#N/A	1
Average CO2 emissions/kilometre (g/km, WLTP) -	#N/A	#N/A	1
Average displacement (cm3) -			1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.155	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.136	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	1719.3	2019	8
Transport CO2 Emissions per Capita (tonnes) -	2.8	2019	14
Road Transport PM Emissions per Capita (grams) -	67.8	2015	14
Road Transport NOx Emissions per Capita (grams)-	3532.0	2015	14
Road Transport BC Emissions per Capita (grams)-	32.4	2015	14
LDV Emission Standards -	Euro 3	2019	1
Diesel Sulphur Levels (ppm) -	0	2019	1
Gasoline Sulphur Levels (ppm) -	0	2019	1
Annual rate of economy-wide energy intensity growth	-1.0%	2000-18	16
Annual rate of transport energy consumption growth	5.6%	2000-18	16
LDV Import value (Million USD)	785	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
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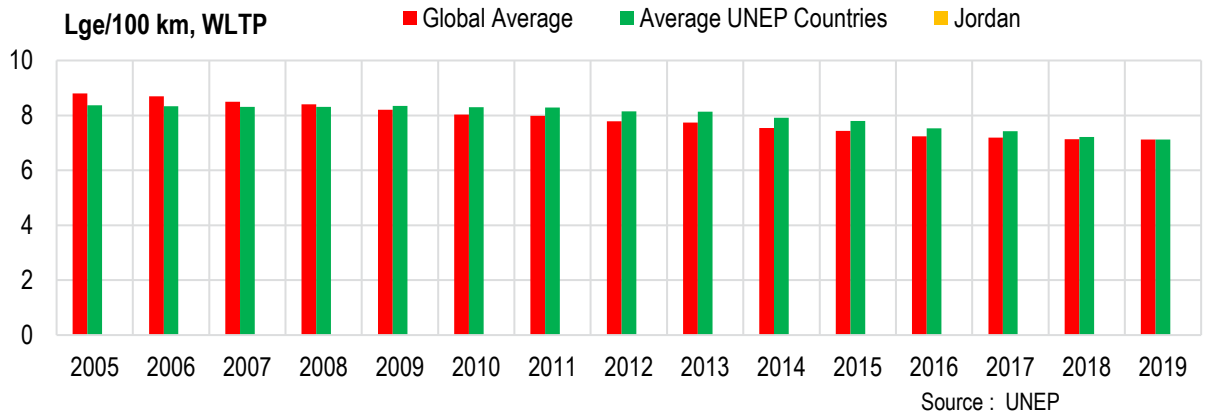
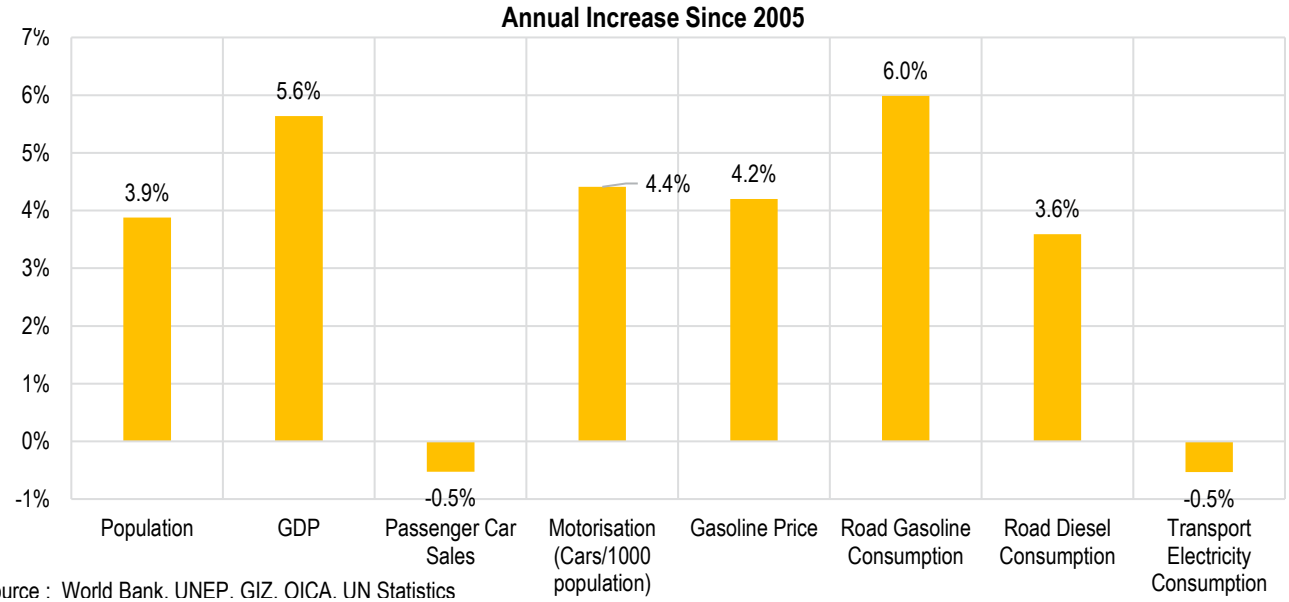
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

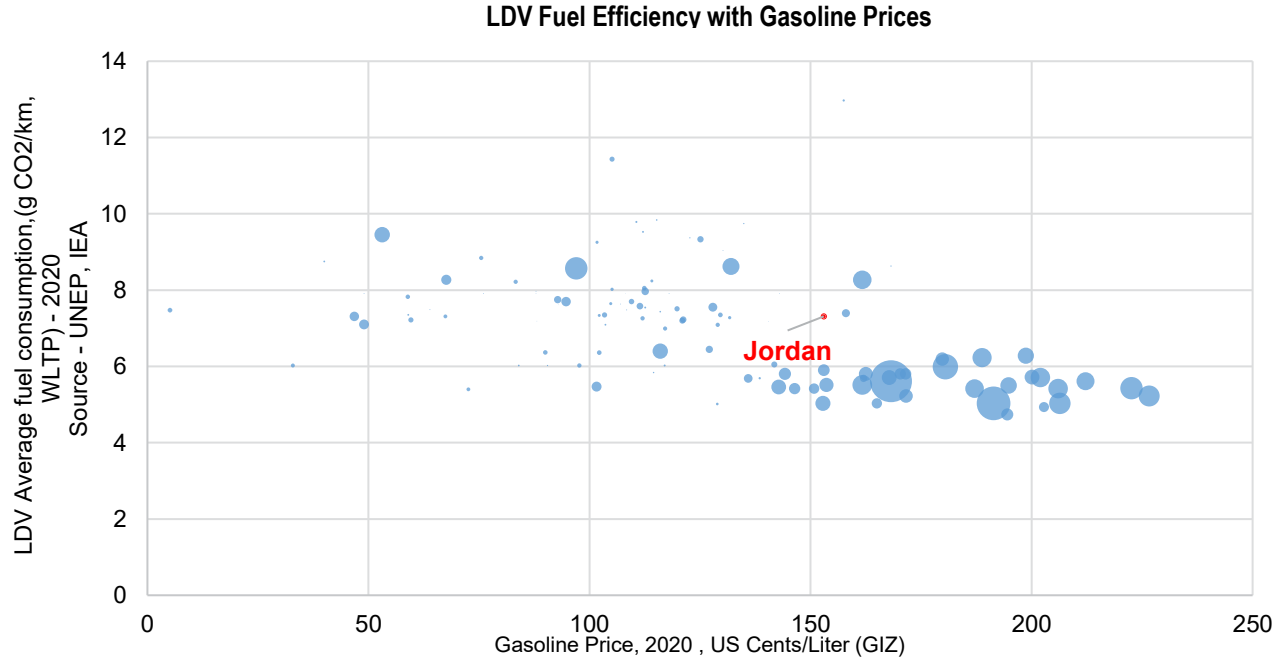
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

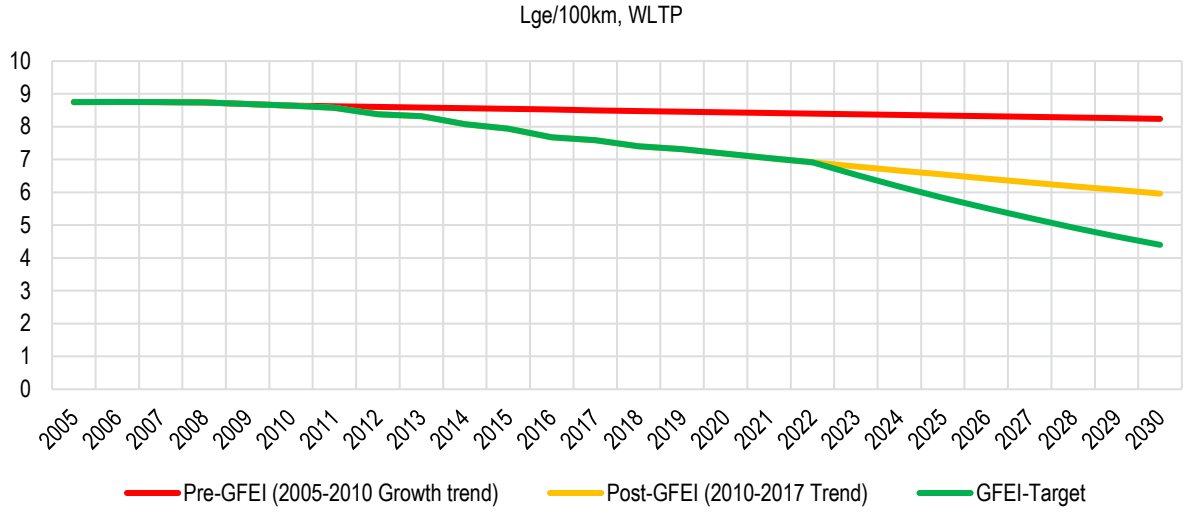
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-1.8%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-4.8%**



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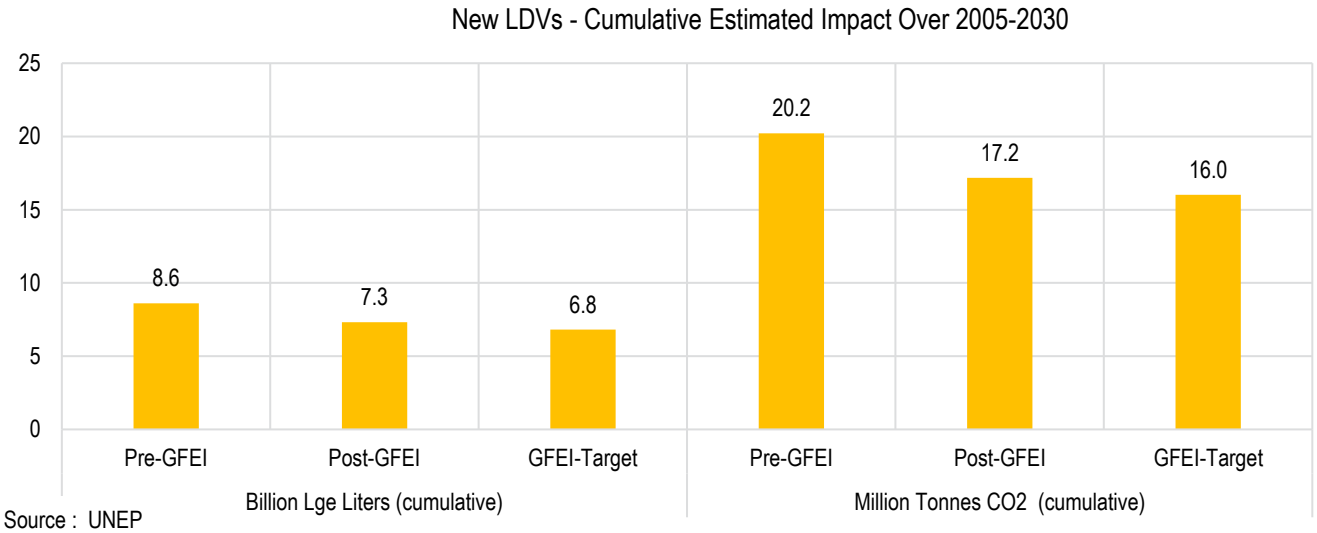


Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

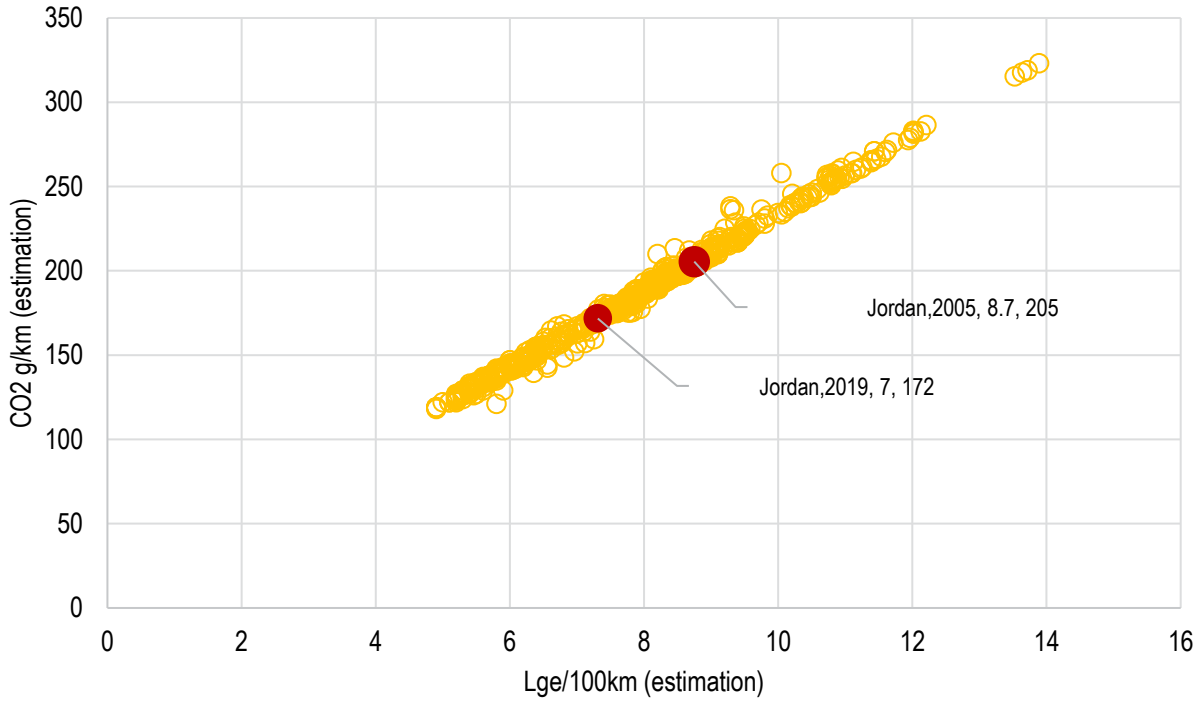
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

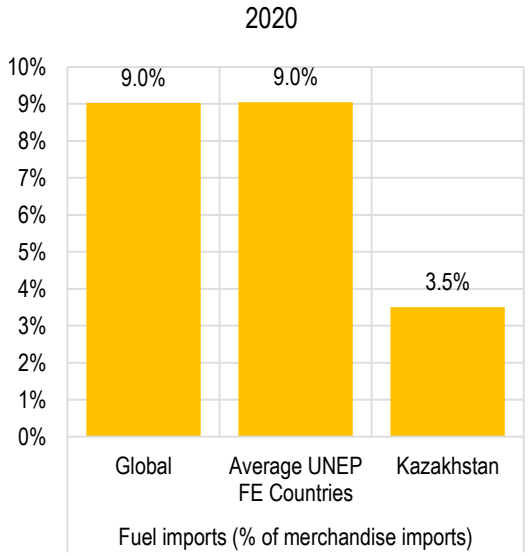
The GFEI country project agreement was signed on 12 February 2018 with the Ministry of Environment. This national project aims to support the development of a fuel economy baseline and policies. The Ministry of Environment of Jordan is in the process to establish partnerships with local organisations and other government agencies to implement the project.

The transport sector contributes to about 45% of total energy consumption in Jordan and is a priority sector for energy efficiency improvement. In order to improve energy efficiency, the government reduced special tax from 55% to 25% on imported Hybrid cars with an engine capacity of less than 2500 cc; and from 55% to 12.5% in case of phasing out cars that are older than ten years old. The Ministry of Transport (MoT) launched a long-term national strategy 2014 with sustainable transport is one of its pillars.

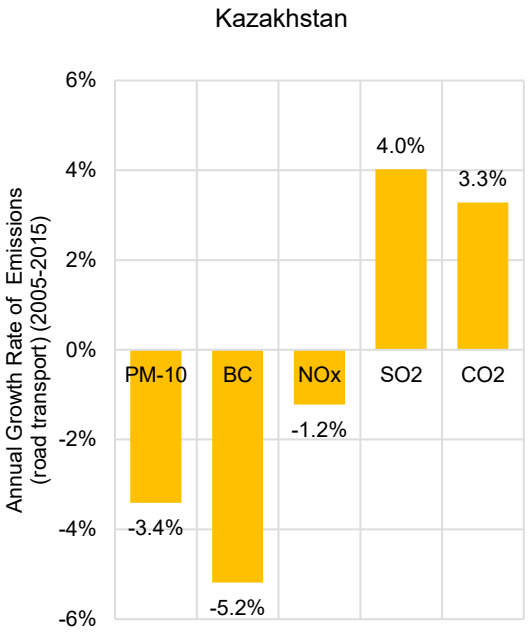
The assessment indicates that if Jordan implements a fuel economy policy for LDVs with a 2030 GFEI target, it could save 1.5 billion litres of gasoline-equivalent & 3.6 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR KAZAKHSTAN

		Year	Source
Population (million)	19	2020	7
Income Level Category	Upper middle income		7
GDP per Capita (PPP, Curent USD)	26744	2020	7
Motorisation (Cars/1000 population)	220	2020	10
Car Sales (000)	101	2020	6
Gasoline Price $/l	0.5	2020	2
Fossil Fuel Subsidy (Million $) 2019	1052	2019	4
Road Infrastructure Length/Capita (meters)	12.8	2018	13
Employment (Transport+,000)	830	2019	11
Fuel Economy (Lge/100 km, WLTP) -	#N/A	#N/A	1
Average CO2 emissions/kilometre (g/km, WLTP) -	#N/A	#N/A	1
Average displacement (cm3) -			1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	No	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.243	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.028	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	188.0	2019	8
Transport CO2 Emissions per Capita (tonnes) -	15.0	2019	14
Road Transport PM Emissions per Capita (grams) -	26.2	2015	14
Road Transport NOx Emissions per Capita (grams)-	2589.4	2015	14
Road Transport BC Emissions per Capita (grams)-	11.5	2015	14
LDV Emission Standards -	Euro 6	2019	1
Diesel Sulphur Levels (ppm) -	350	2019	1
Gasoline Sulphur Levels (ppm) -	500/350	2019	1
Annual rate of economy-wide energy intensity growth	-2.0%	2000-18	16
Annual rate of transport energy consumption growth	4.8%	2000-18	16
LDV Import value (Million USD)	772	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
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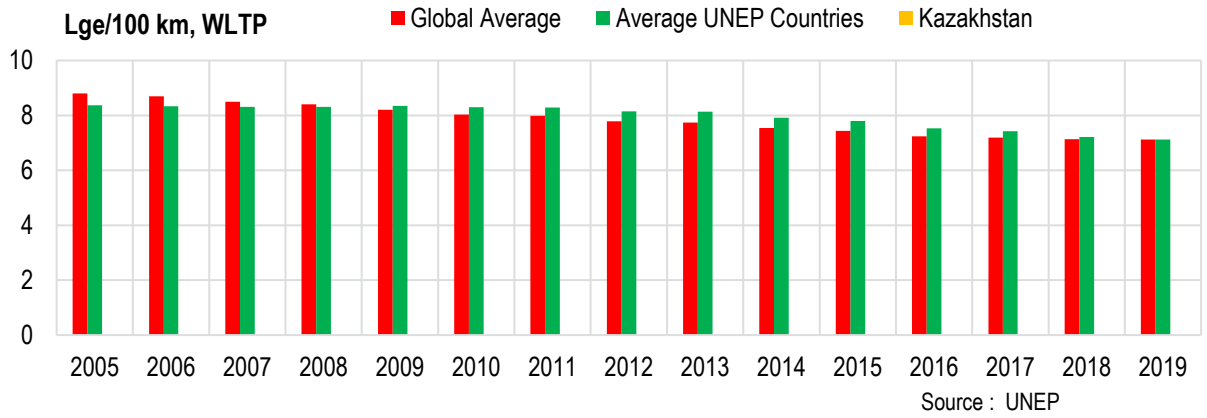
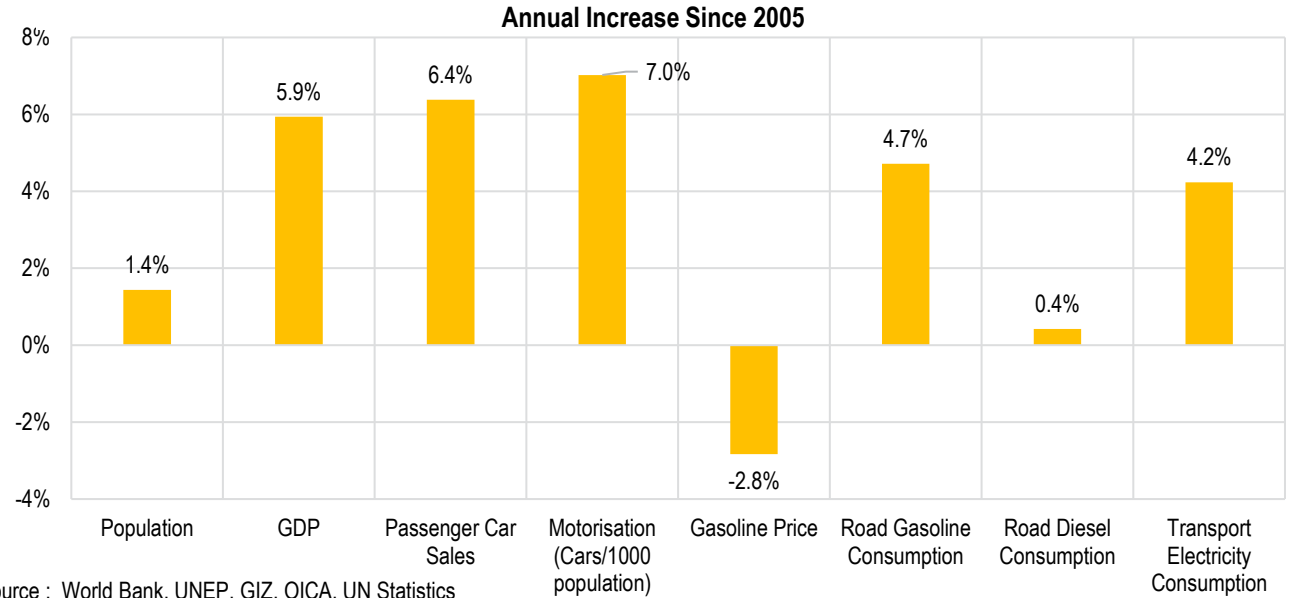
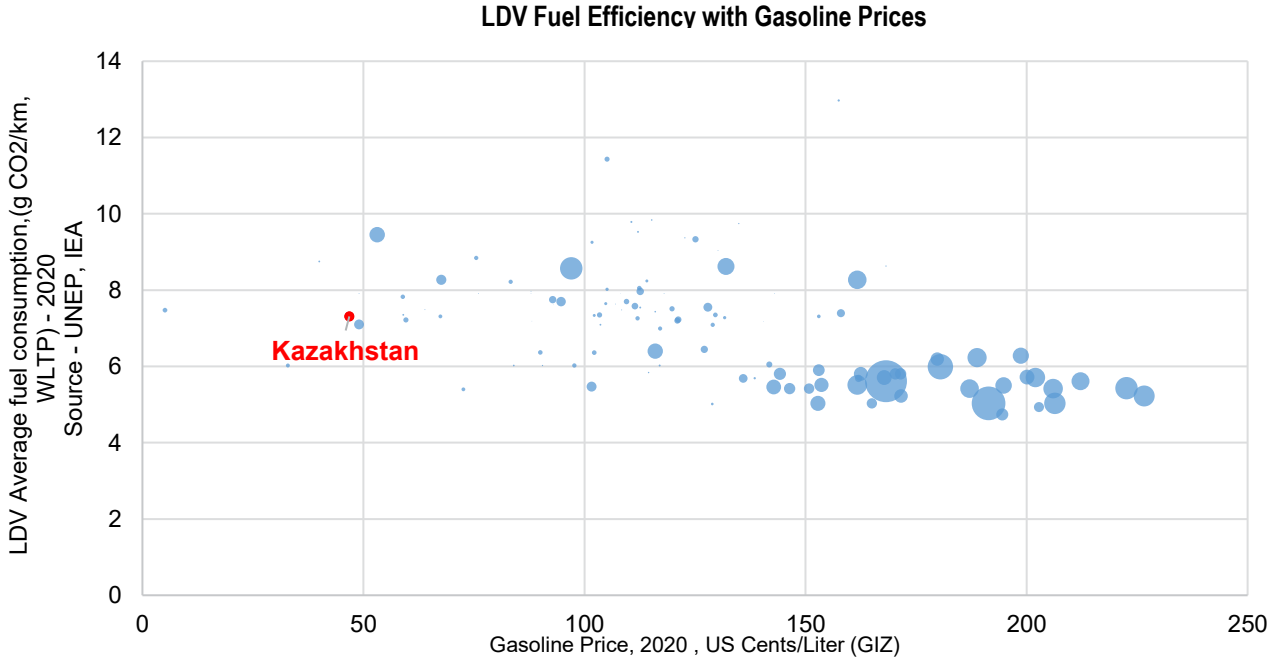
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

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FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

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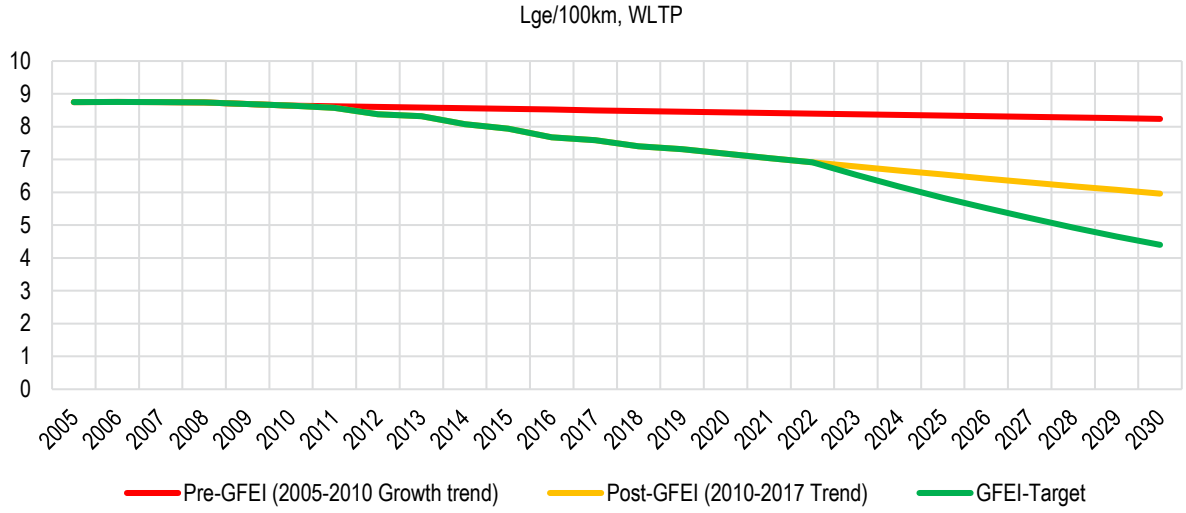
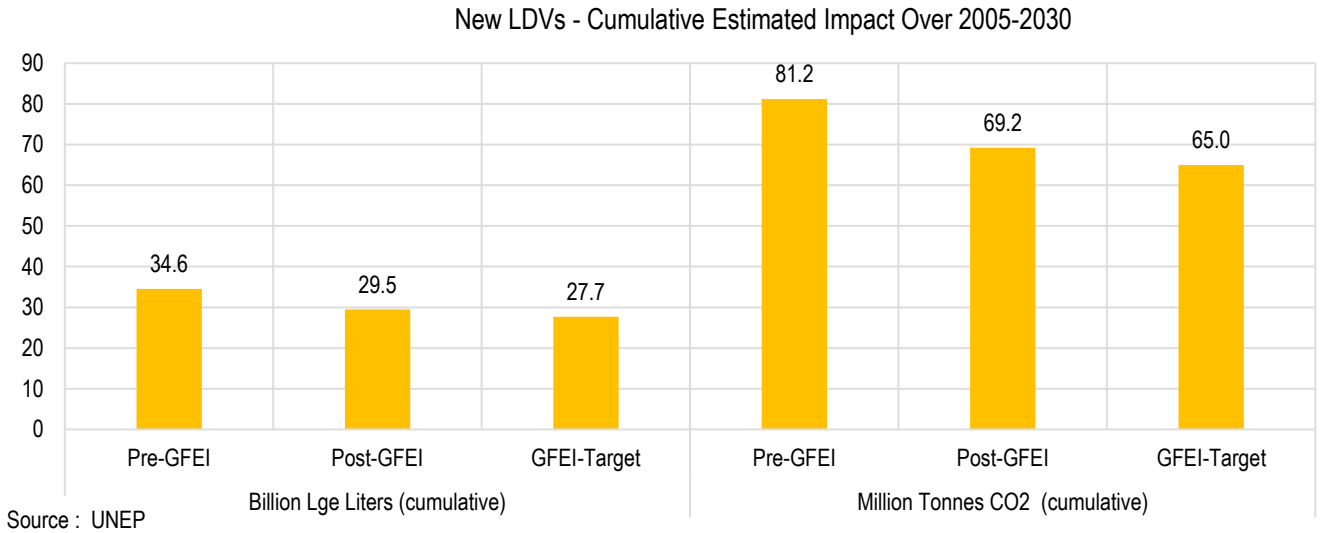
From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-4.8%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

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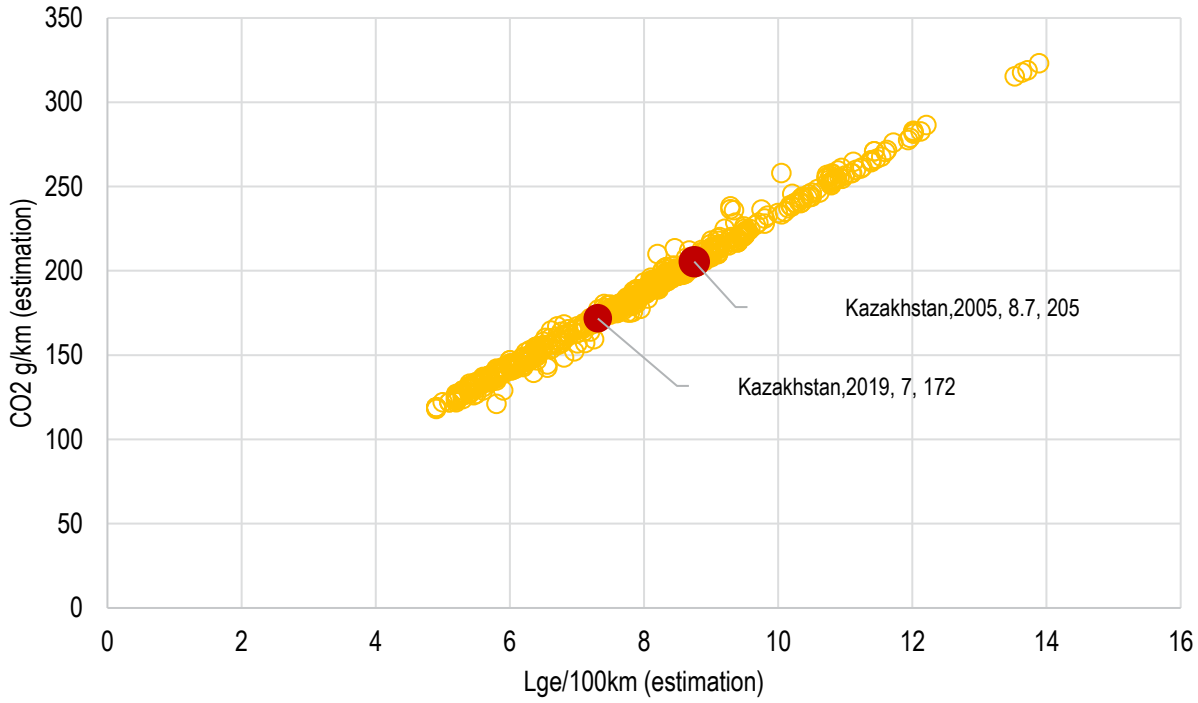
d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

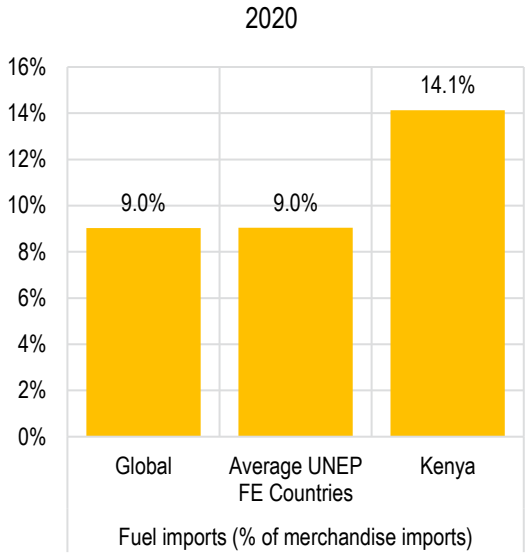
The GFEI country project with Kazakhstan was implemented by the Regional Environment Centre for Central Asia (CAREC) based in Kazakhstan through an agreement signed on 13 June 2017. CAREC coordinated with relevant government agencies, including the Ministries of Energy and Transport. Initial results of the fuel economy baseline study and policy recommendations were presented in a two-day regional seminar on 4-5 July 2018. The event was held as part of the "Promoting the development of clean transport in Kazakhstan" project, which is being implemented by the Regional Environmental Centre for Central Asia (CAREC) and GFEI partner UNEP.

Kazakhstan has adopted the law "On energy saving and energy efficiency", "On Supporting the Use of Renewable Energy Sources" aiming at more significant use of renewable energy sources. Research indicates that with of switch to more efficient heavy trucks, light trucks and light-duty vehicles, the energy consumption could be reduced by about 22% in 2050 (when compared with BAU). The reduction in gasoline and diesel consumption is about 39% and 29%.

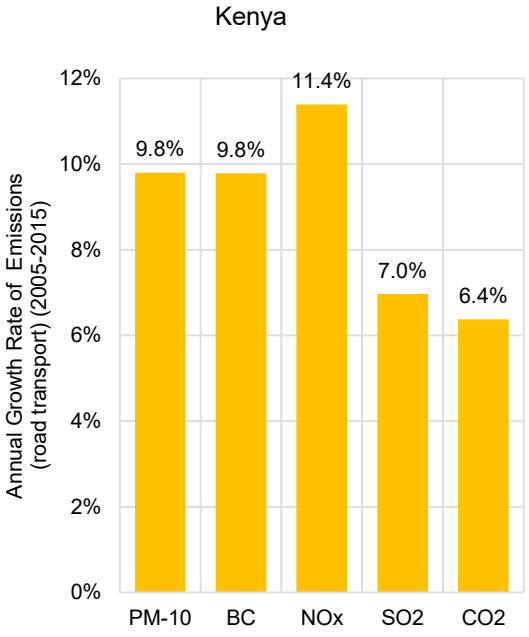
The assessment indicates that if Kazakhstan implements a fuel economy policy for LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 4.7 billion litres of gasoline-equivalent & 11.2 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR KENYA

		Year	Source
Population (million)	54	2020	7
Income Level Category	Lower middle income		7
GDP per Capita (PPP, Curent USD)	4576	2020	7
Motorisation (Cars/1000 population)	18	2020	10
Car Sales (000)	42	2020	6
Gasoline Price $/l	1.2	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	5.2	2018	13
Employment (Transport+,000)	650	2019	11
Fuel Economy (Lge/100 km, WLTP) -	8	2016	1
Average CO2 emissions/kilometre (g/km, WLTP) -	184	2016	1
Average displacement (cm3) -	1972	2016	1
Average kerb weight (kg) -	1442	2016	1
Average power (kw) -	96	2016	1
Average Age of newly registered cars (years) -	7	2016	1
Cumulative number of LDVs (total sample size,000) -	416		1
Diesel Share in LDV (sample,%)	22%	2016	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.026	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.035	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	65.6	2019	8
Transport CO2 Emissions per Capita (tonnes) -	0.4	2019	14
Road Transport PM Emissions per Capita (grams) -	73.9	2015	14
Road Transport NOx Emissions per Capita (grams)-	1721.9	2015	14
Road Transport BC Emissions per Capita (grams)-	36.5	2015	14
LDV Emission Standards -	0	2019	1
Diesel Sulphur Levels (ppm) -	50	2019	1
Gasoline Sulphur Levels (ppm) -	150	2019	1
Annual rate of economy-wide energy intensity growth	-1.0%	2000-18	16
Annual rate of transport energy consumption growth	5.7%	2000-18	16
LDV Import value (Million USD)	443	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
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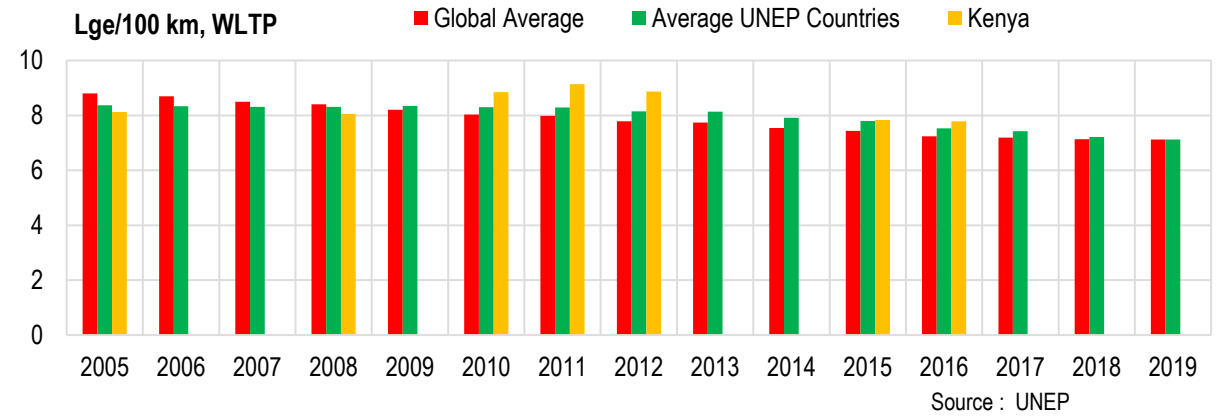
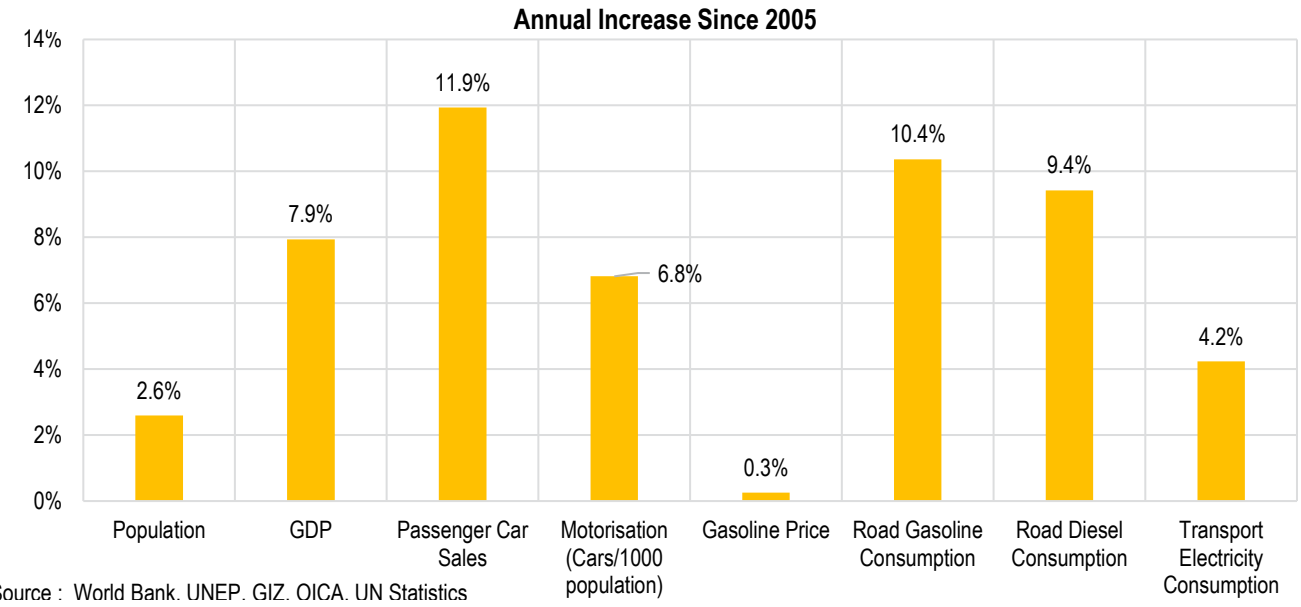
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

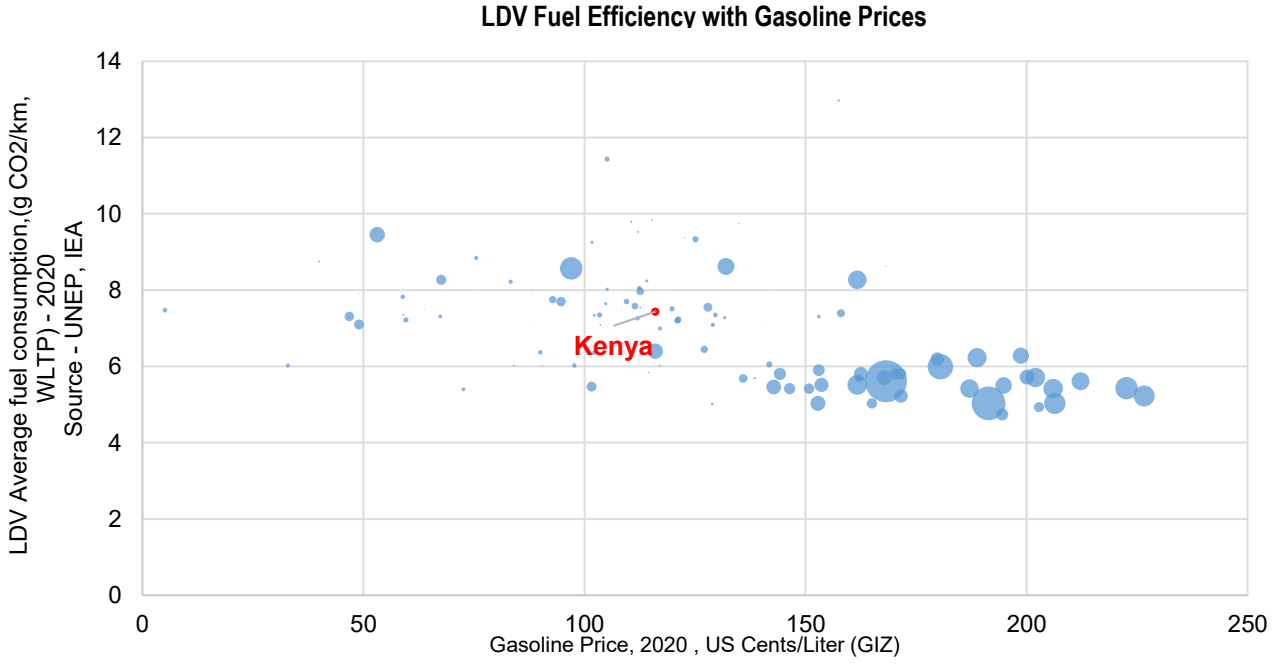
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

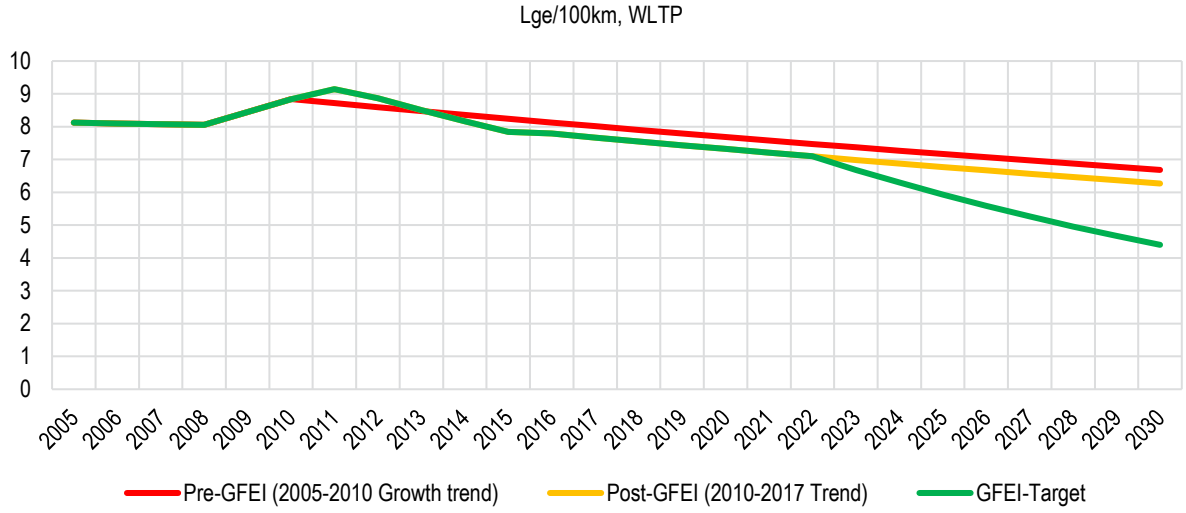
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-1.9%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-5.0%**



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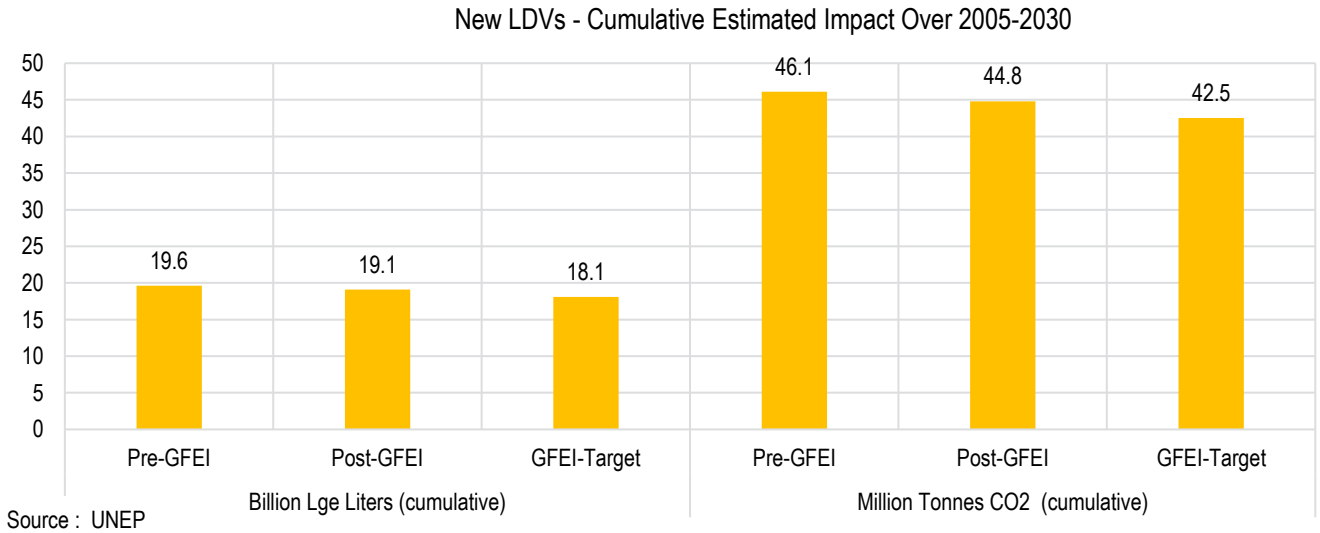


Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

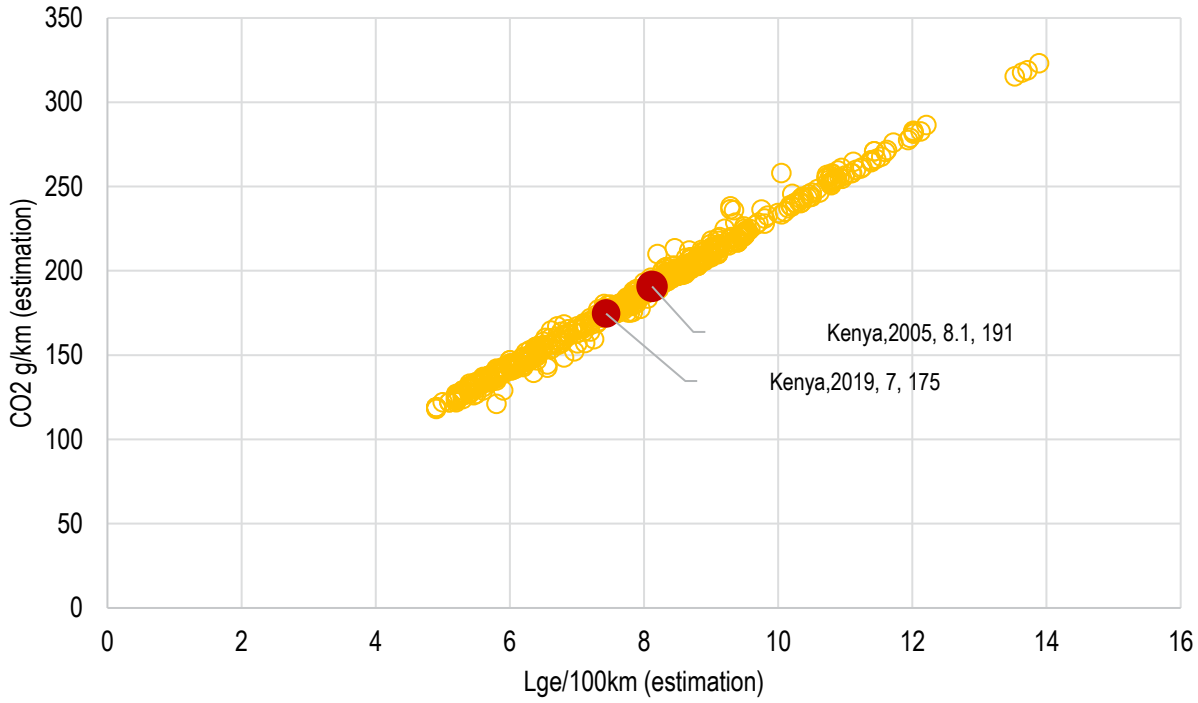
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

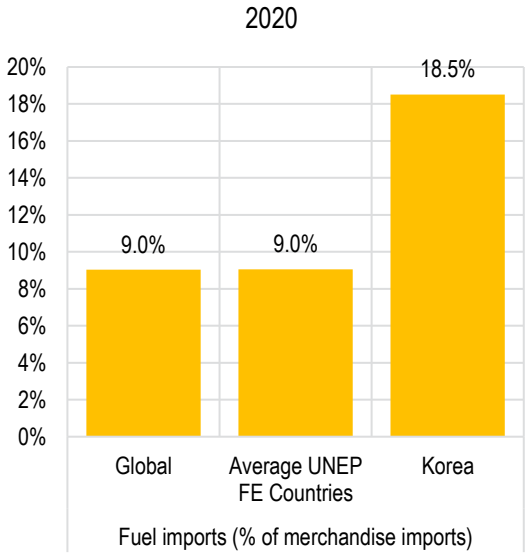
Source : UNEP

With support from the Global Fuel Economy Initiative and the Energy Regulatory Commission, an vehicle inventory baseline study of vehicles imported into the country during the period 2010 – 2012 was carried out by the University of Nairobi. The study estimated the baseline trend in average fuel economy and CO2 emissions. The government announced changes to the excise duty in the 2015 budget to encourage the importation of newer vehicles with potential for lower emissions. It has been estimated that the annual growth rate in Light-Duty Vehicles (LDVs) in Kenya is about 12%. The projection in total LDVs registration is expected to reach 5 million vehicles in 2030 up from the 2 million vehicles registered in 2012. LDVs were estimated to emit a total of 0.7 million tonnes of CO2 in 2012.

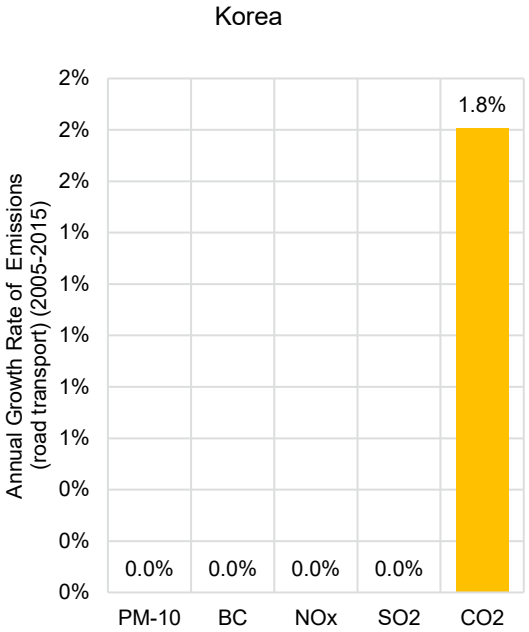
The assessment indicates that if Kenya implements a fuel economy policy for LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 2.3 billion litres of gasoline-equivalent & 5.6 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR KOREA

		Year	Source
Population (million)	52	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	43319	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	1618	2020	6
Gasoline Price $/l	1.2	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	3.9	2018	13
Employment (Transport+,000)	1018	2019	11
Fuel Economy (Lge/100 km, WLTP) -	6	2019	1
Average CO2 emissions/kilometre (g/km, WLTP) -	149	2019	1
Average displacement (cm3) -	2033	2019	1
Average kerb weight (kg) -	1479	2019	1
Average power (kw) -	132	2019	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	#N/A	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	#N/A	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.187	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.382	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	68.1	2019	8
Transport CO2 Emissions per Capita (tonnes) -	12.6	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	#N/A	2000-18	16
Annual rate of transport energy consumption growth	4.9%	2000-18	16
LDV Import value (Million USD)	0	2020	3



Source : World Bank



Source : IIASA

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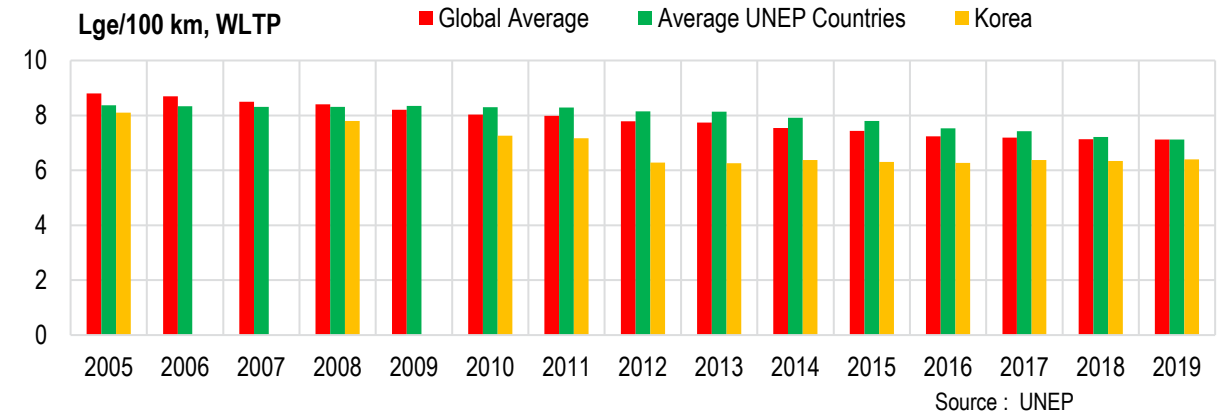
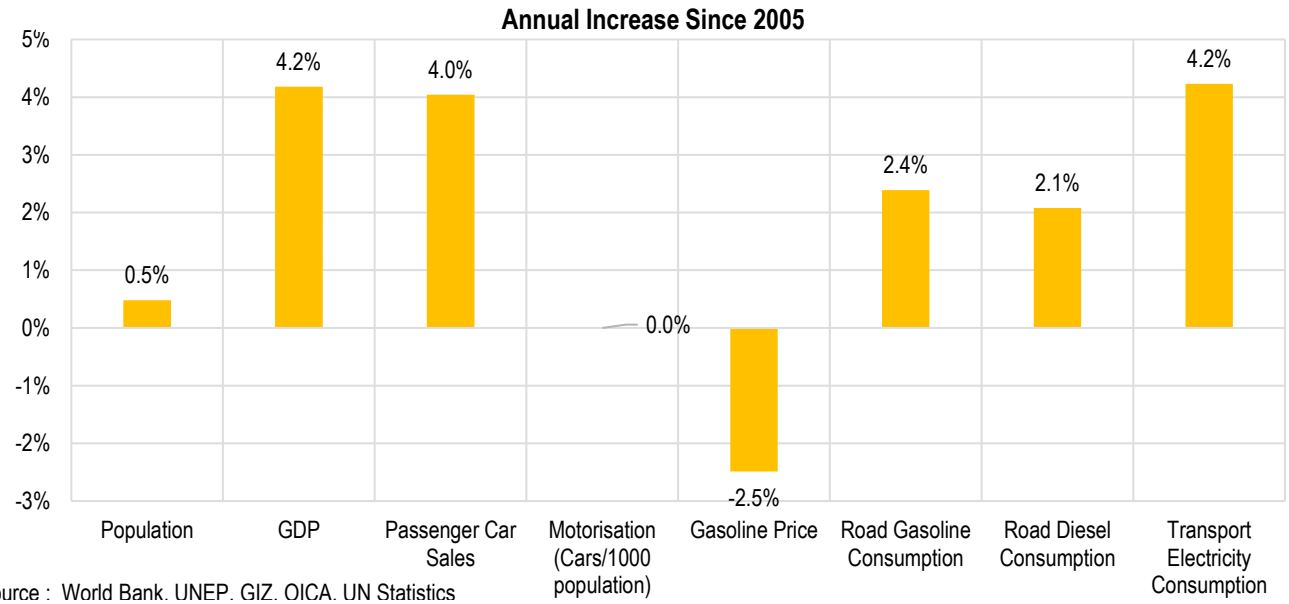
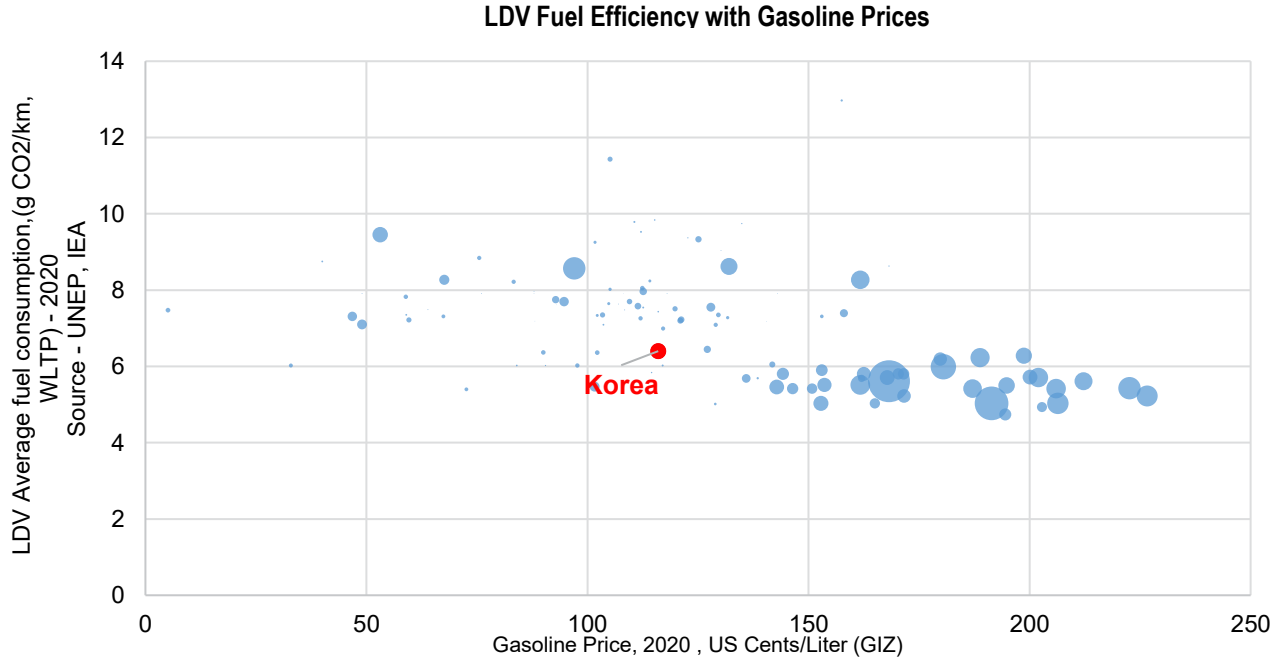
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

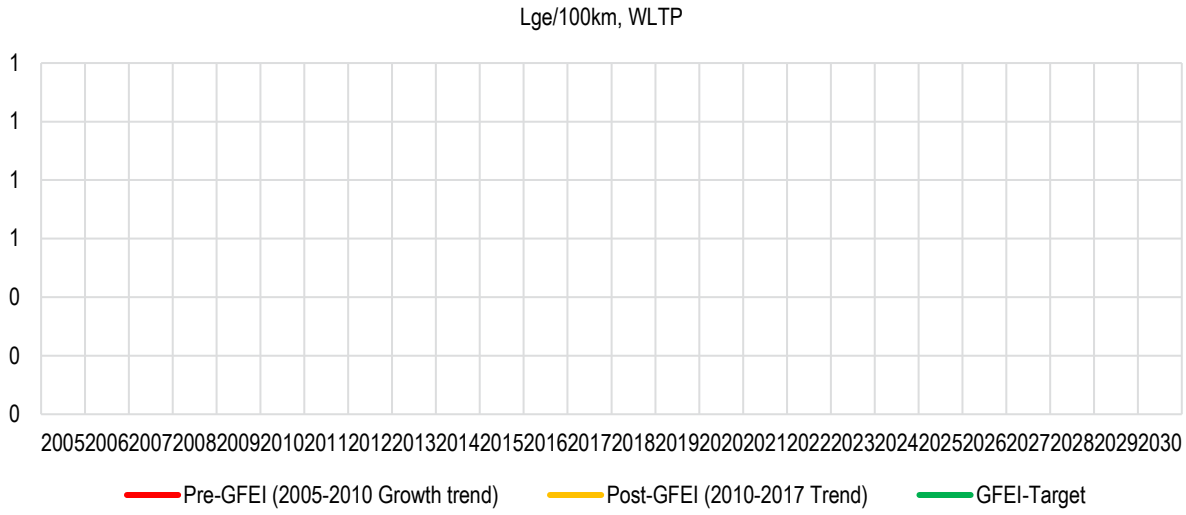
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



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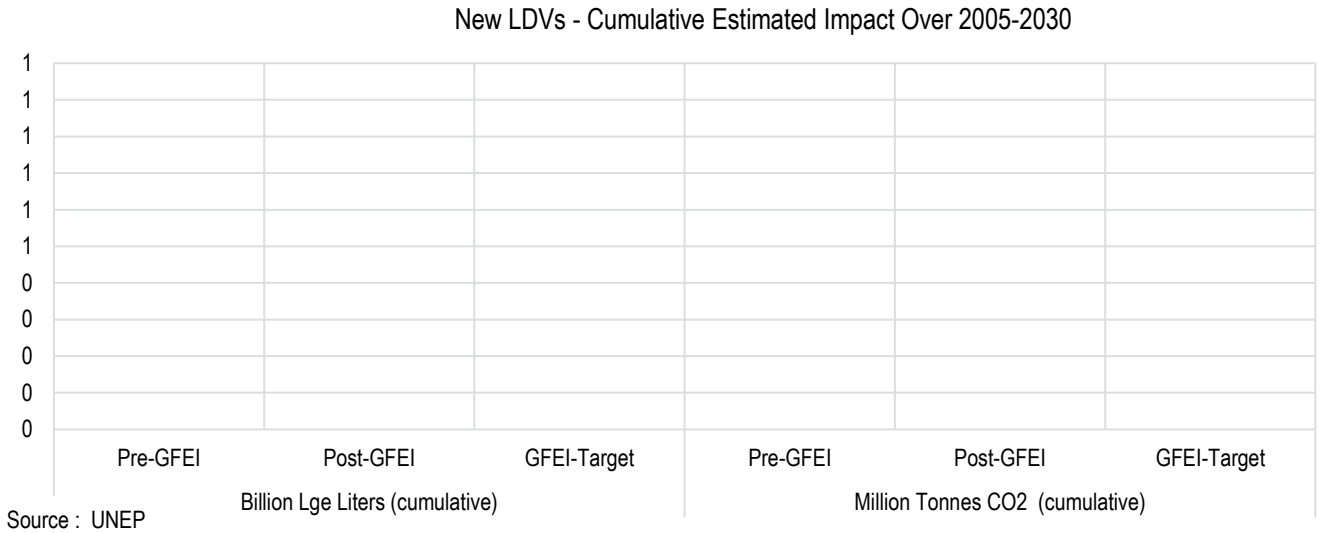


Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

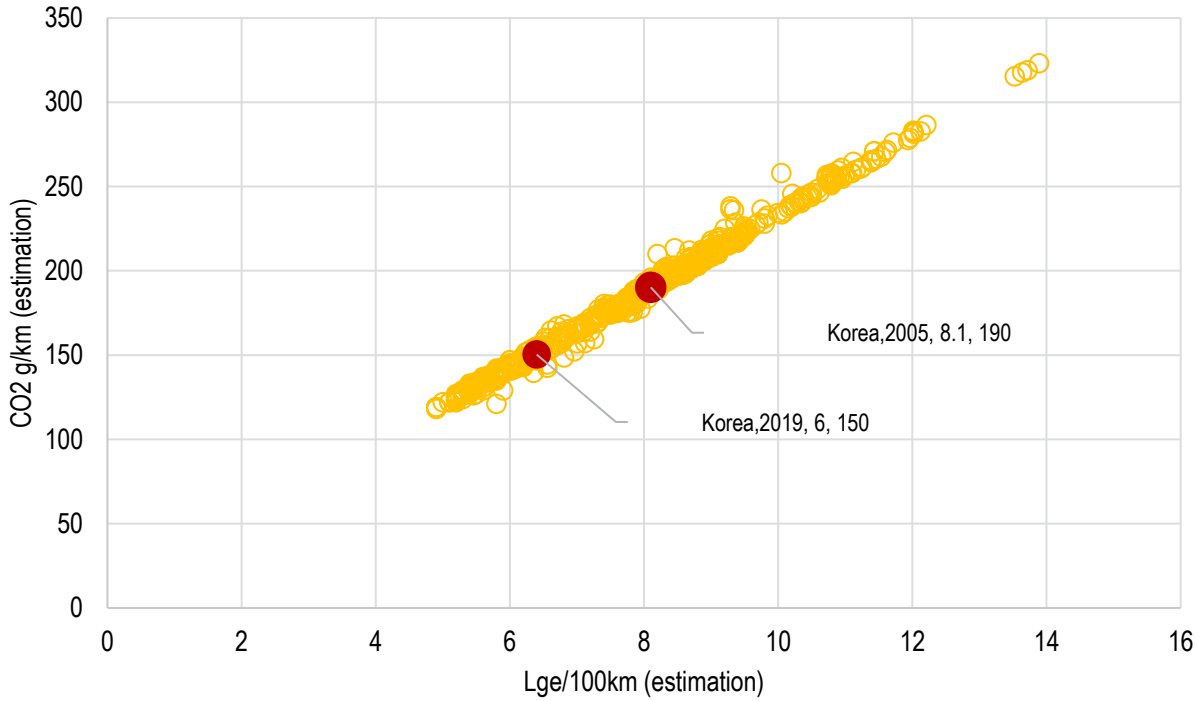
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



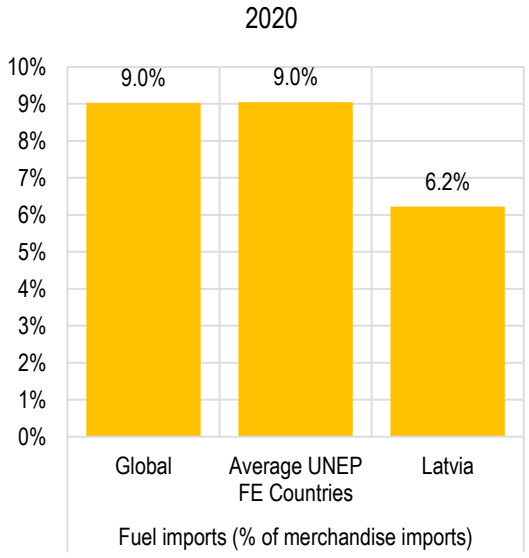
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR LATVIA

		Year	Source
Population (million)	2	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	32212	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	14	2020	6
Gasoline Price $/l	1.7	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	31.3	2018	13
Employment (Transport+,000)	111	2019	11
Fuel Economy (Lge/100 km, WLTP) -	6	2016	1
Average CO2 emissions/kilometre (g/km, WLTP) -	143	2017	1
Average displacement (cm3) -	1681	2017	1
Average kerb weight (kg) -	1432	2017	1
Average power (kw) -	100	2017	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.093	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.448	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	61.0	2019	8
Transport CO2 Emissions per Capita (tonnes) -	4.4	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	-2.5%	2000-18	16
Annual rate of transport energy consumption growth	2.3%	2000-18	16
LDV Import value (Million USD)	570	2020	3



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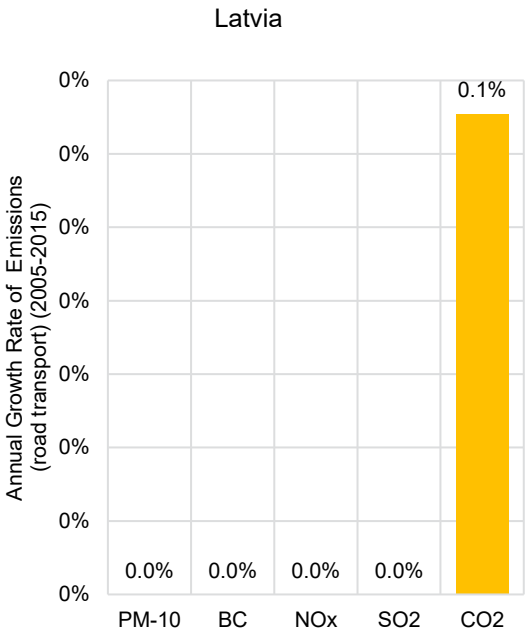

Source : IIASA

Sources & Notes

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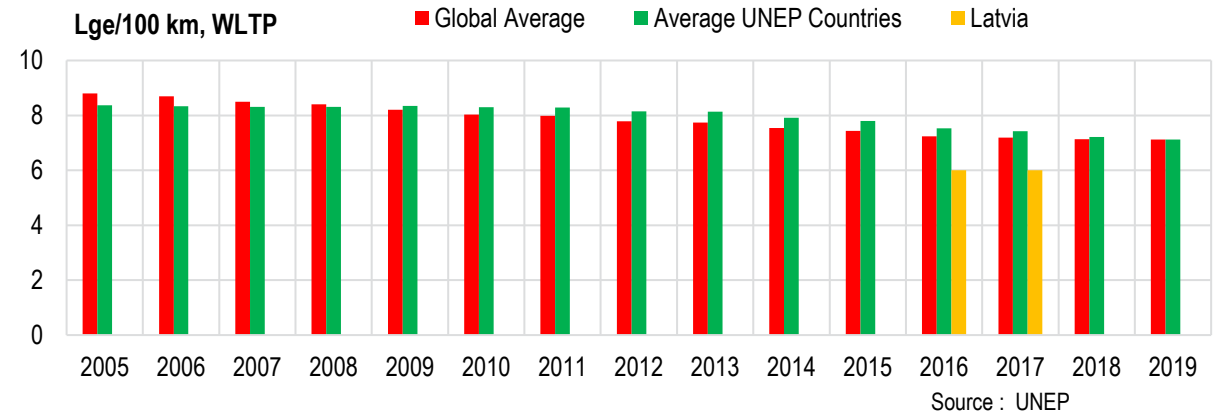
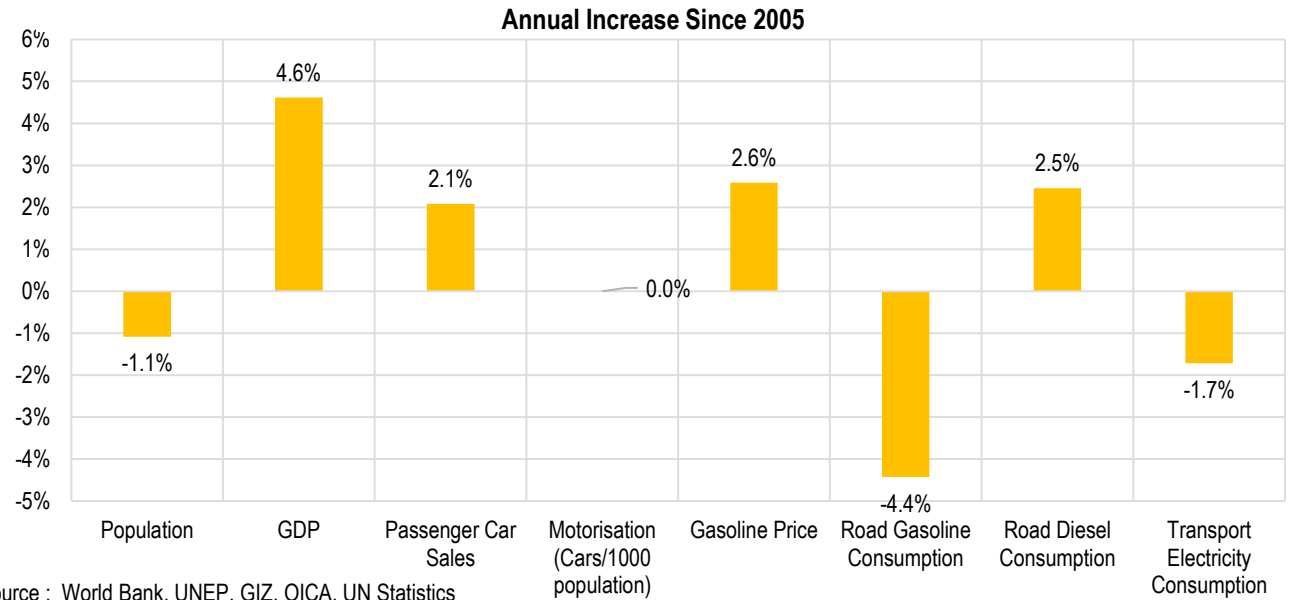
FUEL ECONOMY TRENDS





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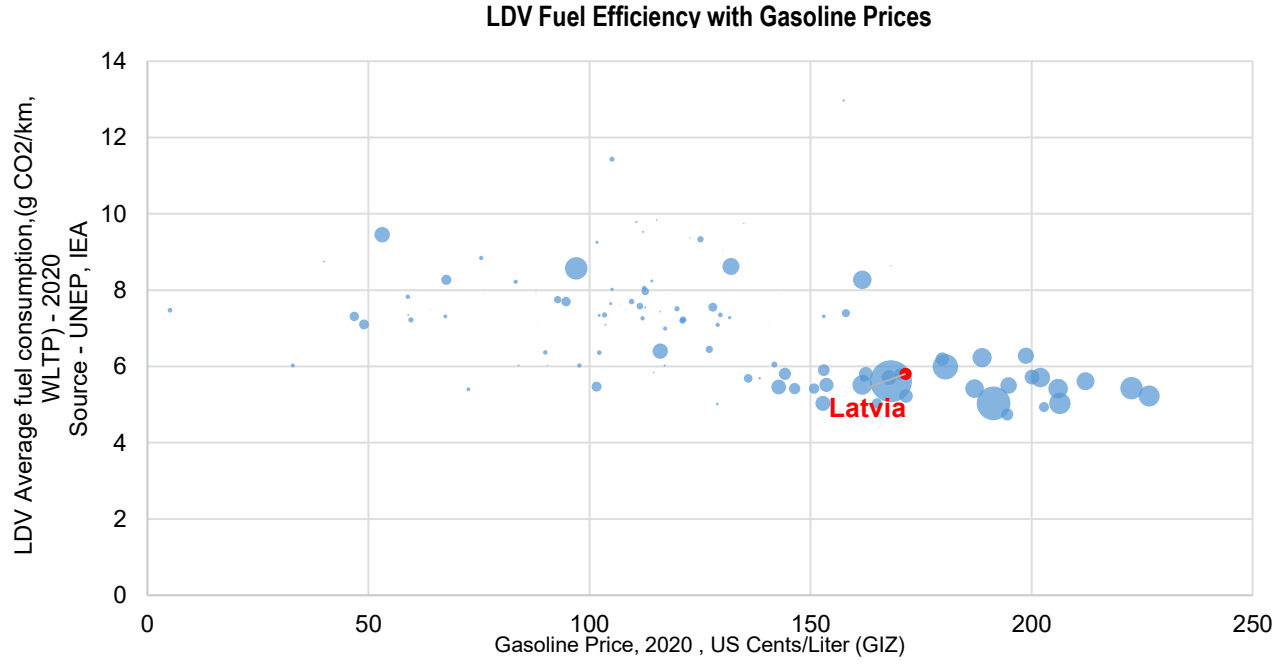


Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

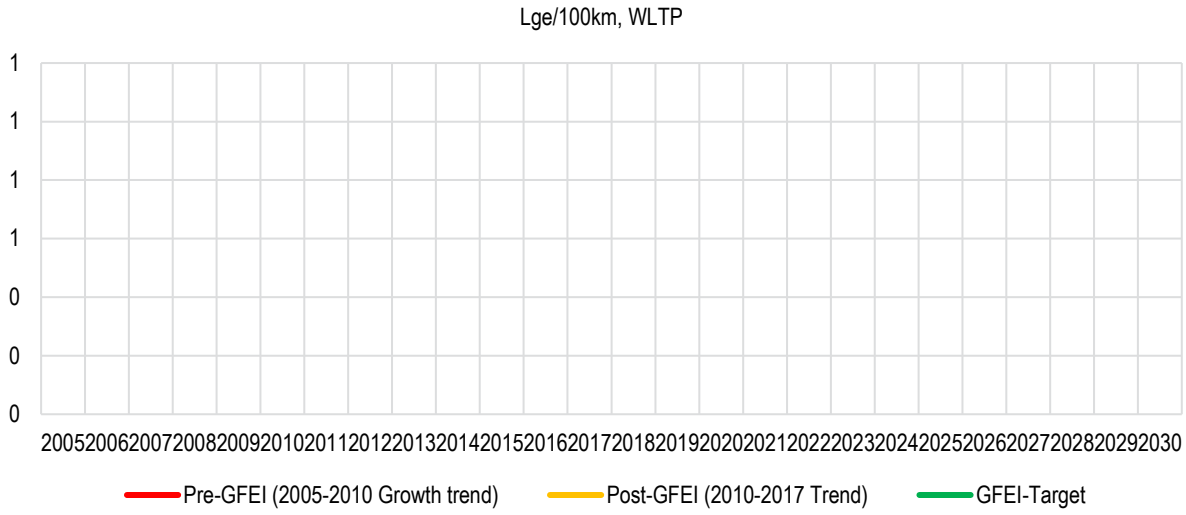
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



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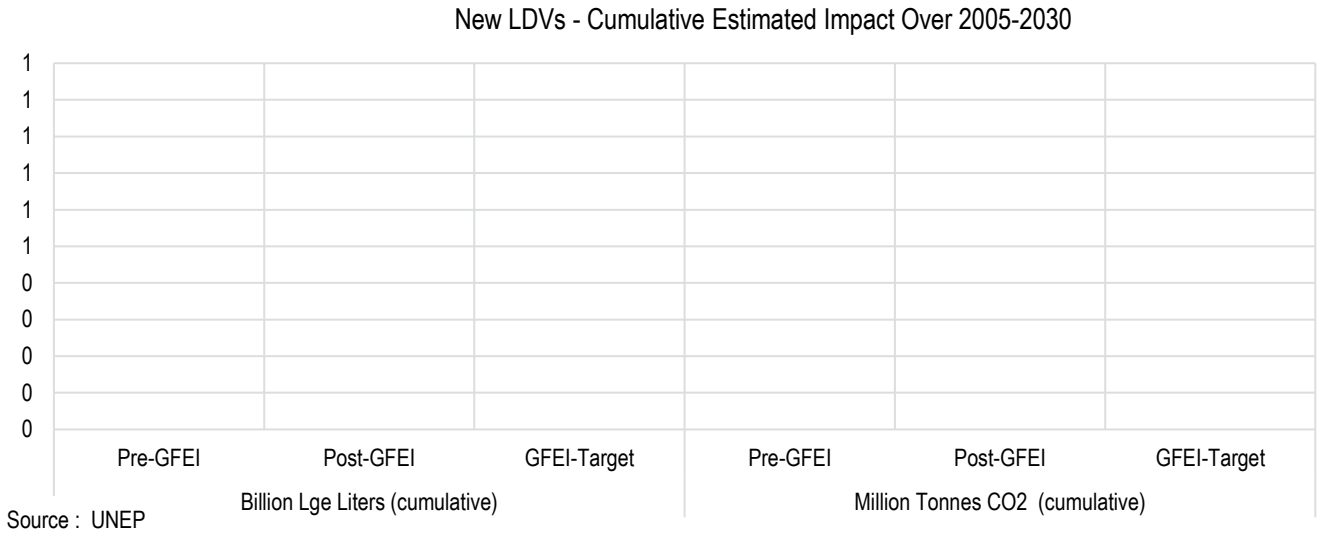

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Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

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a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

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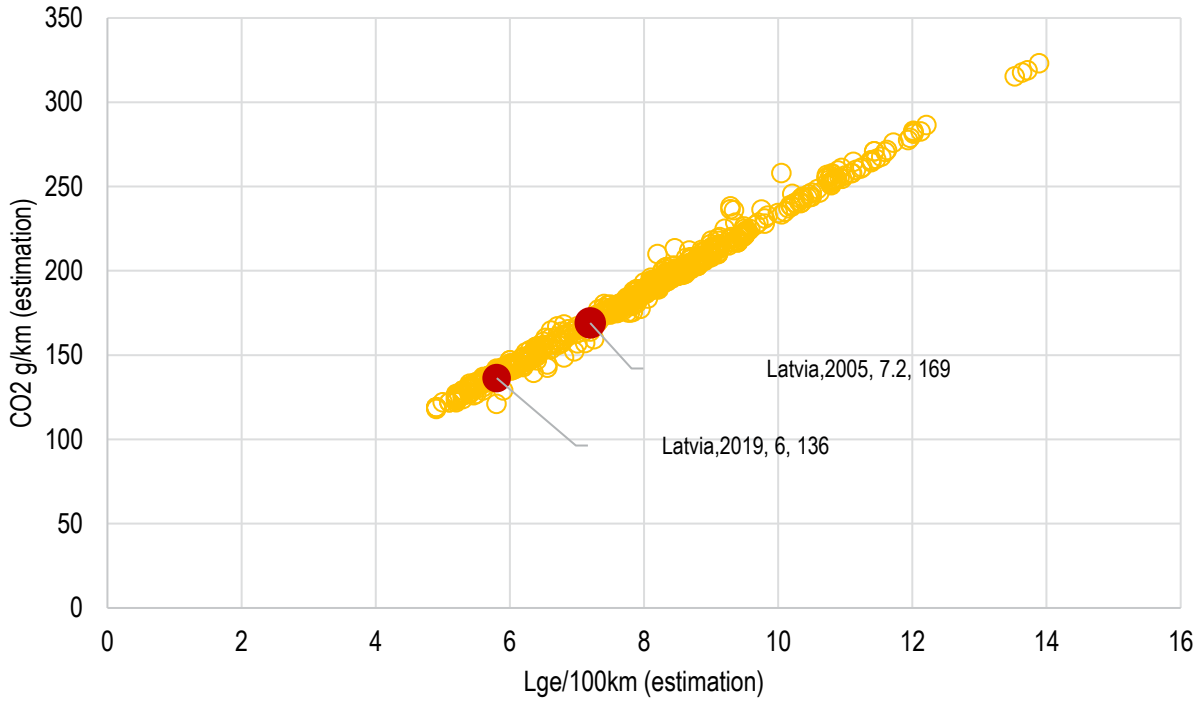
c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



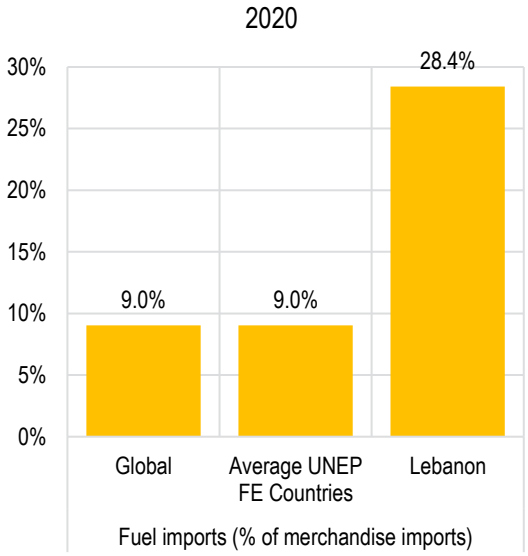
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR LEBANON

		Year	Source
Population (million)	7	2020	7
Income Level Category	Upper middle income		7
GDP per Capita (PPP, Curent USD)	12114	2020	7
Motorisation (Cars/1000 population)	87	2020	10
Car Sales (000)	19	2020	6
Gasoline Price $/l	0.8	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	3.9	2018	13
Employment (Transport+,000)	191	2019	11
Fuel Economy (Lge/100 km, WLTP) -	10	2015	1
Average CO2 emissions/kilometre (g/km, WLTP) -	223	2015	1
Average displacement (cm3) -			1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -	347		1
Diesel Share in LDV (sample,%)	12%	2015	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.304	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.009	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	17.0	2019	8
Transport CO2 Emissions per Capita (tonnes) -	4.0	2019	14
Road Transport PM Emissions per Capita (grams) -	29.1	2015	14
Road Transport NOx Emissions per Capita (grams)-	865.9	2015	14
Road Transport BC Emissions per Capita (grams)-	9.4	2015	14
LDV Emission Standards -	no policy	2019	1
Diesel Sulphur Levels (ppm) -	0	2019	1
Gasoline Sulphur Levels (ppm) -	0	2019	1
Annual rate of economy-wide energy intensity growth	-0.6%	2000-18	16
Annual rate of transport energy consumption growth	#VALUE!	2000-18	16
LDV Import value (Million USD)	243	2020	3



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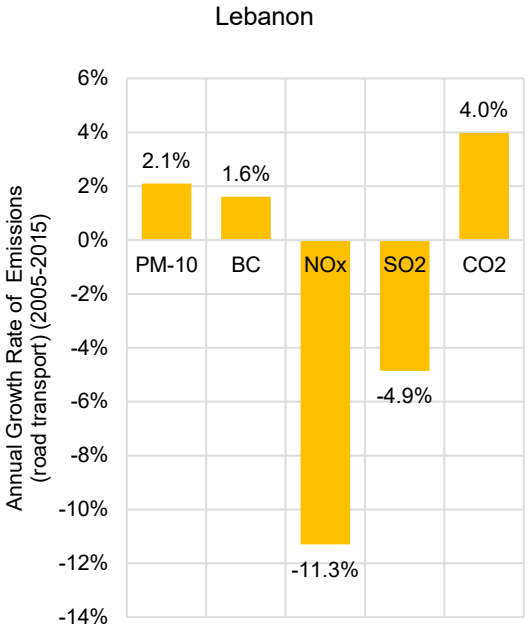

Source : IIASA

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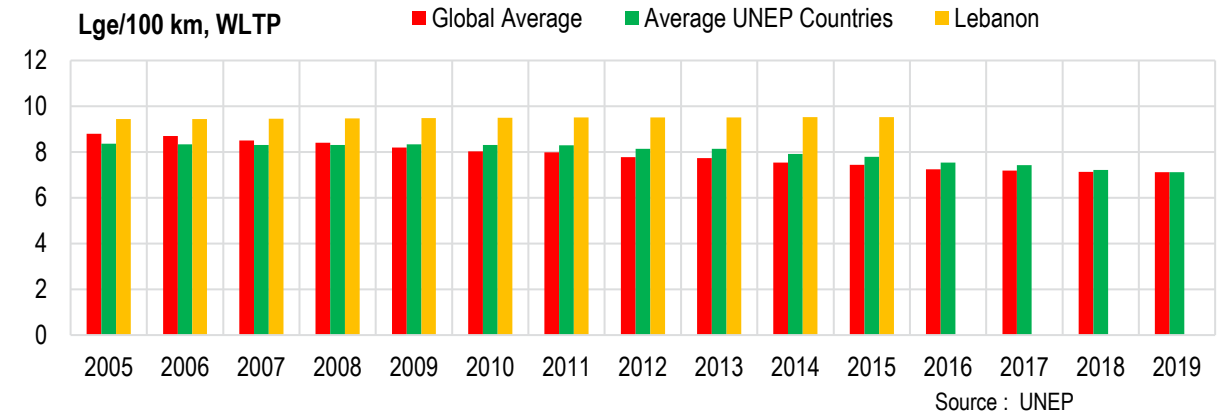

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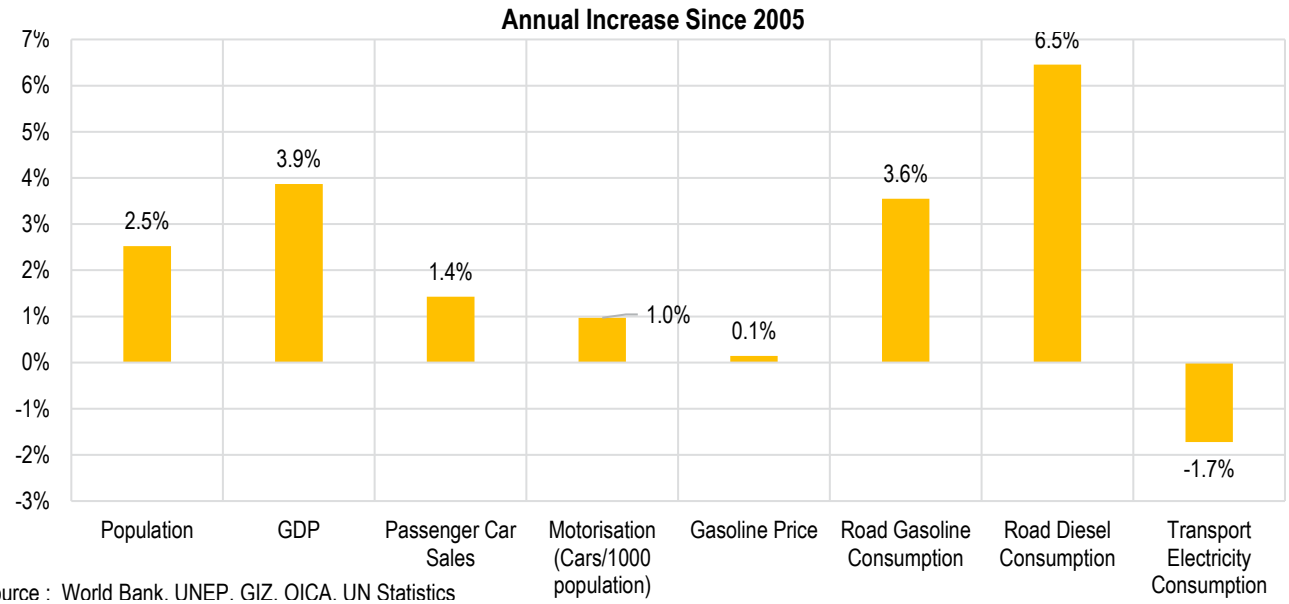
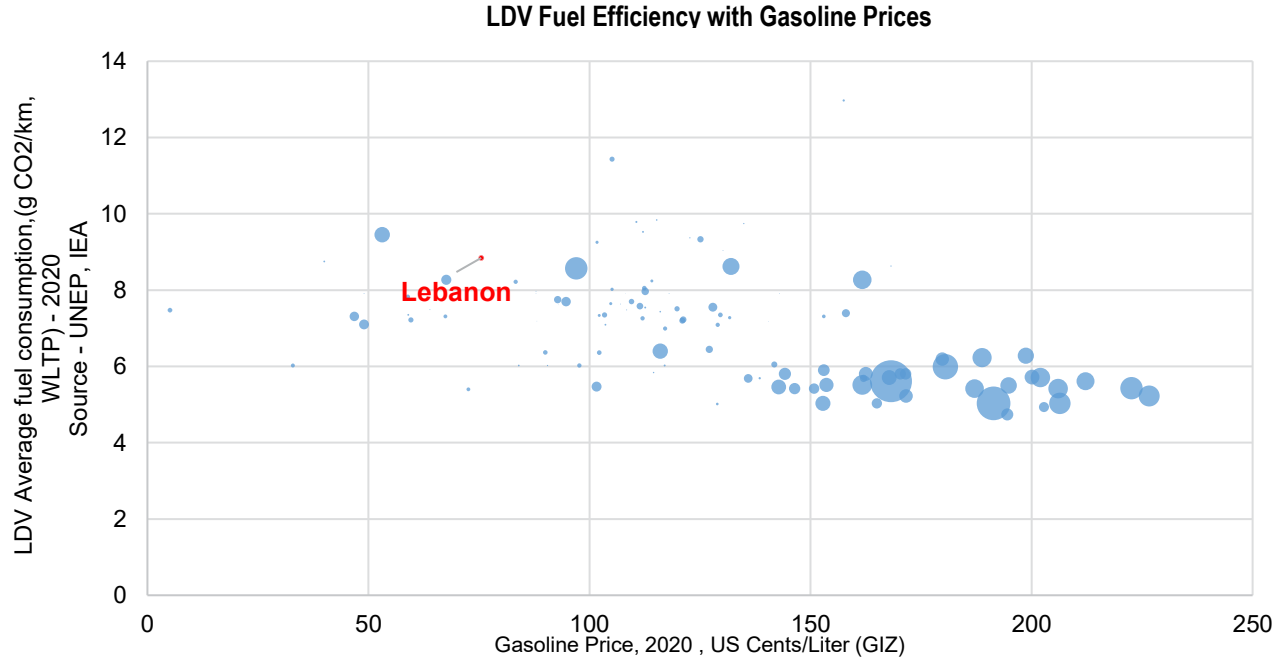


Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

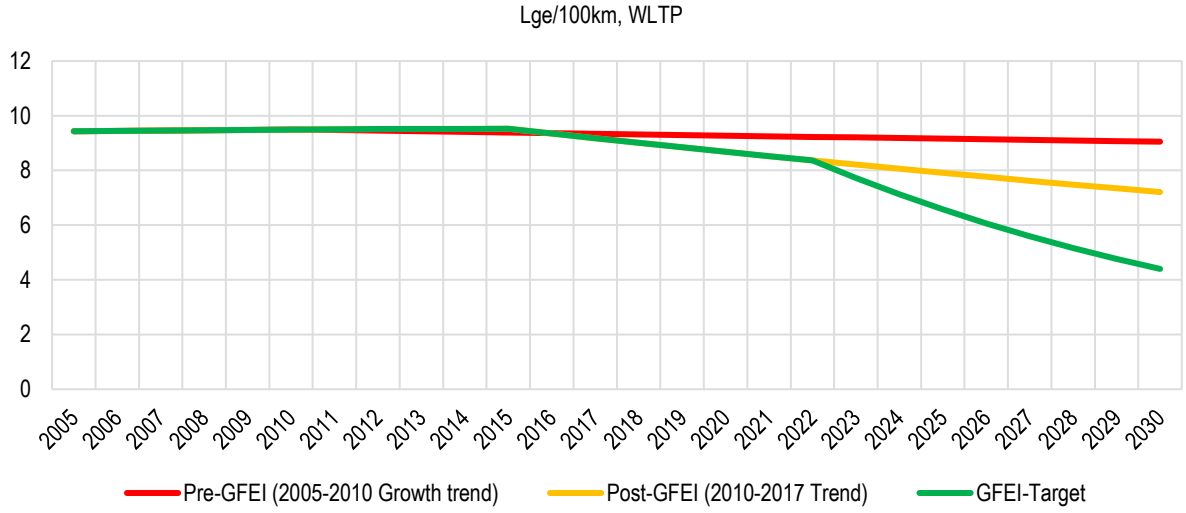
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

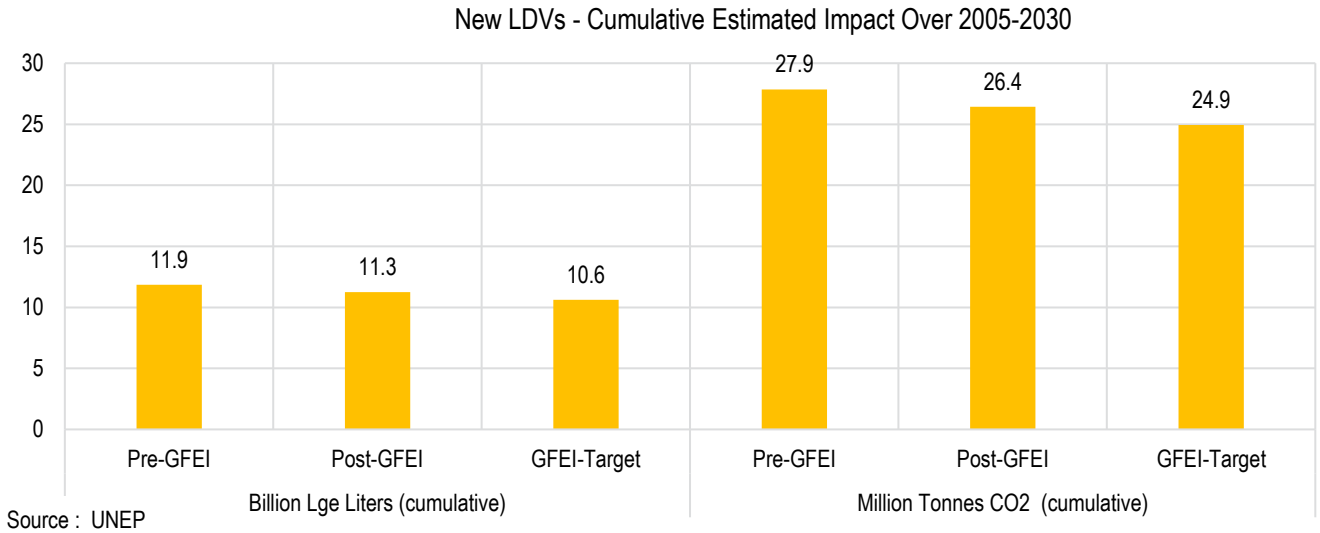
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-0.9%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-6.6%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

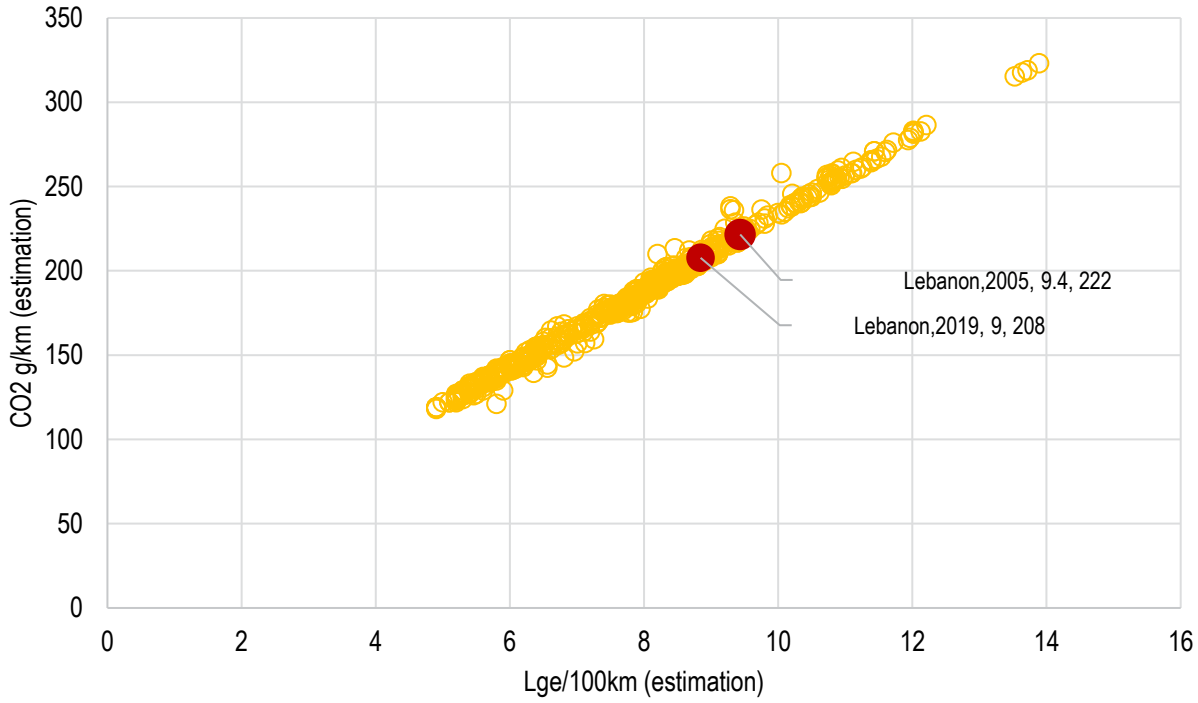
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

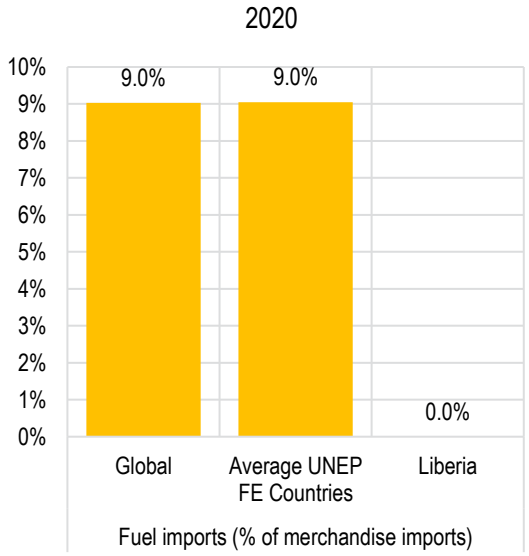
Source : UNEP

An agreement was signed with the American University of Beirut on 4 October 2017 to develop a fuel economy baseline and assist the country in estimating emissions from mobile sources. The project has been completed, and final substantive and financial reports were received in November 2018. A national vehicle inventory has been established, and the fuel economy baseline for the years 2005 to 2015 has been set. The report found a doubling of vehicle sales between 2005 and 2015 alongside a substantive increase in diesel-powered vehicles. Estimates for CO2 and air pollutant emissions of the entire vehicle fleet in Lebanon for the years 2005 to 2015 have been calculated showing almost a doubling in CO2 emissions between 2005 and 2015. The report concludes with recommendations concerning improvements to the national vehicle inventory, the reformation of the current technical control process, the promotion of fuel-efficient vehicles such as hybrid vehicles through fiscal reforms as well as the proposal of a scrappage scheme to lower average vehicle age, which had been investigated in an earlier study.

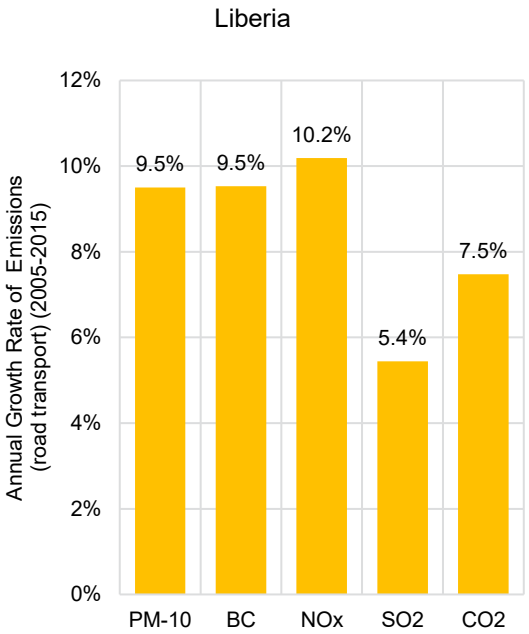
The assessment indicates that if Lebanon implements a fuel economy policy for LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 1.3 billion litres of gasoline-equivalent & 3.2 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR LIBERIA

		Year	Source
Population (million)	5	2020	7
Income Level Category	Low income		7
GDP per Capita (PPP, Curent USD)	1468	2020	7
Motorisation (Cars/1000 population)	4	2020	10
Car Sales (000)	5	2020	6
Gasoline Price $/l	0.9	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	5.4	2018	13
Employment (Transport+,000)	78	2019	11
Fuel Economy (Lge/100 km, WLTP) -	8	2013	1
Average CO2 emissions/kilometre (g/km, WLTP) -	187	2013	1
Average displacement (cm3) -	1866	2013	1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	17	2013	1
Cumulative number of LDVs (total sample size,000) -	1		1
Diesel Share in LDV (sample,%)	35%	2013	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.025	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.016	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	23.0	2019	8
Transport CO2 Emissions per Capita (tonnes) -	0.2	2019	14
Road Transport PM Emissions per Capita (grams) -	44.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	1024.1	2015	14
Road Transport BC Emissions per Capita (grams)-	21.7	2015	14
LDV Emission Standards -	0	2019	1
Diesel Sulphur Levels (ppm) -	3000	2019	1
Gasoline Sulphur Levels (ppm) -	0	2019	1
Annual rate of economy-wide energy intensity growth	1.7%	2000-18	16
Annual rate of transport energy consumption growth	8.8%	2000-18	16
LDV Import value (Million USD)	29	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
7 World Bank
8 UN Statistics Division
9 SLOCAT &GIZ
10 Estimated using growth and sales data
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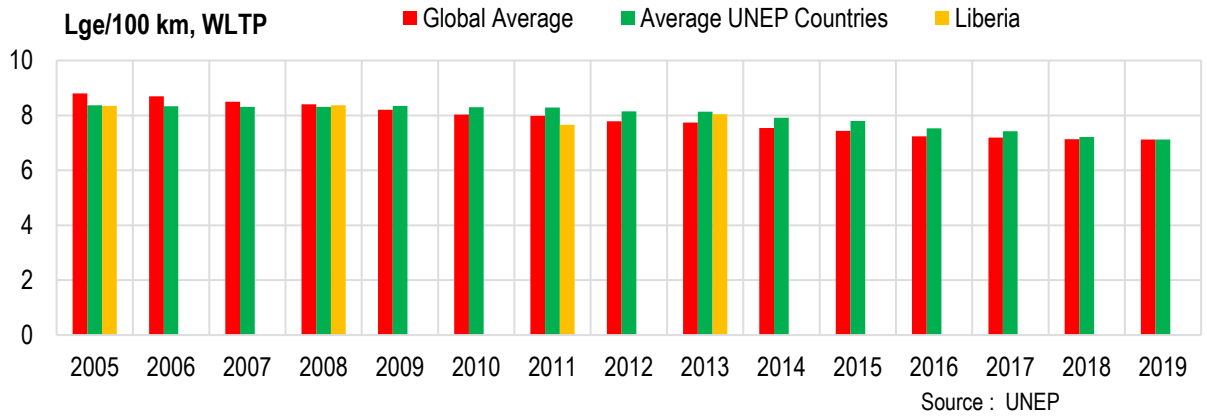
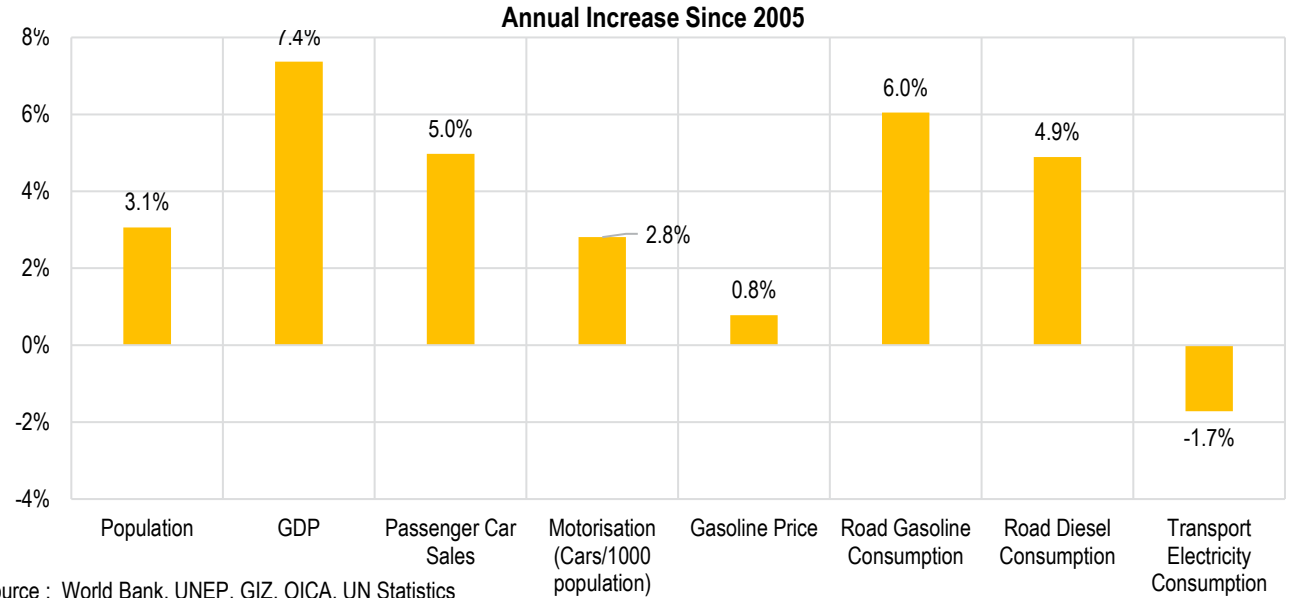
12 International Transport Forum
13 Koks, E.E. et al. A global multi-hazard risk analysis of road
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

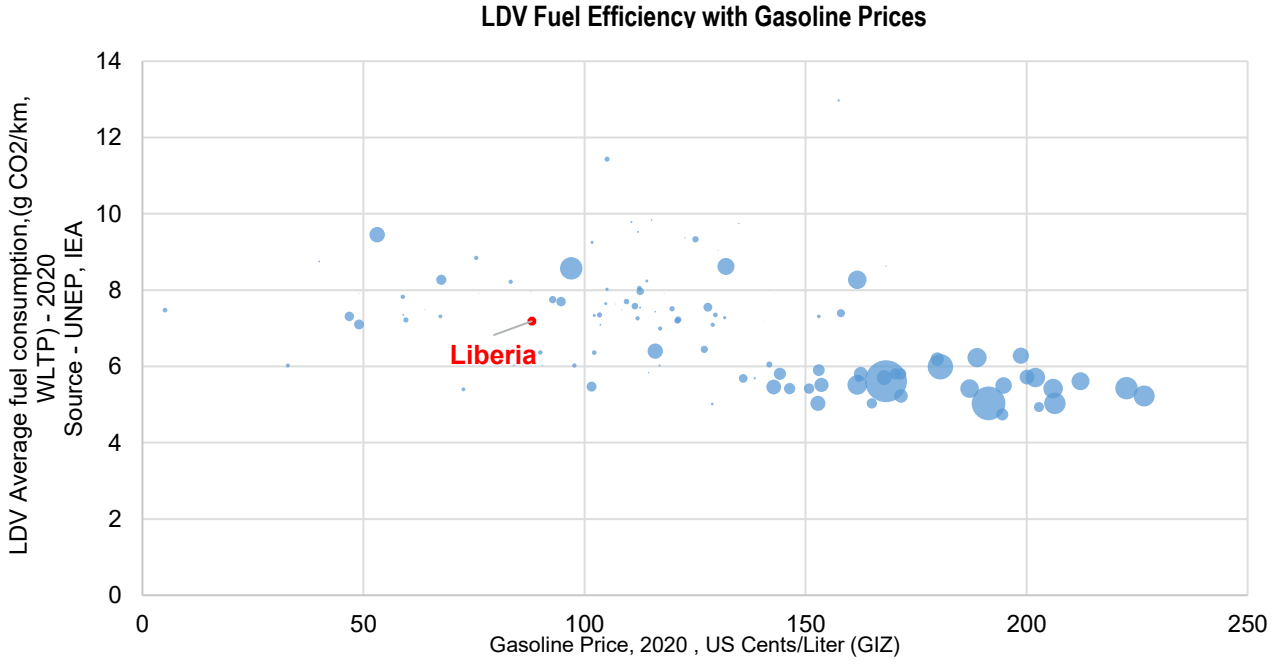
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

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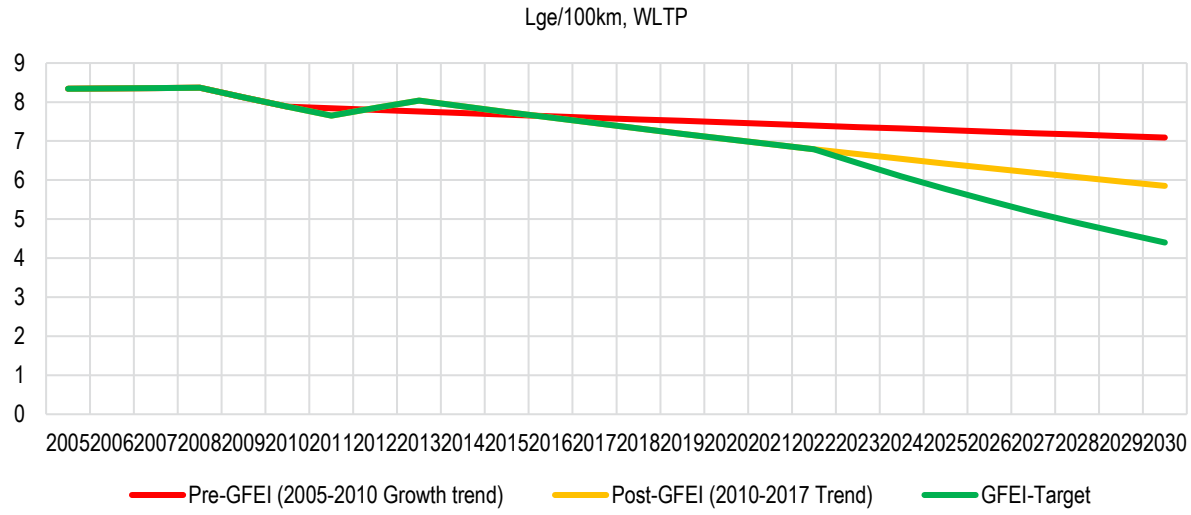
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

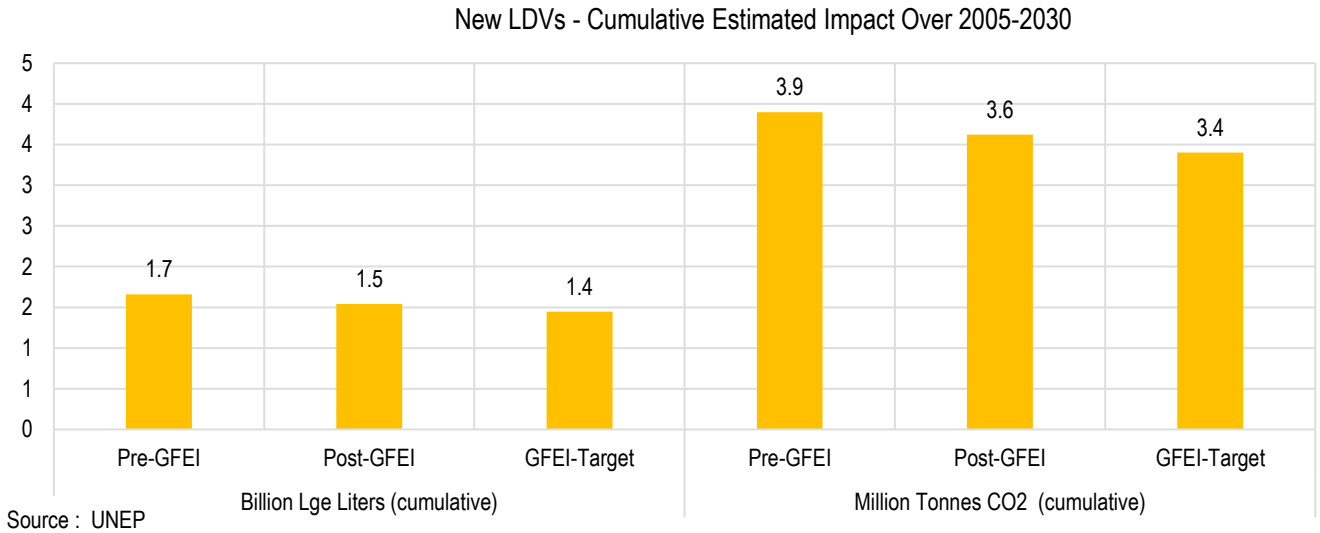
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-1.1%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-4.6%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

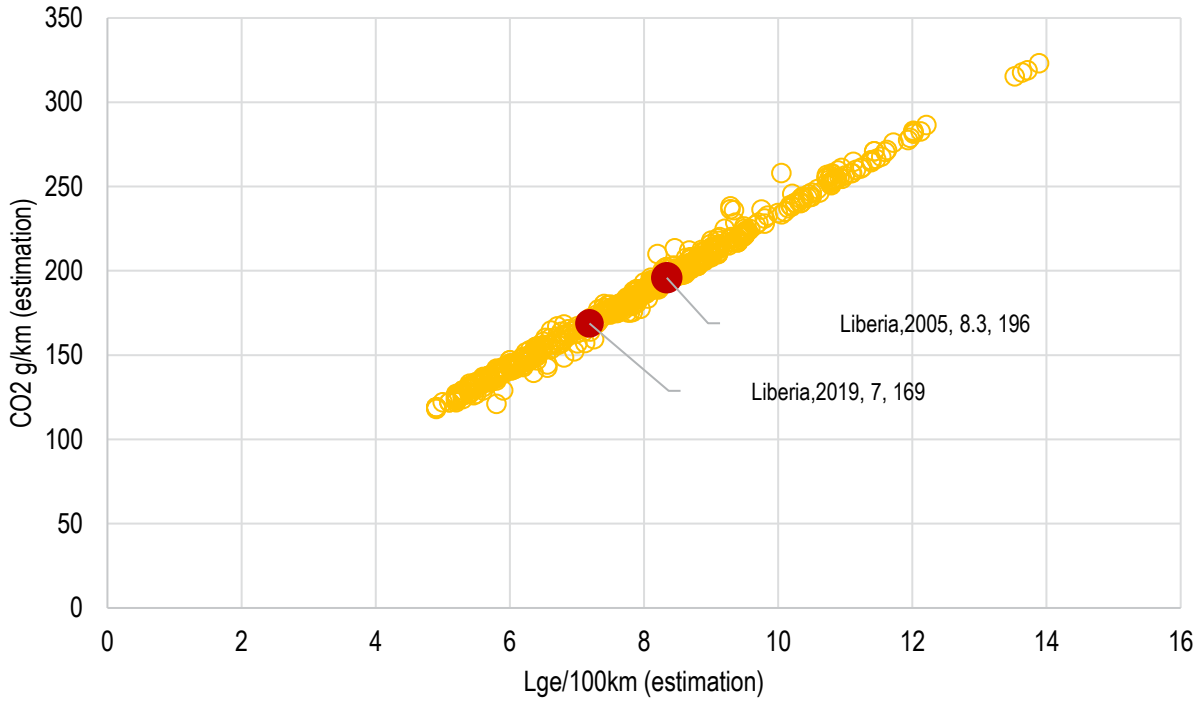
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

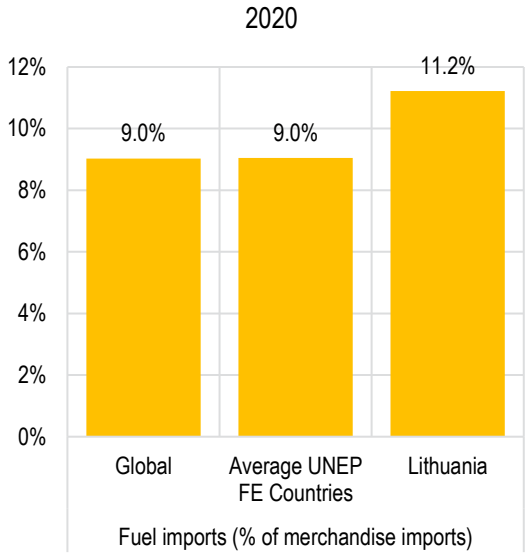
UNEP and the Environmental Protection Agency of Liberia entered into an agreement on 25 August 2016 to promote vehicle fuel economy by carrying out a vehicle inventory analysis and development of fuel economy policies for the country. The Environmental Protection Agency of Liberia held a workshop on 20-21 November 2017 to validate the findings of a fuel economy study and proposed policy interventions to promote the import of cleaner and more fuel-efficient vehicles in Liberia. A CO2 based taxation system and vehicle labelling scheme were proposed as policies that would support the import of cleaner cars into the country.

One of the main recommendations of Liberia's energy plan is to limit the age of the vehicles that can be imported, beyond which the tax rate would be substantially higher as a disincentive for importing cars beyond (say ten years old or 150 thousand miles, whichever is first).

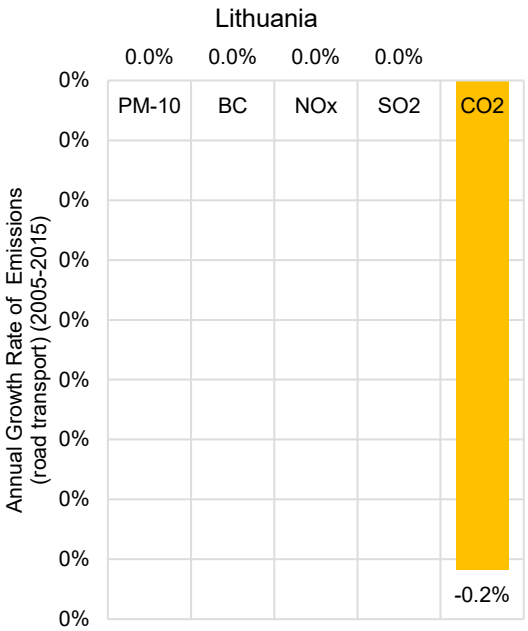
The assessment indicates that if Liberia implements a fuel economy policy for LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 235 million litres of gasoline-equivalent & 0.55 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR LITHUANIA

		Year	Source
Population (million)	3	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	39192	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	36	2020	6
Gasoline Price $/l	1.6	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	31.2	2018	13
Employment (Transport+,000)	131	2019	11
Fuel Economy (Lge/100 km, WLTP) -	6	2016	1
Average CO2 emissions/kilometre (g/km, WLTP) -	143	2016	1
Average displacement (cm3) -	1672	2017	1
Average kerb weight (kg) -	1402	2017	1
Average power (kw) -	93	2017	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	No	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.088	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.619	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	27.7	2019	8
Transport CO2 Emissions per Capita (tonnes) -	4.9	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	-3.5%	2000-18	16
Annual rate of transport energy consumption growth	4.0%	2000-18	16
LDV Import value (Million USD)	1234	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

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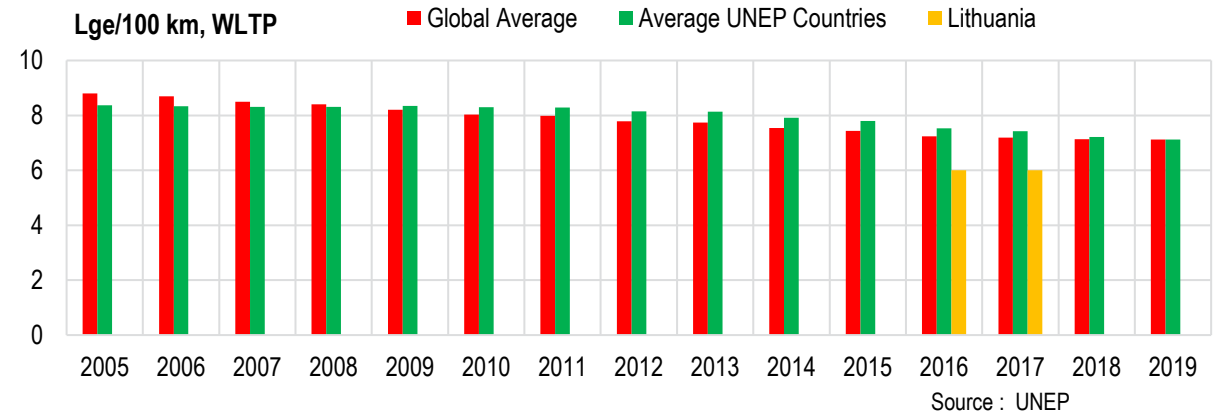
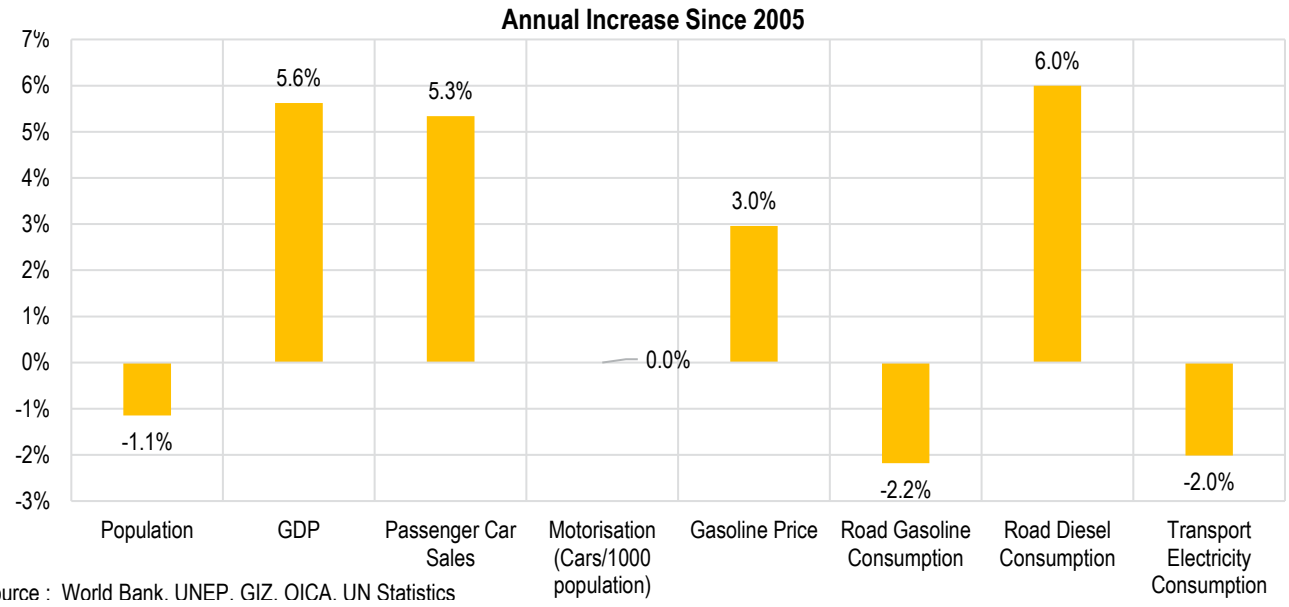
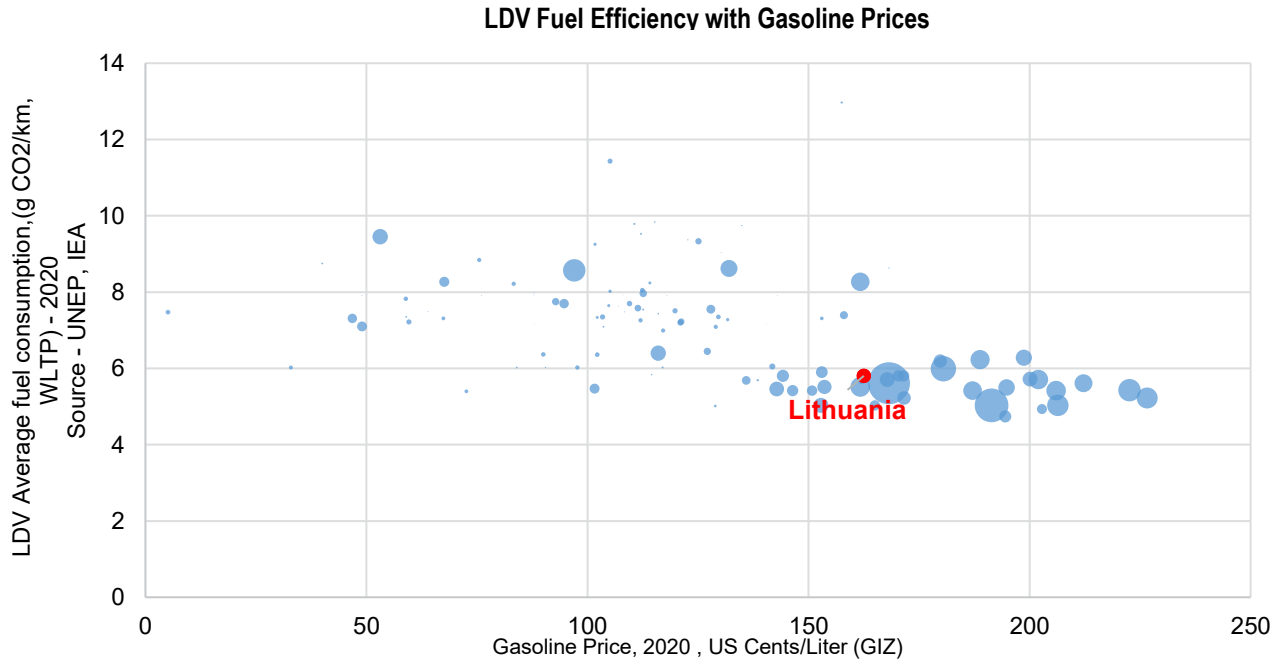
FUEL ECONOMY TRENDS





Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

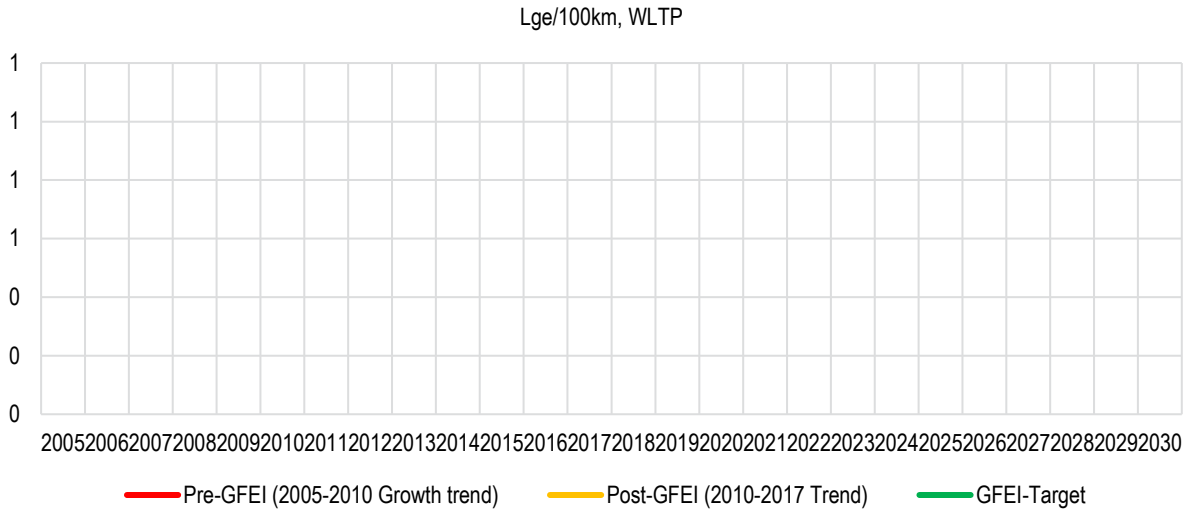
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



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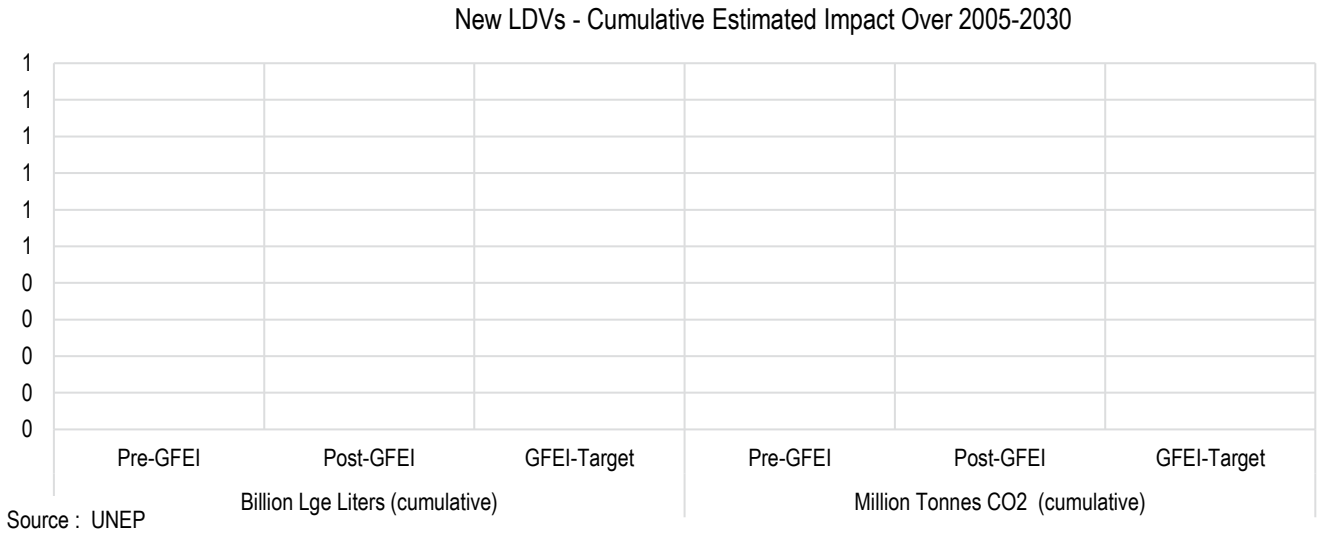

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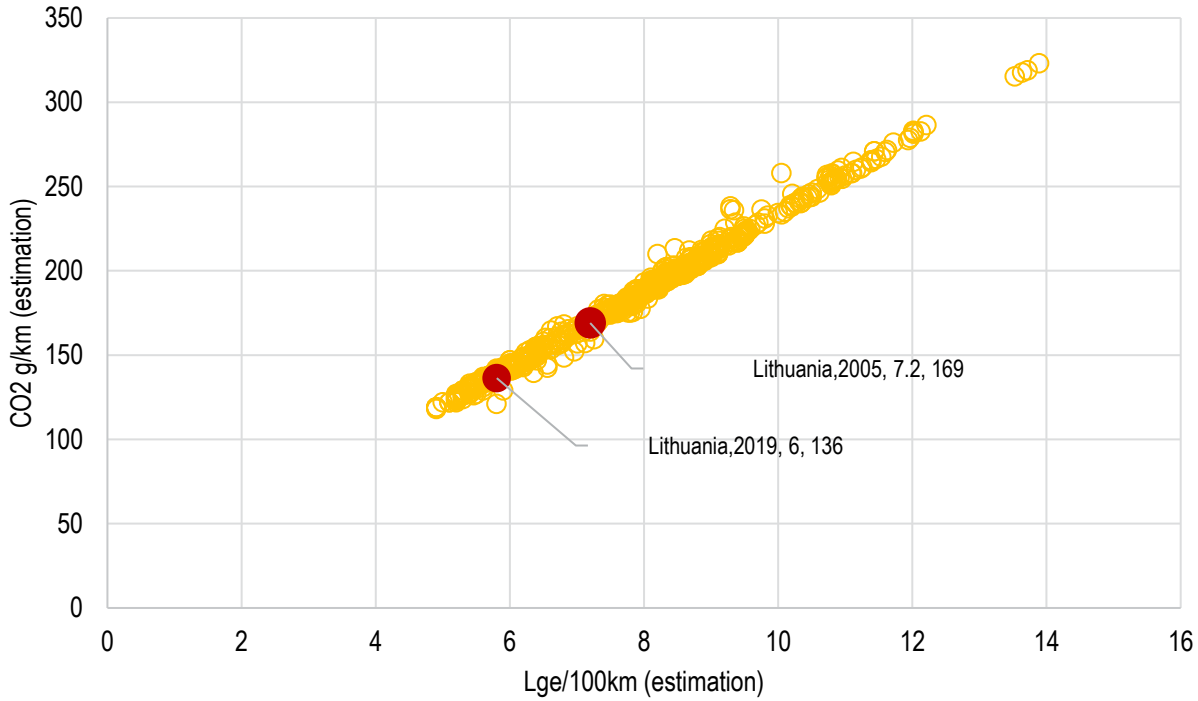
c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



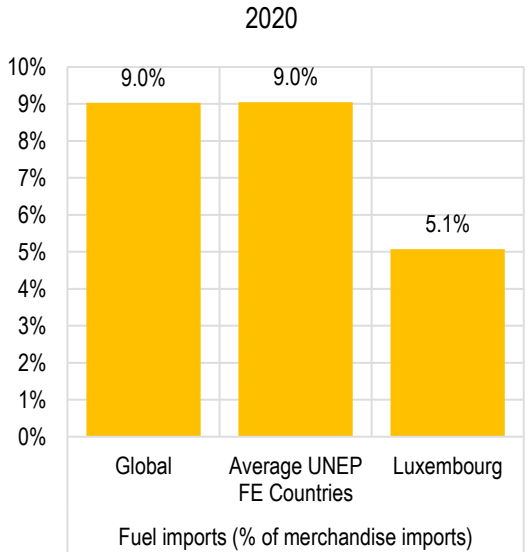
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

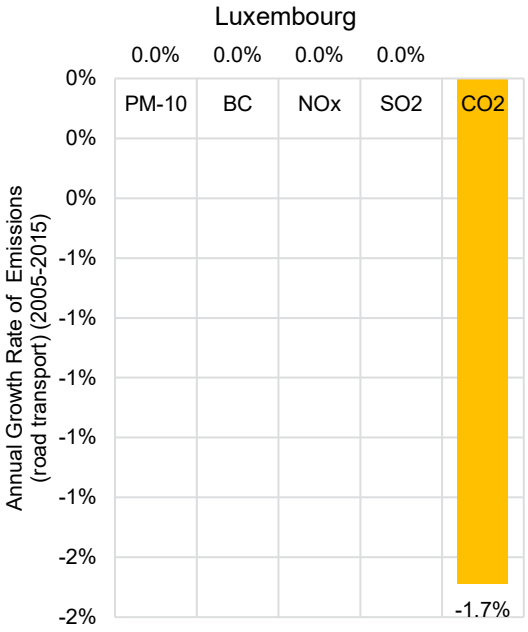
#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR LUXEMBOURG

		Year	Source
Population (million)	1	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	118504	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	46	2020	6
Gasoline Price $/l	1.7	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	18.4	2018	13
Employment (Transport+,000)	27	2019	11
Fuel Economy (Lge/100 km, WLTP) -	6	2015	1
Average CO2 emissions/kilometre (g/km, WLTP) -	140	2017	1
Average displacement (cm3) -	1803	2017	1
Average kerb weight (kg) -	1457	2017	1
Average power (kw) -	118	2017	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.569	2019	8
Transport Diesel Consumption Tonnes/Capita -	2.799	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	231.2	2019	8
Transport CO2 Emissions per Capita (tonnes) -	15.7	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	-1.9%	2000-18	16
Annual rate of transport energy consumption growth	1.6%	2000-18	16
LDV Import value (Million USD)	2265	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
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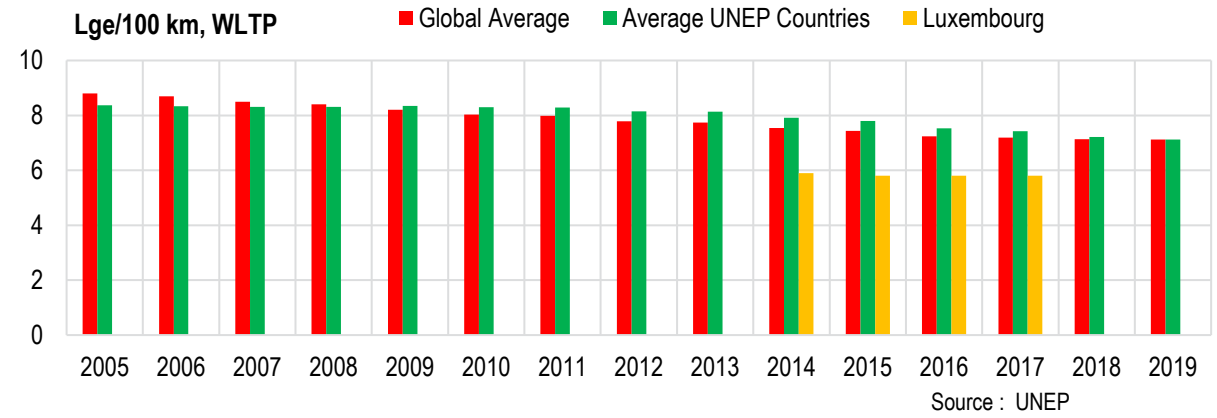
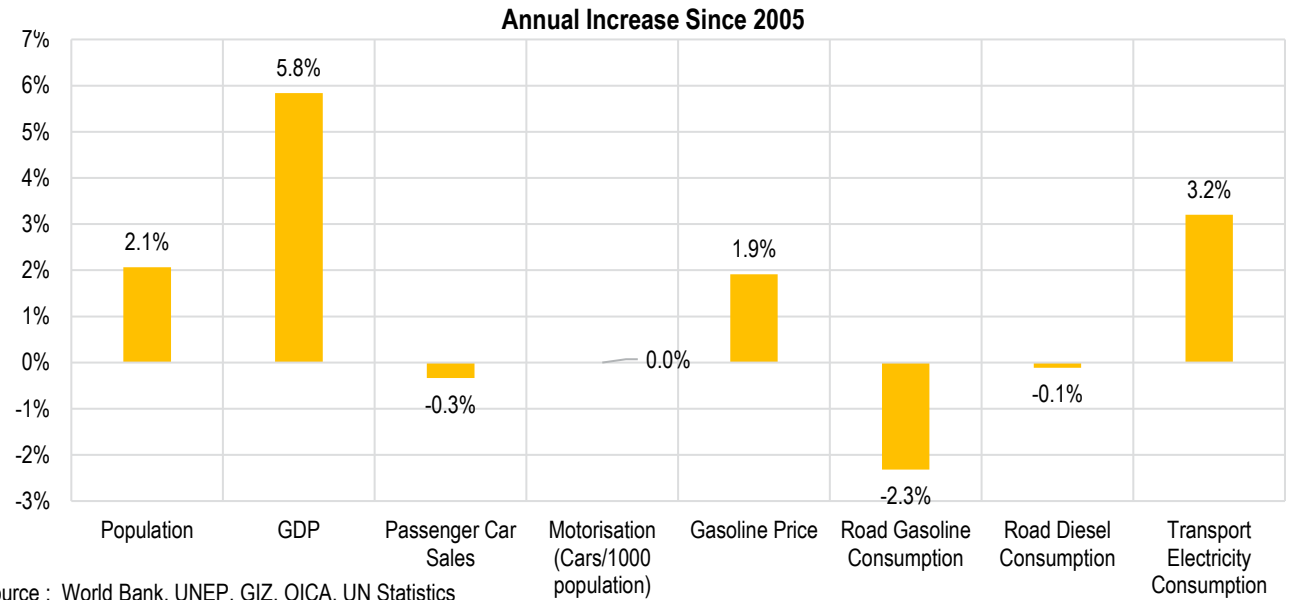
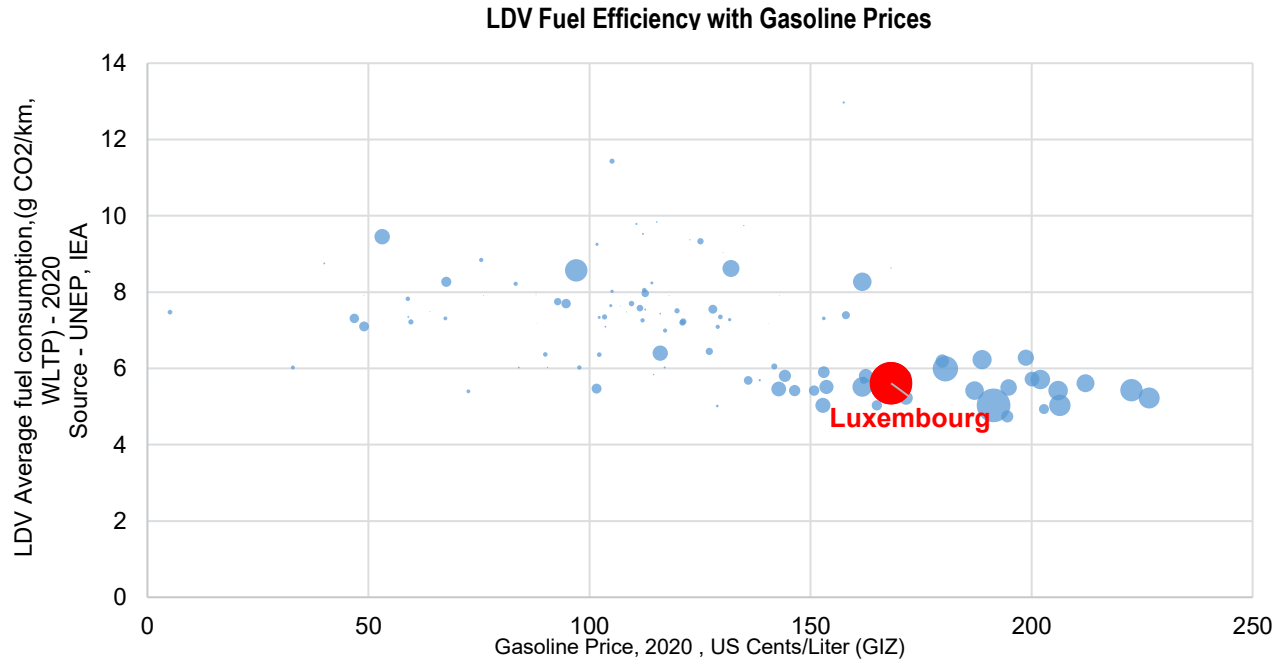
FUEL ECONOMY TRENDS





Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

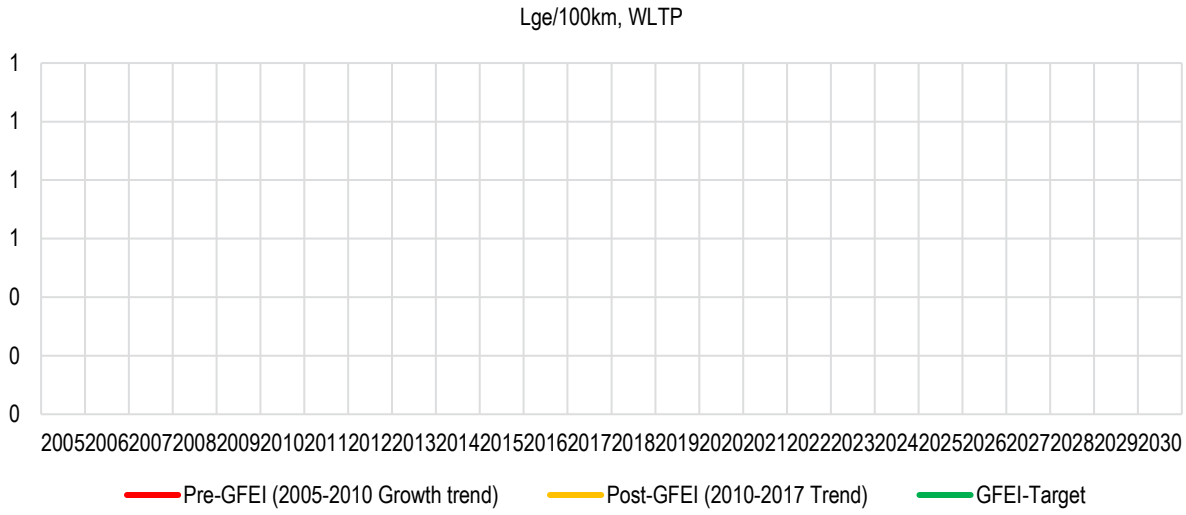
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



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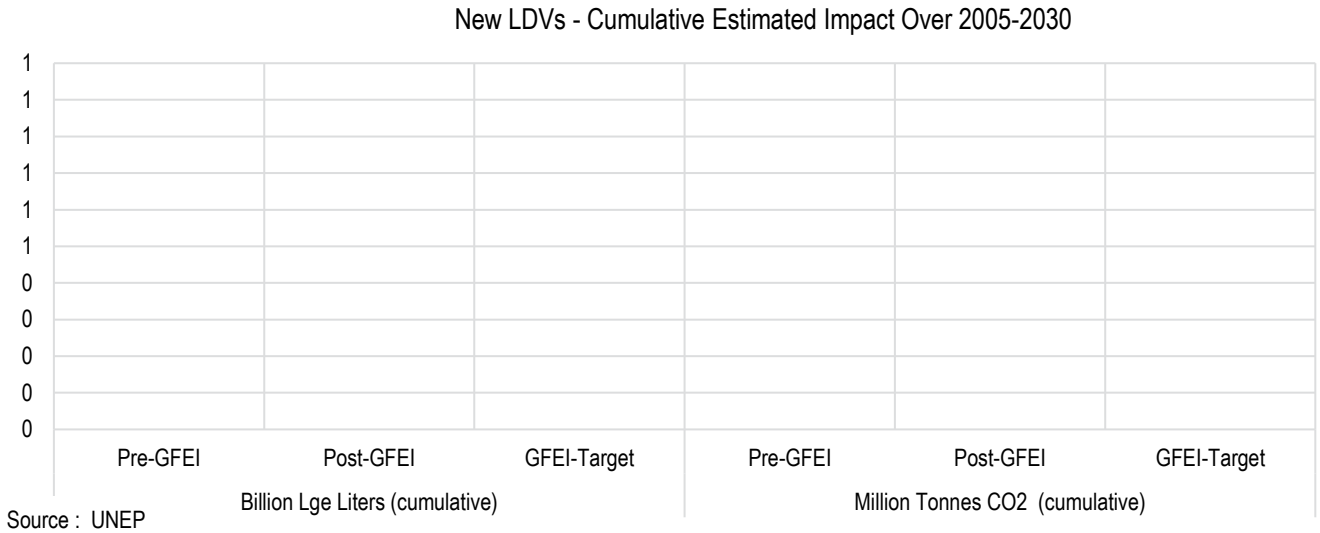

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a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

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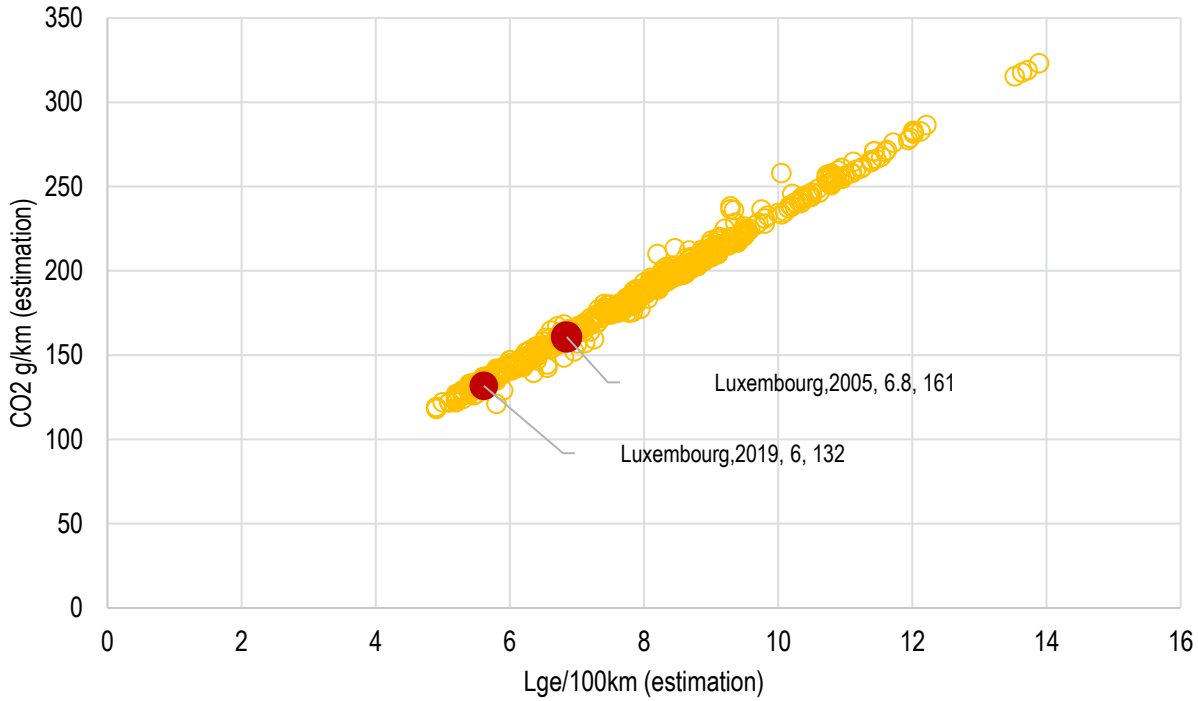
d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



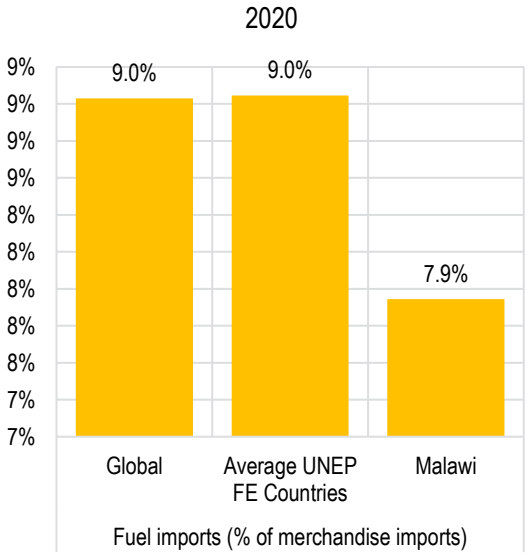
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

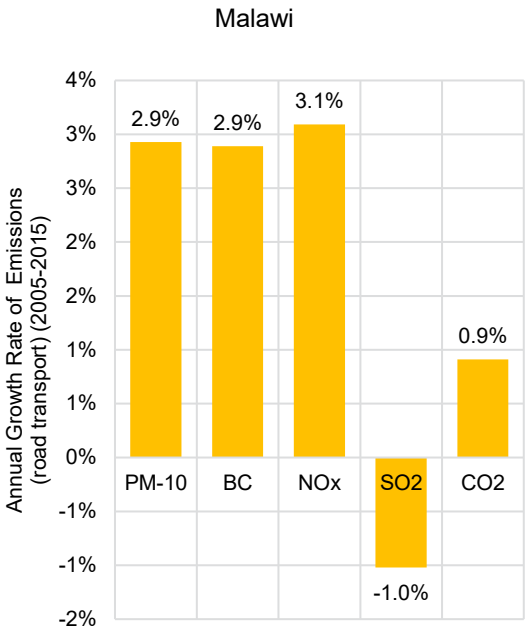
#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR MALAWI

		Year	Source
Population (million)	19	2020	7
Income Level Category	Low income		7
GDP per Capita (PPP, Curent USD)	1591	2020	7
Motorisation (Cars/1000 population)	4	2020	10
Car Sales (000)	5	2020	6
Gasoline Price $/l	1.4	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	7.2	2018	13
Employment (Transport+,000)	212	2019	11
Fuel Economy (Lge/100 km, WLTP) -	8	2015	1
Average CO2 emissions/kilometre (g/km, WLTP) -	184	2015	1
Average displacement (cm3) -	1929	2015	1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	8	2015	1
Cumulative number of LDVs (total sample size,000) -	133		1
Diesel Share in LDV (sample,%)	37%	2015	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.011	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.012	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	7.6	2019	8
Transport CO2 Emissions per Capita (tonnes) -	0.1	2019	14
Road Transport PM Emissions per Capita (grams) -	13.7	2015	14
Road Transport NOx Emissions per Capita (grams)-	273.3	2015	14
Road Transport BC Emissions per Capita (grams)-	6.6	2015	14
LDV Emission Standards -	0	2019	1
Diesel Sulphur Levels (ppm) -	50	2019	1
Gasoline Sulphur Levels (ppm) -	0	2019	1
Annual rate of economy-wide energy intensity growth	-2.5%	2000-18	16
Annual rate of transport energy consumption growth	5.8%	2000-18	16
LDV Import value (Million USD)	0	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
7 World Bank
8 UN Statistics Division
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10 Estimated using growth and sales data
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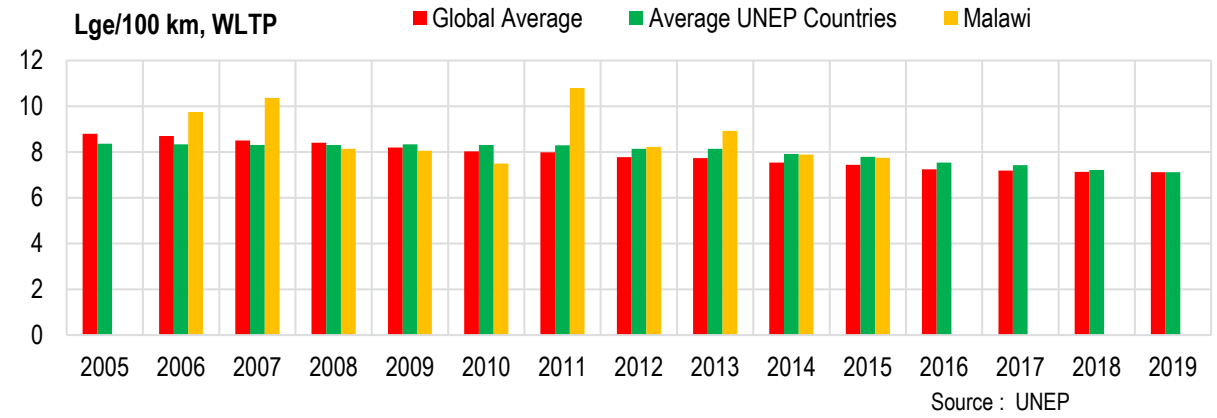
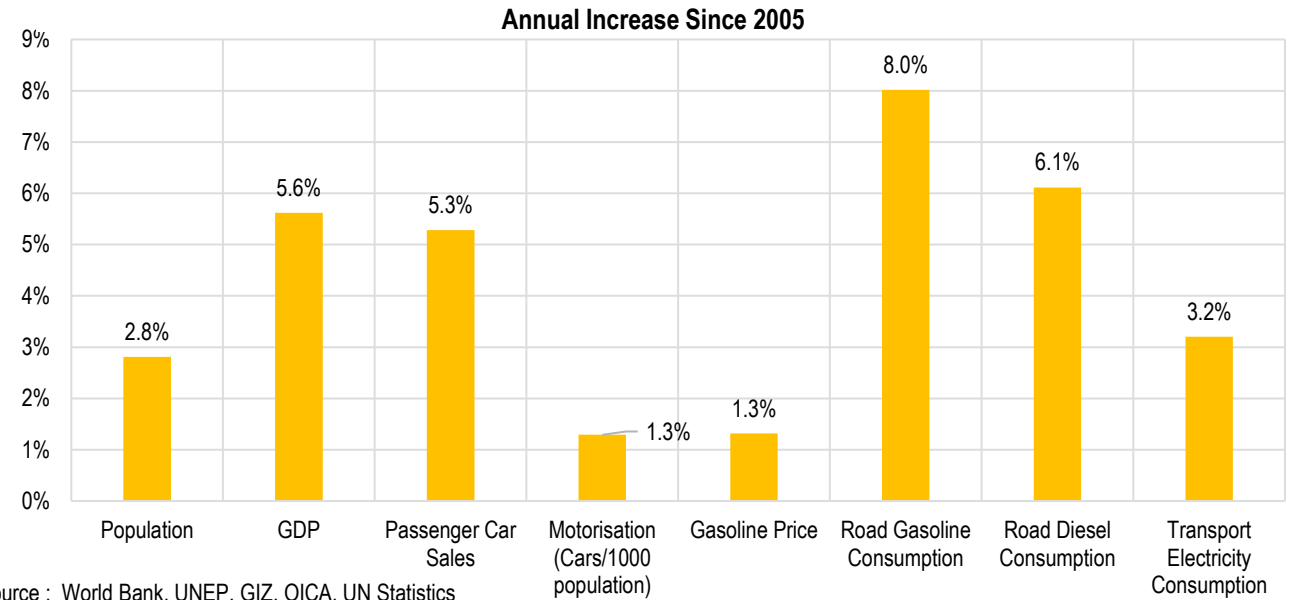
13 Koks, E.E. et al. A global multi-hazard risk analysis of road
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

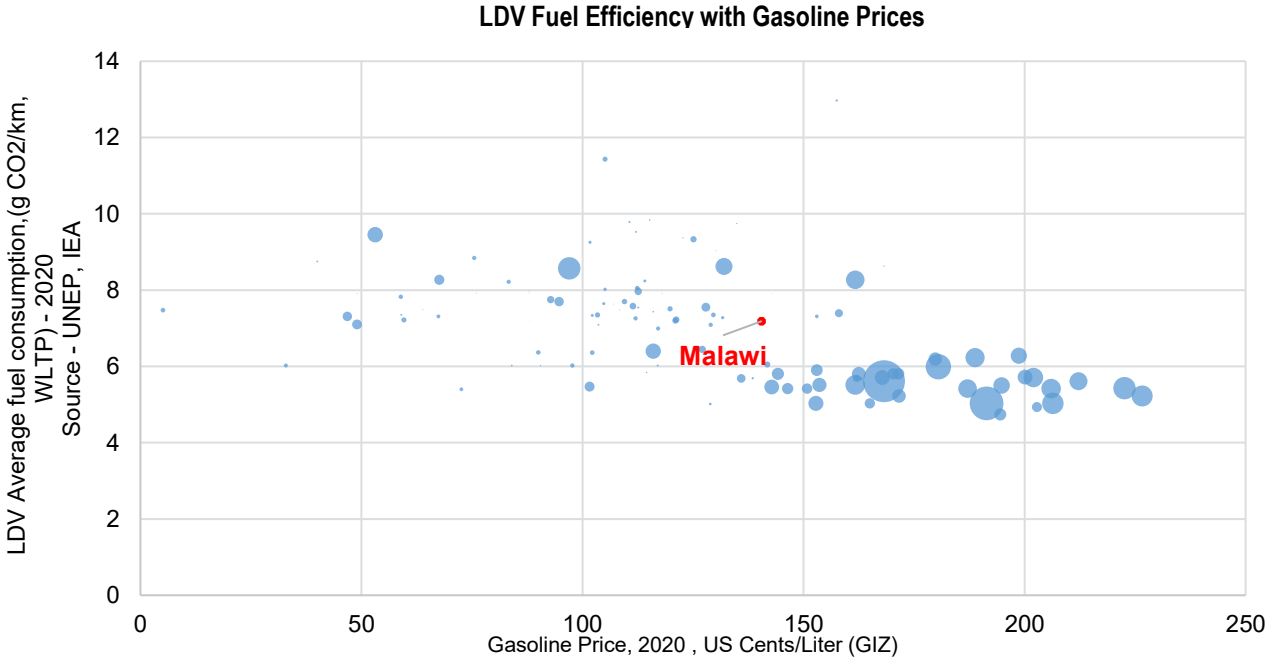
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

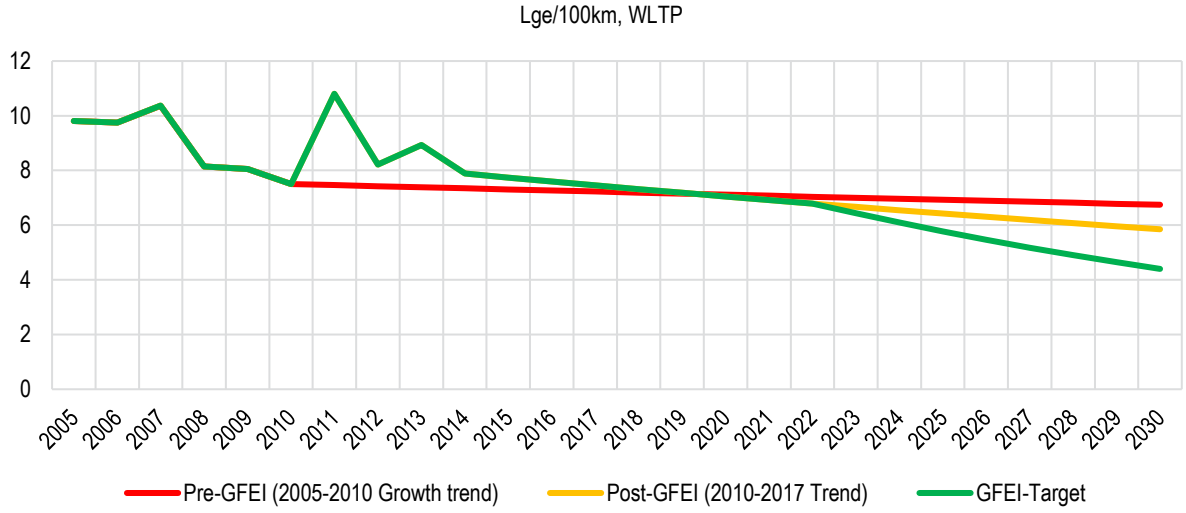
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-0.6%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-4.6%**



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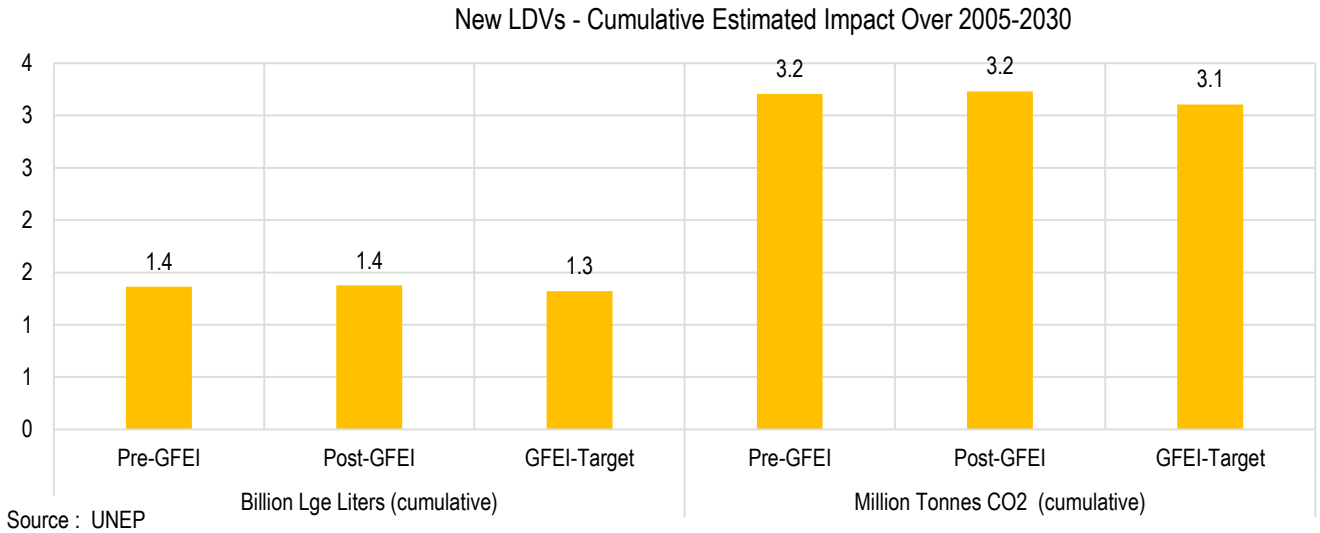


Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

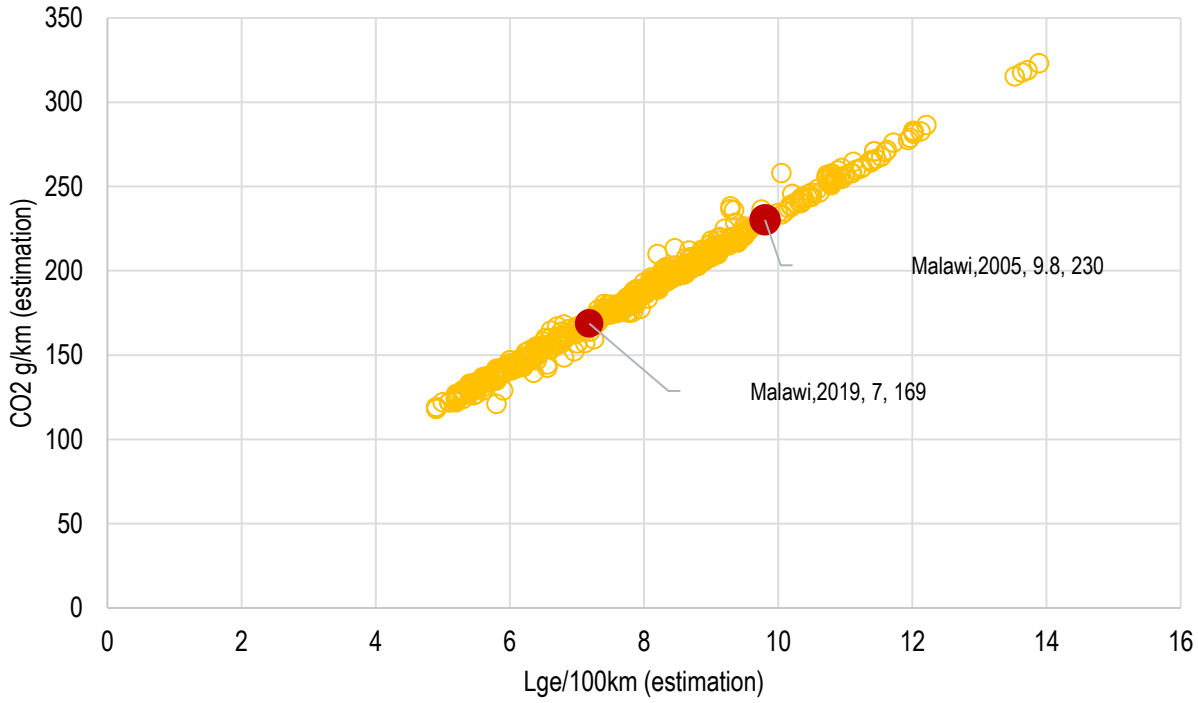
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

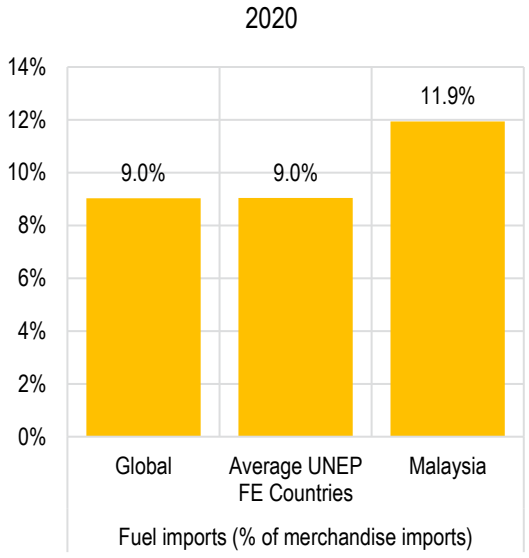
Source : UNEP

In Malawi, the GFEI fuel economy baseline project was conducted with the Department of Energy Affairs (DoE Malawi) under the Ministry of Natural Resources, Energy & Mining. On 11 December 2017, a workshop was organised to share and validate the inventory study. In the validation workshop, stakeholders recommended the introduction of an additional environmental tax to be levied on imports of second-hand vehicles, vehicle recycling policy targeting all vehicles older than 20 years, the introduction of vehicle labelling, and the development of vehicular emission standards. Currently, the Malawi Revenue Authority has been implementing a 25 percent surcharge on imported vehicles older than 8 years at first registration. However, these charges have not made a significant impact.

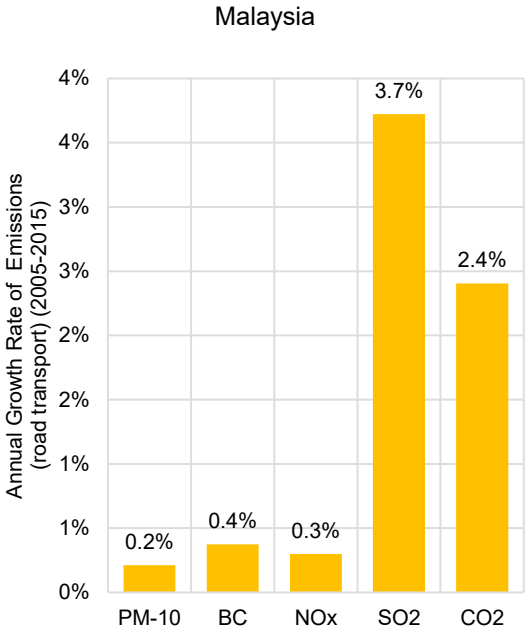
The assessment indicates that if Malawi implements a fuel economy policy for LDVs with a 2030 GFEI target, it could save 146 million litres of gasoline-equivalent & 0.34 million tonnes of CO2 cumulative from newly registered LDVs. The Department of Energy Affairs has estimated that by 2030, 0.272 million tonnes of CO2 could be saved using fuel economy policy (with taxation).

LDV FUEL ECONOMY COUNTRY REPORT FOR MALAYSIA

		Year	Source
Population (million)	32	2020	7
Income Level Category	Upper middle income		7
GDP per Capita (PPP, Curent USD)	27913	2020	7
Motorisation (Cars/1000 population)	398	2020	10
Car Sales (000)	481	2020	6
Gasoline Price $/l	0.5	2020	2
Fossil Fuel Subsidy (Million $) 2019	825	2019	4
Road Infrastructure Length/Capita (meters)	6.5	2018	13
Employment (Transport+,000)	990	2019	11
Fuel Economy (Lge/100 km, WLTP) -	7	2016	1
Average CO2 emissions/kilometre (g/km, WLTP) -	168	2019	1
Average displacement (cm3) -	1494	2019	1
Average kerb weight (kg) -	1195	2019	1
Average power (kw) -	88	2018	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -	1058		1
Diesel Share in LDV (sample,%)	7%	2018	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	No	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.394	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.222	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	15.5	2019	8
Transport CO2 Emissions per Capita (tonnes) -	7.8	2019	14
Road Transport PM Emissions per Capita (grams) -	572.4	2015	14
Road Transport NOx Emissions per Capita (grams)-	8555.5	2015	14
Road Transport BC Emissions per Capita (grams)-	257.6	2015	14
LDV Emission Standards -	Euro 2	2019	1
Diesel Sulphur Levels (ppm) -	50	2019	1
Gasoline Sulphur Levels (ppm) -	500	2019	1
Annual rate of economy-wide energy intensity growth	-1.1%	2000-18	16
Annual rate of transport energy consumption growth	3.8%	2000-18	16
LDV Import value (Million USD)	1047	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

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4 International Energy Agency
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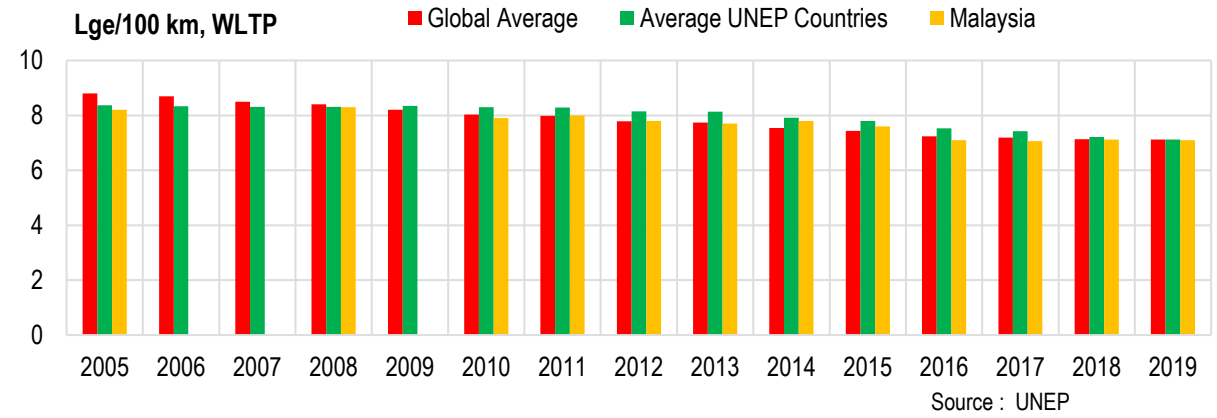
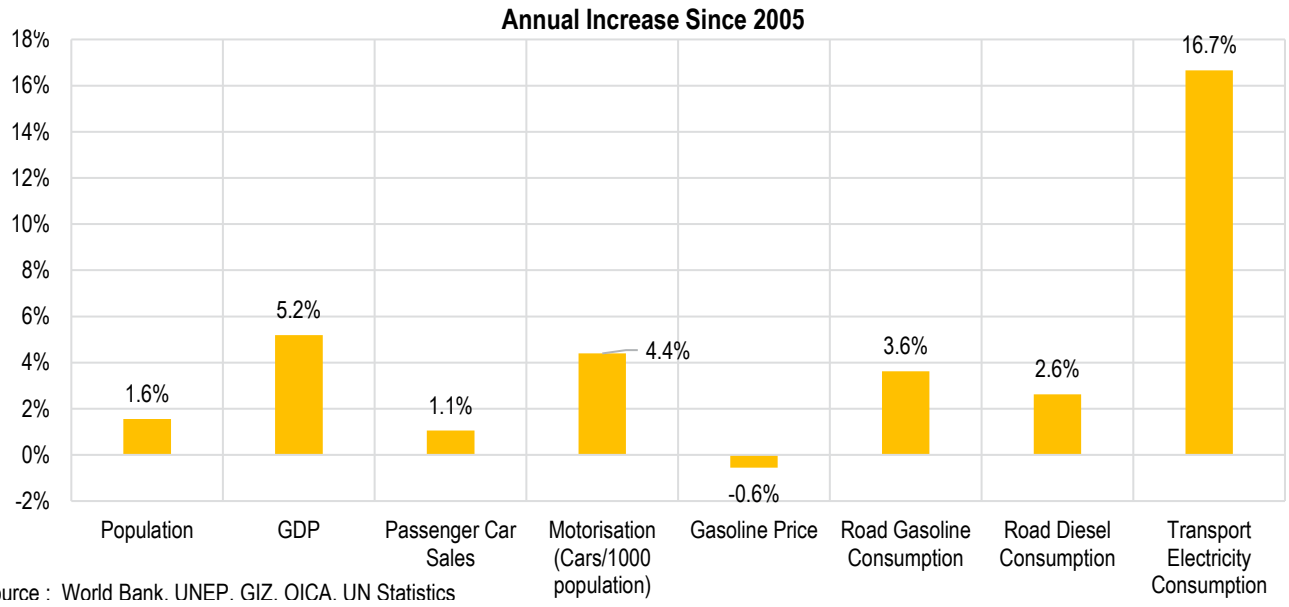
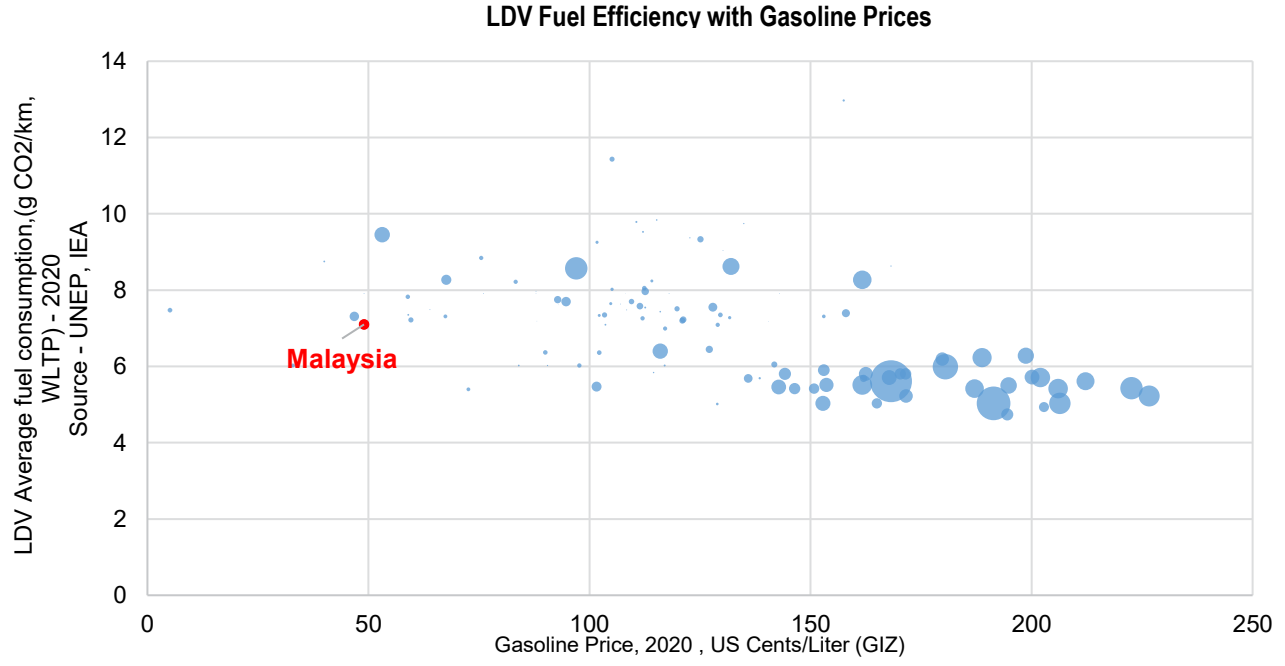
FUEL ECONOMY TRENDS





Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

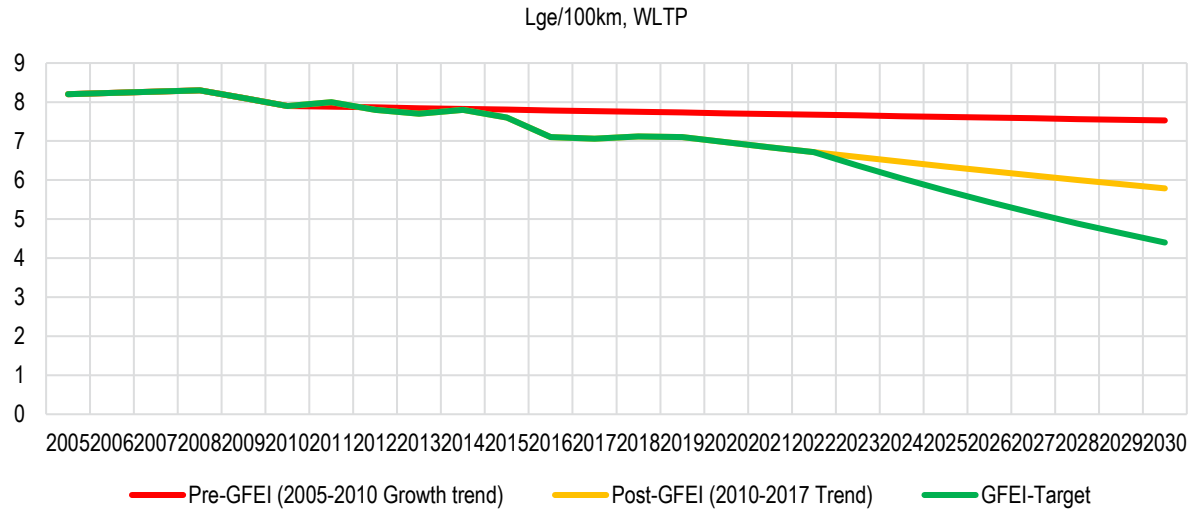
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

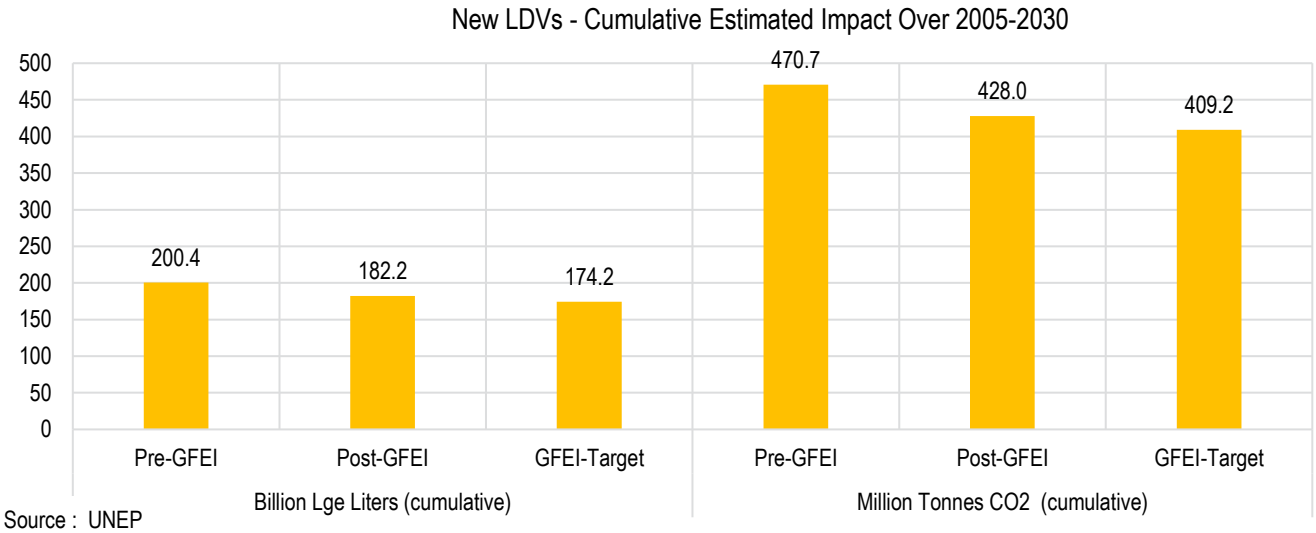
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-1.2%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-4.5%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

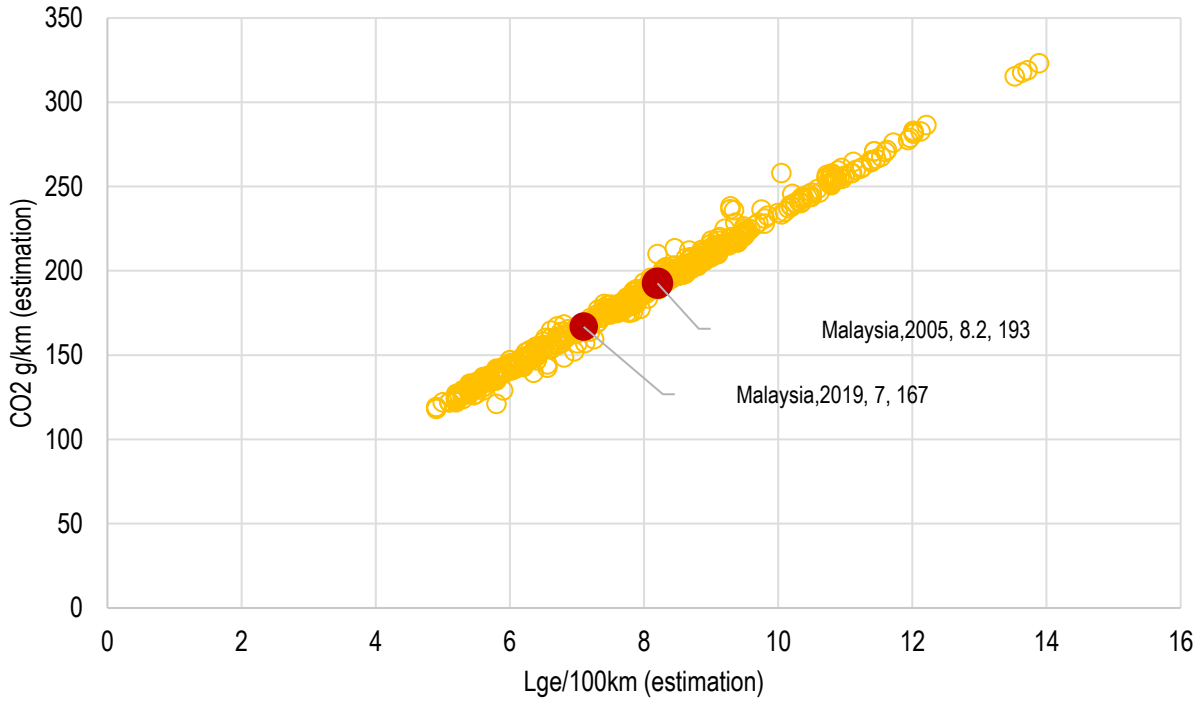
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

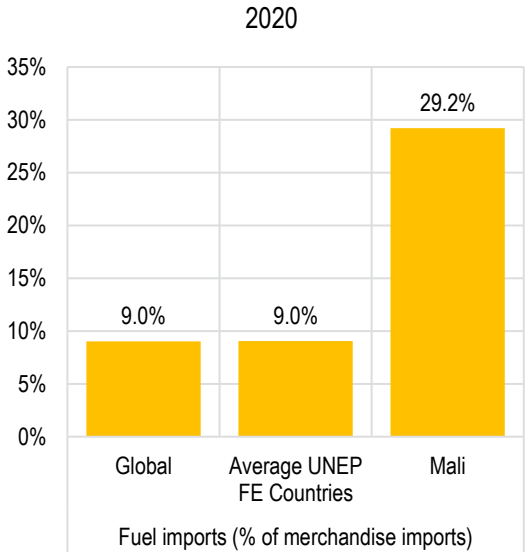
The GFEI country project was implemented by the Malaysia Automotive, Robotics and IoT Institute (MARii) formerly known as Malaysia Automotive Institute (MAI) with support from Clean Air Asia. An official MOA Exchange ceremony in Malaysia was held as part of the Kuala Lumpur International Automotive Symposium (KLIAS) in conjunction with Malaysia Autoshow on 8-12 November 2017 in Serdang, Malaysia. The symposium aimed to promote Malaysia as a regional hub for energy-efficient vehicles. Activities such as data collection for the database started upon the signing of the MOA. In 2018, MARii developed the Malaysia Driving Cycle (MDC), i.e. a standardised test method consistent with the Worldwide Harmonised Light Vehicle Test Cycle Procedure (WLTP) to measure vehicle efficiency.

Malaysia's National Automotive Policy 2020 reports that the energy-efficient vehicle (EEV) penetration has increased from 14% in 2014 to 62% in 2018. The 2020 target for penetration of energy-efficient vehicles was 85%. The new 2025 target for fuel economy for LDVs is to reduce carbon emission from cars by improving fuel economy level in Malaysia by 2025 in line with the ASEAN Fuel Economy Roadmap of 5.3 Lge / 100km.

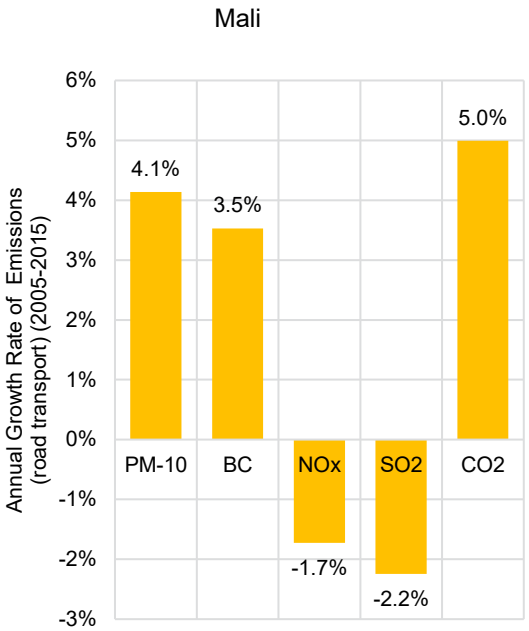
The assessment indicates that if Malaysia implements a fuel economy policy for LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 34 billion litres of gasoline-equivalent & 80.6 million tonnes of CO2 cumulative from newly registered LDVs. The Malaysian government has estimated that by 2020, with fuel efficiency improvement, about 200,000 tonnes of CO2 could be reduced from the BAU scenario.

LDV FUEL ECONOMY COUNTRY REPORT FOR MALI

		Year	Source
Population (million)	20	2020	7
Income Level Category	Low income		7
GDP per Capita (PPP, Curent USD)	2347	2020	7
Motorisation (Cars/1000 population)	10	2020	10
Car Sales (000)	1	2020	6
Gasoline Price $/l	0.5	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	8.5	2018	13
Employment (Transport+,000)	165	2019	11
Fuel Economy (Lge/100 km, WLTP) -	#N/A	#N/A	1
Average CO2 emissions/kilometre (g/km, WLTP) -	#N/A	#N/A	1
Average displacement (cm3) -			1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.006	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.017	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	24.8	2019	8
Transport CO2 Emissions per Capita (tonnes) -	0.1	2019	14
Road Transport PM Emissions per Capita (grams) -	7.7	2015	14
Road Transport NOx Emissions per Capita (grams)-	95.2	2015	14
Road Transport BC Emissions per Capita (grams)-	3.4	2015	14
LDV Emission Standards -	0	2019	1
Diesel Sulphur Levels (ppm) -	10000	2019	1
Gasoline Sulphur Levels (ppm) -	0	2019	1
Annual rate of economy-wide energy intensity growth	-0.1%	2000-18	16
Annual rate of transport energy consumption growth	6.9%	2000-18	16
LDV Import value (Million USD)	139	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

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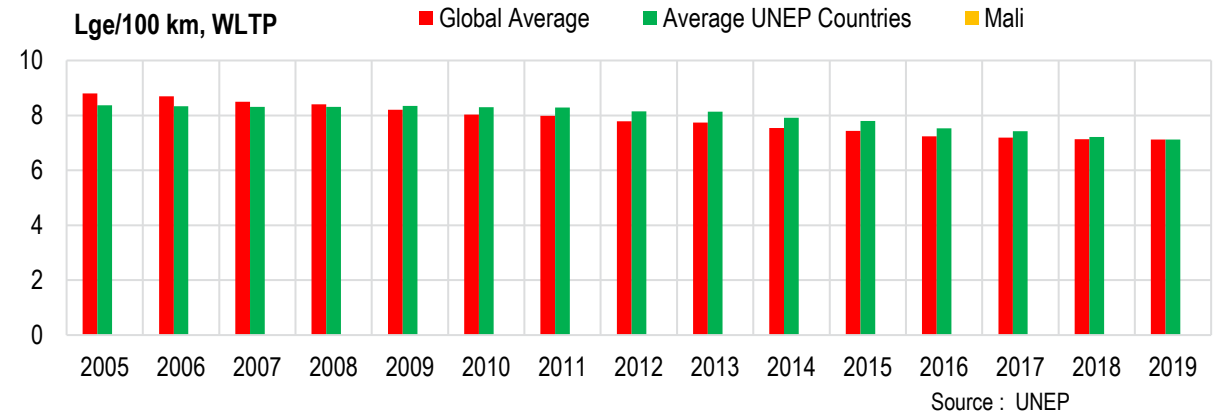
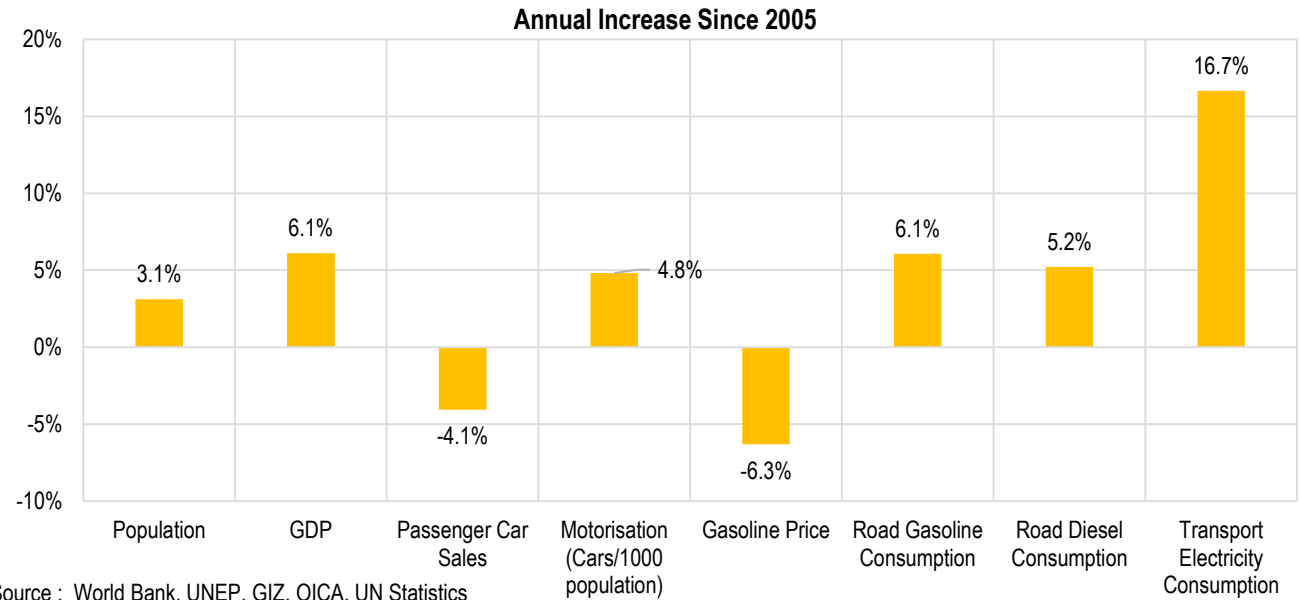
FUEL ECONOMY TRENDS



Source : UNEP



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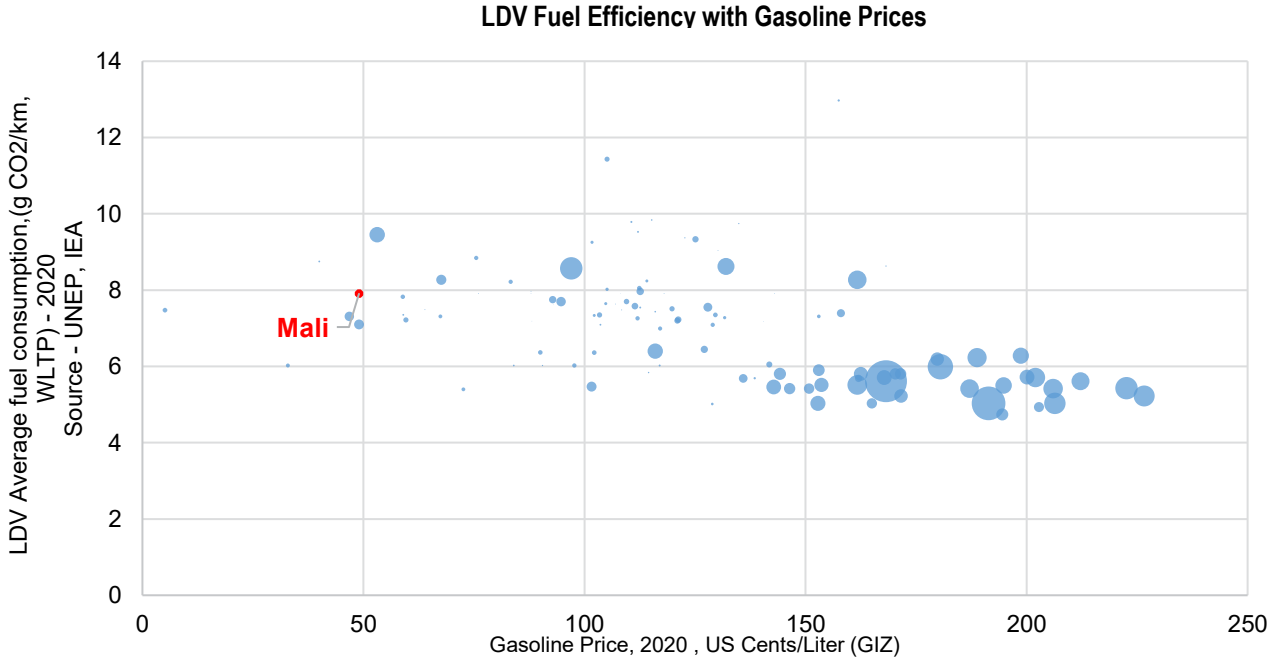


Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

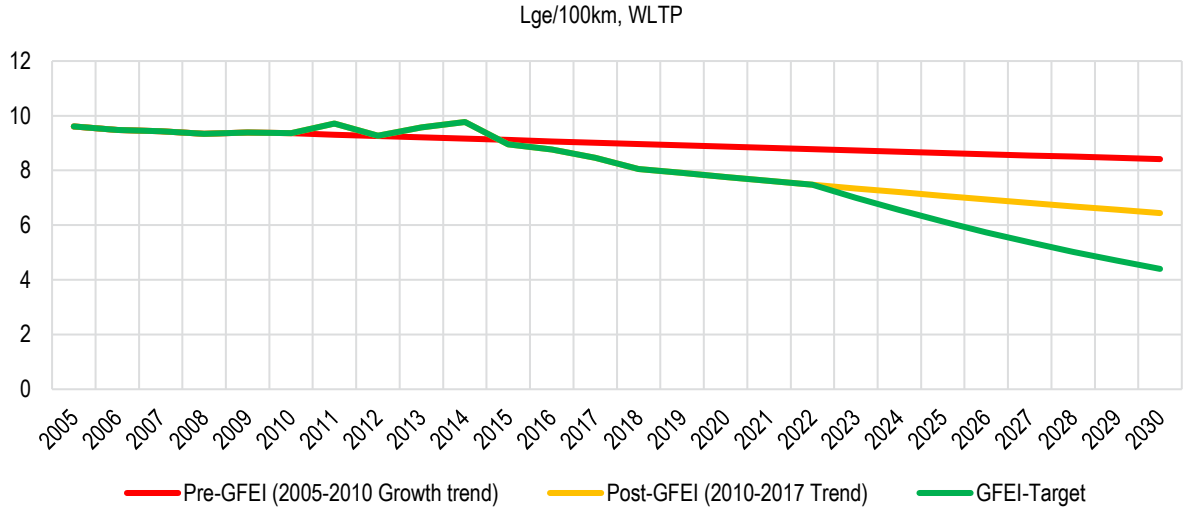
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

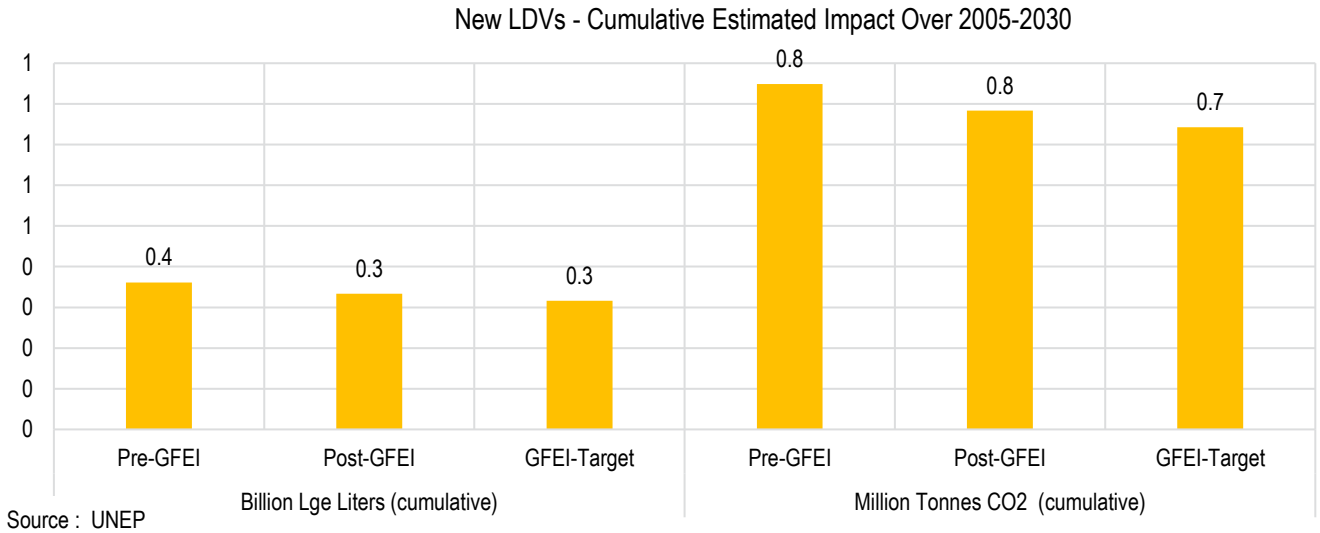
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-1.9%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-5.5%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

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3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

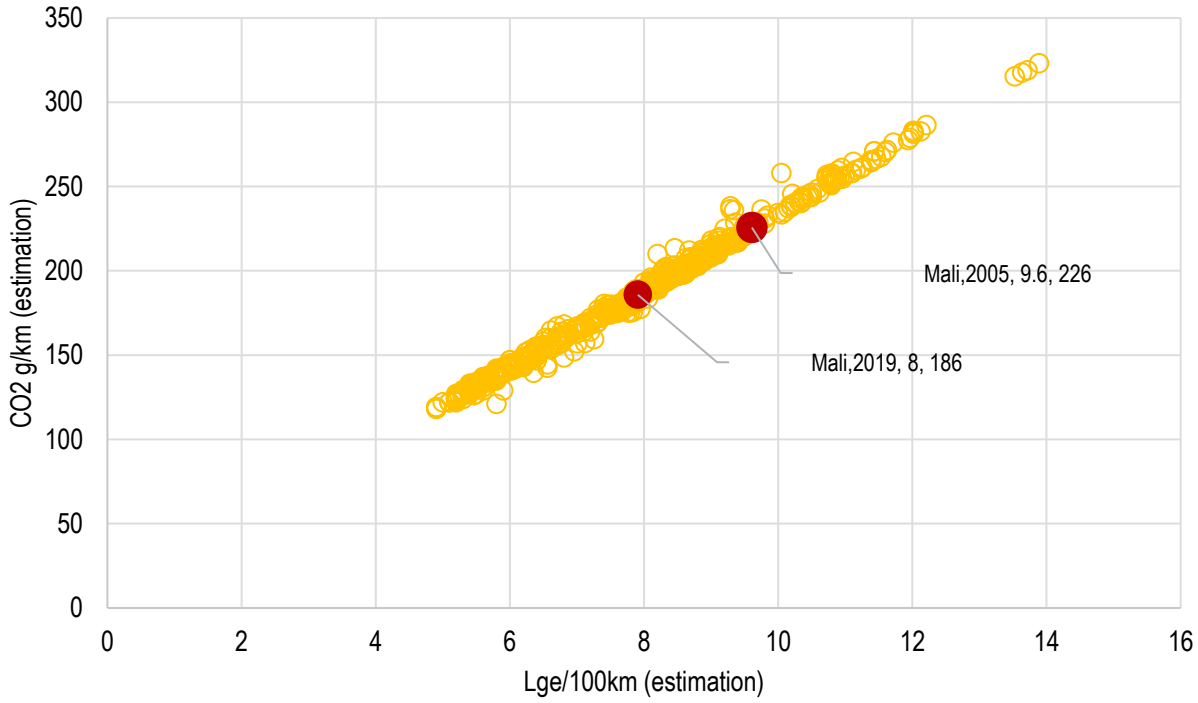
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

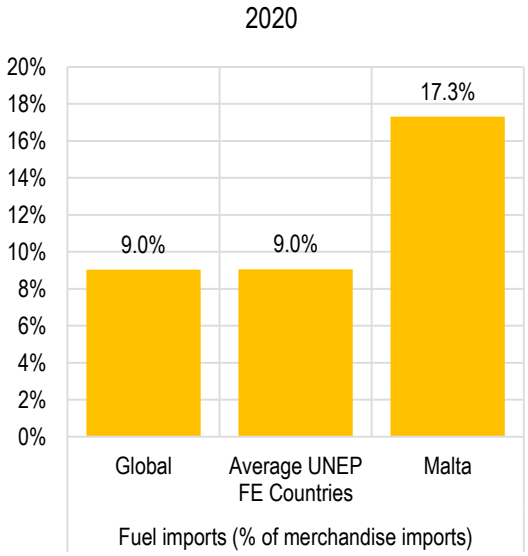
Source : UNEP

UNEP signed an agreement was signed with the Direction Nationale de l'Assainissement et du Contrôle des Pollutions et des Nuisances (DNACPN) on 13 March 2017 to support the development of fuel economy policies including fuel economy baseline and trends analysis in Mali. The GFEI project launch workshop was held on 15 May 2017 in Bamako, attended by 60 participants drawn from government technical departments, industry, professional organisations, academia, and media in the field of transportation. The baseline study is being carried out by the Energy Department of the National School of Engineers in Bamako.

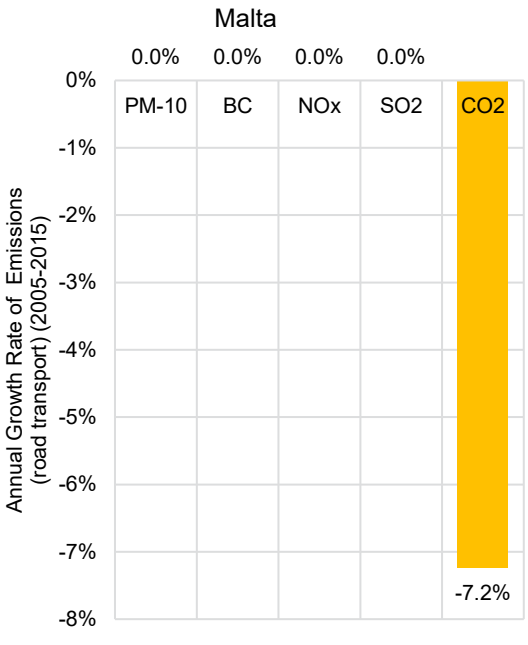
The assessment indicates that if Mali implements a fuel economy policy for LDVs with a 2030 GFEI target, it could save 35 million litres of gasoline-equivalent & 0.08 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR MALTA

		Year	Source
Population (million)	1	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	42640	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	6	2020	6
Gasoline Price $/l	1.5	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	6.1	2018	13
Employment (Transport+,000)	20	2019	11
Fuel Economy (Lge/100 km, WLTP) -	5	2017	1
Average CO2 emissions/kilometre (g/km, WLTP) -	124	2017	1
Average displacement (cm3) -	1416	2017	1
Average kerb weight (kg) -	1181	2017	1
Average power (kw) -	74	2016	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.157	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.288	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	3.1	2019	8
Transport CO2 Emissions per Capita (tonnes) -	2.1	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	-3.6%	2000-18	16
Annual rate of transport energy consumption growth	3.1%	2000-18	16
LDV Import value (Million USD)	108	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
7 World Bank
8 UN Statistics Division
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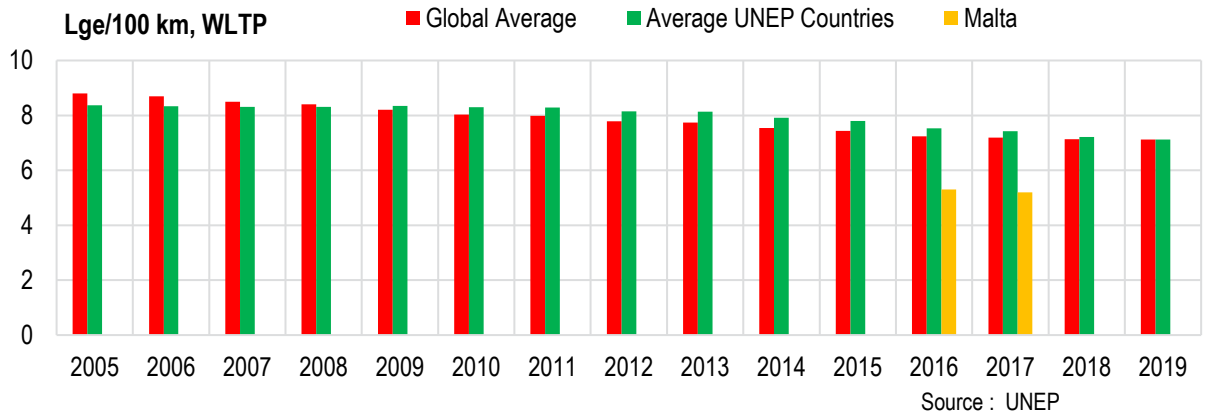
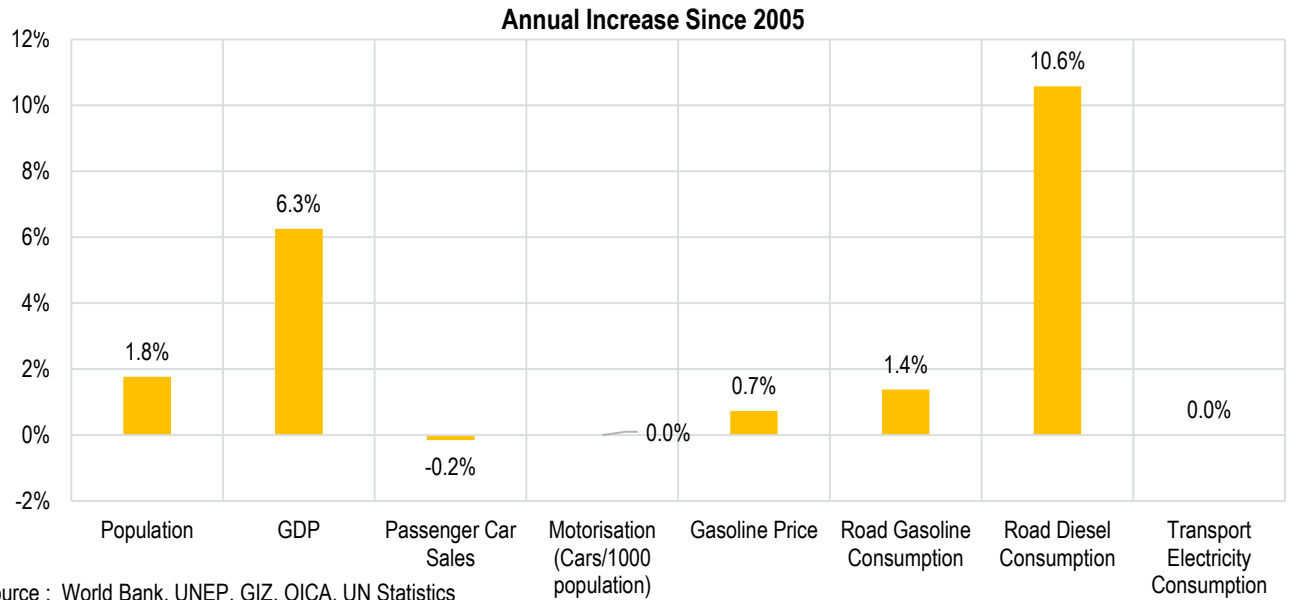
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

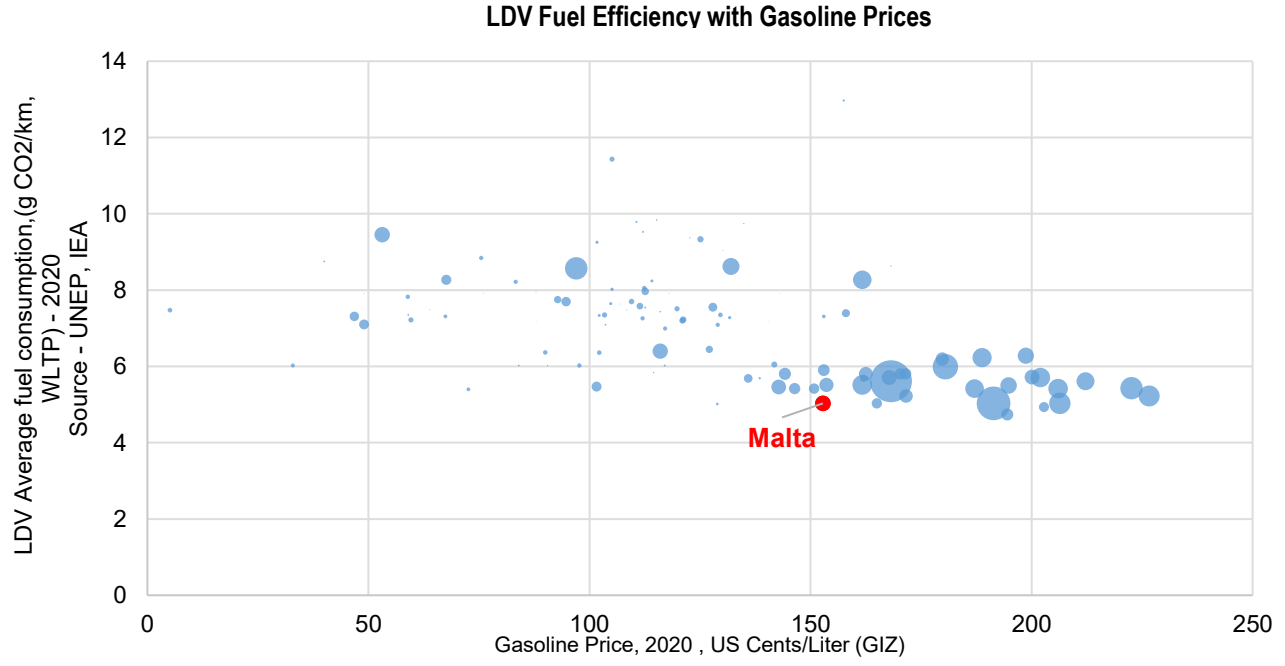
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

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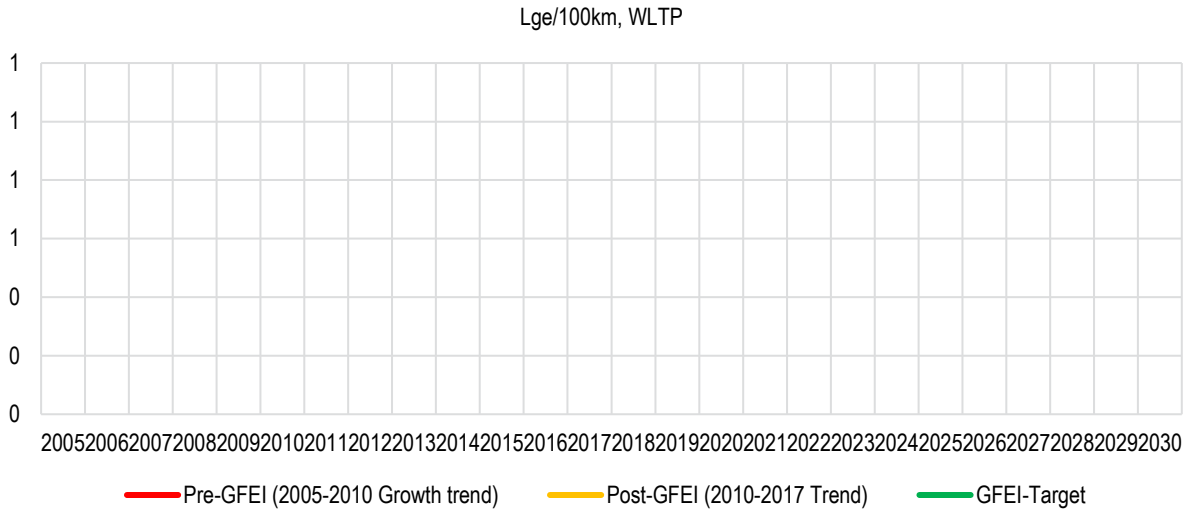
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

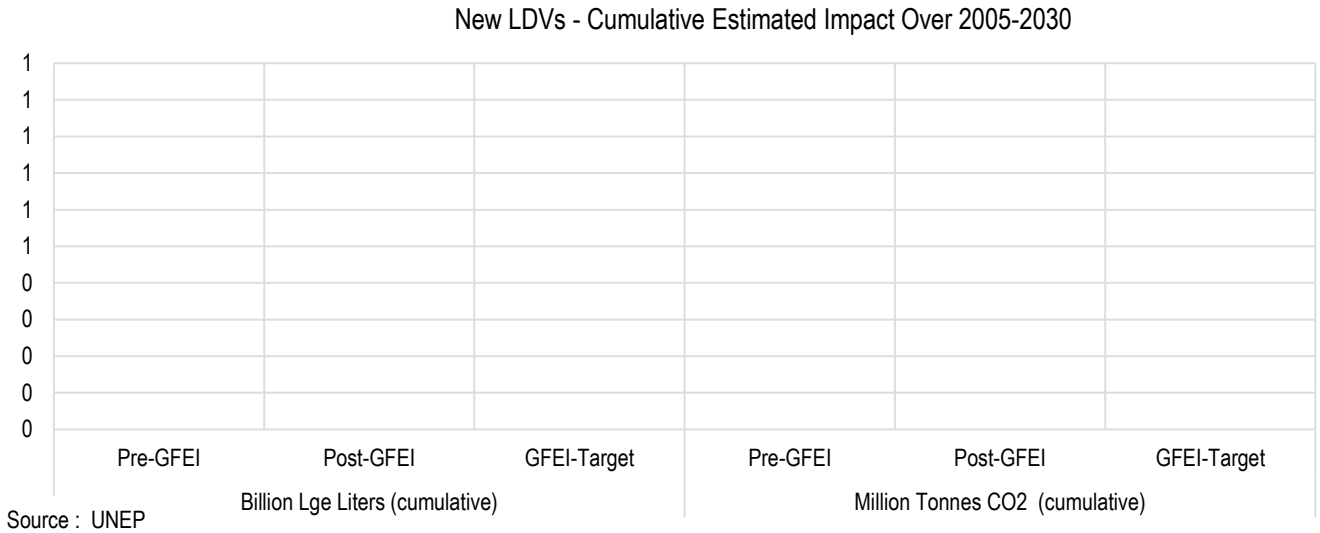
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

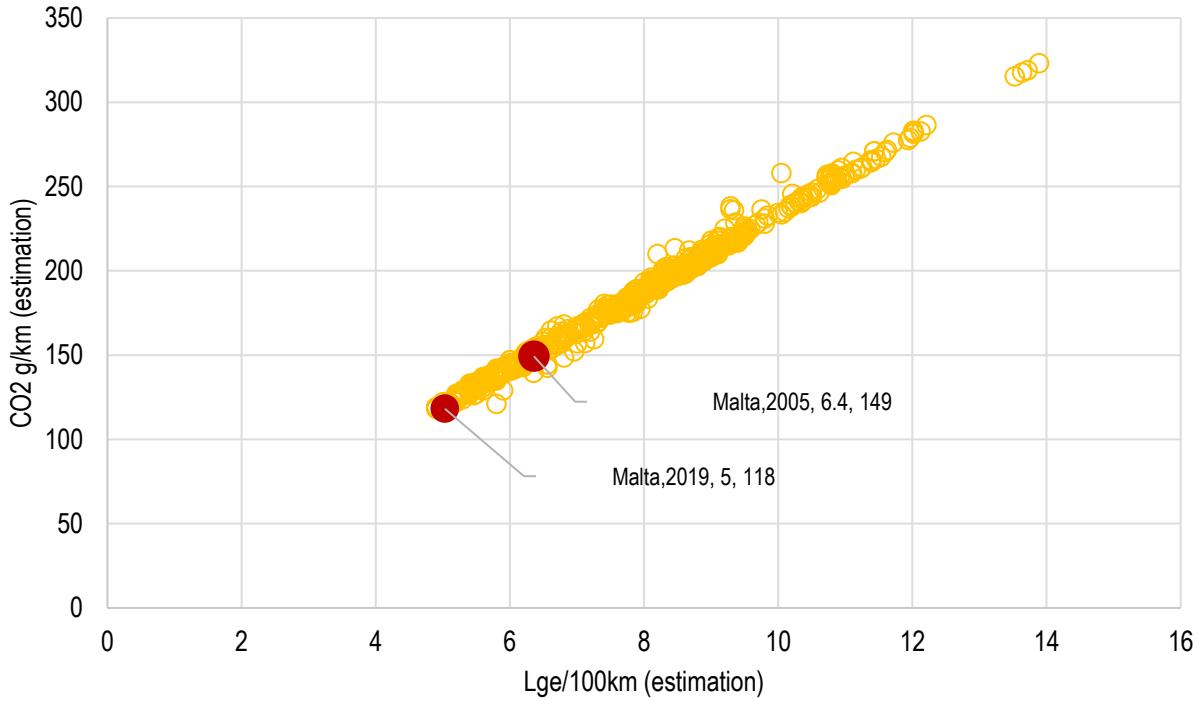
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



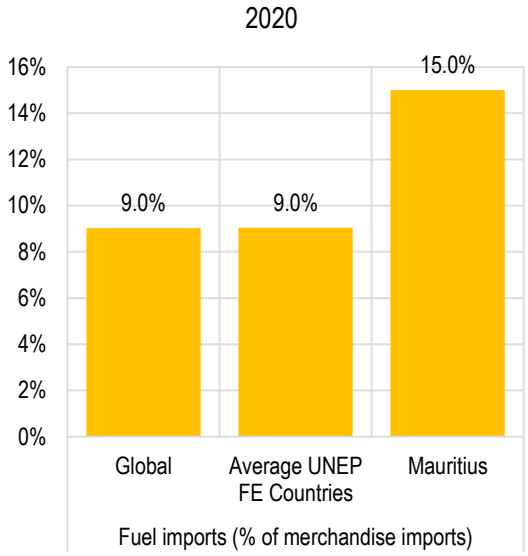
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

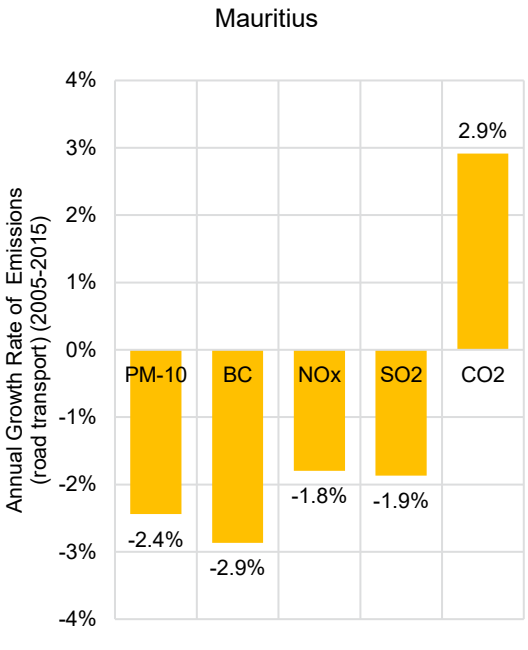
#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR MAURITIUS

		Year	Source
Population (million)	1	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	20523	2020	7
Motorisation (Cars/1000 population)	149	2020	10
Car Sales (000)	6	2020	6
Gasoline Price $/l	1.3	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	4.5	2018	13
Employment (Transport+,000)	56	2019	11
Fuel Economy (Lge/100 km, WLTP) -	7	2013	1
Average CO2 emissions/kilometre (g/km, WLTP) -	168	2013	1
Average displacement (cm3) -	1681	2013	1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -	369		1
Diesel Share in LDV (sample,%)	23%	2013	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.153	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.143	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	1.3	2019	8
Transport CO2 Emissions per Capita (tonnes) -	3.4	2019	14
Road Transport PM Emissions per Capita (grams) -	216.9	2015	14
Road Transport NOx Emissions per Capita (grams)-	3994.8	2015	14
Road Transport BC Emissions per Capita (grams)-	99.5	2015	14
LDV Emission Standards -	0	2019	1
Diesel Sulphur Levels (ppm) -	50	2019	1
Gasoline Sulphur Levels (ppm) -	150	2019	1
Annual rate of economy-wide energy intensity growth	-1.8%	2000-18	16
Annual rate of transport energy consumption growth	2.3%	2000-18	16
LDV Import value (Million USD)	174	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

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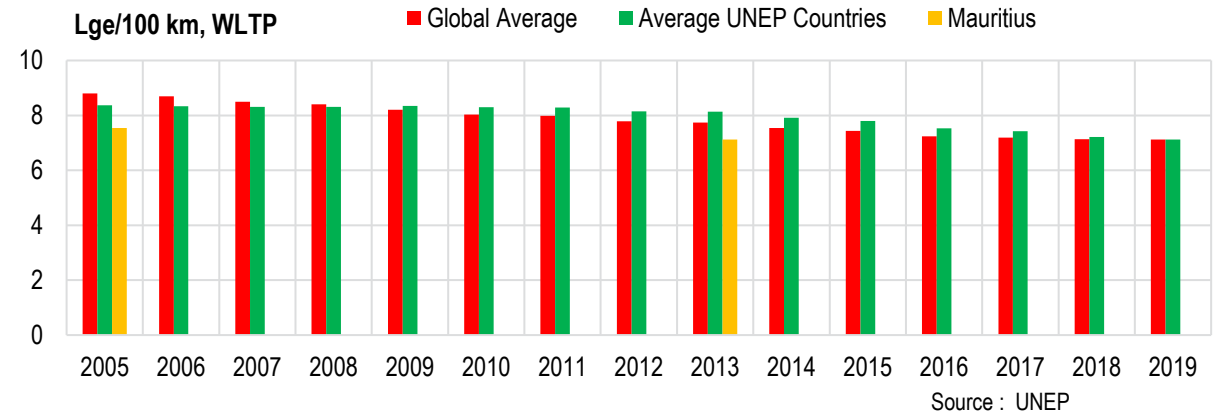
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

FUEL ECONOMY TRENDS



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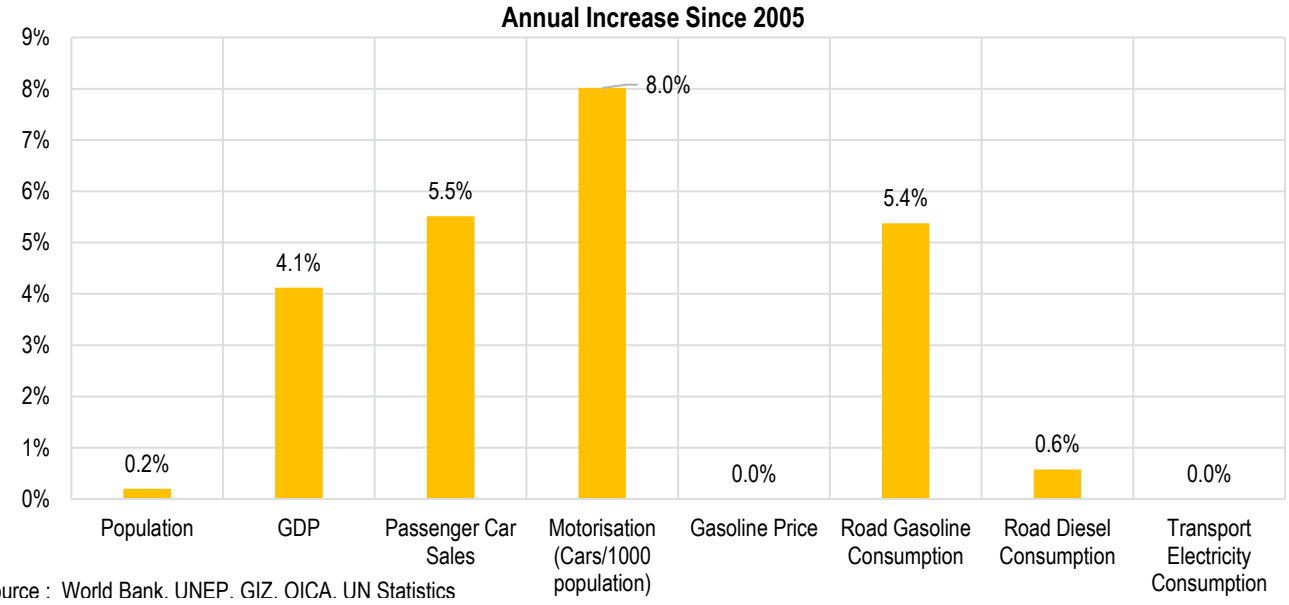
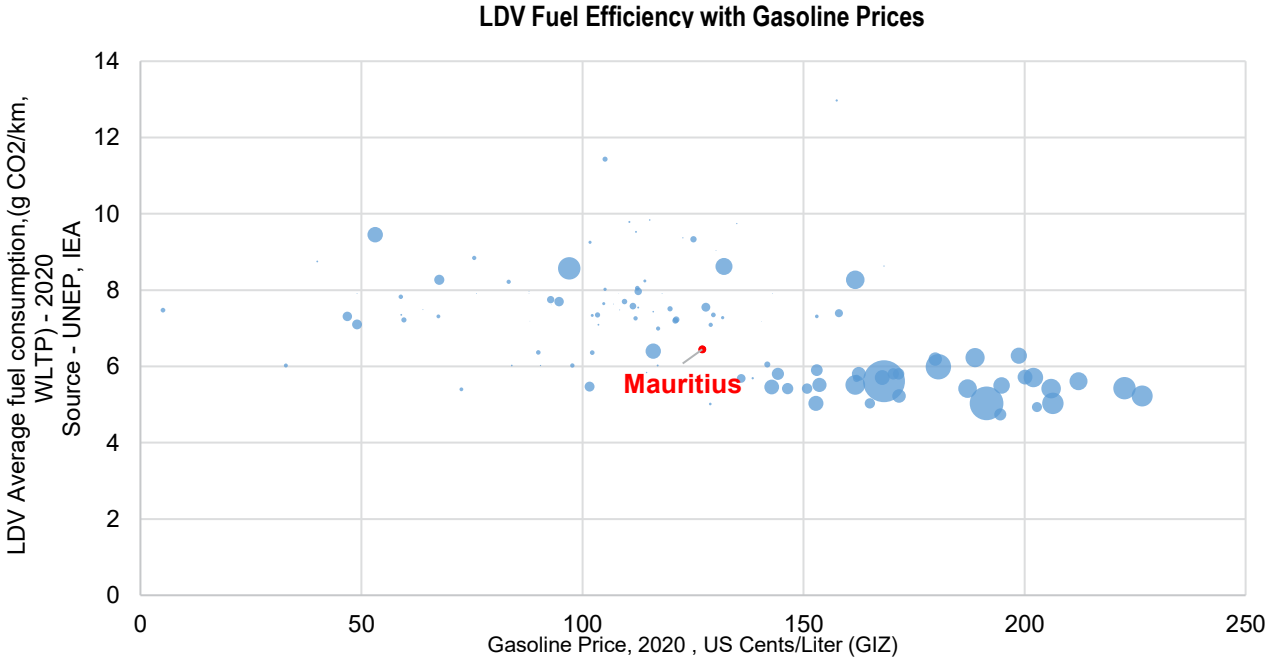


Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

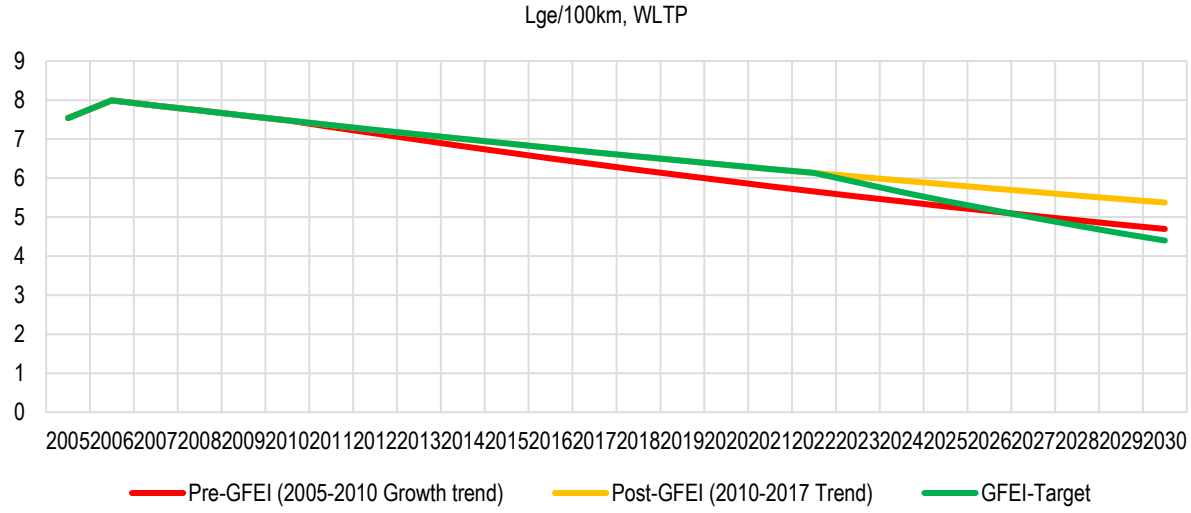
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

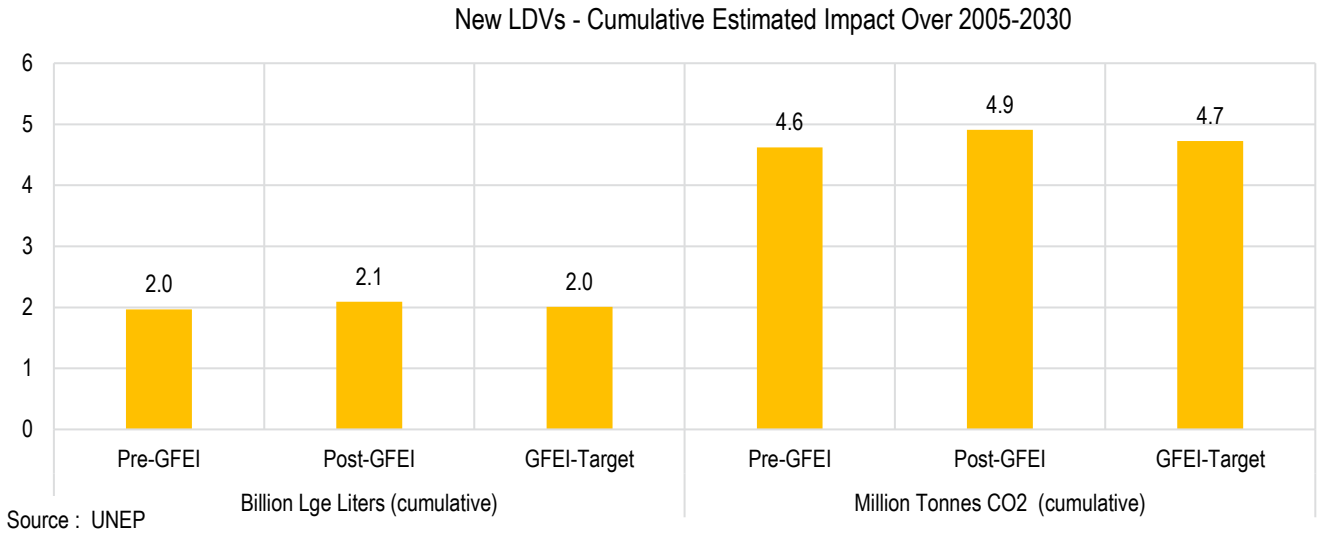
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-1.6%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-3.6%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

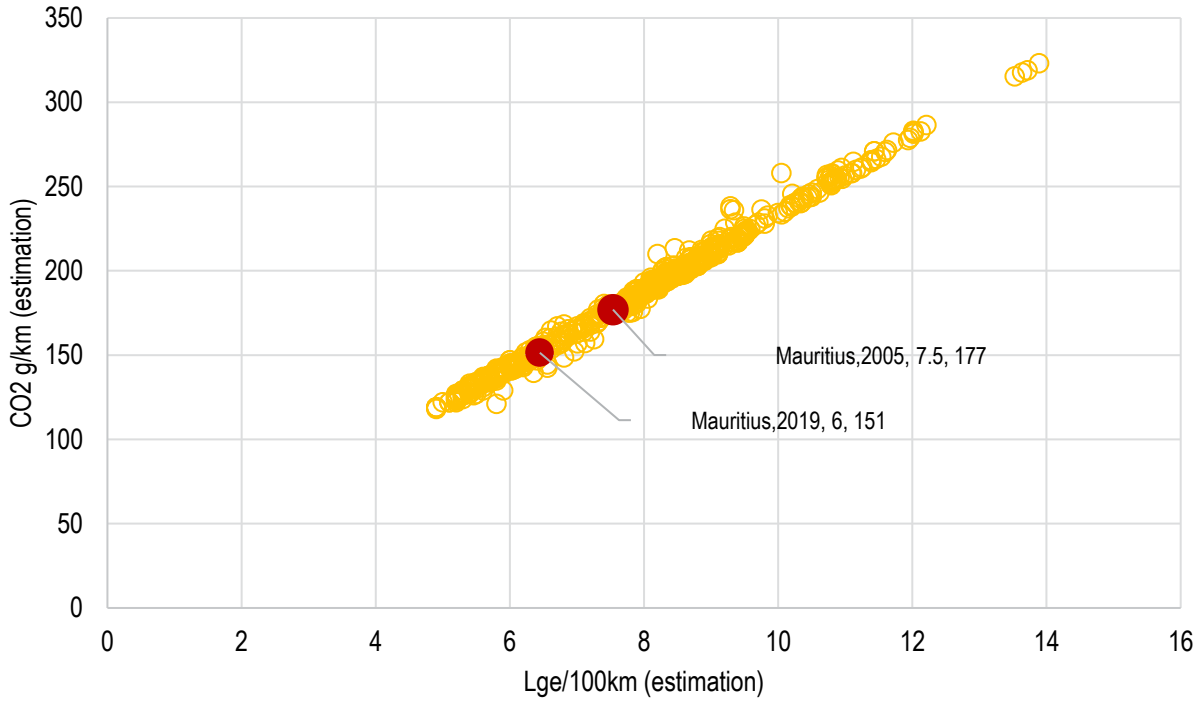
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

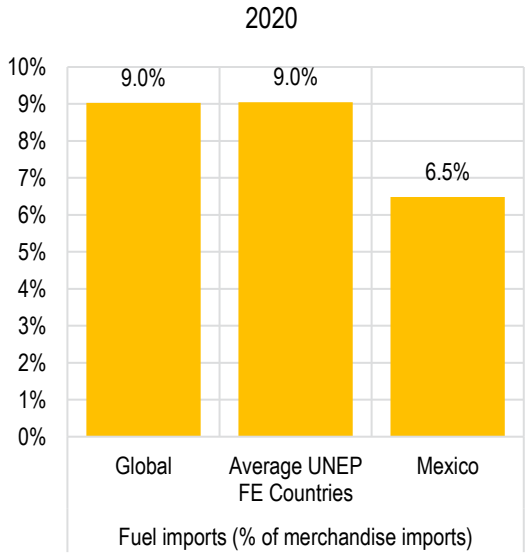
Source : UNEP

On 4 October 2017, UNEP and the Ministry of Social Security, National Solidarity, and Environment and Sustainable Development entered into an agreement to conclude the vehicle fuel economy work that had been initiated in a previous funding agreement. Mauritius established 6 working groups to handle different aspects of the clean and efficient fuels and vehicles project in the country, i.e., Updated average vehicle fuel economy for 2014 and 2015 and a Data Entry Tool; Motor car labelling regulations and awareness programs; Traffic management measures; Socio-economic impact of policies on low and no-emission vehicles including two-wheelers; Fiscal incentives for the promotion of cleaner and more energy-efficient cars; Introduction of cleaner fuels and enforcement. In 2019, Mauritius announced additional fiscal incentives to promote electric and hybrid vehicles through the 2019/20 budget statement. Excise duty was reduced by between 5% and 15% depending on the type/rating of the electric vehicle. Besides, mandatory vehicle labelling was made compulsory as of 1 June 2019. The country also engaged in a fuel efficiency communication campaign involving the national population and car dealers.

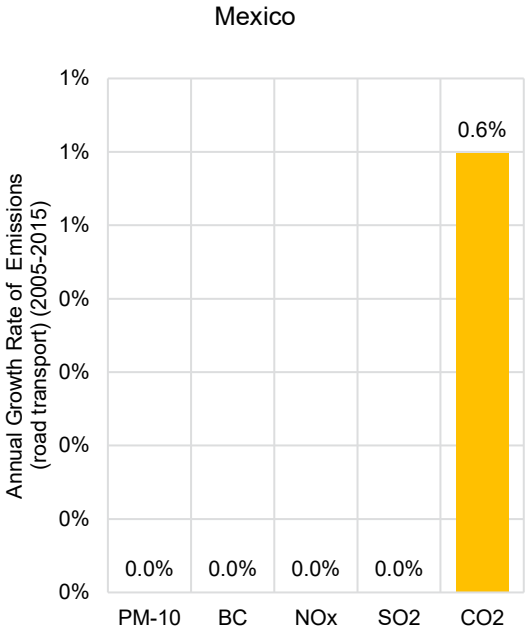
The assessment indicates that if Liberia implements a fuel economy policy for LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 313 million litres of gasoline-equivalent & 0.73 million tonnes of CO2 cumulative from newly registered LDVs. In 2014, The Ministry of Environment and Sustainable Development had estimated that the government could collect Rs 200 million as CO2 levy.

LDV FUEL ECONOMY COUNTRY REPORT FOR MEXICO

		Year	Source
Population (million)	129	2020	7
Income Level Category	Upper middle income		7
GDP per Capita (PPP, Curent USD)	18794	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	532	2020	6
Gasoline Price $/l	1.1	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	7.0	2018	13
Employment (Transport+,000)	3078	2019	11
Fuel Economy (Lge/100 km, WLTP) -	8	2019	1
Average CO2 emissions/kilometre (g/km, WLTP) -	176	2016	1
Average displacement (cm3) -	1908	2019	1
Average kerb weight (kg) -	1379	2019	1
Average power (kw) -	106	2014	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.252	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.104	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	8.6	2019	8
Transport CO2 Emissions per Capita (tonnes) -	3.8	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	-1.0%	2000-18	16
Annual rate of transport energy consumption growth	1.8%	2000-18	16
LDV Import value (Million USD)	6233	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

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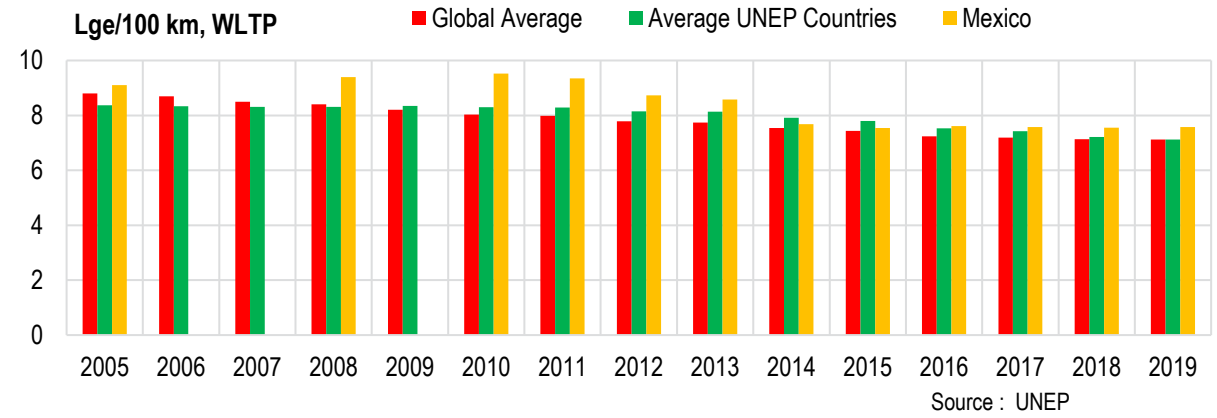
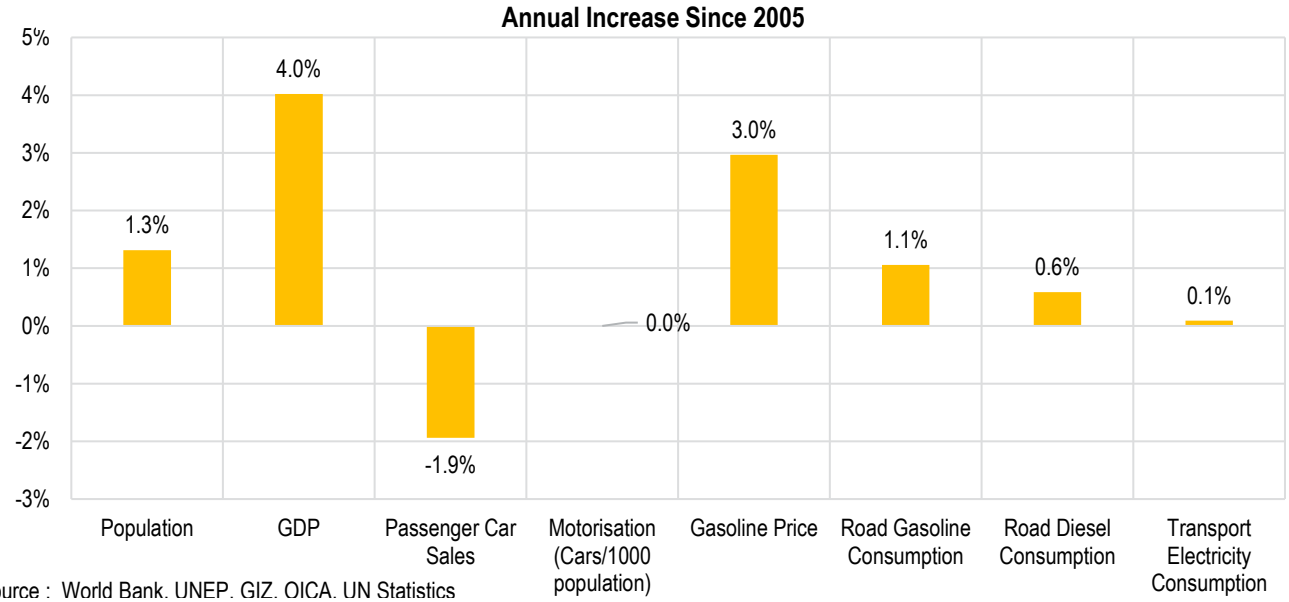
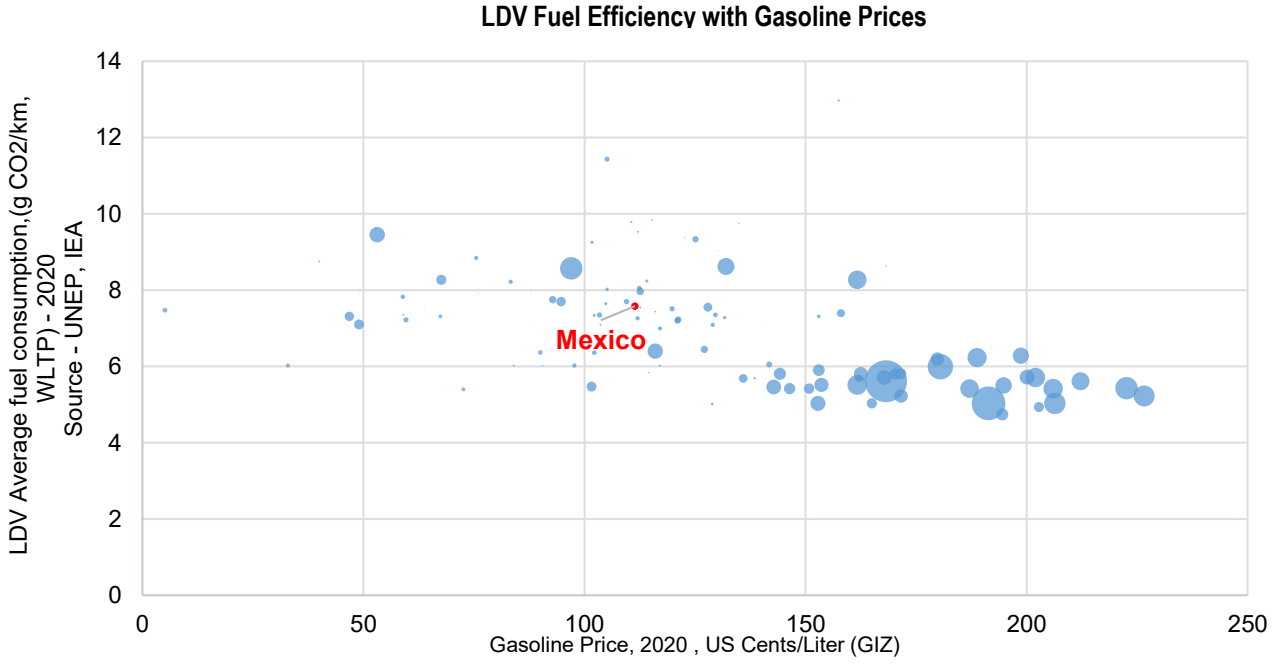
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



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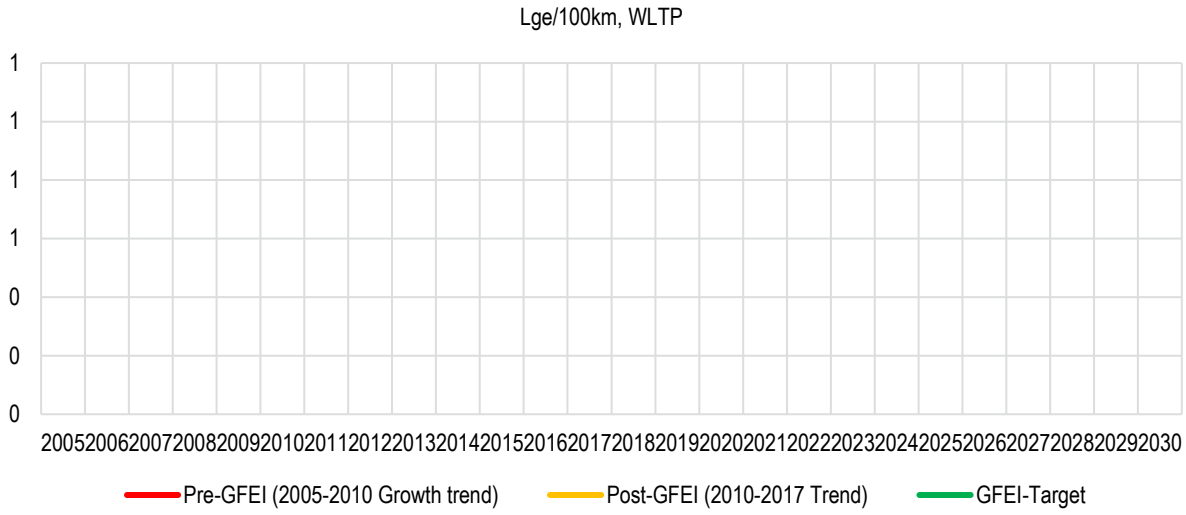
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



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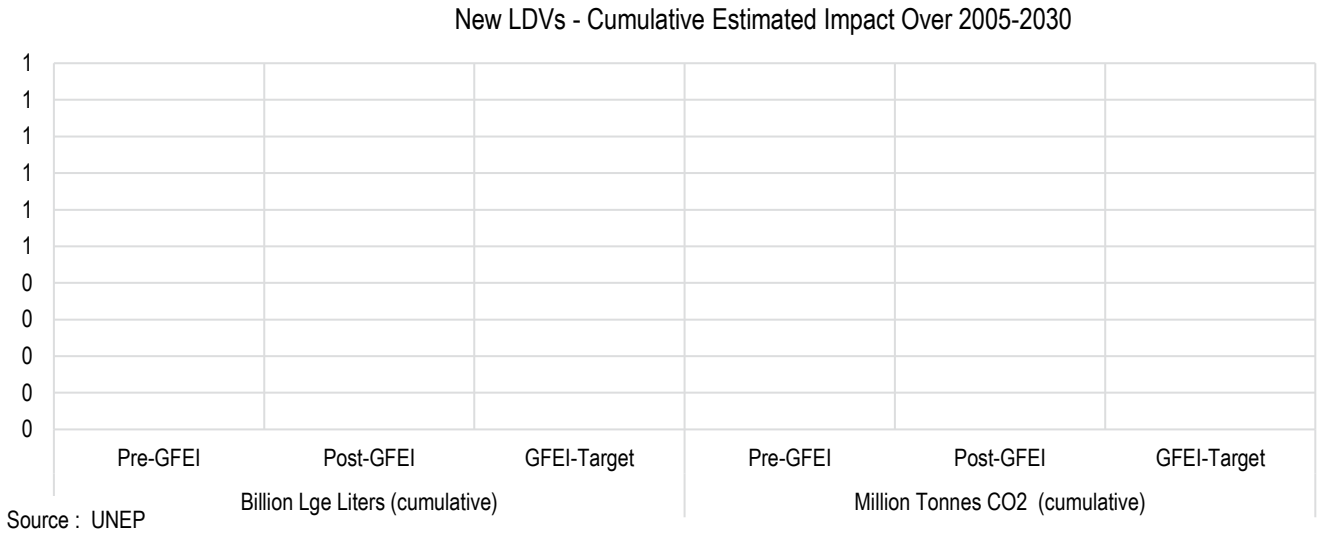

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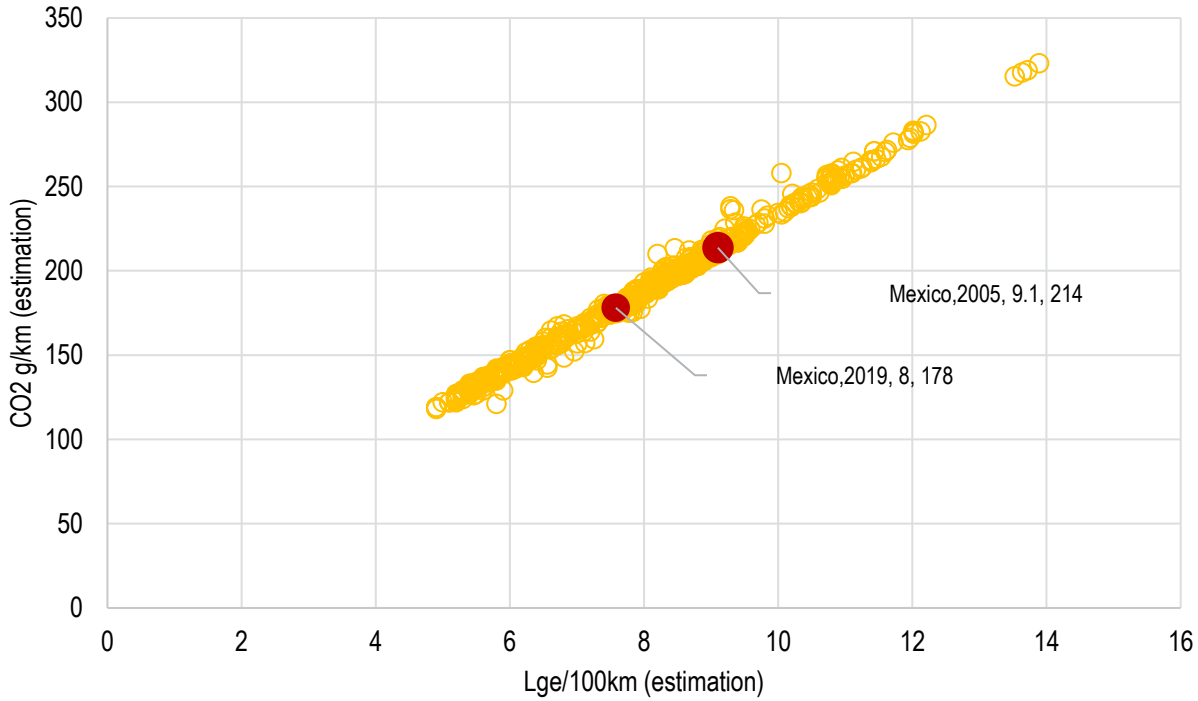
FUEL ECONOMY DESCRIPTION



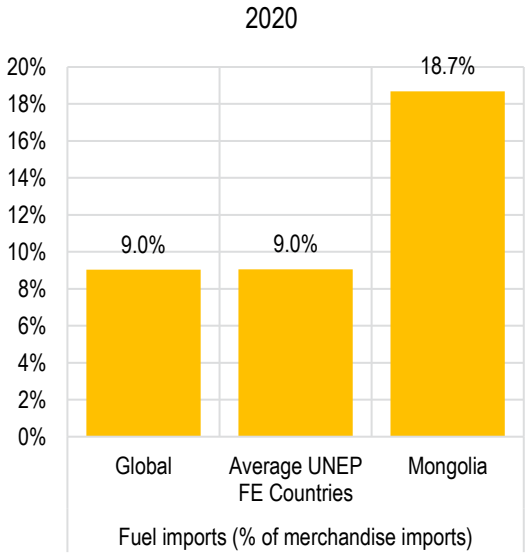
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

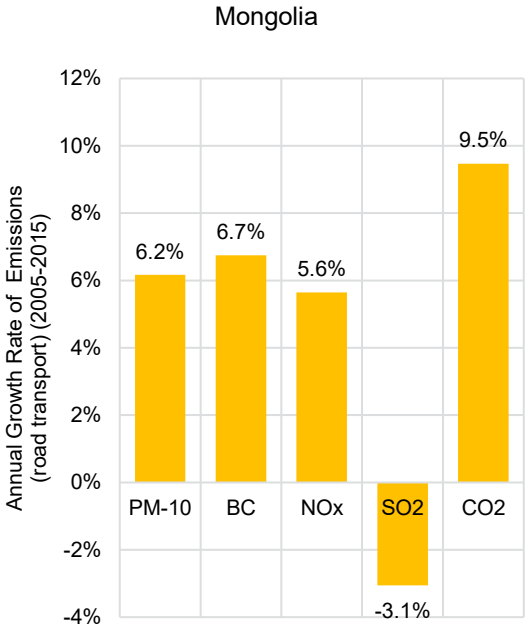
#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR MONGOLIA

		Year	Source
Population (million)	3	2020	7
Income Level Category	Lower middle income		7
GDP per Capita (PPP, Curent USD)	12362	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	38	2020	6
Gasoline Price $/l	1.0	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	32.6	2018	13
Employment (Transport+,000)	95	2019	11
Fuel Economy (Lge/100 km, WLTP) -	#N/A	#N/A	1
Average CO2 emissions/kilometre (g/km, WLTP) -	#N/A	#N/A	1
Average displacement (cm3) -			1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.165	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.000	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	86.9	2019	8
Transport CO2 Emissions per Capita (tonnes) -	11.1	2019	14
Road Transport PM Emissions per Capita (grams) -	89.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	9308.0	2015	14
Road Transport BC Emissions per Capita (grams)-	34.9	2015	14
LDV Emission Standards -	no policy	2019	1
Diesel Sulphur Levels (ppm) -	5000	2019	1
Gasoline Sulphur Levels (ppm) -	0	2019	1
Annual rate of economy-wide energy intensity growth	-2.0%	2000-18	16
Annual rate of transport energy consumption growth	5.0%	2000-18	16
LDV Import value (Million USD)	297	2020	3



Source : World Bank



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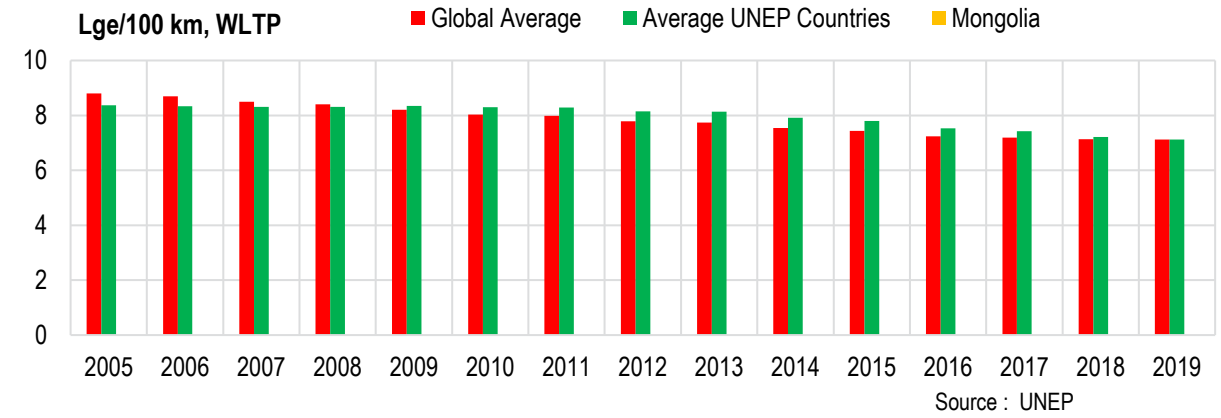
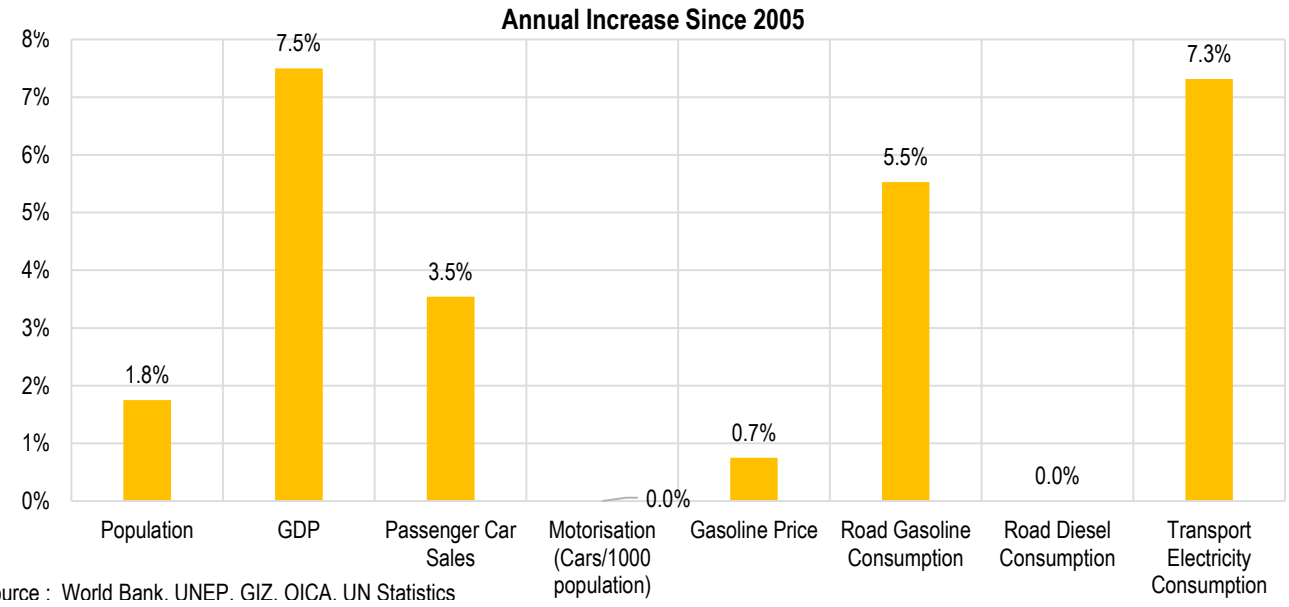
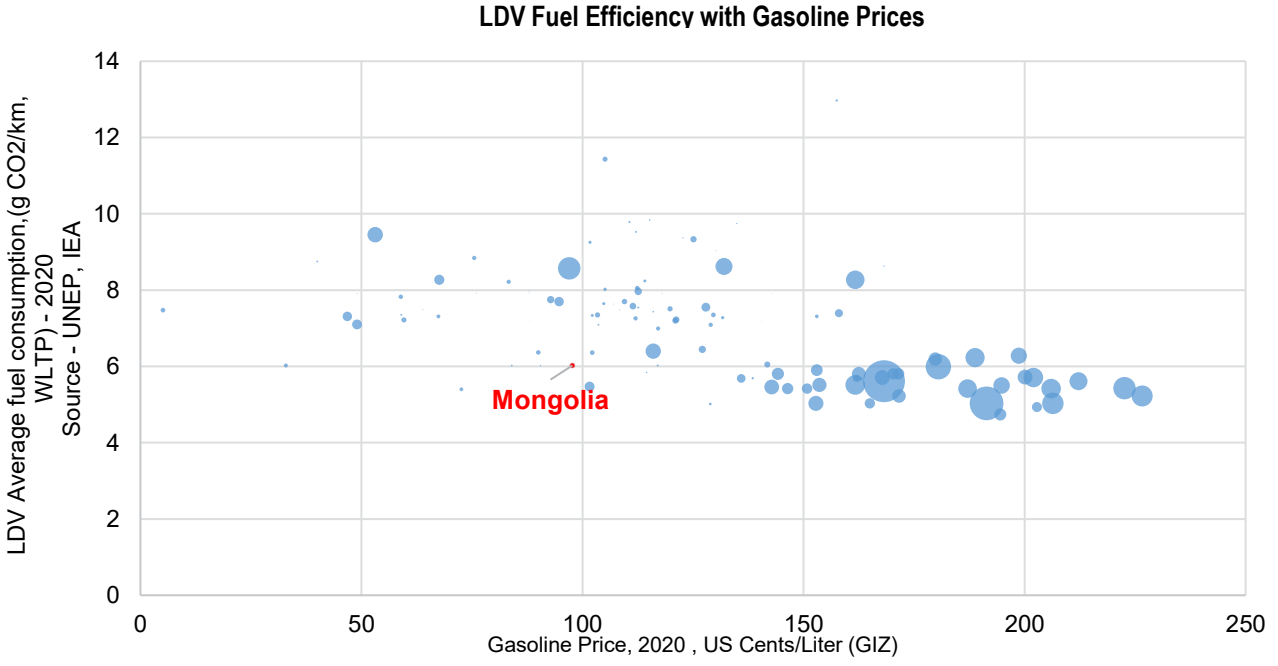
16 Tracking SDG7: The Energy Progress Report

FUEL ECONOMY TRENDS





Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

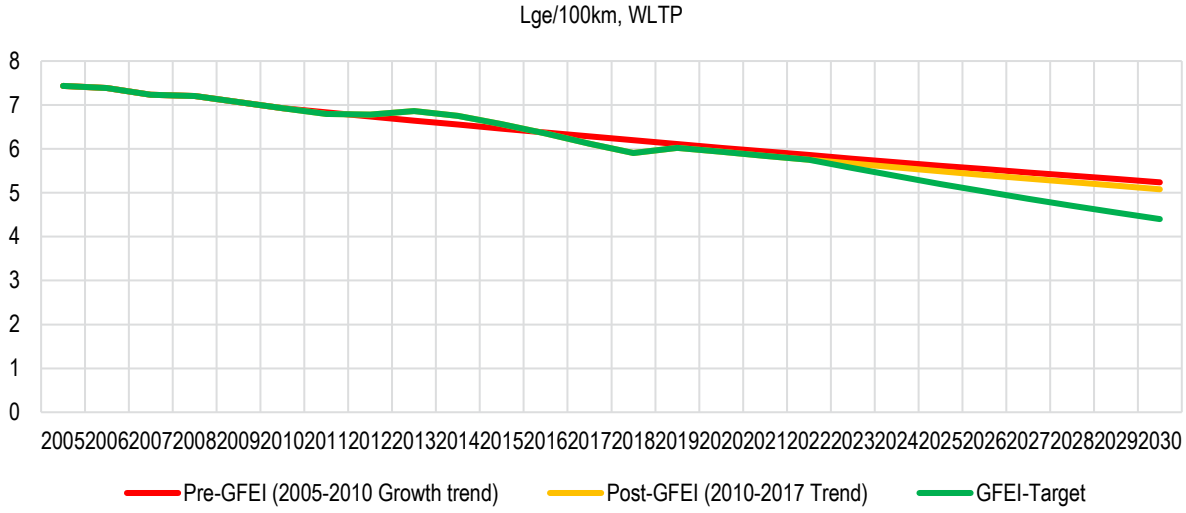
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

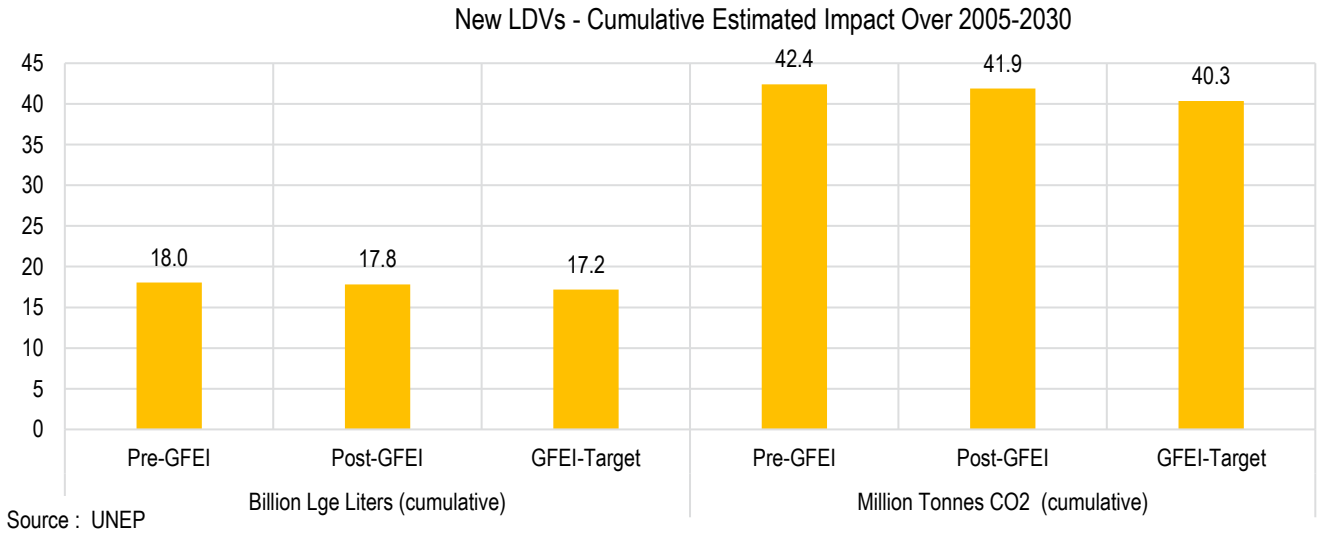
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-1.5%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-2.9%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

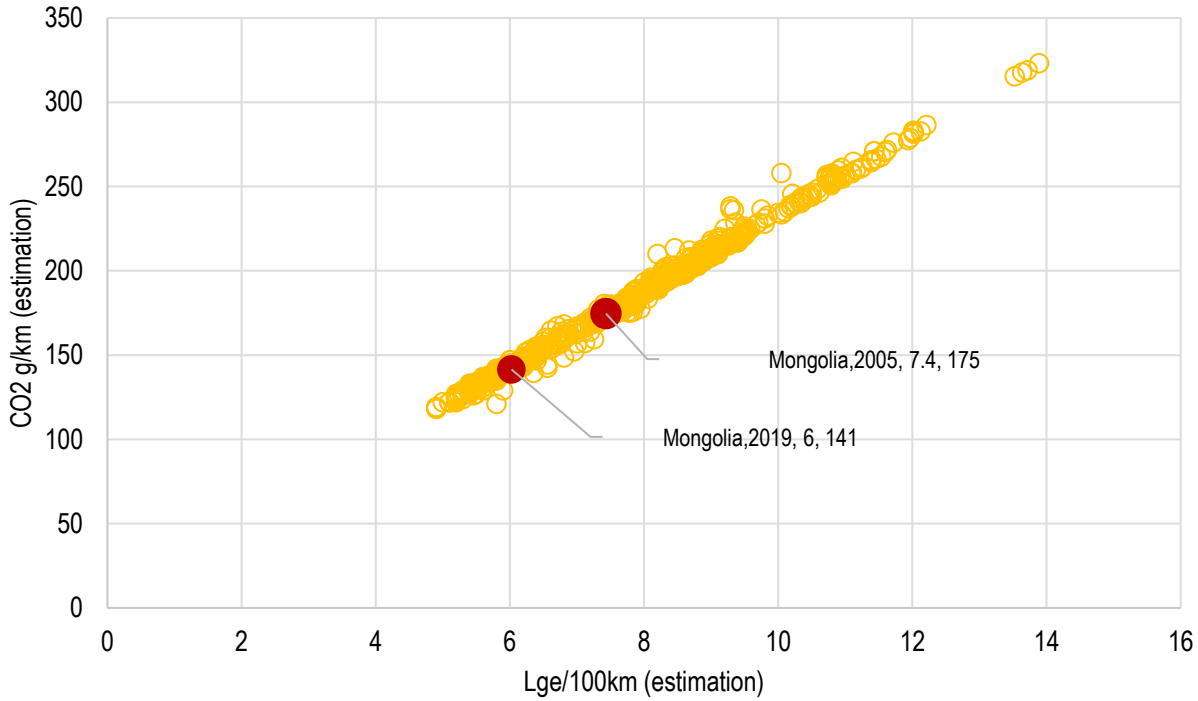
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

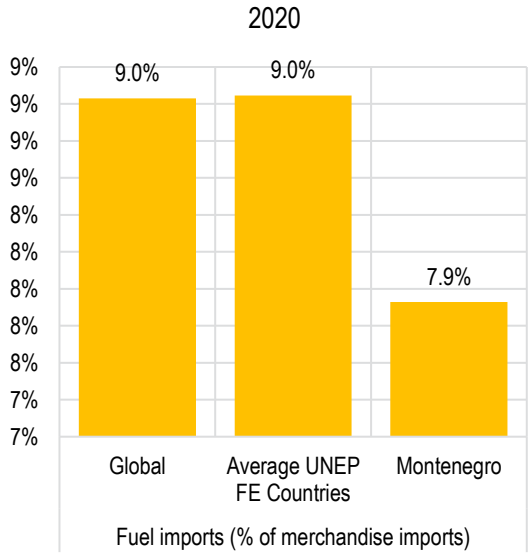
Source : UNEP

The GFEI activities in Mongolia were part of an agreement to support the development of vehicle emissions and fuel quality roadmap for Mongolia supported by the CCAC. The ECO-Asia University in Ulaanbaatar was selected as the implementing partner, and the agreement was signed on 1 September 2017. The vehicle fleet analysis included fuel economy baseline development. On August 2018, UNEP conducted a national stakeholder meeting on their ongoing projects in Mongolia – the health and air pollution assessment study, and this study focusing on the development and adoption of a vehicle emission standards and fuel quality roadmap. Initial results of the fuel economy baseline analysis were presented. It showed Mongolia having up to 92% of all newly registered vehicles as second-hand imports. A follow-up study focusing on the impact of proposed clean and efficient vehicles and fuel-related fiscal policies on the environment and economy is being implemented by ECO-Asia. This follow-up project is supported by the Hewlett Foundation.

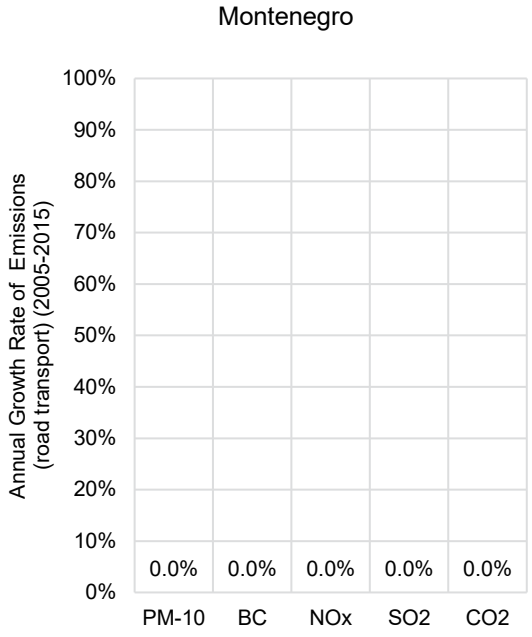
The assessment indicates that if Mongolia implements a fuel economy policy for LDVs with a 2030 GFEI target, it could save 1.1 billion litres of gasoline-equivalent & 2.78 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR MONTENEGRO

		Year	Source
Population (million)	1	2020	7
Income Level Category	Upper middle income		7
GDP per Capita (PPP, Curent USD)	20543	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	17	2020	6
Gasoline Price $/l	1.6	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	28.4	2018	13
Employment (Transport+,000)	18	2019	11
Fuel Economy (Lge/100 km, WLTP) -	6	2014	1
Average CO2 emissions/kilometre (g/km, WLTP) -	152	2014	1
Average displacement (cm3) -	1760	2014	1
Average kerb weight (kg) -	1368	2014	1
Average power (kw) -	81	2014	1
Average Age of newly registered cars (years) -	8	2014	1
Cumulative number of LDVs (total sample size,000) -	38		1
Diesel Share in LDV (sample,%)	83%	2014	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.058	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.341	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	33.3	2019	8
Transport CO2 Emissions per Capita (tonnes) -	0.0	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	0	2019	1
Diesel Sulphur Levels (ppm) -	10	2019	1
Gasoline Sulphur Levels (ppm) -	10	2019	1
Annual rate of economy-wide energy intensity growth	#VALUE!	2000-18	16
Annual rate of transport energy consumption growth	#VALUE!	2000-18	16
LDV Import value (Million USD)	0	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
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7 World Bank
8 UN Statistics Division
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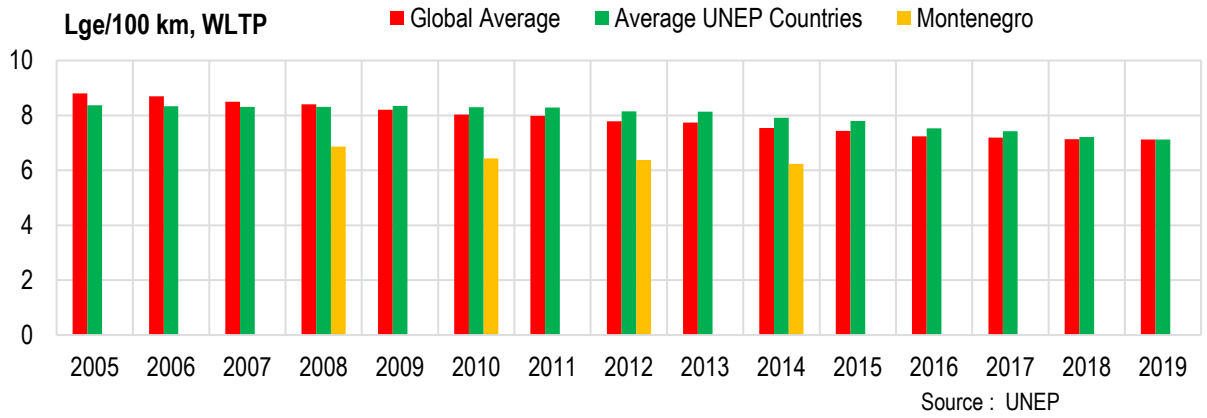
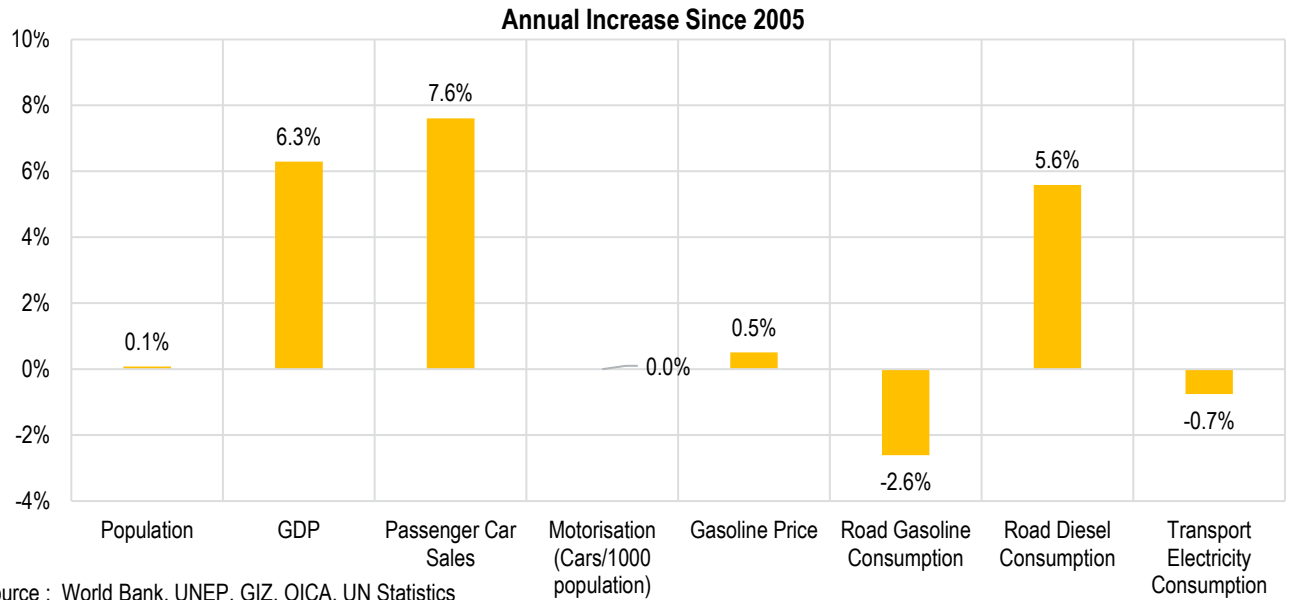
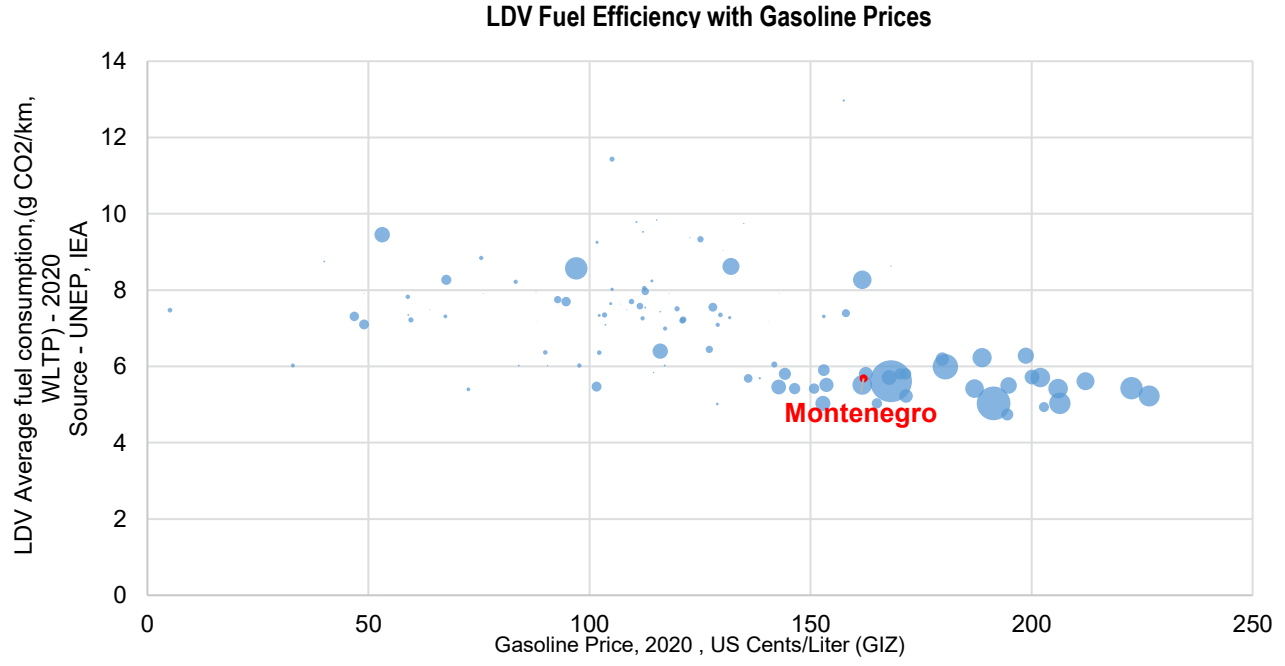
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

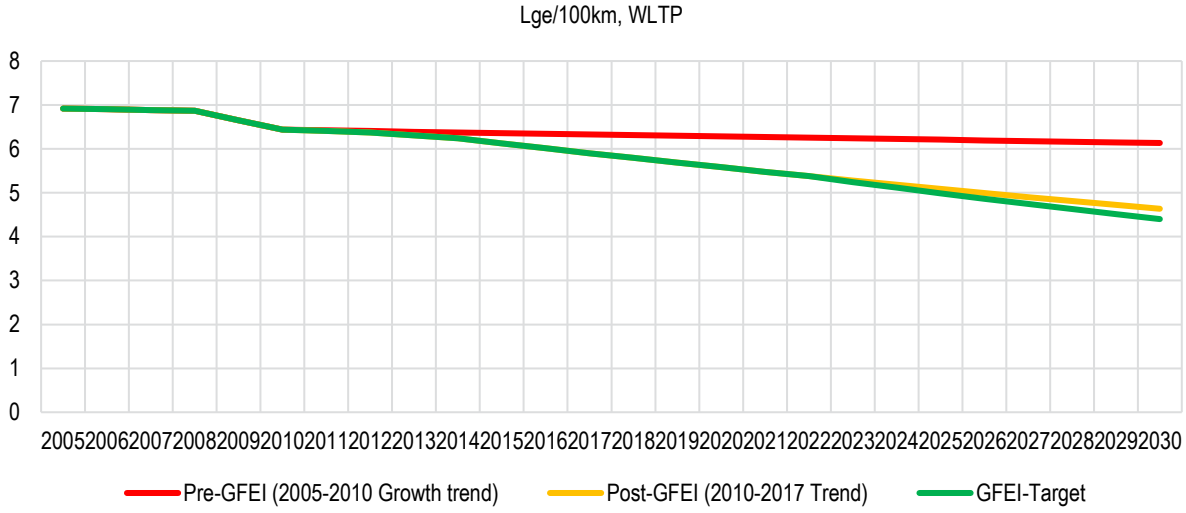
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

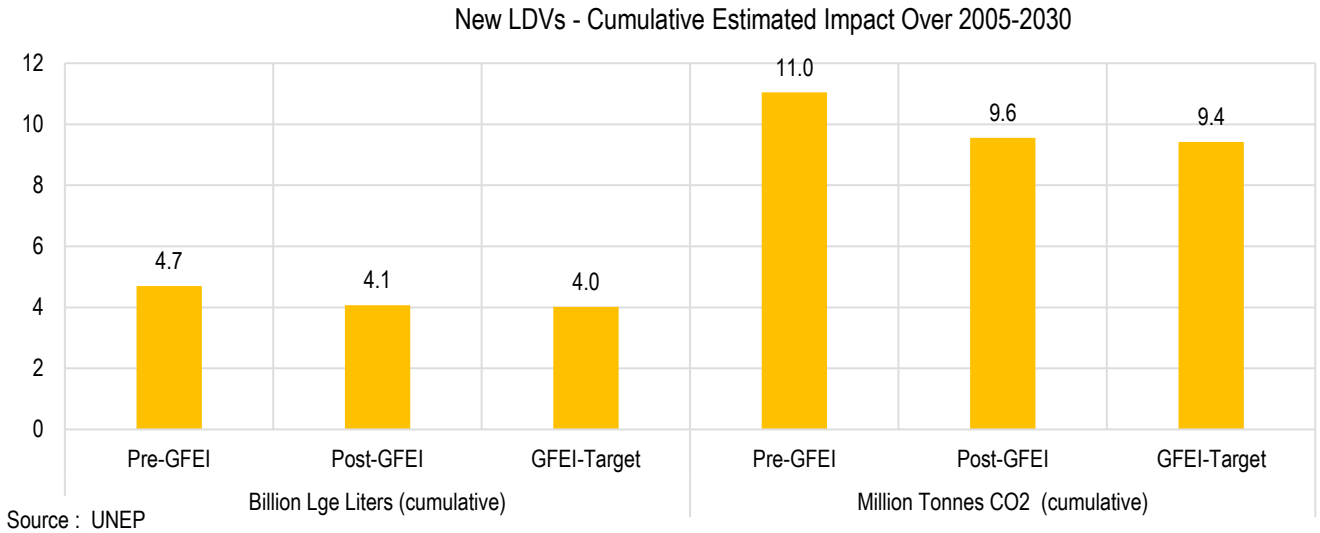
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-1.4%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-2.3%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

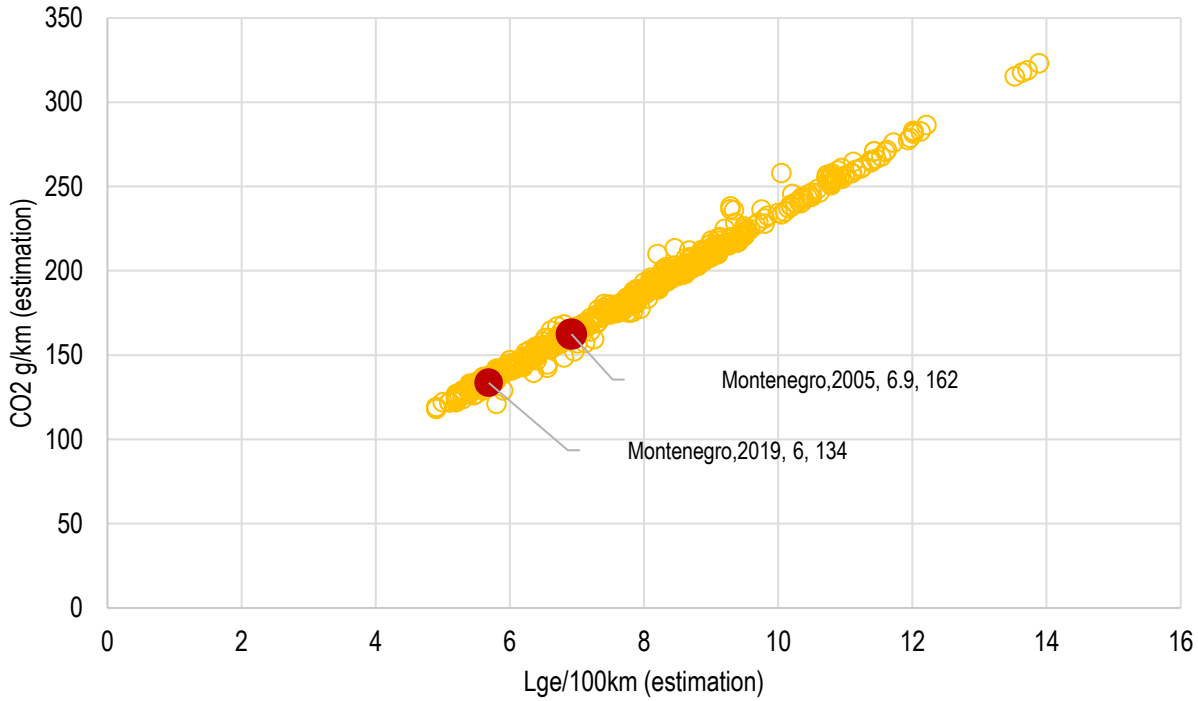
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

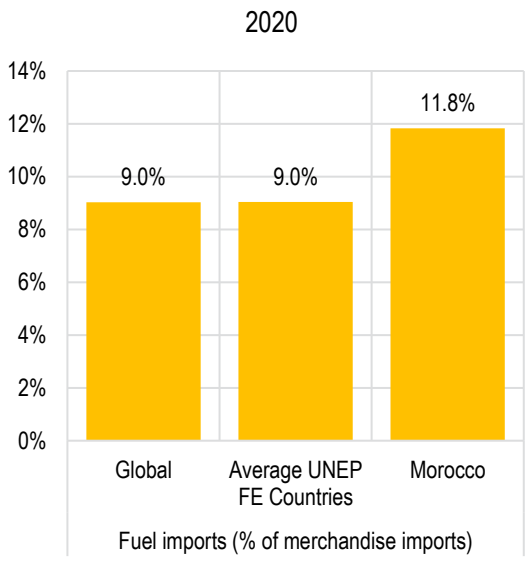
Source : UNEP

The original agreement to conduct initial vehicle fleet analysis and fuel economy baseline was signed in September 2011. The full project proposal for GFEI that supports fuel economy policy development was signed on 22 April 2015. Montenegro has mandated auto fuel economy labelling of new vehicles from Q4 2017. Rulebook no. 40/17 of 27 June 2017 from the Ministry of Sustainable Development and Tourism, with support from our partner - the Regional Environmental Center (REC) Country Office Montenegro - made this policy adoption possible. The labelling is following EU Directive 1999/94/EC on the availability of consumer information on fuel economy and CO2 emissions. Auto importers can use the proposed label design or develop their own label if it is per the Rulebook and EU Directive. The Montenegrin Rulebook no. 40/17 of 27 June 2017 also stipulates the yearly publication of an official Guide on Fuel Economy and Carbon Dioxide Emissions for consumers. The Guide for new passenger vehicles available on the Montenegrin market contains the annual list of models of new passenger vehicles available, fuel type and official data on fuel economy and CO2 emissions for each given model and a list of ten models of new passenger cars with the most economical fuel consumption, ranked according to rising CO2 emissions by fuel type.

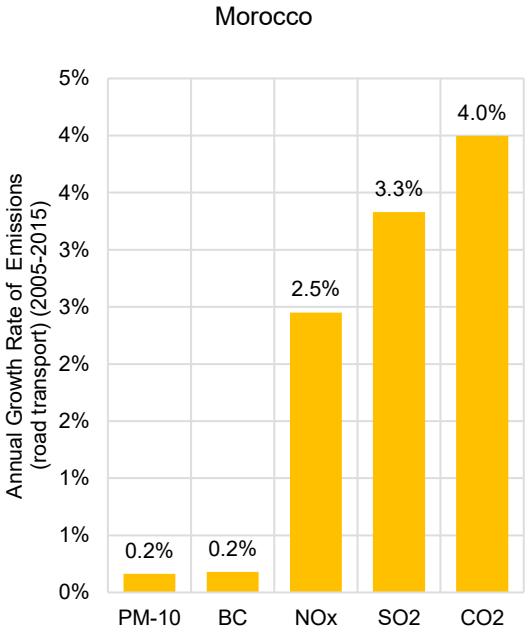
The assessment indicates that if Montenegro implements a fuel economy policy for first-time LDVs with a 2030 GFEI target, it could save 656 million litres of gasoline-equivalent & 1.5 million tonnes of CO2 cumulative from newly registered LDVs. Official estimates indicate that introduction of low-carbon vehicles could lead to 9000 tonnes by 2030.

LDV FUEL ECONOMY COUNTRY REPORT FOR MOROCCO

		Year	Source
Population (million)	37	2020	7
Income Level Category	Lower middle income		7
GDP per Capita (PPP, Curent USD)	7486	2020	7
Motorisation (Cars/1000 population)	74	2020	10
Car Sales (000)	117	2020	6
Gasoline Price $/l	1.3	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	4.9	2018	13
Employment (Transport+,000)	577	2019	11
Fuel Economy (Lge/100 km, WLTP) -	6	2013	1
Average CO2 emissions/kilometre (g/km, WLTP) -	134	2013	1
Average displacement (cm3) -	1525	2013	1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -	221		1
Diesel Share in LDV (sample,%)	86%	2013	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.020	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.140	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	10.5	2019	8
Transport CO2 Emissions per Capita (tonnes) -	2.0	2019	14
Road Transport PM Emissions per Capita (grams) -	154.2	2015	14
Road Transport NOx Emissions per Capita (grams)-	2869.8	2015	14
Road Transport BC Emissions per Capita (grams)-	77.0	2015	14
LDV Emission Standards -	0	2019	1
Diesel Sulphur Levels (ppm) -	0	2019	1
Gasoline Sulphur Levels (ppm) -	0	2019	1
Annual rate of economy-wide energy intensity growth	-0.7%	2000-18	16
Annual rate of transport energy consumption growth	3.3%	2000-18	16
LDV Import value (Million USD)	0	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
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4 International Energy Agency
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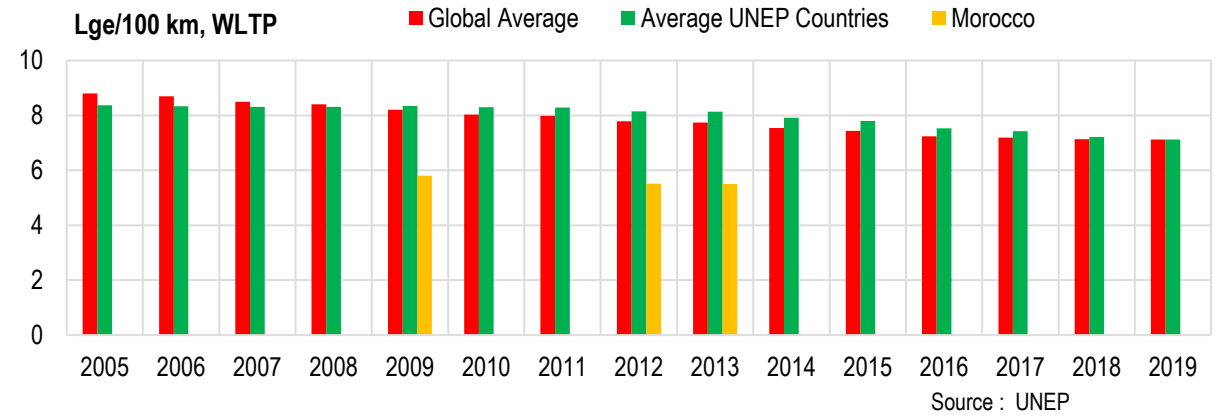
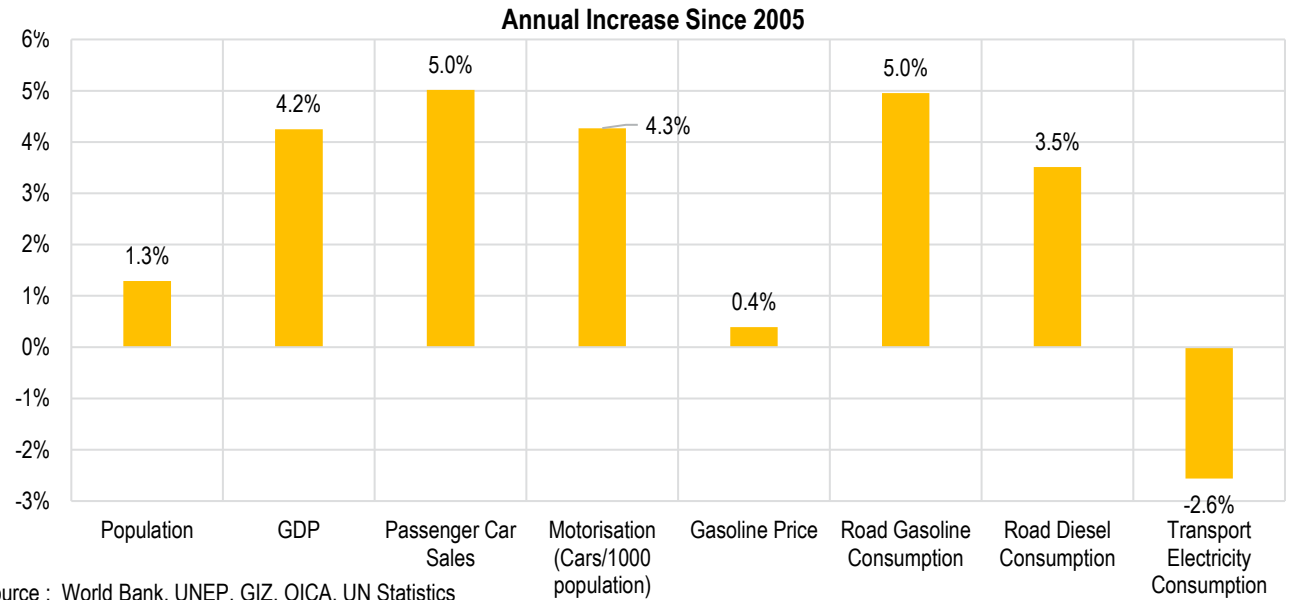
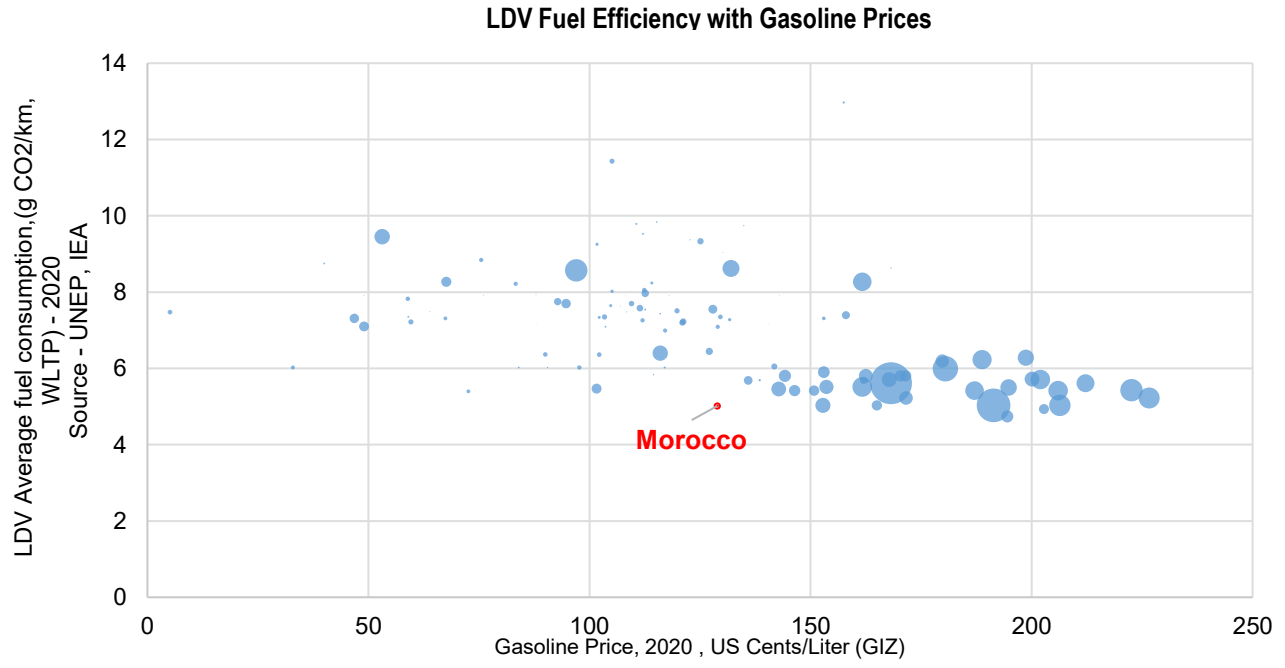
FUEL ECONOMY TRENDS





Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

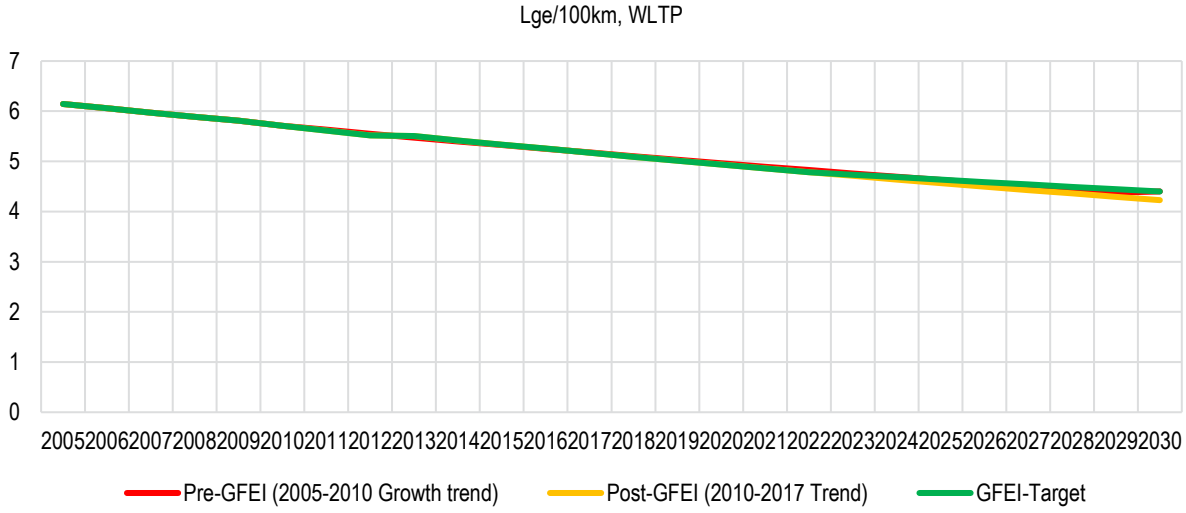
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

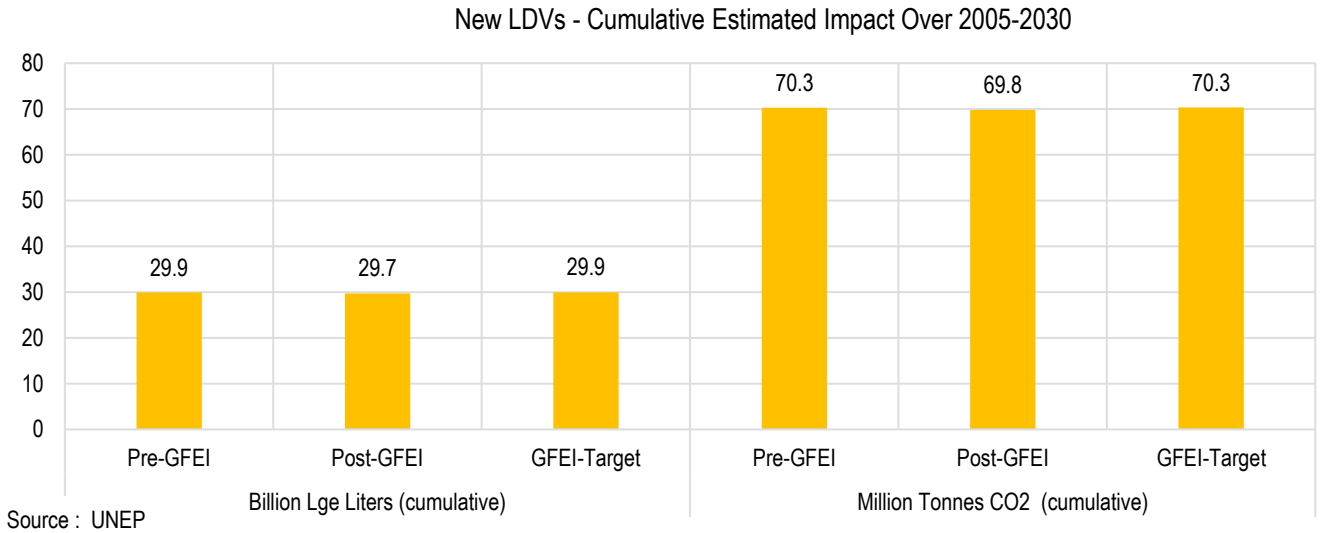
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-1.4%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-1.1%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

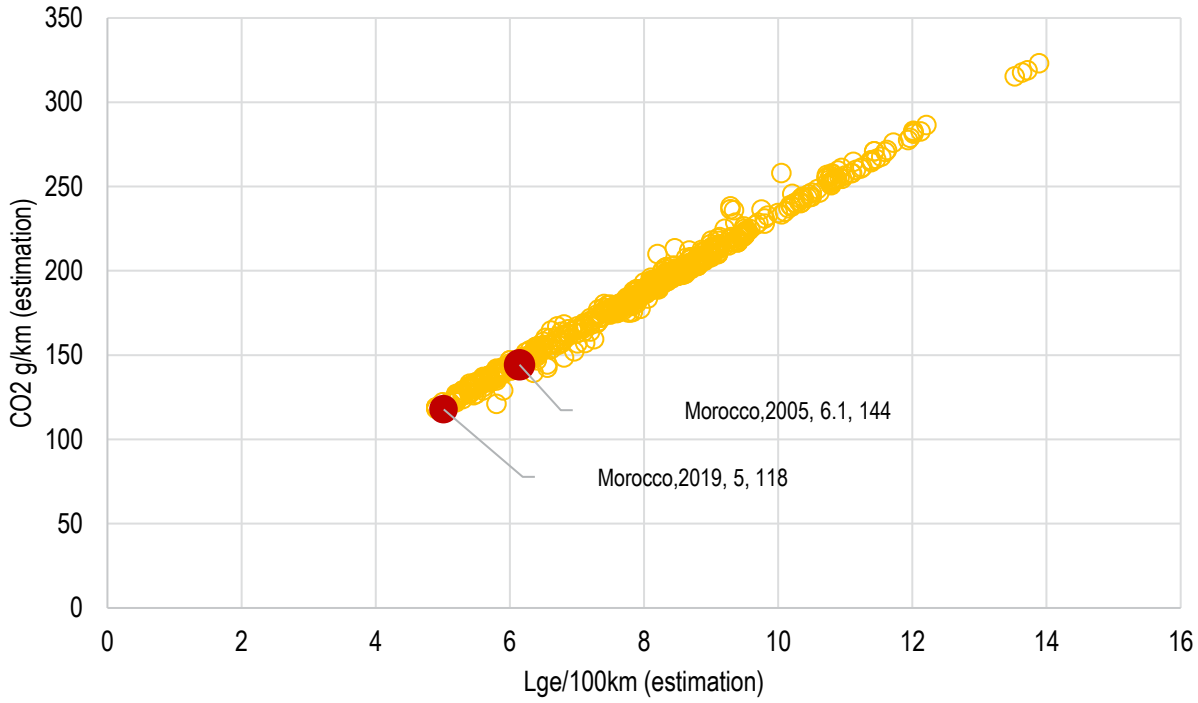
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

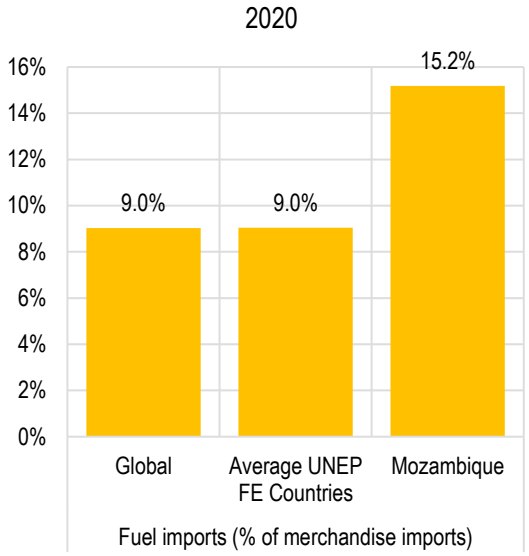
Source : UNEP

Road transport is by far the main mode of transportation, and the vehicle fleet more than doubled from 1.6 million vehicles in 2000 to 3.4 million in 2014. The majority of vehicles in Morocco run on diesel fuels, with diesel vehicles representing about 61% of the vehicle fleet in 2011. Morocco's nationally determined contribution to the Paris Agreement proposes an energy reduction target of 12 % by 2020 and 15 % by 2030 in buildings, industry and transport sector.

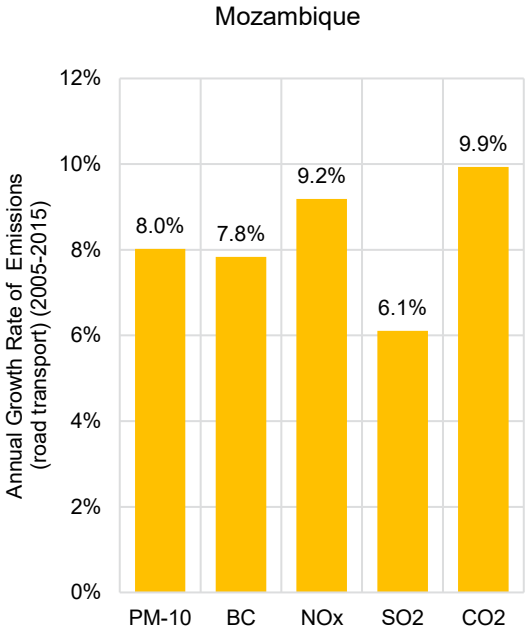
The assessment indicates that if Morocco implements a fuel economy policy for first-time LDVs with a 2030 GFEI target, it could save 2.3 billion litres of gasoline-equivalent & 5.6 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR MOZAMBIQUE

		Year	Source
Population (million)	31	2020	7
Income Level Category	Low income		7
GDP per Capita (PPP, Curent USD)	1297	2020	7
Motorisation (Cars/1000 population)	11	2020	10
Car Sales (000)	10	2020	6
Gasoline Price $/l	1.1	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	6.2	2018	13
Employment (Transport+,000)	223	2019	11
Fuel Economy (Lge/100 km, WLTP) -	8	2018	1
Average CO2 emissions/kilometre (g/km, WLTP) -	190	2018	1
Average displacement (cm3) -			1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -	72		1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.010	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.026	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	12.3	2019	8
Transport CO2 Emissions per Capita (tonnes) -	0.3	2019	14
Road Transport PM Emissions per Capita (grams) -	45.8	2015	14
Road Transport NOx Emissions per Capita (grams)-	880.6	2015	14
Road Transport BC Emissions per Capita (grams)-	22.2	2015	14
LDV Emission Standards -	0	2019	1
Diesel Sulphur Levels (ppm) -	50	2019	1
Gasoline Sulphur Levels (ppm) -	0	2019	1
Annual rate of economy-wide energy intensity growth	-4.6%	2000-18	16
Annual rate of transport energy consumption growth	8.1%	2000-18	16
LDV Import value (Million USD)	0	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

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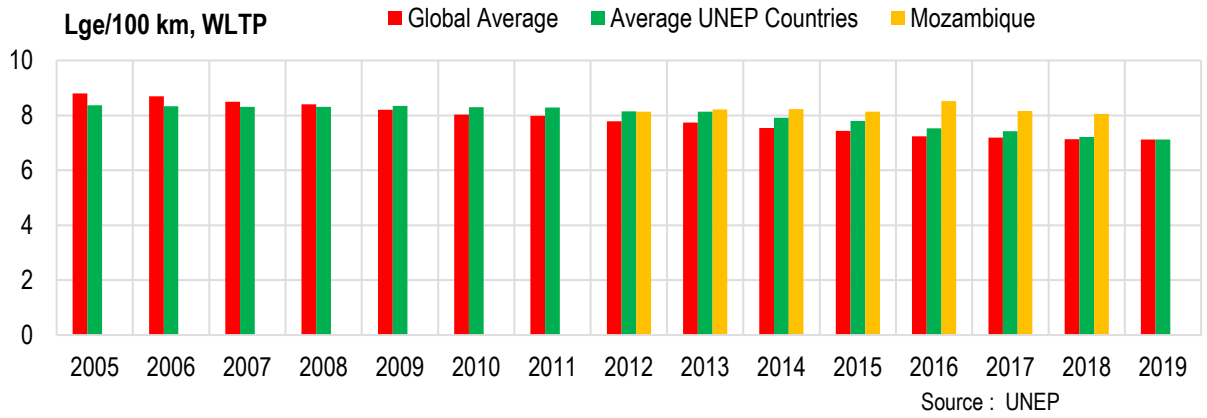
FUEL ECONOMY TRENDS



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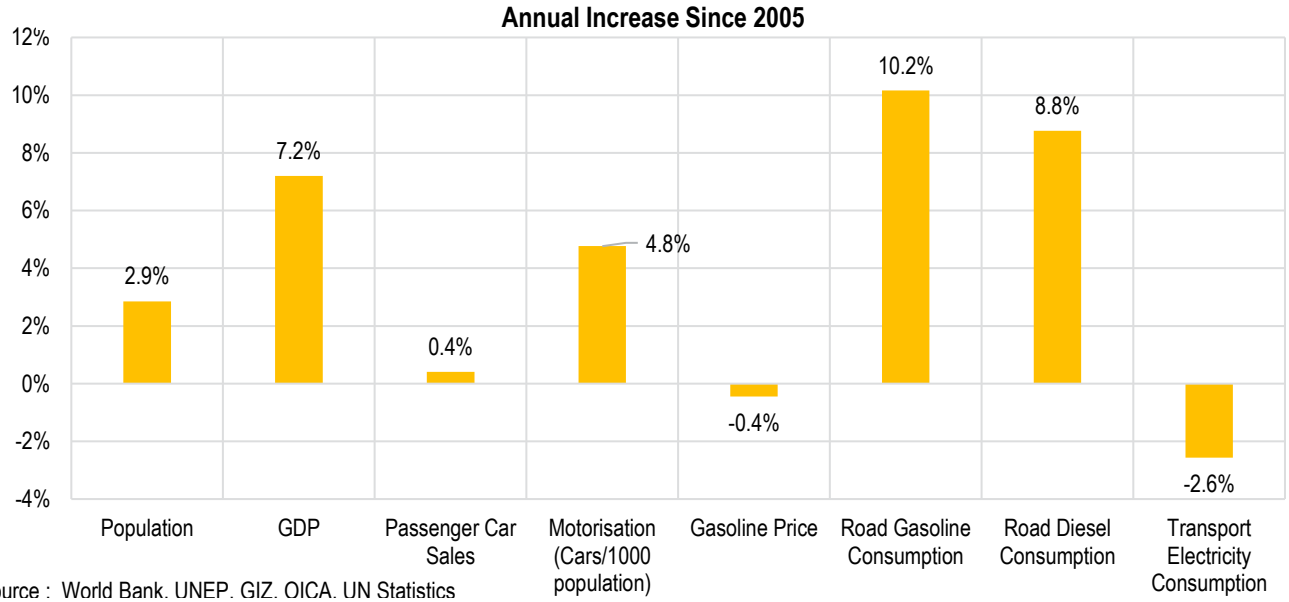

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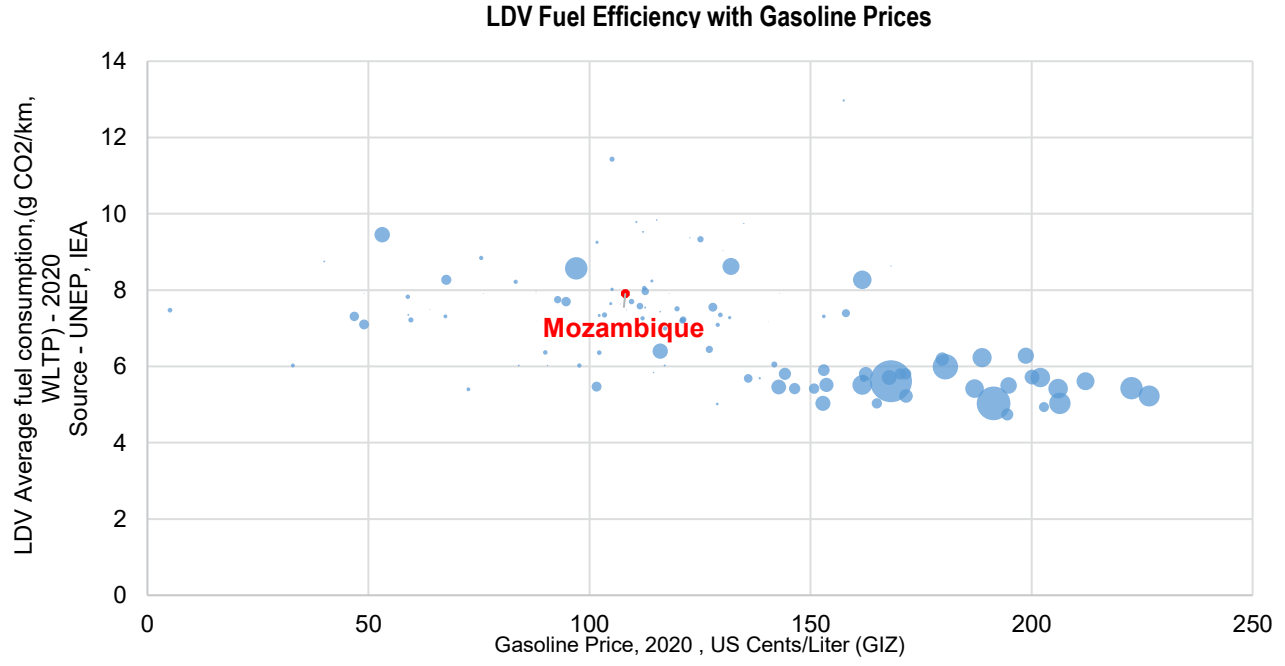


Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

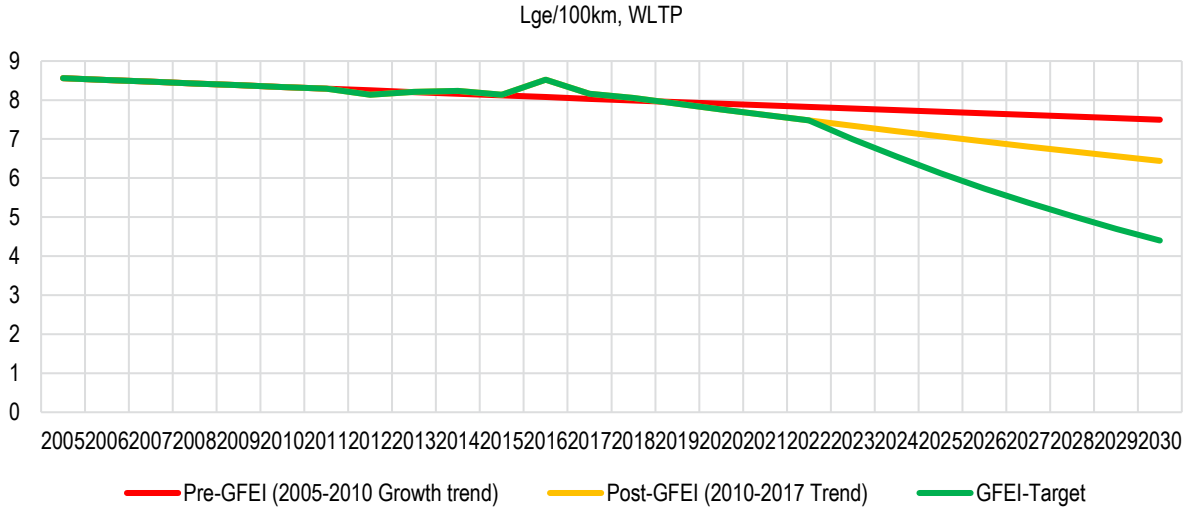
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

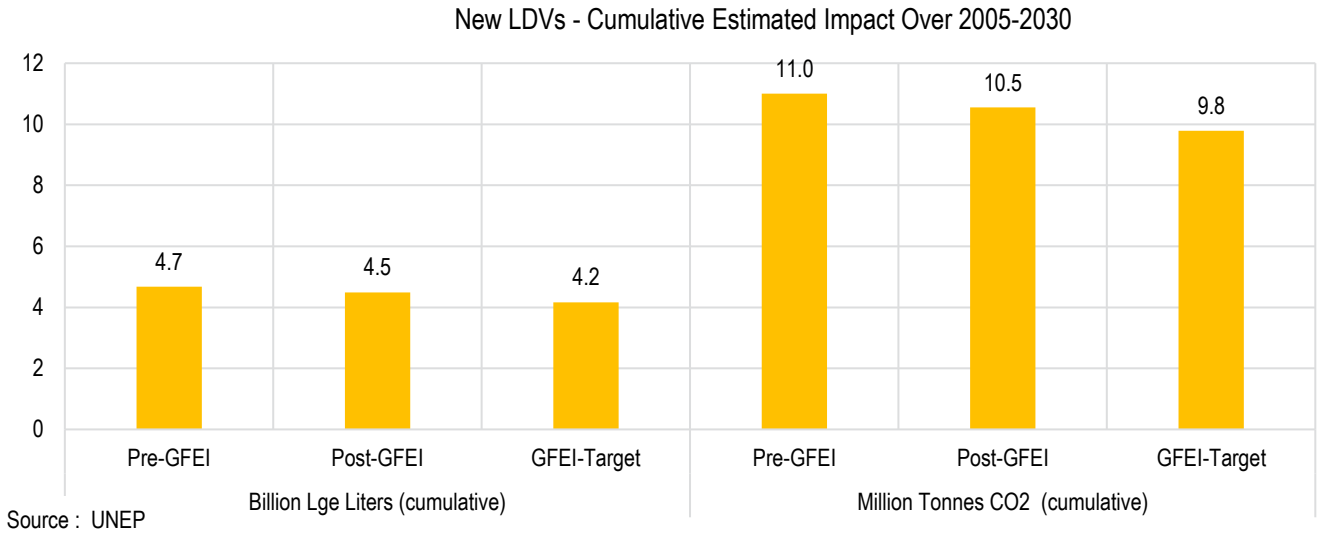
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-0.7%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-5.5%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

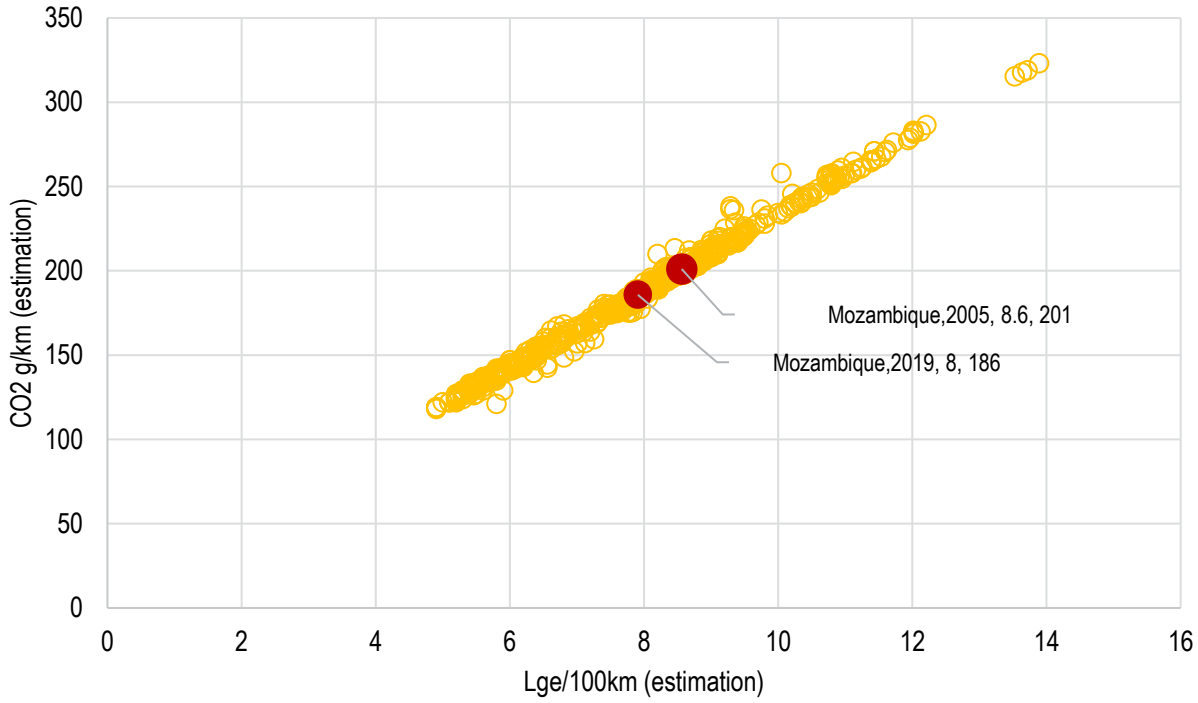
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

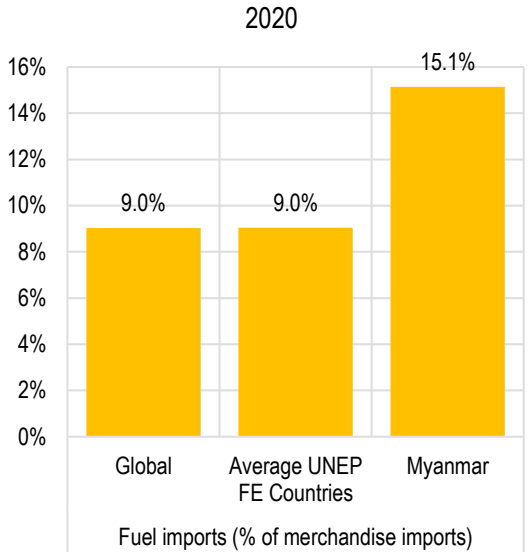
Source : UNEP

The Ministry of Mineral Resources and Energy (MIREME) and UNEP signed an agreement on 13 February 2018 to support the promotion of automotive fuel economy and electric mobility in Mozambique including the development of vehicle emission standards. The Ministry led the fuel economy vehicle inventory and baseline development, and the preparation of the vehicle emission standards for Mozambique. A national stakeholder workshop was held on 3-4 September 2018 in Mozambique to discuss fuel economy trends and consider policy options. The workshop aimed to review the fuel economy baseline and trends analysis. The fuel economy baseline shows that the average age of the national vehicle fleet was 13-15 years, with 70-80% of the vehicles registered in the capital, Maputo. On 7 November 2019, a national workshop was held to discuss the national draft electric mobility strategy which had been developed by Eduardo Mondlane University (UEM). Participants recommended that a legal framework for electric mobility that includes policies and procedures to govern the introduction of electric mobility. A pilot project in Maputo city would then complement the strategy.

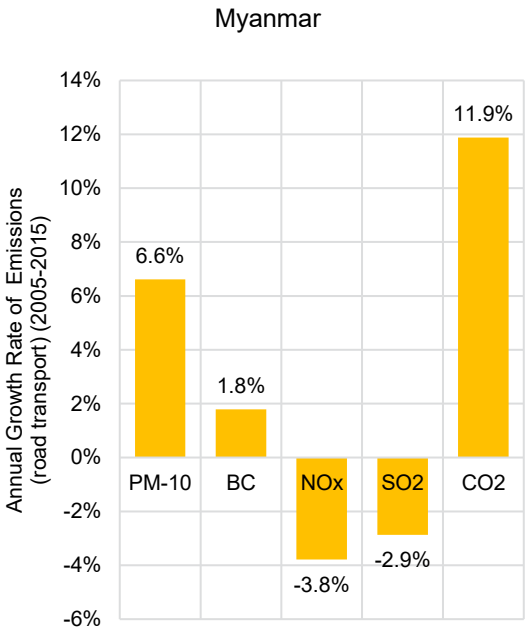
The assessment indicates that if Mozambique implements a fuel economy policy for LDVs with a 2030 GFEI target, it could save 365 million litres of gasoline-equivalent & 0.86 million tonnes of CO2 cumulative from newly registered LDVs. Gilberto Mahumane et al. has estimated using LEAP modelling that the demand for fuel transport is expected to increase by more than 2.5 times between 2015 and 2030. Among all sectors, the most significant potential for carbon emissions reduction is in the transport sector.

LDV FUEL ECONOMY COUNTRY REPORT FOR MYANMAR

		Year	Source
Population (million)	54	2020	7
Income Level Category	Lower middle income		7
GDP per Capita (PPP, Curent USD)	5122	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	6	2020	6
Gasoline Price $/l	0.6	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	4.2	2018	13
Employment (Transport+,000)	1280	2019	11
Fuel Economy (Lge/100 km, WLTP) -	8	2017	1
Average CO2 emissions/kilometre (g/km, WLTP) -	179	2017	1
Average displacement (cm3) -	1568	2017	1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	7	2017	1
Cumulative number of LDVs (total sample size,000) -	8		1
Diesel Share in LDV (sample,%)	25%	2017	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.022	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.010	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	7.1	2019	8
Transport CO2 Emissions per Capita (tonnes) -	0.9	2019	14
Road Transport PM Emissions per Capita (grams) -	95.2	2015	14
Road Transport NOx Emissions per Capita (grams)-	419.8	2015	14
Road Transport BC Emissions per Capita (grams)-	29.0	2015	14
LDV Emission Standards -	no policy	2019	1
Diesel Sulphur Levels (ppm) -	2000	2019	1
Gasoline Sulphur Levels (ppm) -	0	2019	1
Annual rate of economy-wide energy intensity growth	-5.7%	2000-18	16
Annual rate of transport energy consumption growth	3.4%	2000-18	16
LDV Import value (Million USD)	0	2020	3



Source : World Bank

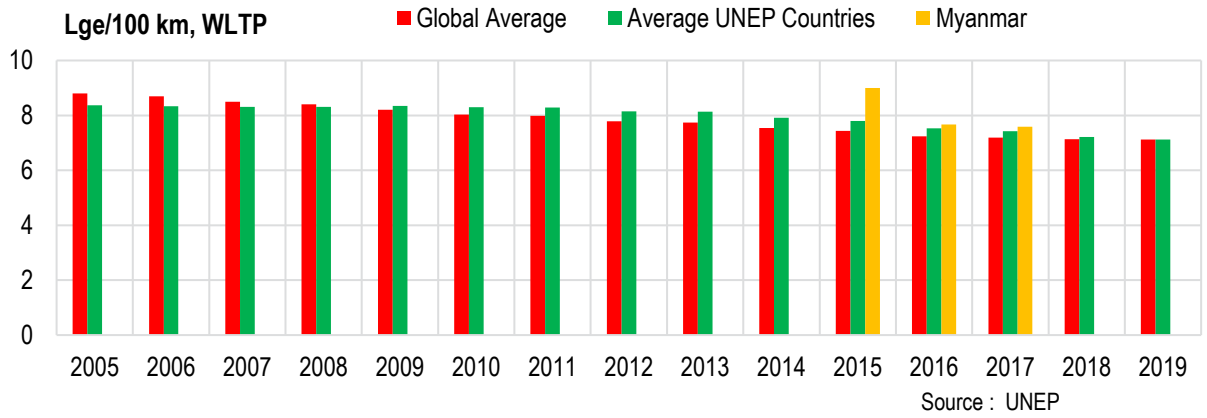


Source : IIASA

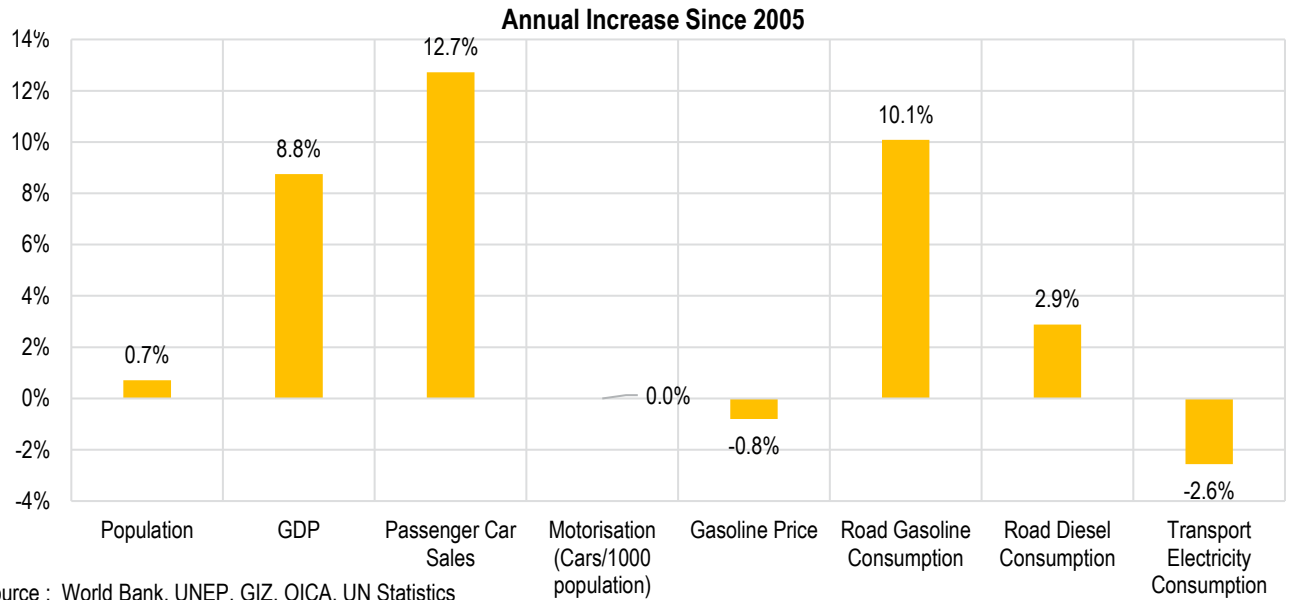
Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
7 World Bank
8 UN Statistics Division
9 SLOCAT &GIZ
10 Estimated using growth and sales data
11 Employment is for Transport; storage and communication, ILO
12 International Transport Forum
13 Koks, E.E. et al. A global multi-hazard risk analysis of road
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

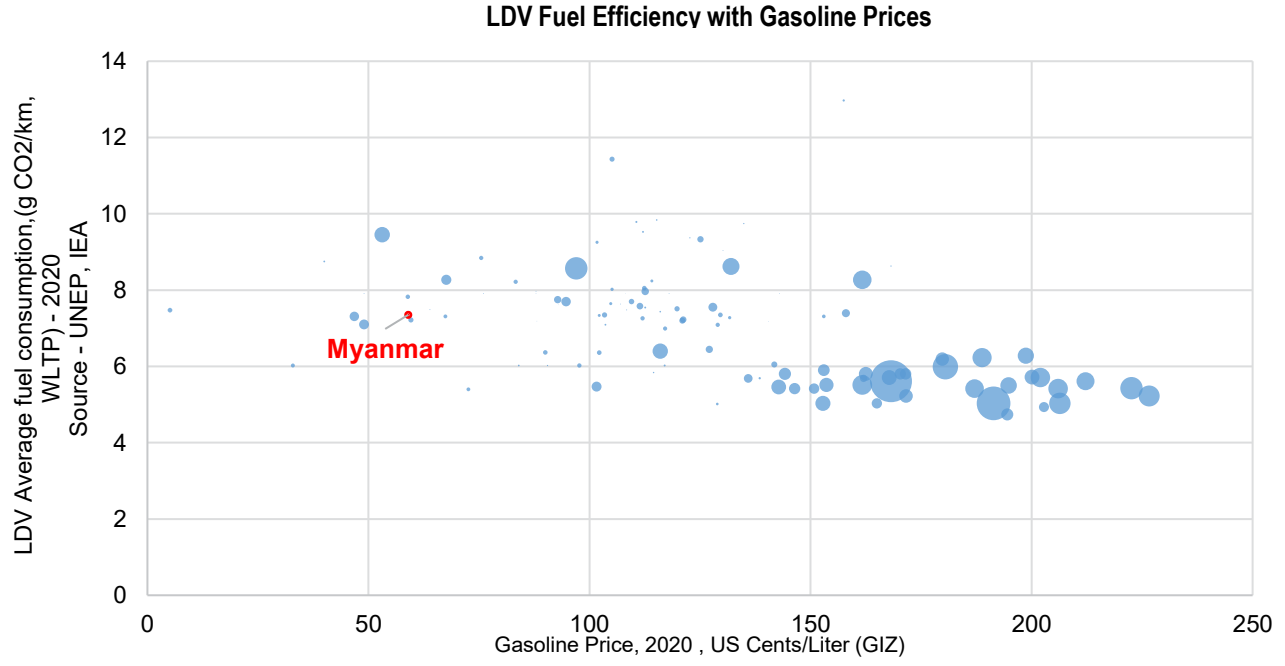
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

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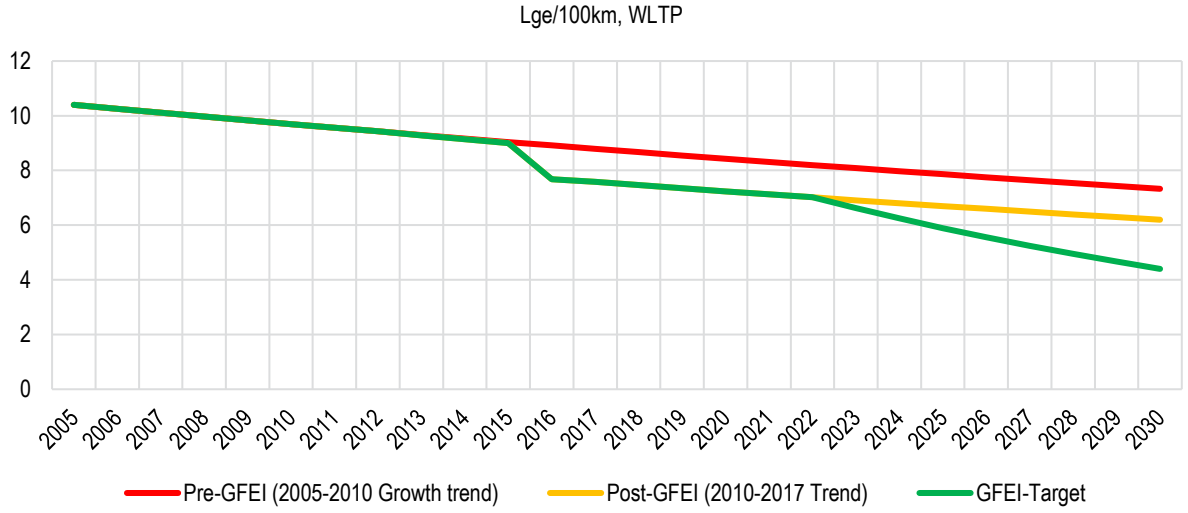
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-2.9%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-4.9%**



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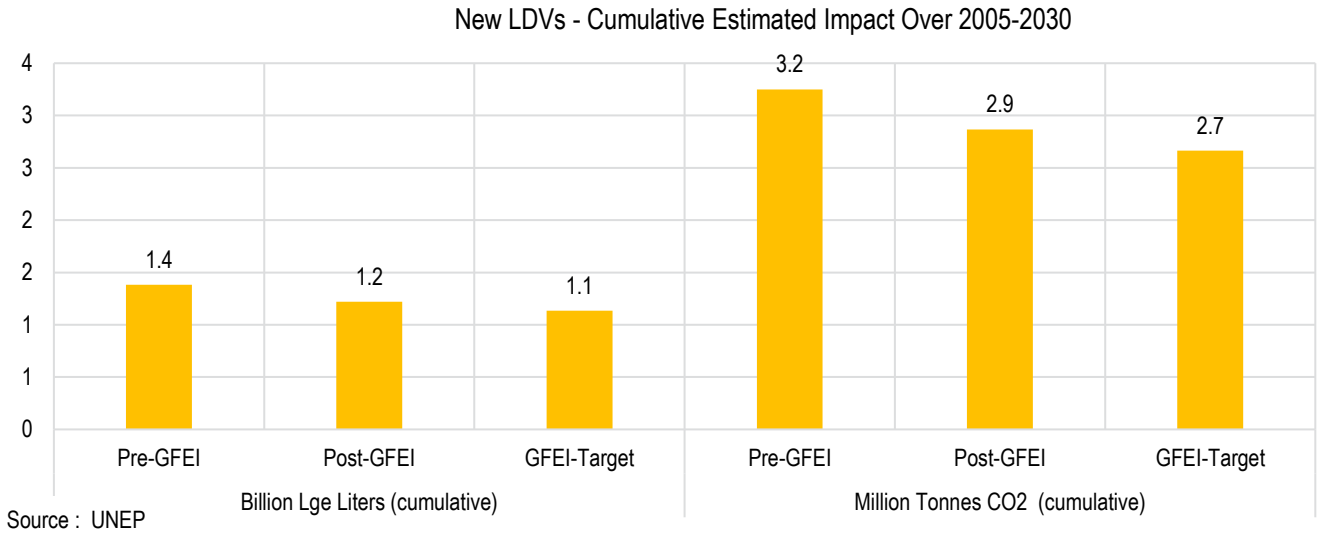


Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

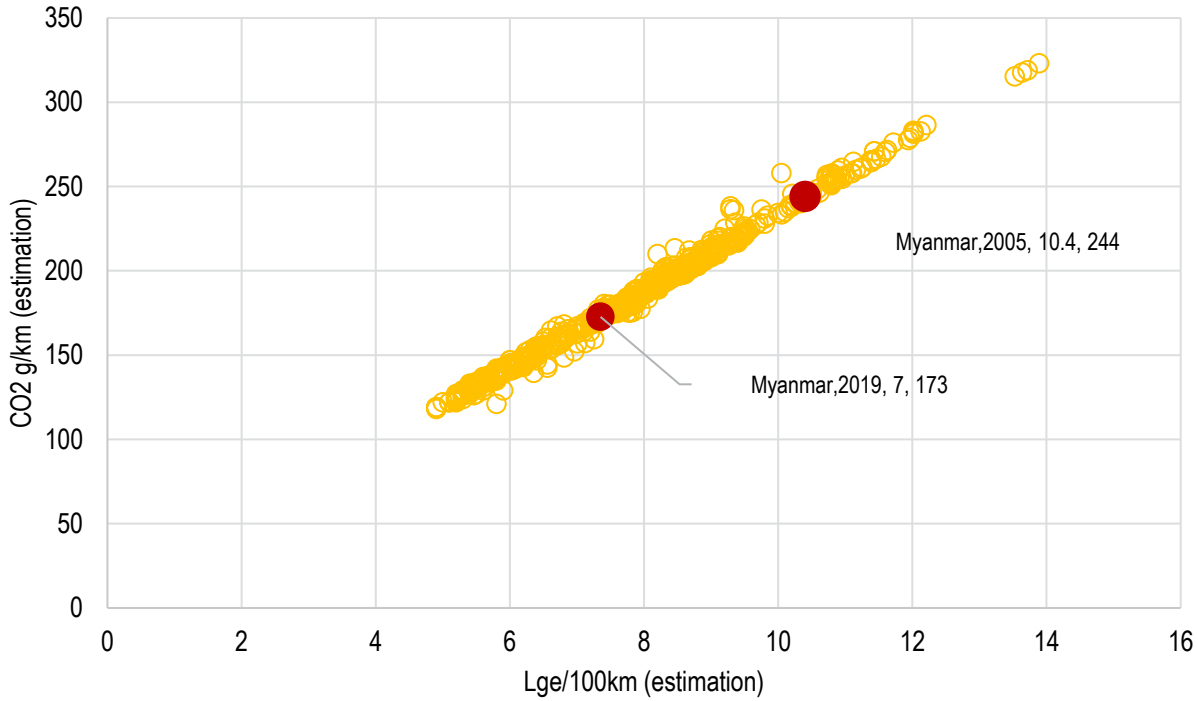
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

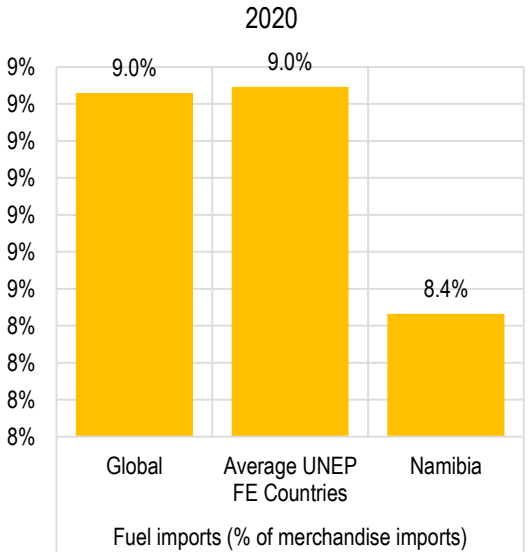
The activities in Myanmar are part of the agreement signed with Clean Air Asia on 27 July 2016 to support Asian countries in fuel economy policy development. The Ministry of Industry was identified as the focal point for this project. A national workshop on developing fuel economy baseline and policies was organised in Naypyidaw, Myanmar on 19 September 2017 to explain what fuel economy is about and to convene relevant stakeholders in the country. UNEP is also supporting Myanmar in developing their vehicle emission standards and fuel quality roadmap, together with Clean Air Asia. A workshop on developing the vehicle emission standards and fuel quality roadmap in Myanmar was organised on 19-20 September 2019.

Myanmar has endorsed the ASEAN Fuel Economy Roadmap for Transport Sector 2018 – 2025: with Focus on Light-Duty Vehicles. The roadmap sets six aspirational goals for ASEAN. The headline goal is an aspirational target to reduce the average fuel consumption of new light-duty vehicles sold in ASEAN by 26% between 2015 and 2025, which leads to an improvement in average fuel economy to around 5.3 LGe/100km by 2025, from an estimated 7.2 LGe/100km in 2015. This improvement leads to about 17% reduction in annual LDVs CO2 emissions by 2030.

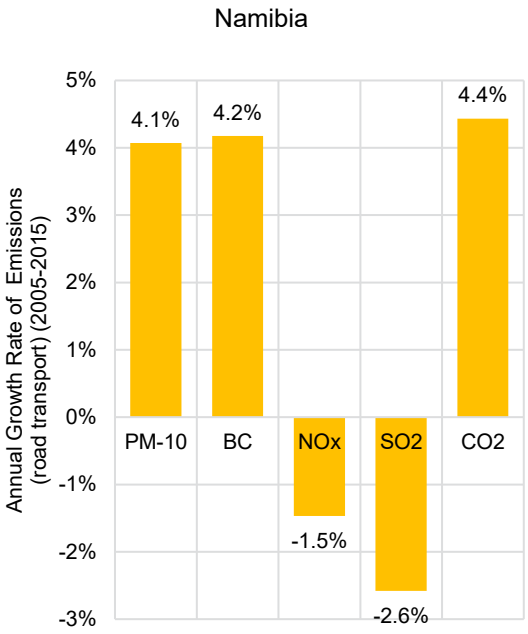
The assessment indicates that if Myanmar implements a fuel economy policy for first-time registered LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 570 million litres of gasoline-equivalent & 1.34 million tonnes of CO2 cumulative from newly registered LDVs. Estimates by ADB suggest that LDV carbon emissions could increase from 1.5 Mt in 2012 to 4.6 Mt in 2030. With low carbon transport policies, the LDV emissions could be reduced to 4Mt by 2030.

LDV FUEL ECONOMY COUNTRY REPORT FOR NAMIBIA

		Year	Source
Population (million)	3	2020	7
Income Level Category	Upper middle income		7
GDP per Capita (PPP, Curent USD)	9295	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	9	2020	6
Gasoline Price $/l	1.1	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	28.5	2018	13
Employment (Transport+,000)	33	2019	11
Fuel Economy (Lge/100 km, WLTP) -	8	2017	1
Average CO2 emissions/kilometre (g/km, WLTP) -	196	2017	1
Average displacement (cm3) -			1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -	53		1
Diesel Share in LDV (sample,%)	25%	2005	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.121	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.118	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	151.8	2019	8
Transport CO2 Emissions per Capita (tonnes) -	1.8	2019	14
Road Transport PM Emissions per Capita (grams) -	180.4	2015	14
Road Transport NOx Emissions per Capita (grams)-	4298.5	2015	14
Road Transport BC Emissions per Capita (grams)-	88.4	2015	14
LDV Emission Standards -	0	2019	1
Diesel Sulphur Levels (ppm) -	500	2019	1
Gasoline Sulphur Levels (ppm) -	500	2019	1
Annual rate of economy-wide energy intensity growth	-0.2%	2000-18	16
Annual rate of transport energy consumption growth	3.4%	2000-18	16
LDV Import value (Million USD)	0	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
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15 Fuel imports (% of merchandise imports) data is from World Bank
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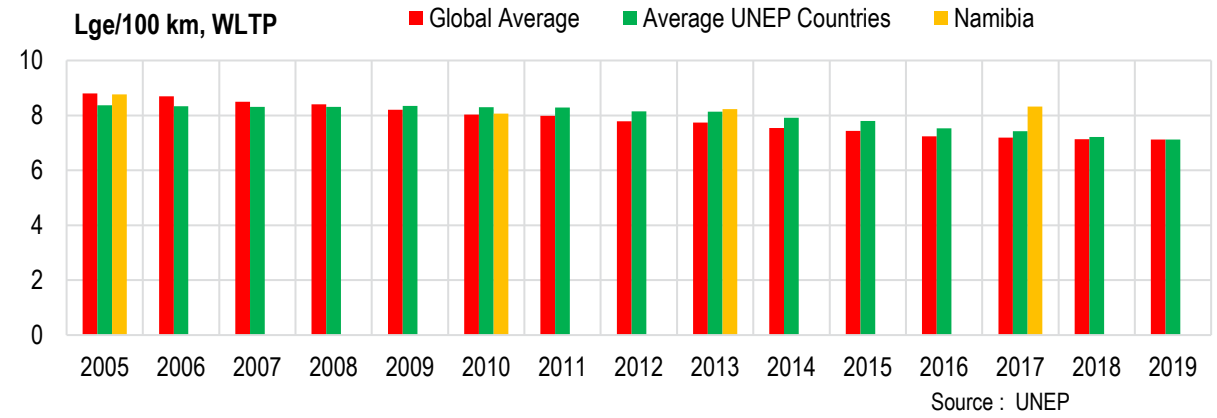
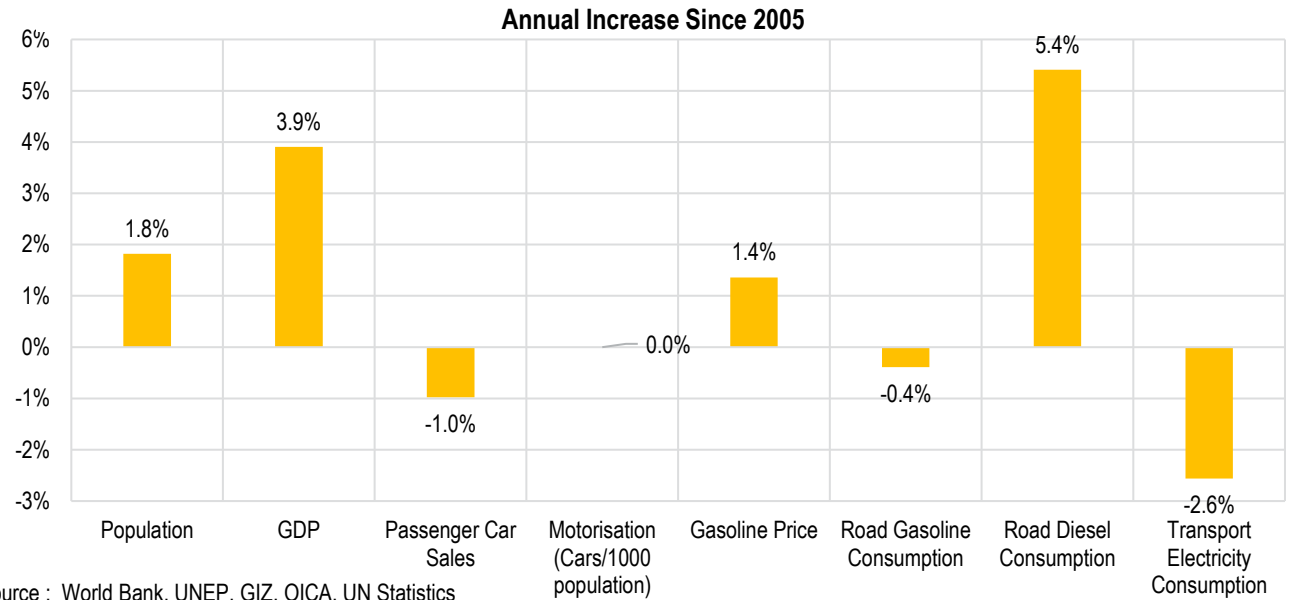
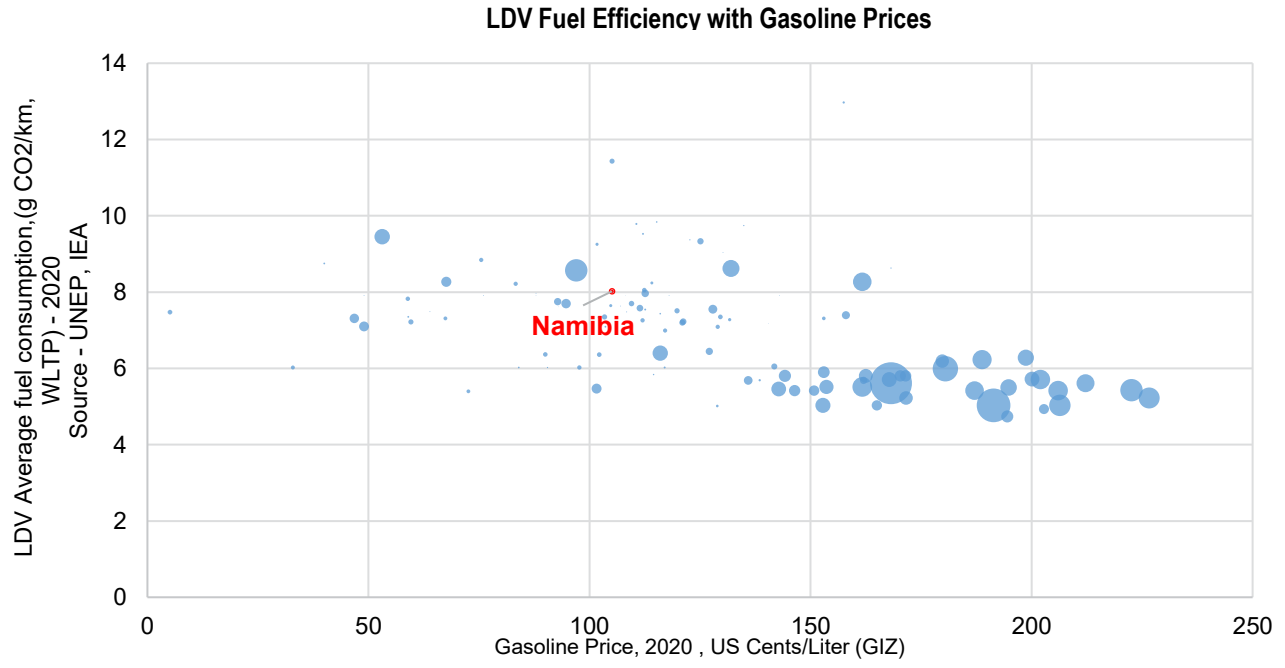
FUEL ECONOMY TRENDS





Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

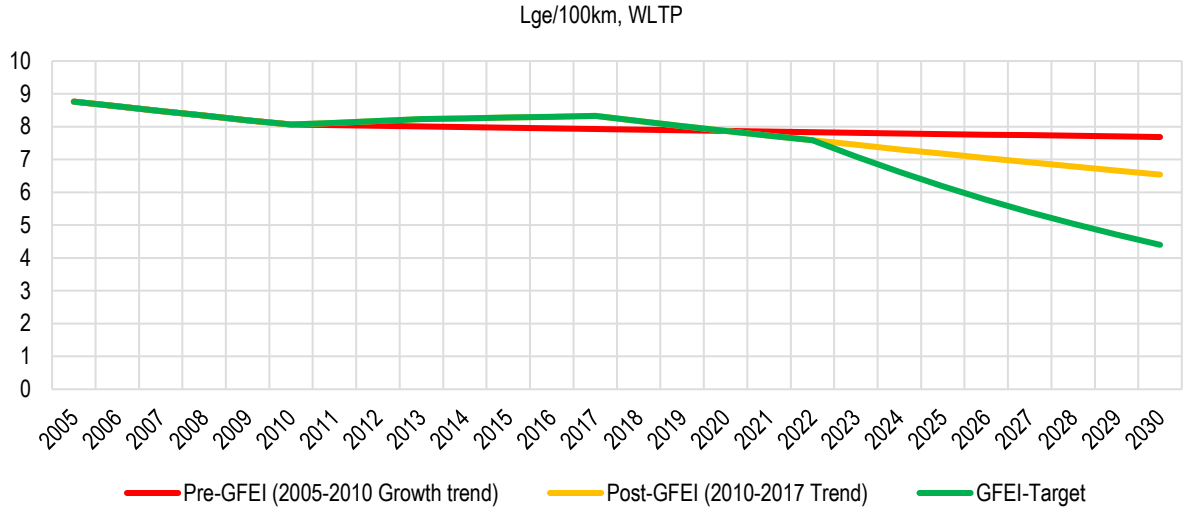
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

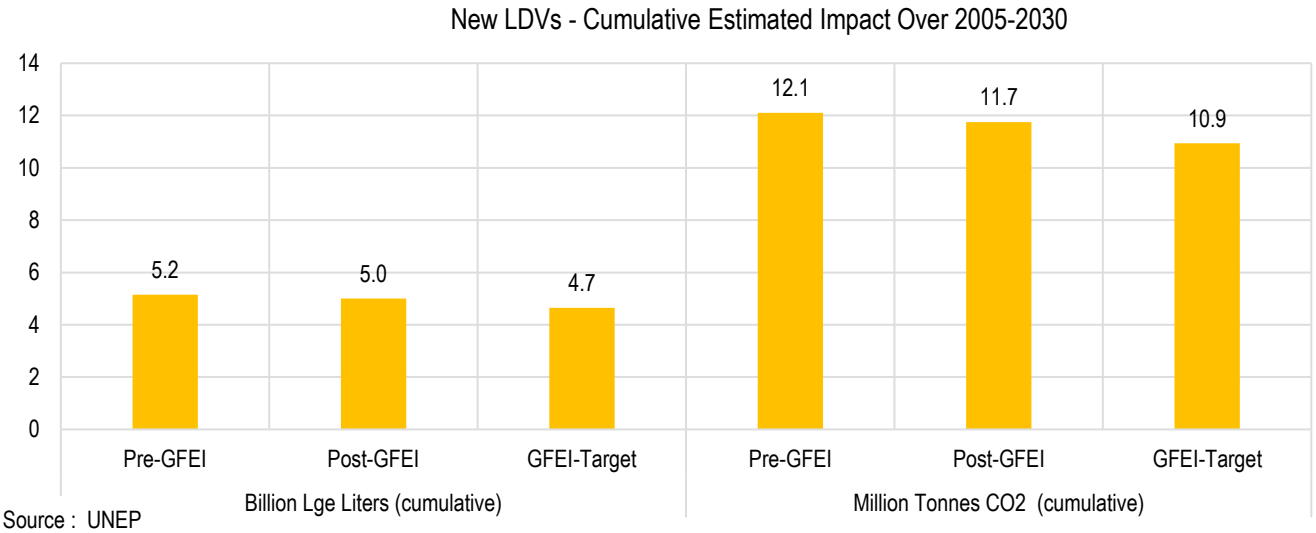
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-0.2%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-5.7%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

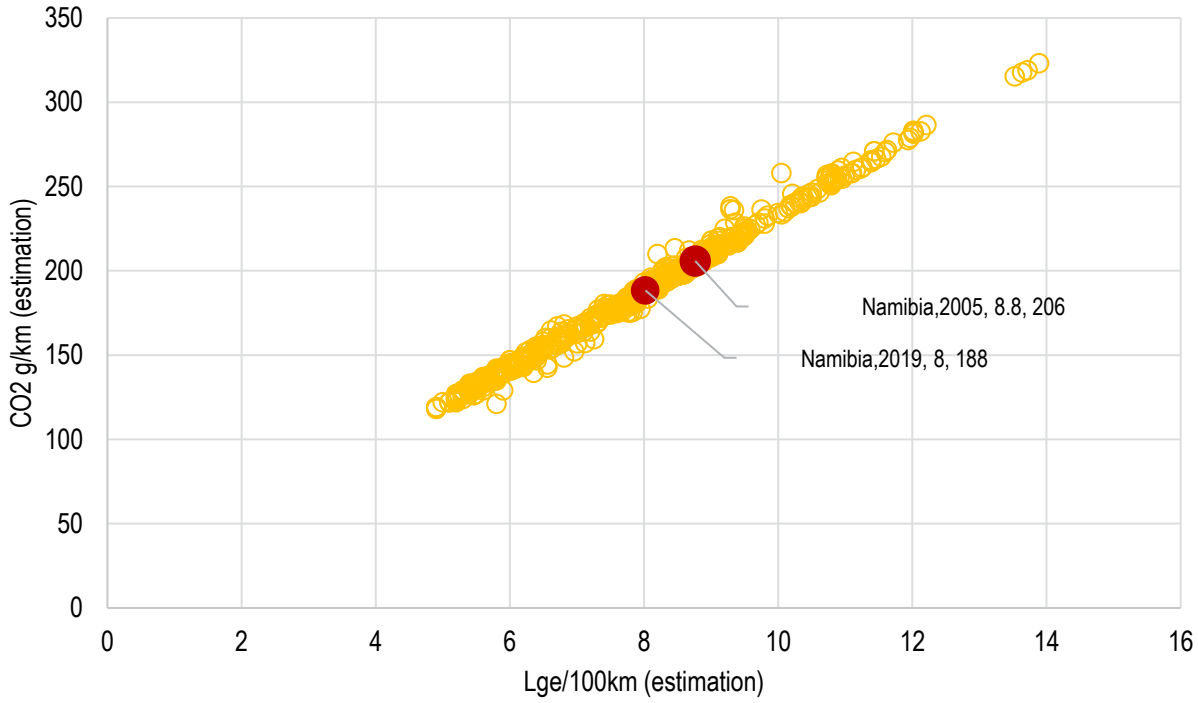
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

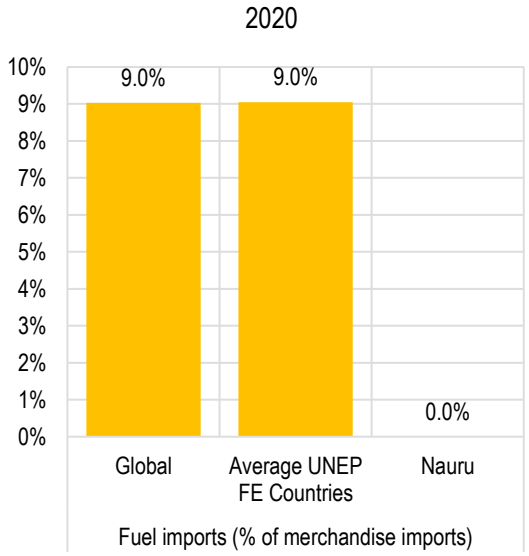
Source : UNEP

The UNEP and The Government of the Republic of Namibia through the Ministry of Mines and Energy (MME) agreed on 17 December 2018 to develop fuel economy baseline and policy options for Namibia. The Ministry of Mines and Energy organised a national stakeholder workshop on 30 September 2019 where fuel economy baseline findings were shared. Vehicle labelling was identified as a quick win for the country that could be implemented in the short term. Namibia's commitment to the Paris Agreement includes increased economy-wide energy efficiency improvement with transport sector-specific measures - mass transport and carpooling strategies as possible measures to reduce greenhouse gas emissions from transportation.

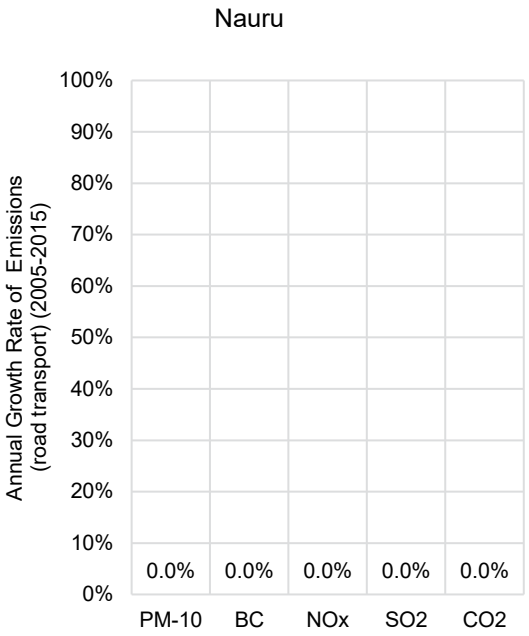
The assessment indicates that if Namibia implements a fuel economy policy for first-time LDVs with a 2030 GFEI target, it could save 362 million litres of gasoline-equivalent & 0.85 million tonnes of CO2 cumulative from newly registered LDVs. Namibia's planning commission estimates that the transport sector has the highest energy demand among all sectors, especially the petroleum products which are imported from South Africa and other African countries.

LDV FUEL ECONOMY COUNTRY REPORT FOR NAURU

		Year	Source
Population (million)	0	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	14335	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	0	2020	6
Gasoline Price $/l	1.1	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	7.5	2018	13
Employment (Transport+,000)	0	2019	11
Fuel Economy (Lge/100 km, WLTP) -	11	2019	1
Average CO2 emissions/kilometre (g/km, WLTP) -	271	2019	1
Average displacement (cm3) -	2643	2019	1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	10	2019	1
Cumulative number of LDVs (total sample size,000) -	2		1
Diesel Share in LDV (sample,%)	32%	2019	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	No	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.265	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.175	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	35610.4	2019	8
Transport CO2 Emissions per Capita (tonnes) -	0.0	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	0	2019	1
Diesel Sulphur Levels (ppm) -	0	2019	1
Gasoline Sulphur Levels (ppm) -	0	2019	1
Annual rate of economy-wide energy intensity growth	-6.2%	2000-18	16
Annual rate of transport energy consumption growth	-1.6%	2000-18	16
LDV Import value (Million USD)	0	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
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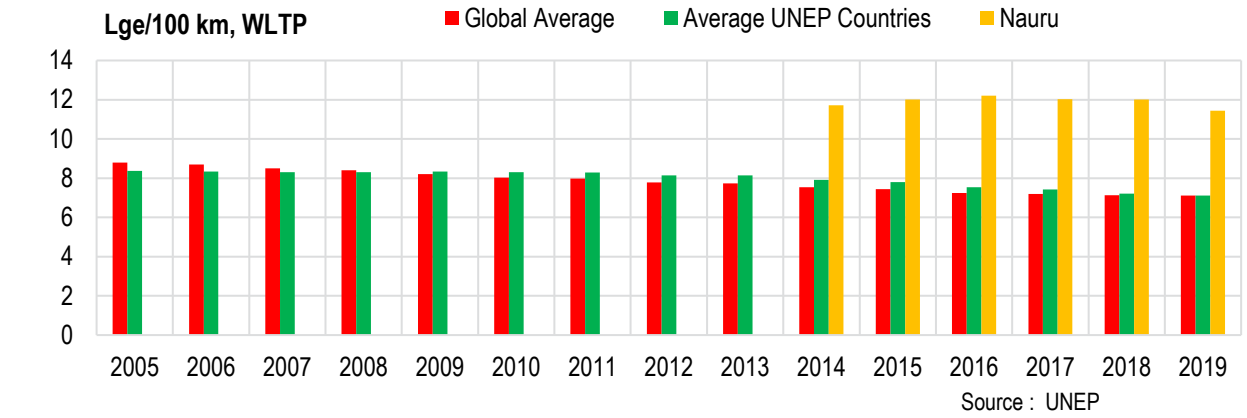
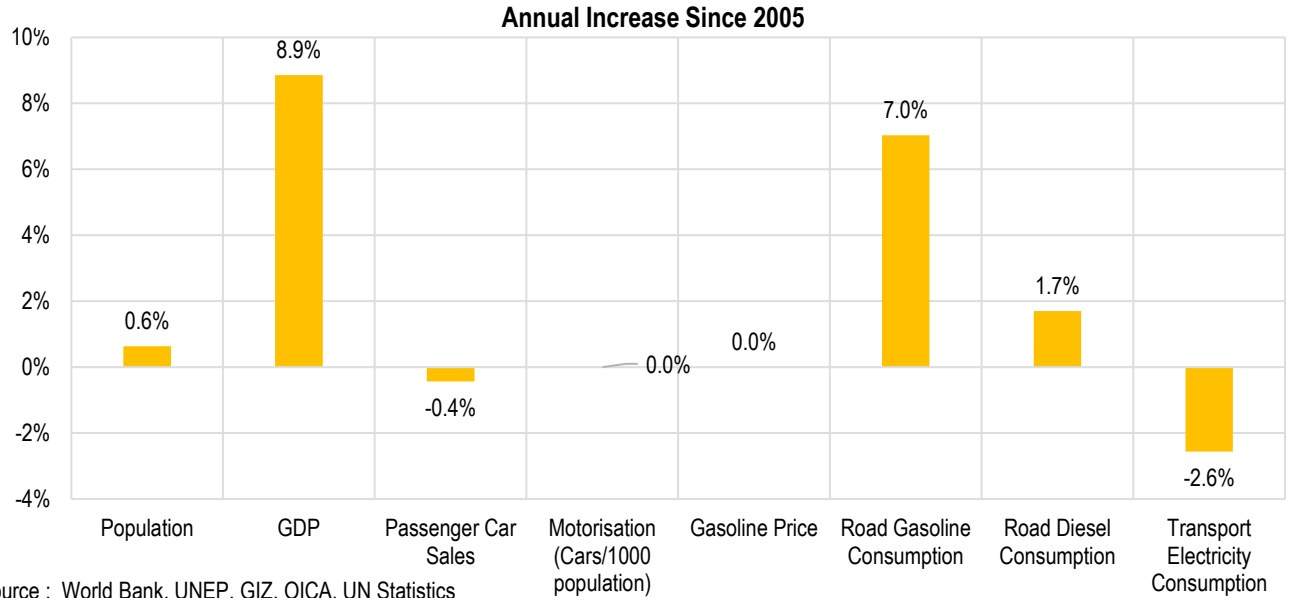
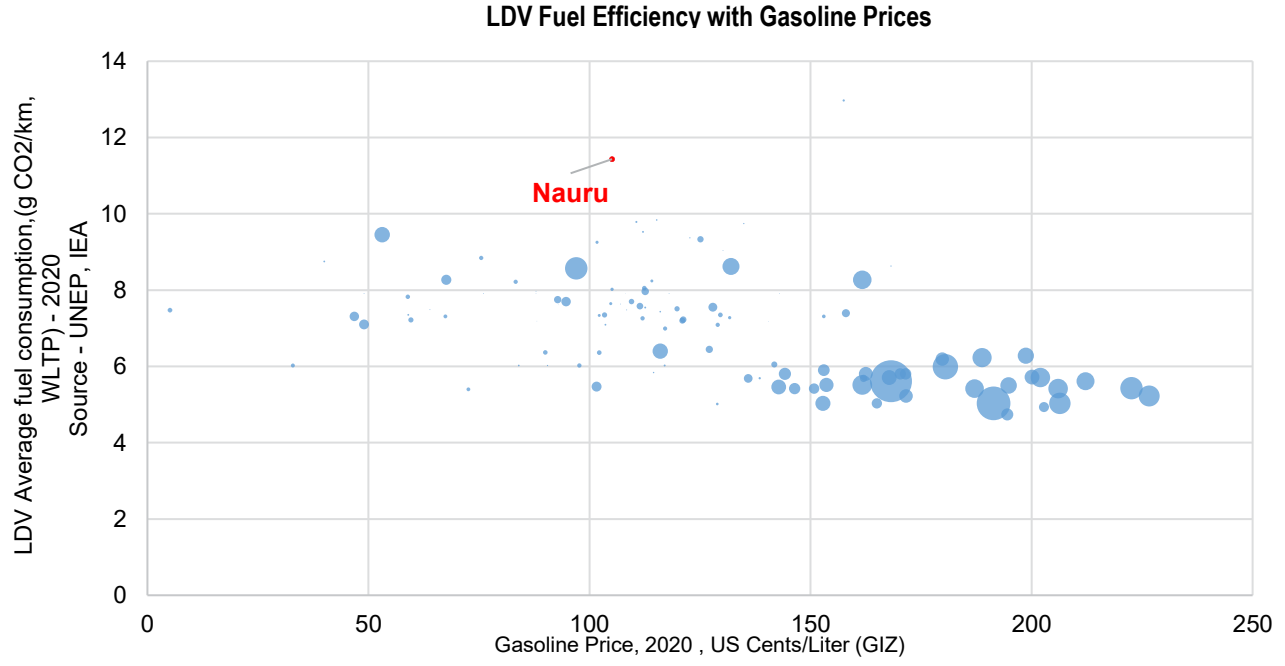
FUEL ECONOMY TRENDS





Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

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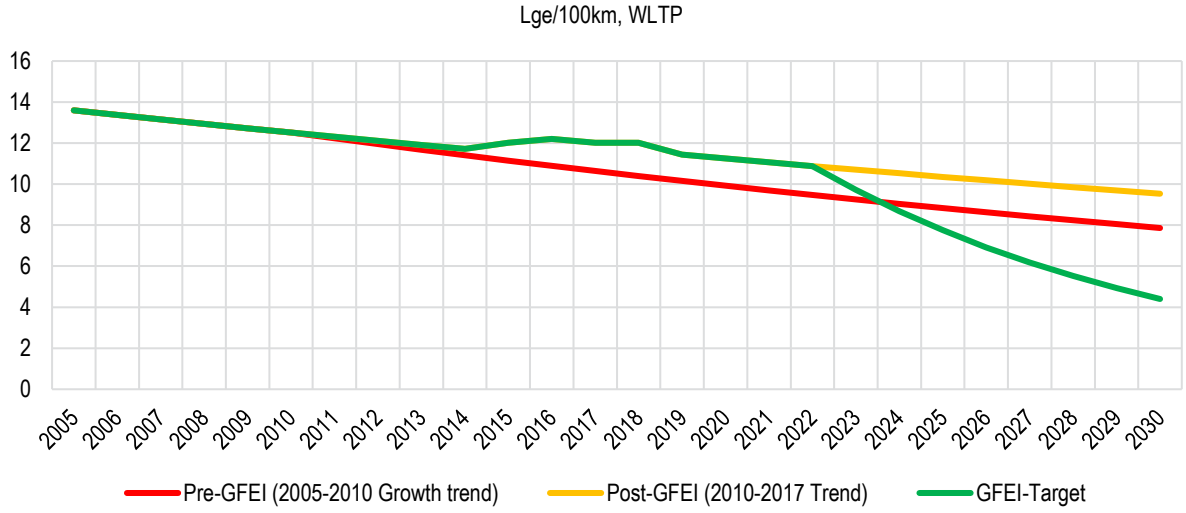
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

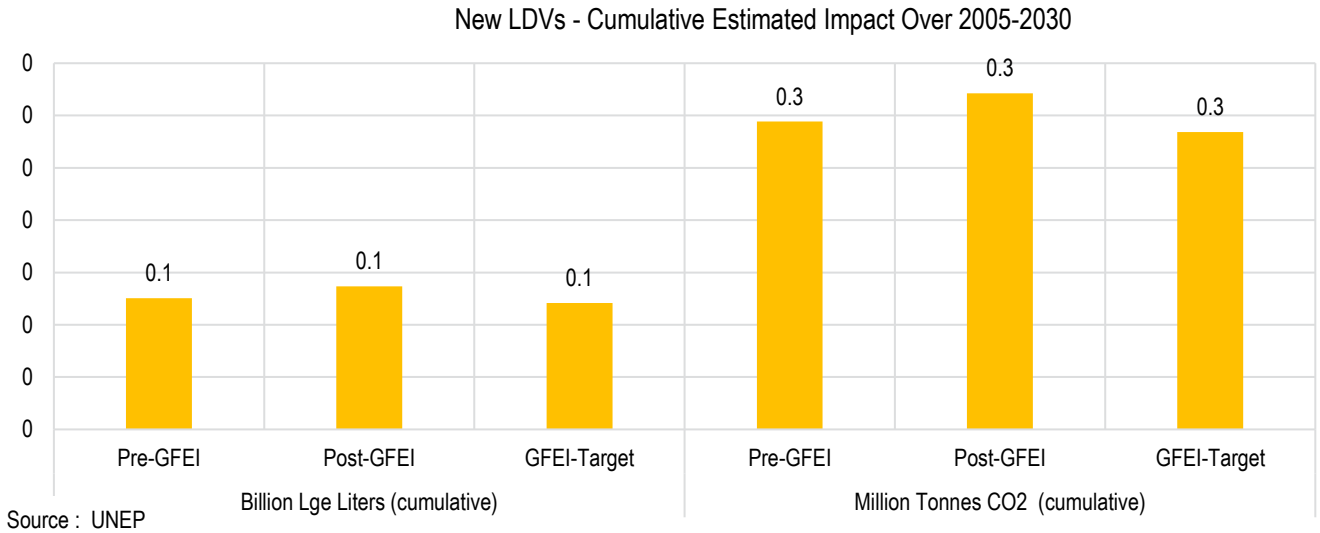
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-1.1%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-9.0%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

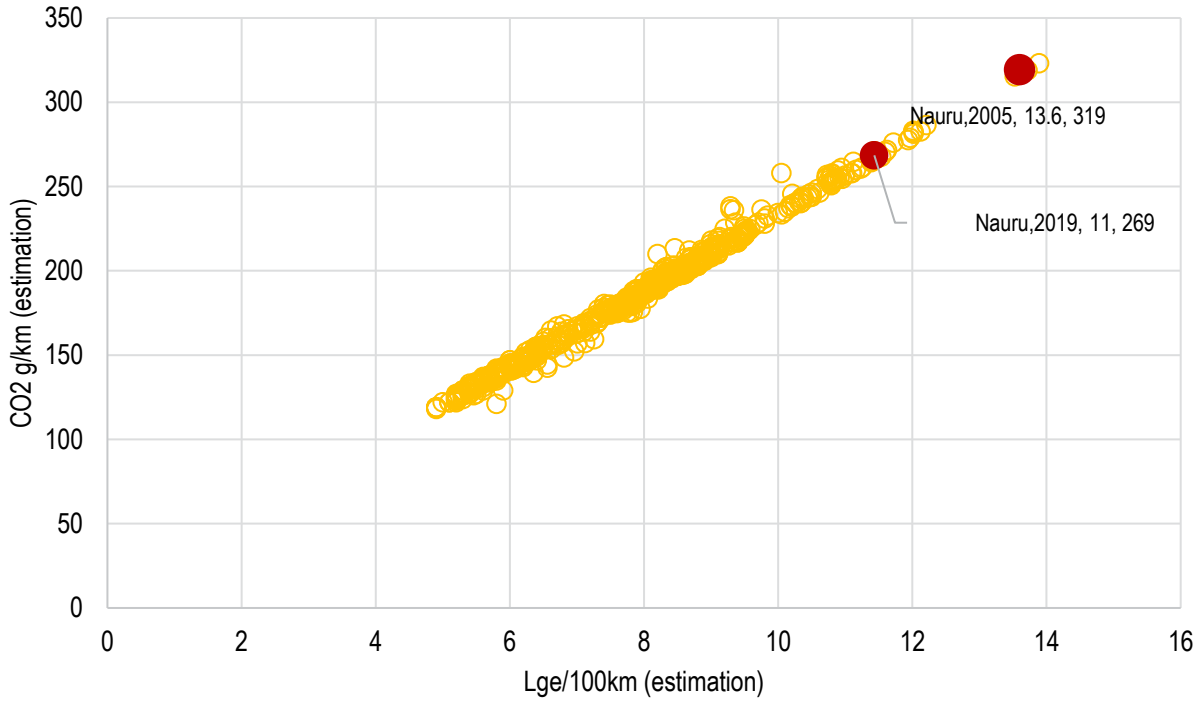
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

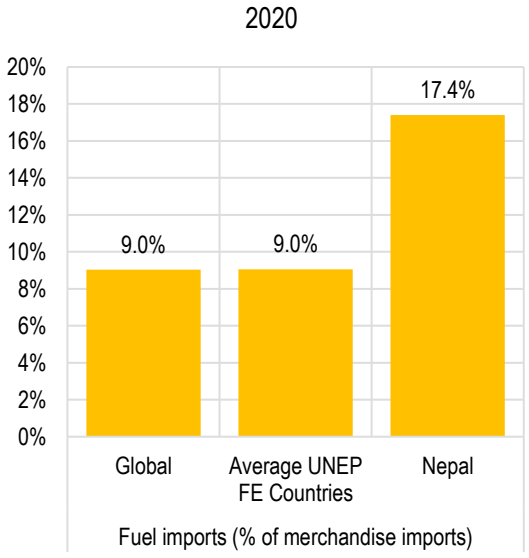
Nauru requested support from the Climate Technology Centre and Network (CTCN) to develop a sustainable land transport strategy that includes the development of a fuel economy baseline for the country. UNEP is working with CTCN in the development of the policy. UNEP signed an agreement with the Department of Commerce, Industry and Environment of Nauru to develop this strategy and conduct the fuel economy baseline analysis. UNEP conducted a mission in Nauru in September 2019 and met with relevant government officials and stakeholders.

Nauru is dependent on fossil fuel, especially in the transport sector. In the past decades, there have been several initiatives to reduce fossil fuel consumption in the transport sector. The government had set a target of achieving 50% renewable energy economy-wide by 2015, which was not achieved. The new Nauru's energy road map proposes the implementation of energy efficiency improvement in transport and to shift from diesel and petrol fuels to alternate fuels.

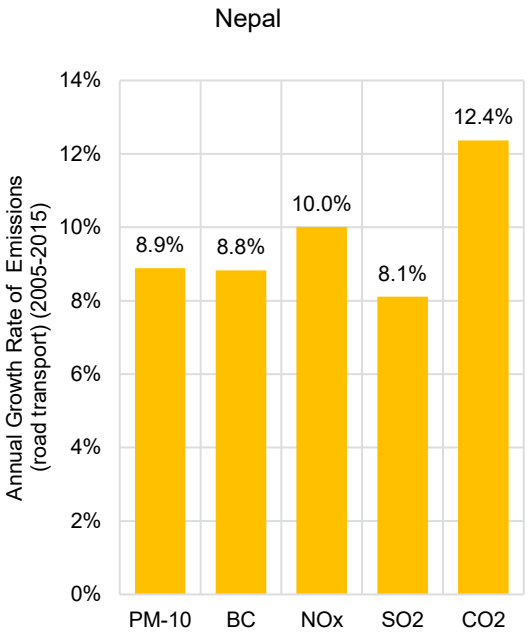
The assessment indicates that if Nauru implements a fuel economy policy for first-time registered LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 21 million litres of gasoline-equivalent & 49 thousand tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR NEPAL

		Year	Source
Population (million)	29	2020	7
Income Level Category	Lower middle income		7
GDP per Capita (PPP, Curent USD)	4007	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	10	2020	6
Gasoline Price $/l	1.1	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	3.8	2018	13
Employment (Transport+,000)	449	2019	11
Fuel Economy (Lge/100 km, WLTP) -	6	2016	1
Average CO2 emissions/kilometre (g/km, WLTP) -	145	2016	1
Average displacement (cm3) -	1443	2016	1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -	66		1
Diesel Share in LDV (sample,%)	36%	2016	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.012	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.034	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	0.1	2019	8
Transport CO2 Emissions per Capita (tonnes) -	0.5	2019	14
Road Transport PM Emissions per Capita (grams) -	57.9	2015	14
Road Transport NOx Emissions per Capita (grams)-	880.4	2015	14
Road Transport BC Emissions per Capita (grams)-	27.4	2015	14
LDV Emission Standards -	Euro 2	2019	1
Diesel Sulphur Levels (ppm) -	350	2019	1
Gasoline Sulphur Levels (ppm) -	150	2019	1
Annual rate of economy-wide energy intensity growth	-1.1%	2000-18	16
Annual rate of transport energy consumption growth	9.6%	2000-18	16
LDV Import value (Million USD)	0	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
7 World Bank
8 UN Statistics Division
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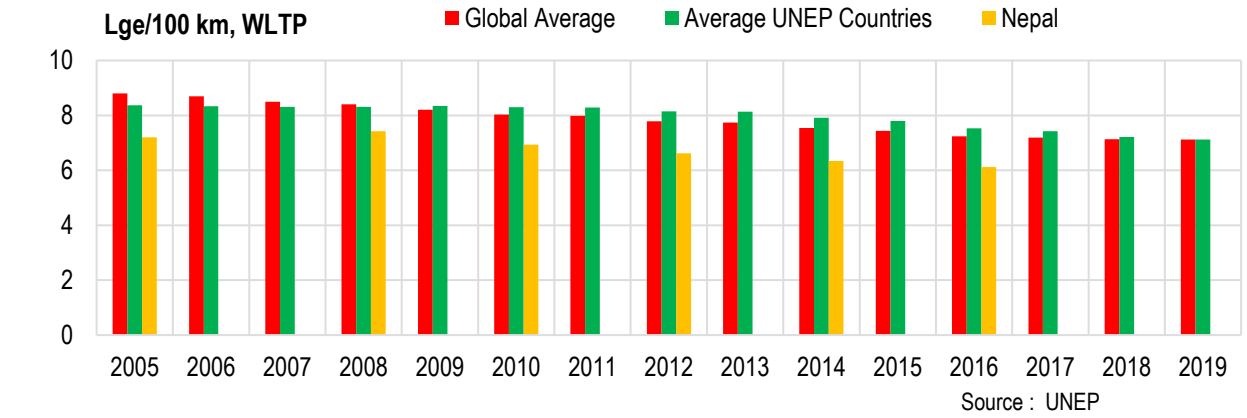
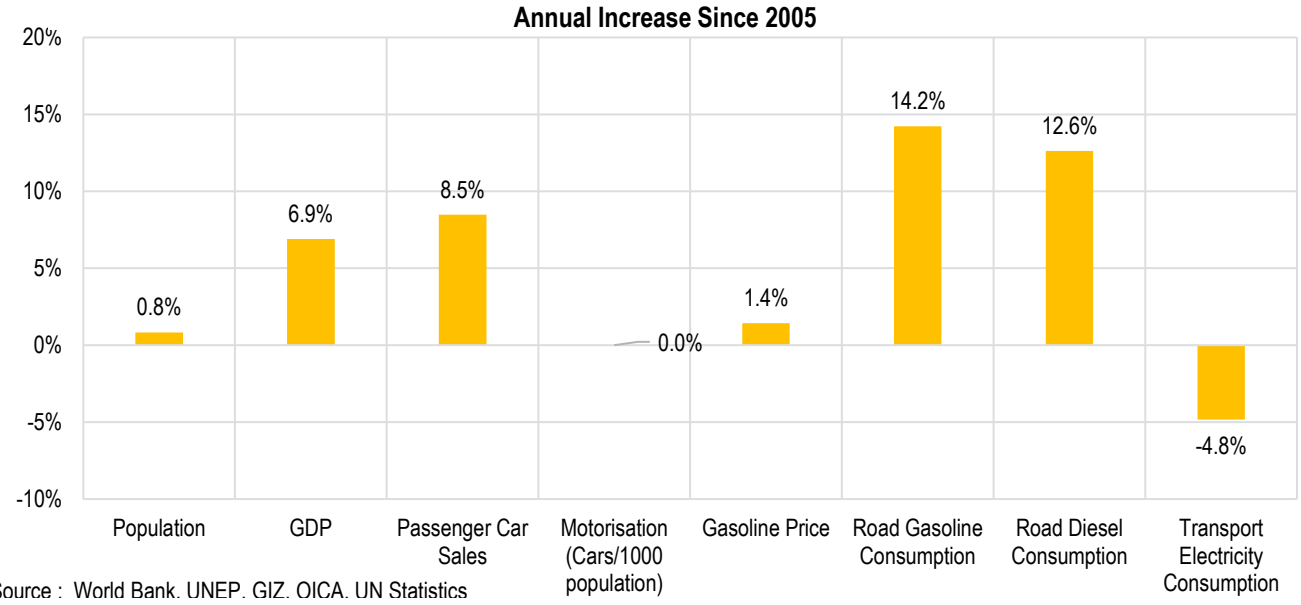
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

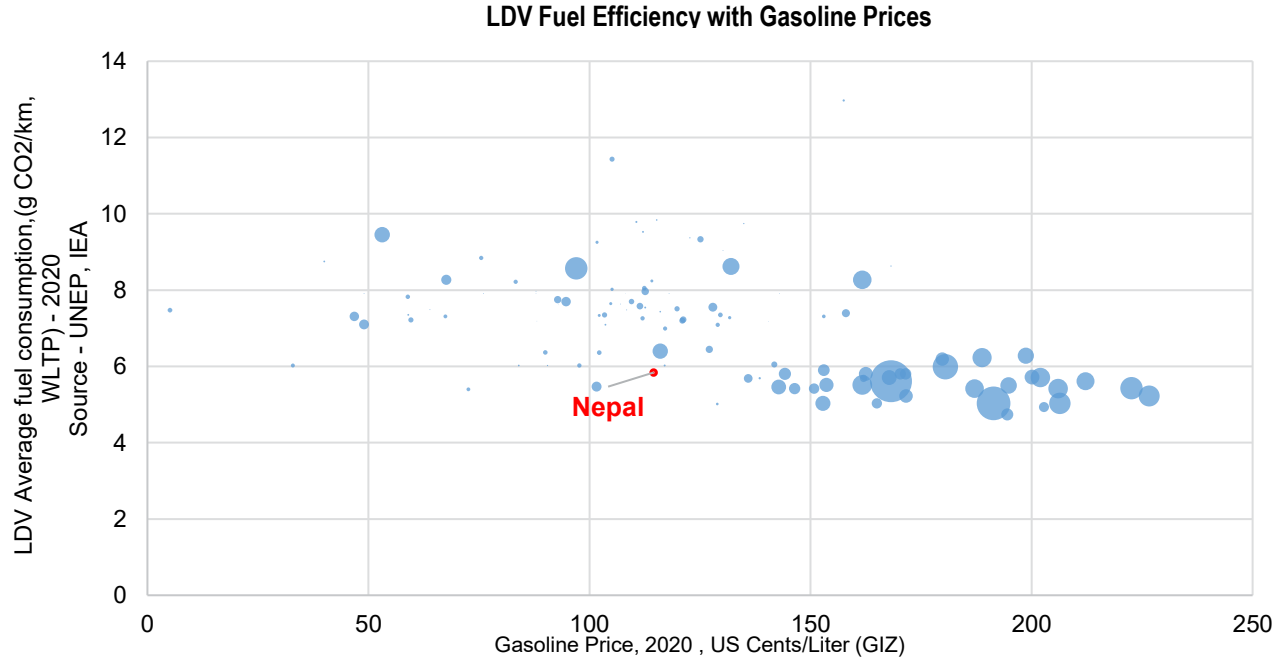
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

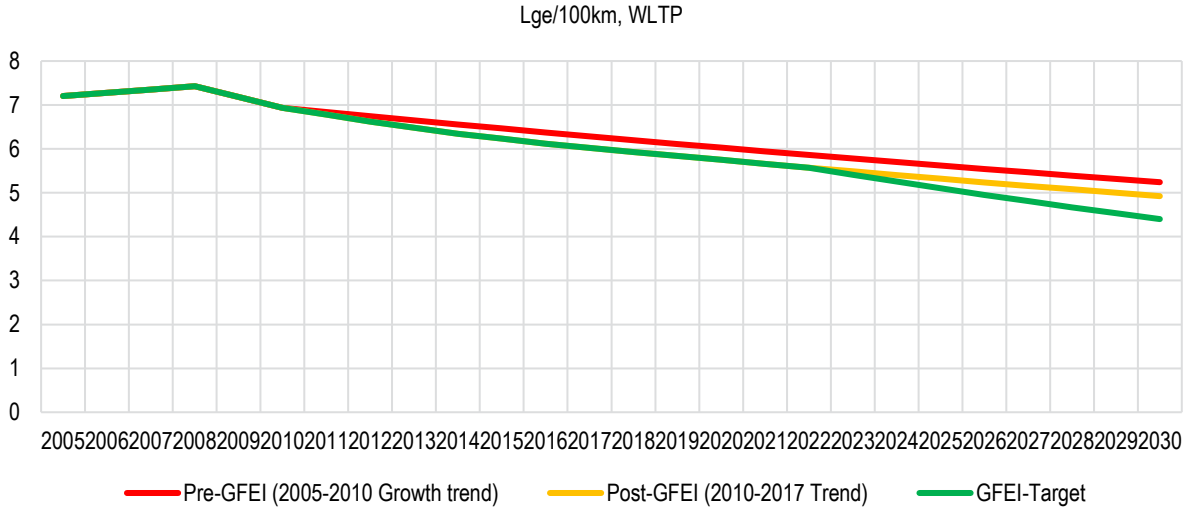
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

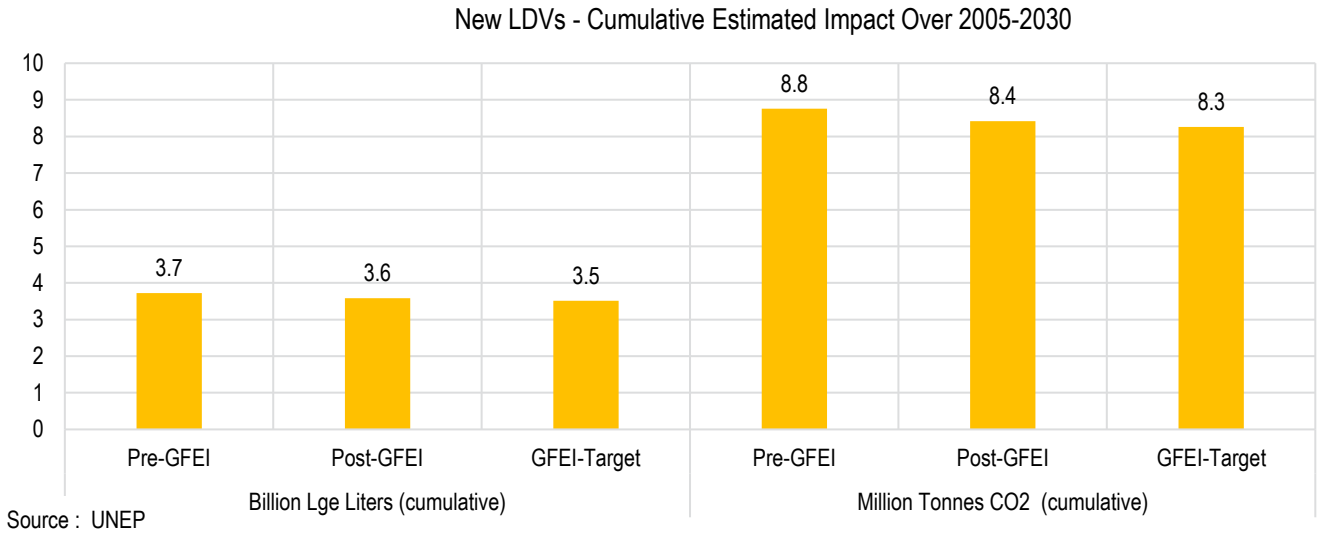
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-1.9%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-2.6%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

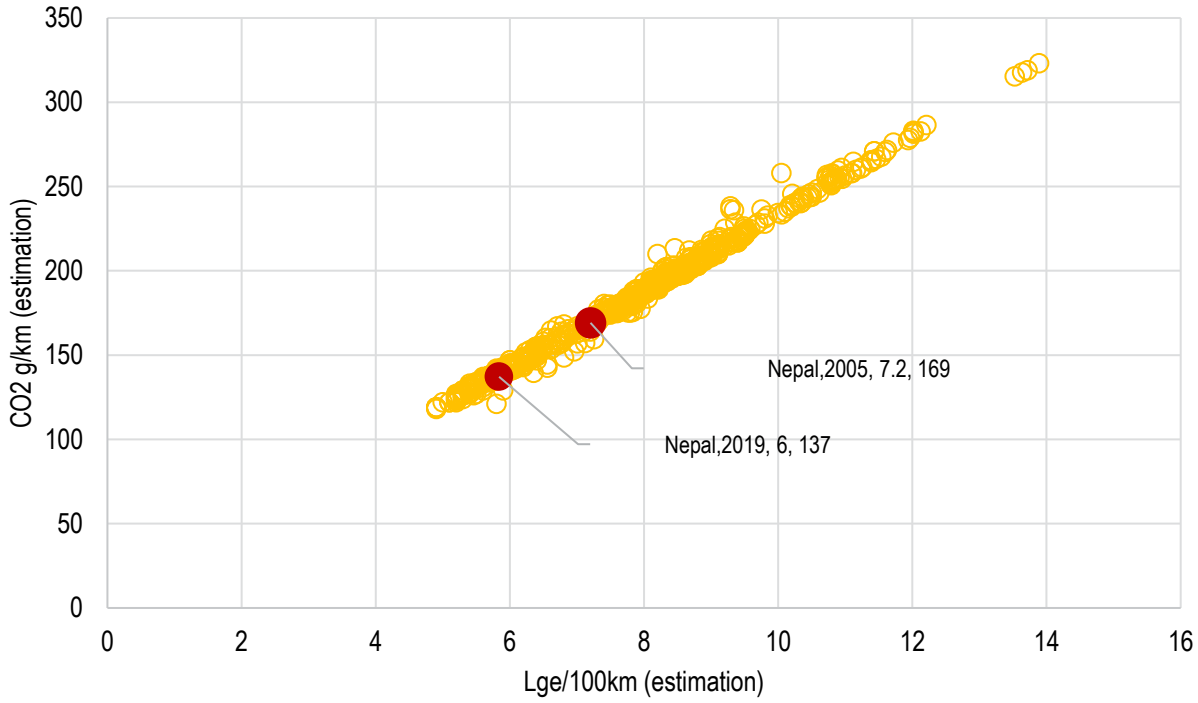
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

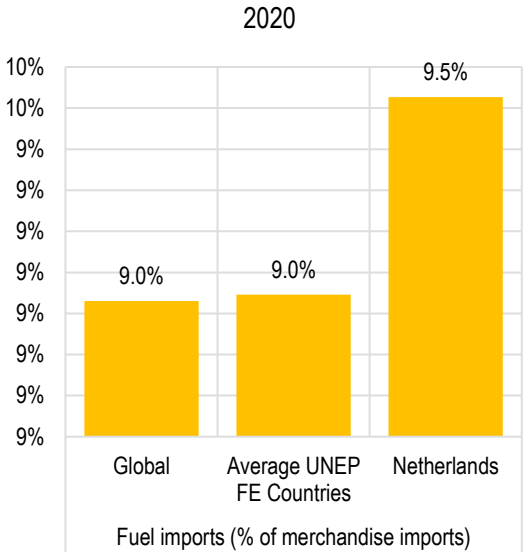
The agreement to develop fuel economy baseline and policies in Nepal was signed on 18 May 2017 with Clean Energy Nepal, one of the leading non-governmental organisations promoting sustainable transport in the country. Activities started in June 2017, where Clean Energy Nepal undertook bi-lateral stakeholder meetings to present the project and obtain their support. These meetings were with the Ministry of Physical Infrastructure and Transport, the Ministry of Population and Environment, Nepal Automobile Dealers Association, Department of Transport Management, and Nepal Oil Corporation. All the organisations have expressed their support for the project. Letters of support have been received from the Ministry of Physical Infrastructure and Transport including allocating personnel for the project; Ministry of Population and Environment, and the Department of Transport and Management including allowing the use of vehicle registration data. A broad stakeholder consultation was conducted as part of the 6th Kathmandu Sustainable Urban Mobility Forum on 15 August 2017. On 27-28 January 2020, UNEP and CEN presented the fuel economy baseline and policy recommendations to various stakeholders at the 8th Kathmandu Sustainable Urban Mobility Forum. UNEP and CEN also conducted a separate roundtable discussion with the Nepal Automobile Dealers Association (NADA) regarding the proposed fuel economy labelling policy. Discussions focused on the need to have more information in the implementation of such a policy and electric mobility.

Environment-friendly Vehicle and Transport Policy, 2014, was formulated to promote environment-friendly vehicles in Nepal. It sets the target to achieve more than 20% of vehicle fleets to be environment-friendly vehicles by 2020, provided tax exemption to purchase electric vehicles. The National Energy Efficiency Strategy, 2075 approved in 2019, proposes the development of national standards for energy efficiency based on established international and regional standards.

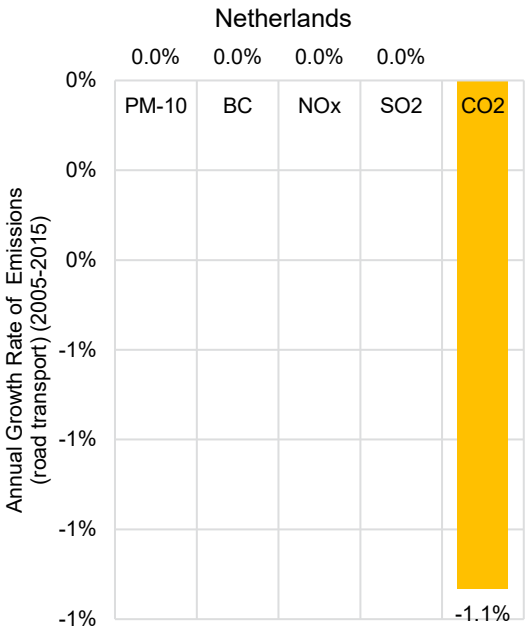
The assessment indicates that if Nepal implements a fuel economy policy for first-time registered LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 356 million litres of gasoline-equivalent & 0.84 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR NETHERLANDS

		Year	Source
Population (million)	17	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	59334	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	358	2020	6
Gasoline Price $/l	2.3	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	12.1	2018	13
Employment (Transport+,000)	786	2019	11
Fuel Economy (Lge/100 km, WLTP) -	5	2014	1
Average CO2 emissions/kilometre (g/km, WLTP) -	127	2016	1
Average displacement (cm3) -	1390	2017	1
Average kerb weight (kg) -	1304	2017	1
Average power (kw) -	87	2015	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.248	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.344	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	135.5	2019	8
Transport CO2 Emissions per Capita (tonnes) -	9.0	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	-1.5%	2000-18	16
Annual rate of transport energy consumption growth	0.1%	2000-18	16
LDV Import value (Million USD)	0	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

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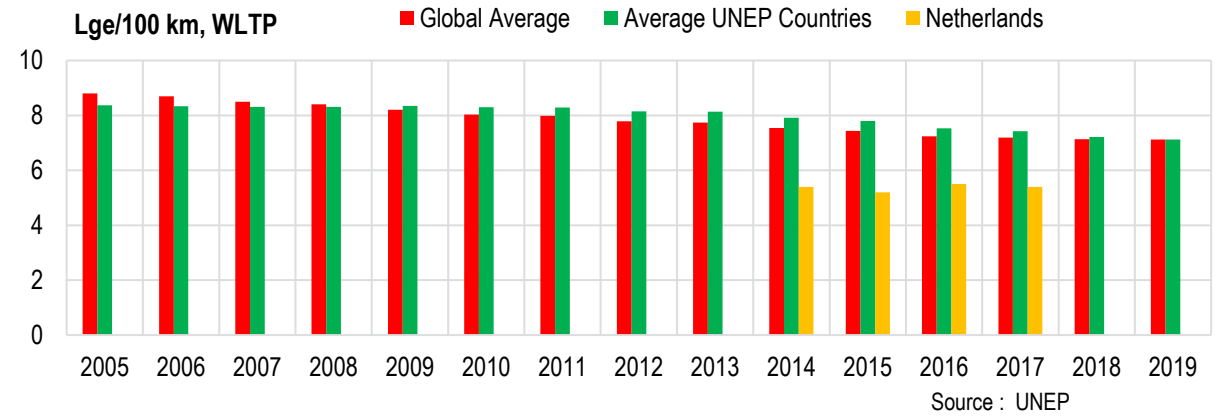
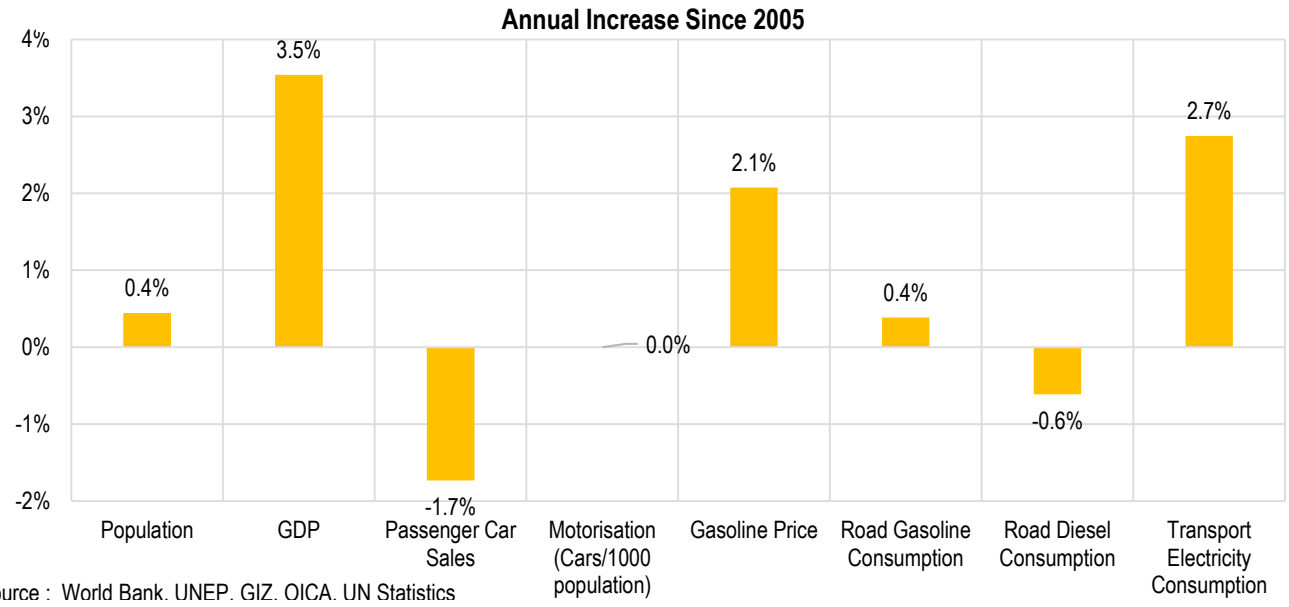
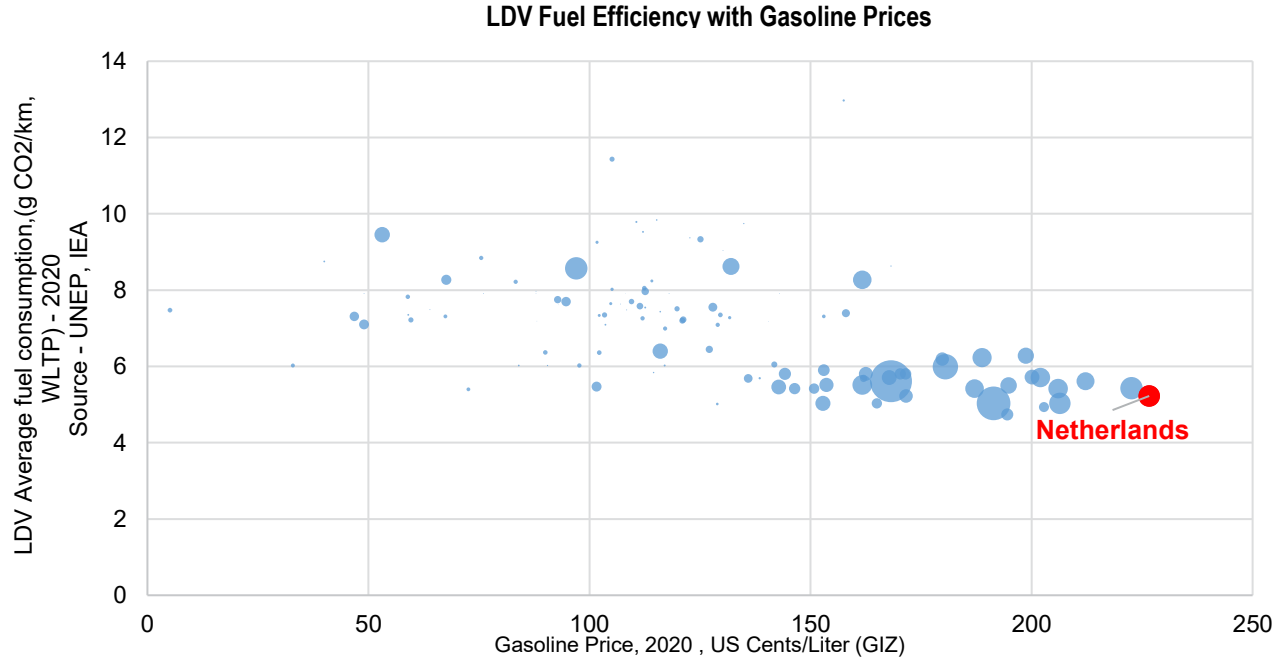
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

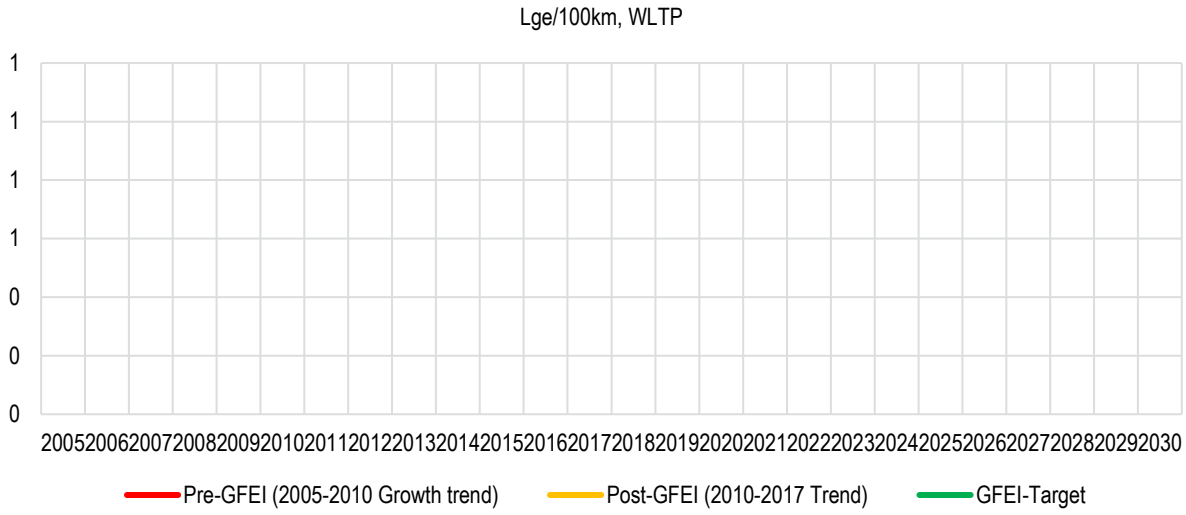
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



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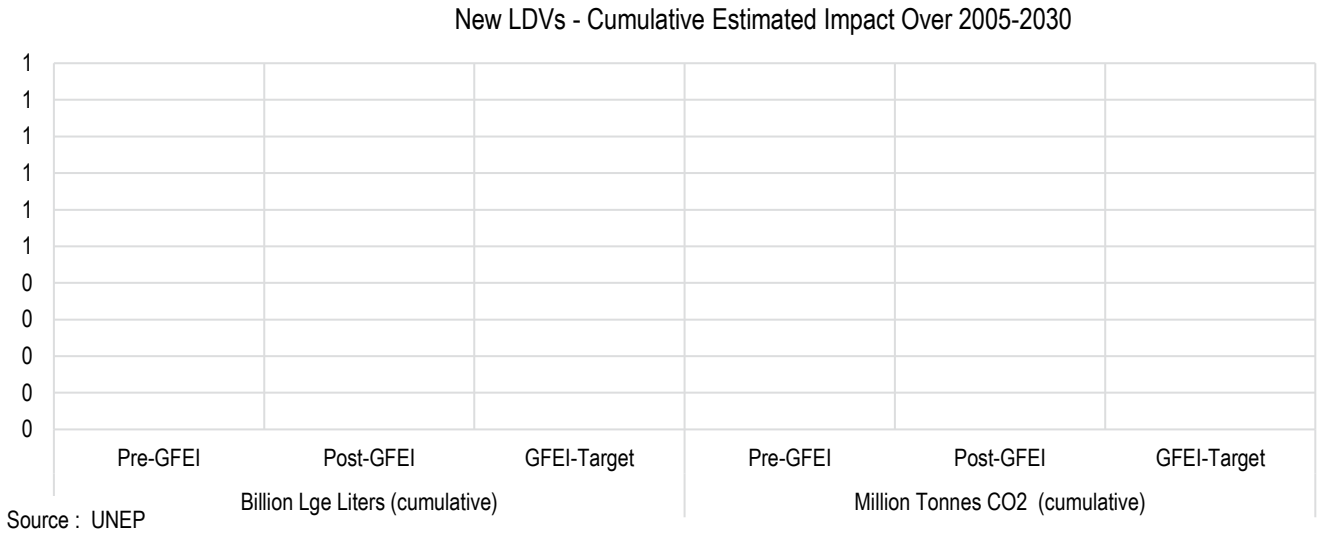

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Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

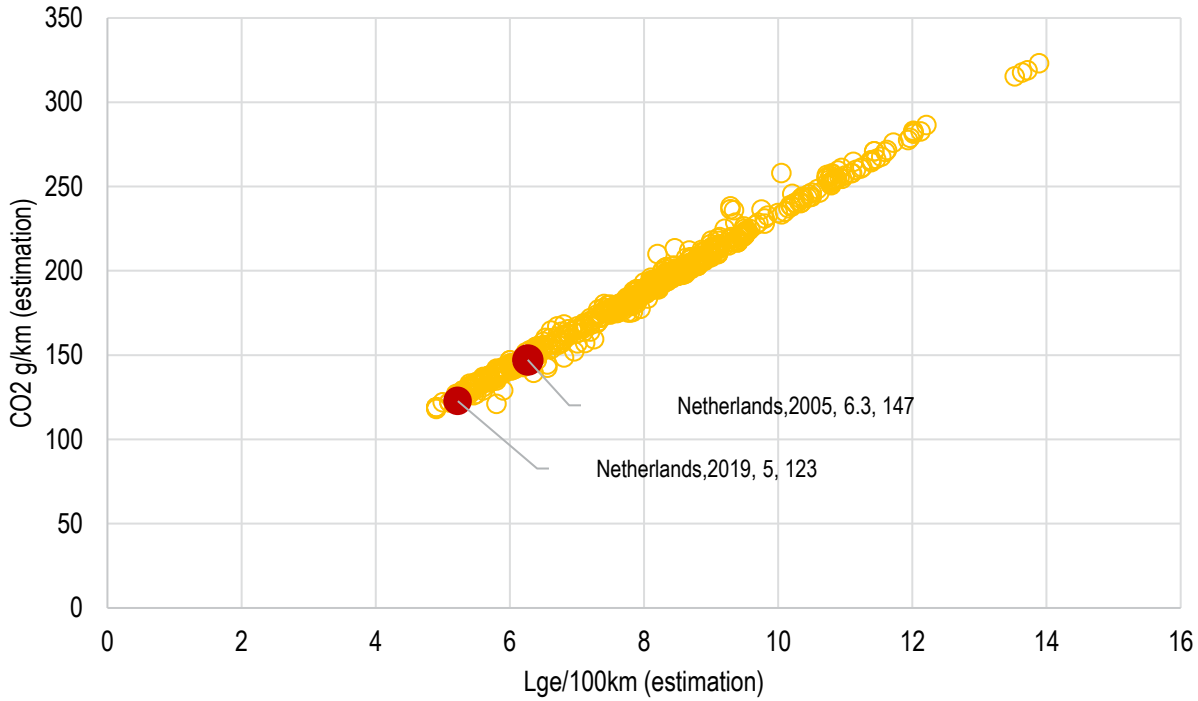
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



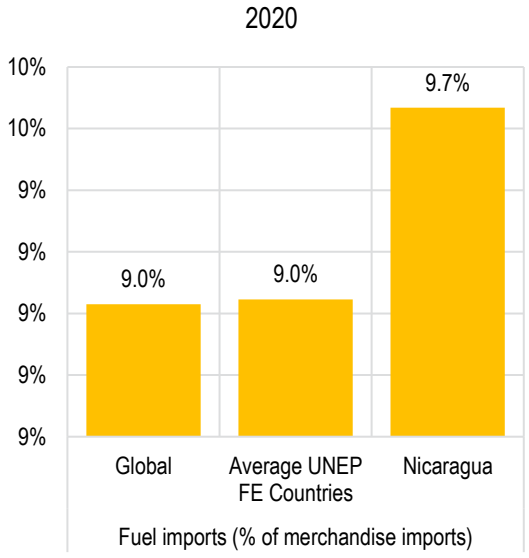
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR NICARAGUA

		Year	Source
Population (million)	7	2020	7
Income Level Category	Lower middle income		7
GDP per Capita (PPP, Curent USD)	5568	2020	7
Motorisation (Cars/1000 population)	19	2020	10
Car Sales (000)	4	2020	6
Gasoline Price $/l	1.2	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	4.1	2018	13
Employment (Transport+,000)	120	2019	11
Fuel Economy (Lge/100 km, WLTP) -	#N/A	#N/A	1
Average CO2 emissions/kilometre (g/km, WLTP) -	#N/A	#N/A	1
Average displacement (cm3) -			1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.047	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.057	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	16.5	2019	8
Transport CO2 Emissions per Capita (tonnes) -	0.9	2019	14
Road Transport PM Emissions per Capita (grams) -	134.5	2015	14
Road Transport NOx Emissions per Capita (grams)-	3858.7	2015	14
Road Transport BC Emissions per Capita (grams)-	67.1	2015	14
LDV Emission Standards -	0	2019	1
Diesel Sulphur Levels (ppm) -	5000	2019	1
Gasoline Sulphur Levels (ppm) -	1000	2019	1
Annual rate of economy-wide energy intensity growth	-0.8%	2000-18	16
Annual rate of transport energy consumption growth	2.2%	2000-18	16
LDV Import value (Million USD)	0	2020	3



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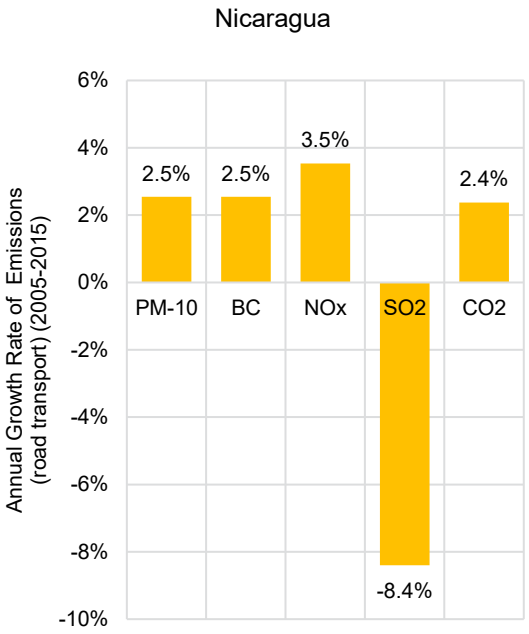

Source : IIASA

Sources & Notes

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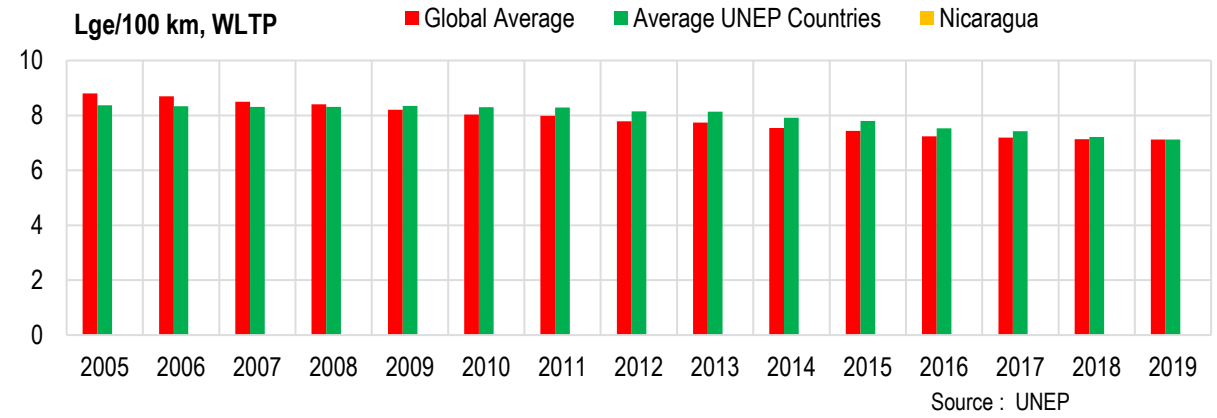
FUEL ECONOMY TRENDS



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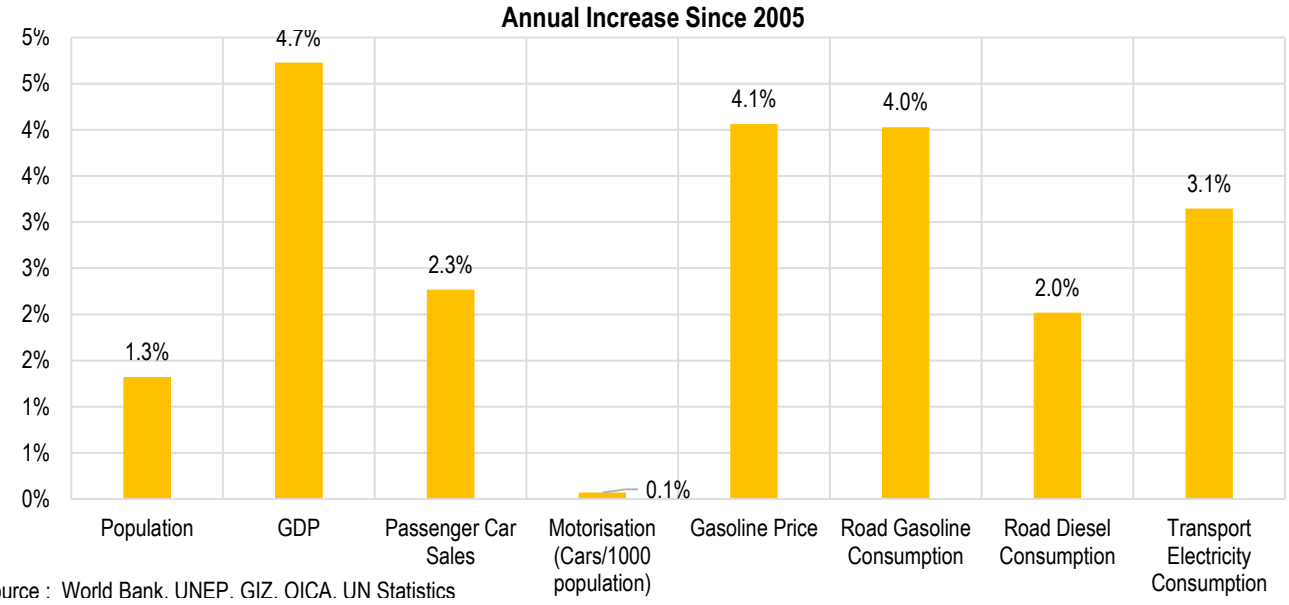

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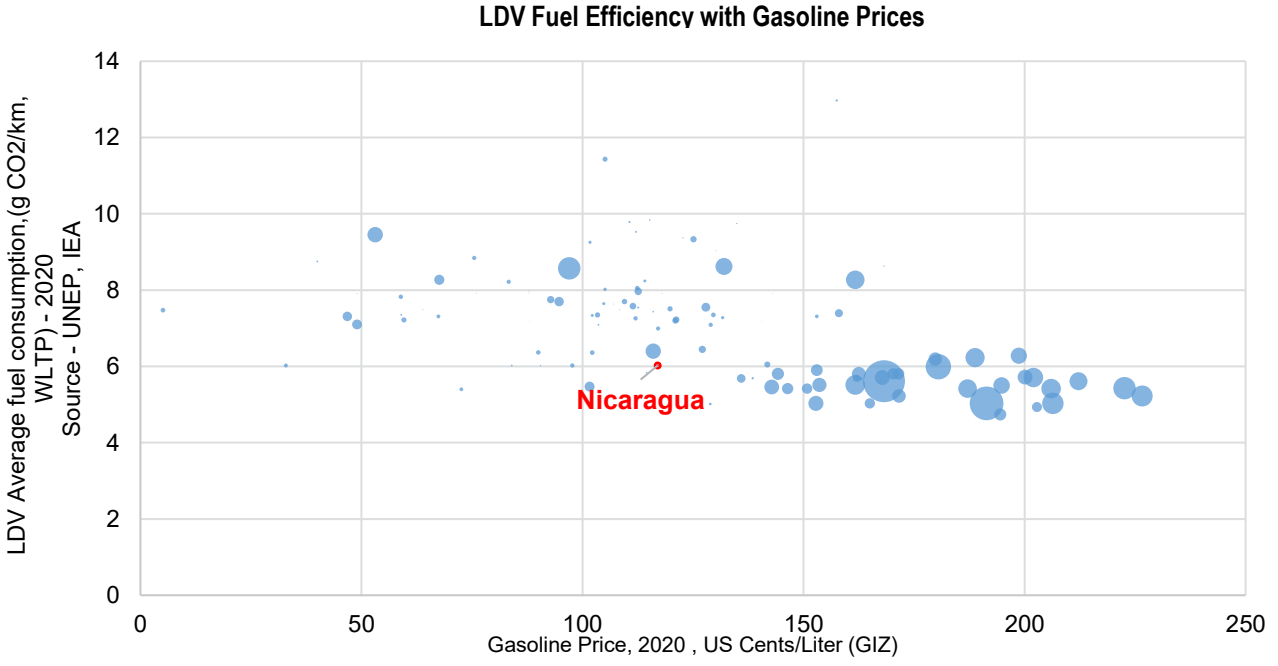

Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

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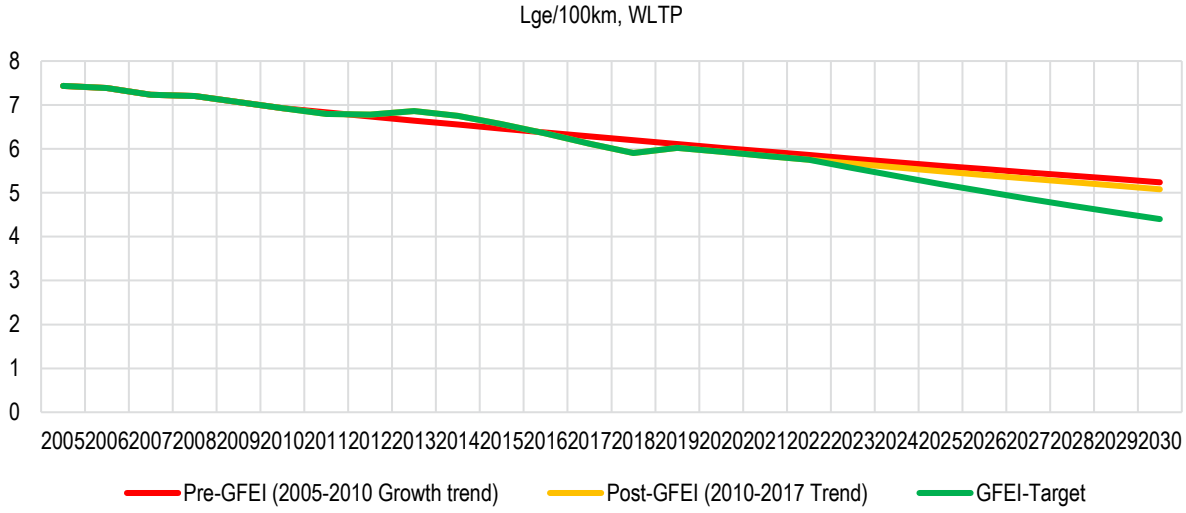
From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-2.9%**



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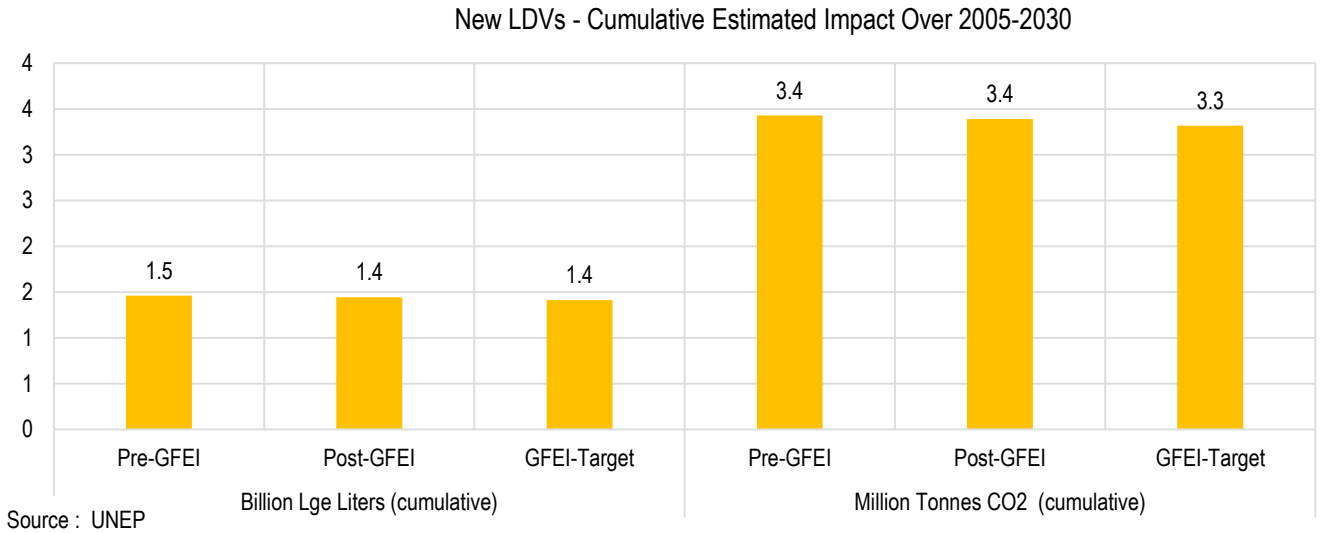

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Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

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5) The Impact assessment assumes

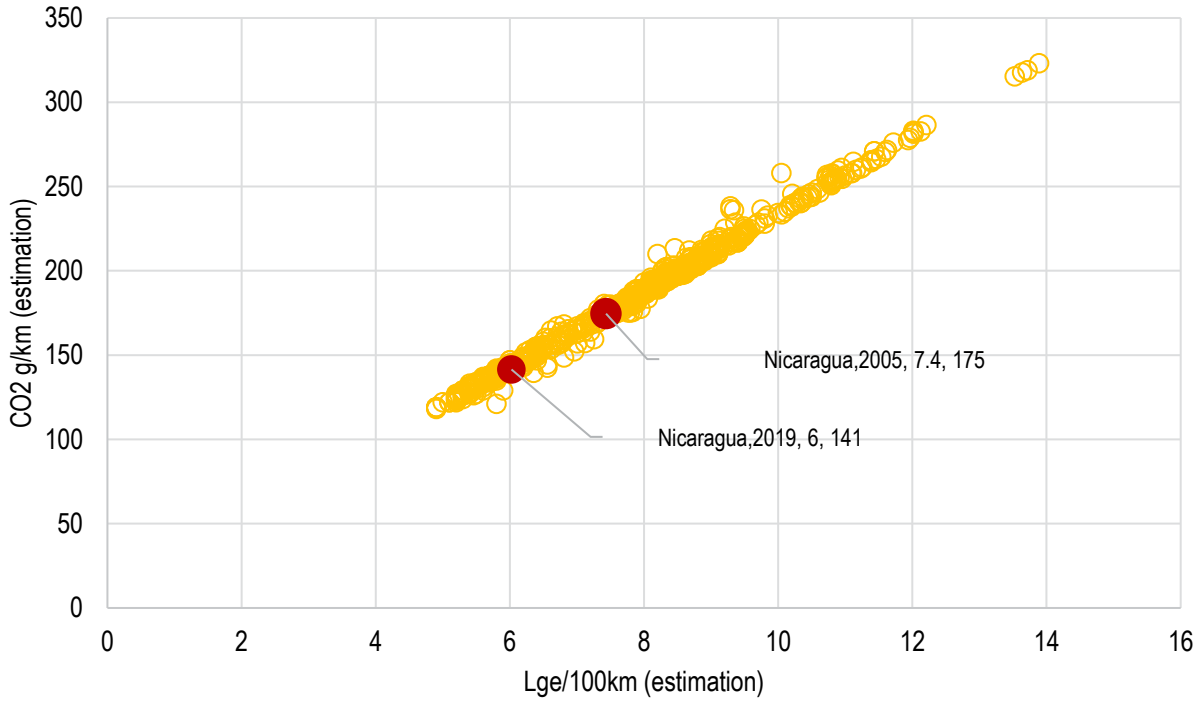
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

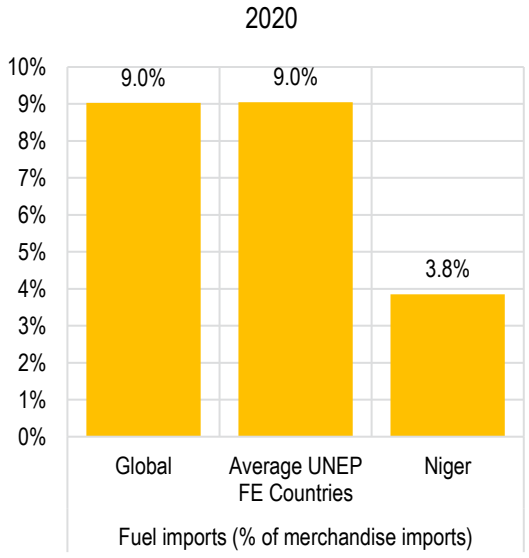
Source : UNEP

The activities to develop a fuel economy baseline (Phase I) in Nicaragua were part of the agreement signed on 15 August 2016 with CEGESTI. Due to a lack of commitment to the GFEI project from Nicaragua, UNEP decided to reallocate the resources to Argentina. This was communicated to donors, including the EU, and approved by them before commencing the activities in Argentina. In June 2019, at the Latin America Regional event, representatives from the Ministry of Energy and Ministry of Environment re-confirmed their interest in participating in a future GFEI program, starting with a baseline study.

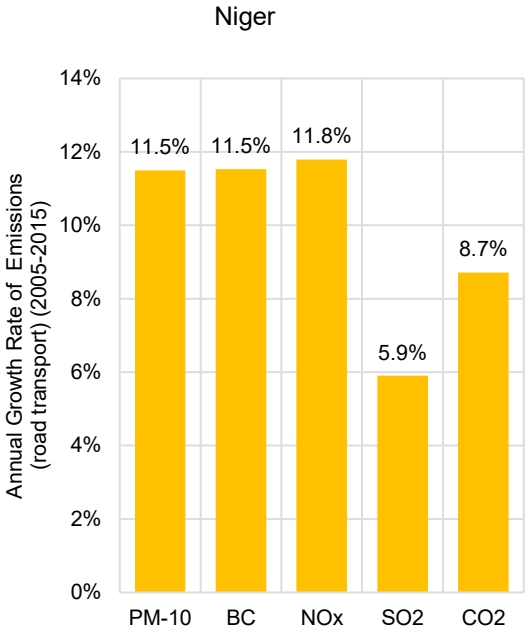
The assessment indicates that if Nicaragua implements a fuel economy policy for first-time registered LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 214 million litres of gasoline-equivalent & 0.5 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR NIGER

		Year	Source
Population (million)	24	2020	7
Income Level Category	Low income		7
GDP per Capita (PPP, Curent USD)	1288	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	7	2020	6
Gasoline Price $/l	0.9	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	2.7	2018	13
Employment (Transport+,000)	127	2019	11
Fuel Economy (Lge/100 km, WLTP) -	8	2017	1
Average CO2 emissions/kilometre (g/km, WLTP) -	185	2017	1
Average displacement (cm3) -			1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -	107		1
Diesel Share in LDV (sample,%)	12%	2017	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	No	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.006	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.008	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	4.5	2019	8
Transport CO2 Emissions per Capita (tonnes) -	0.1	2019	14
Road Transport PM Emissions per Capita (grams) -	23.2	2015	14
Road Transport NOx Emissions per Capita (grams)-	618.6	2015	14
Road Transport BC Emissions per Capita (grams)-	11.0	2015	14
LDV Emission Standards -	0	2019	1
Diesel Sulphur Levels (ppm) -	380	2019	1
Gasoline Sulphur Levels (ppm) -	160	2019	1
Annual rate of economy-wide energy intensity growth	-0.7%	2000-18	16
Annual rate of transport energy consumption growth	9.5%	2000-18	16
LDV Import value (Million USD)	0	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
7 World Bank
8 UN Statistics Division
9 SLOCAT &GIZ
10 Estimated using growth and sales data
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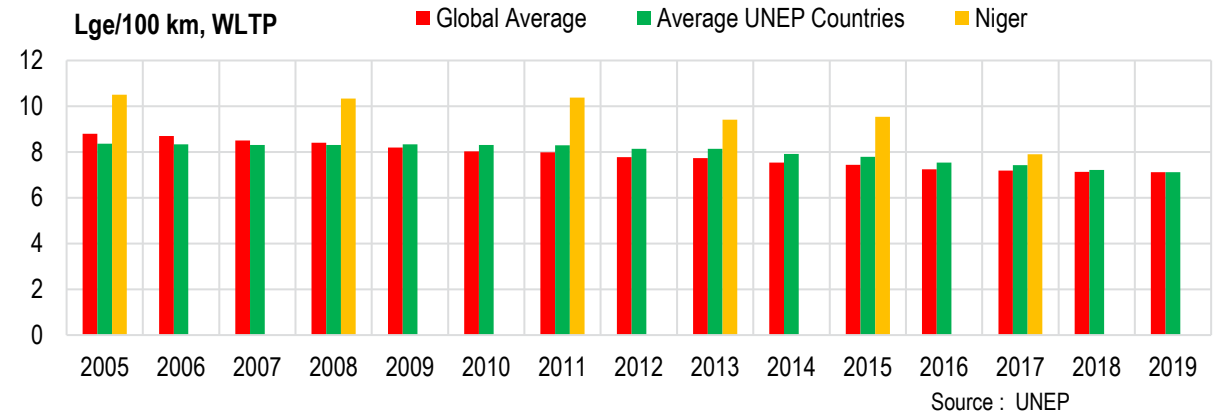
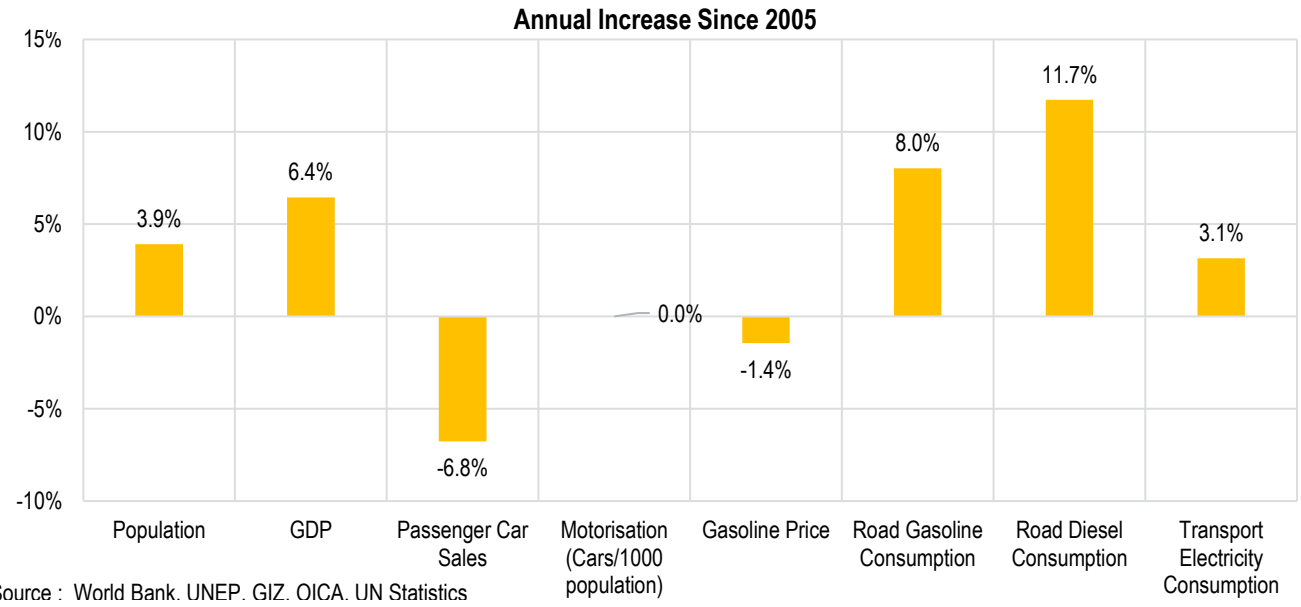
13 Koks, E.E. et al. A global multi-hazard risk analysis of road
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

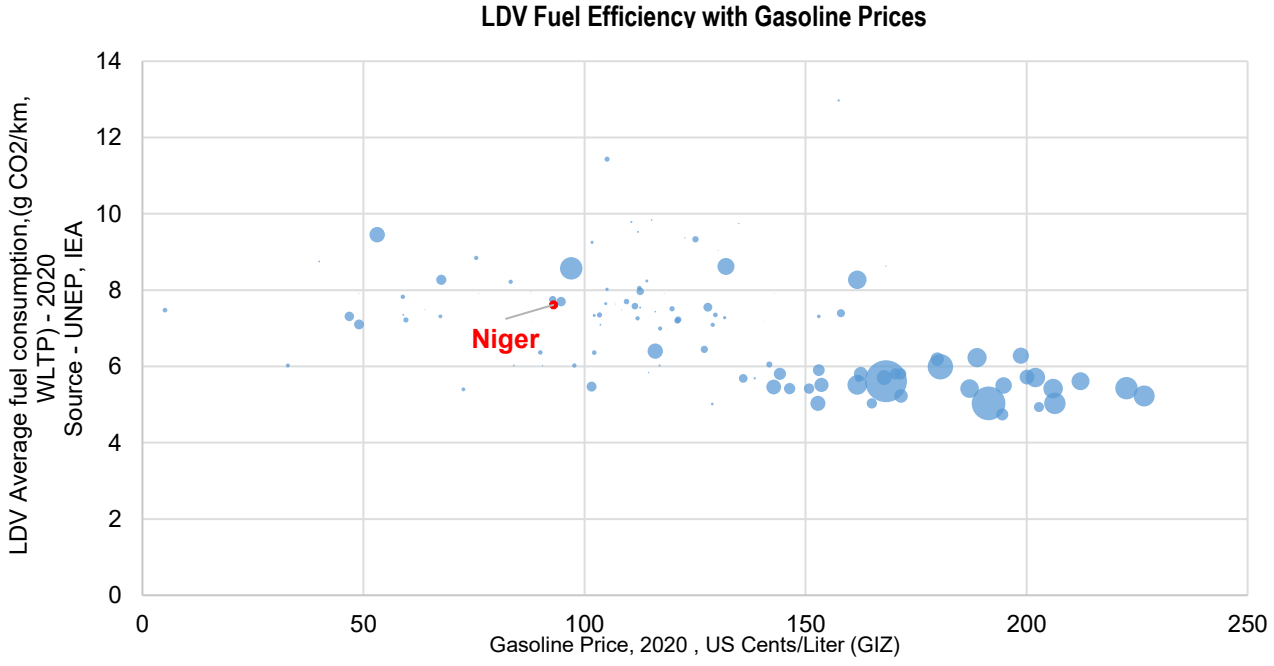
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

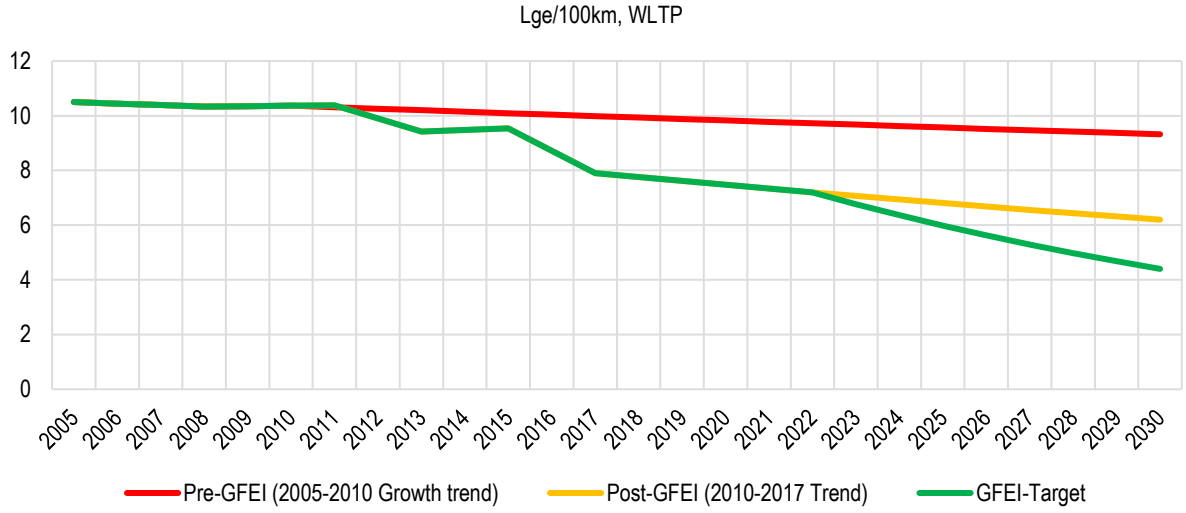
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

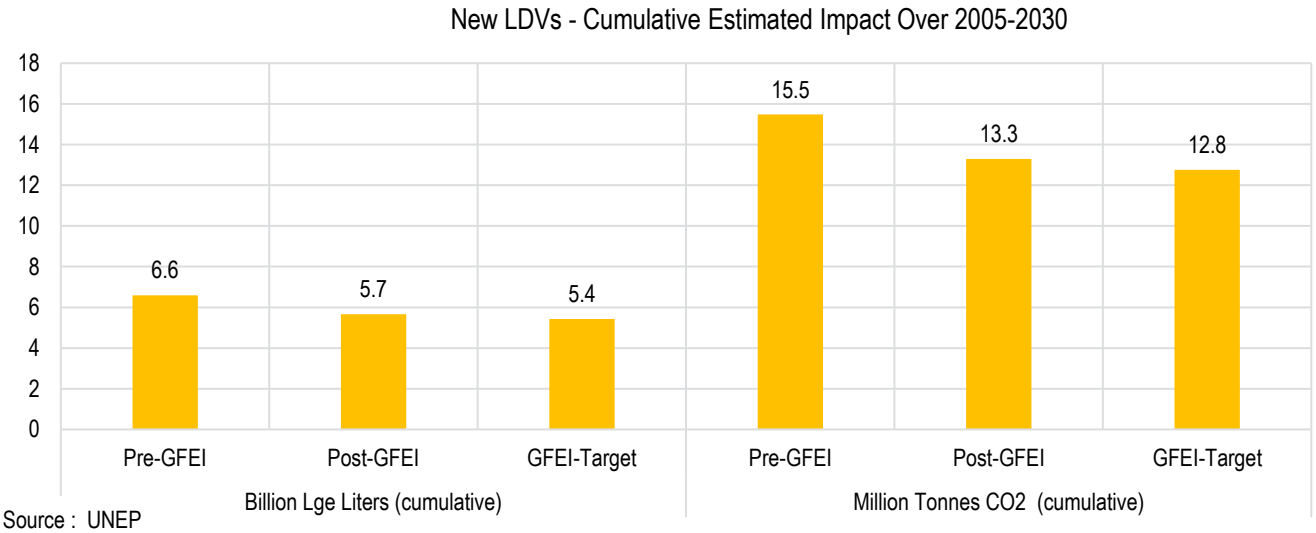
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-3.2%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-5.2%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

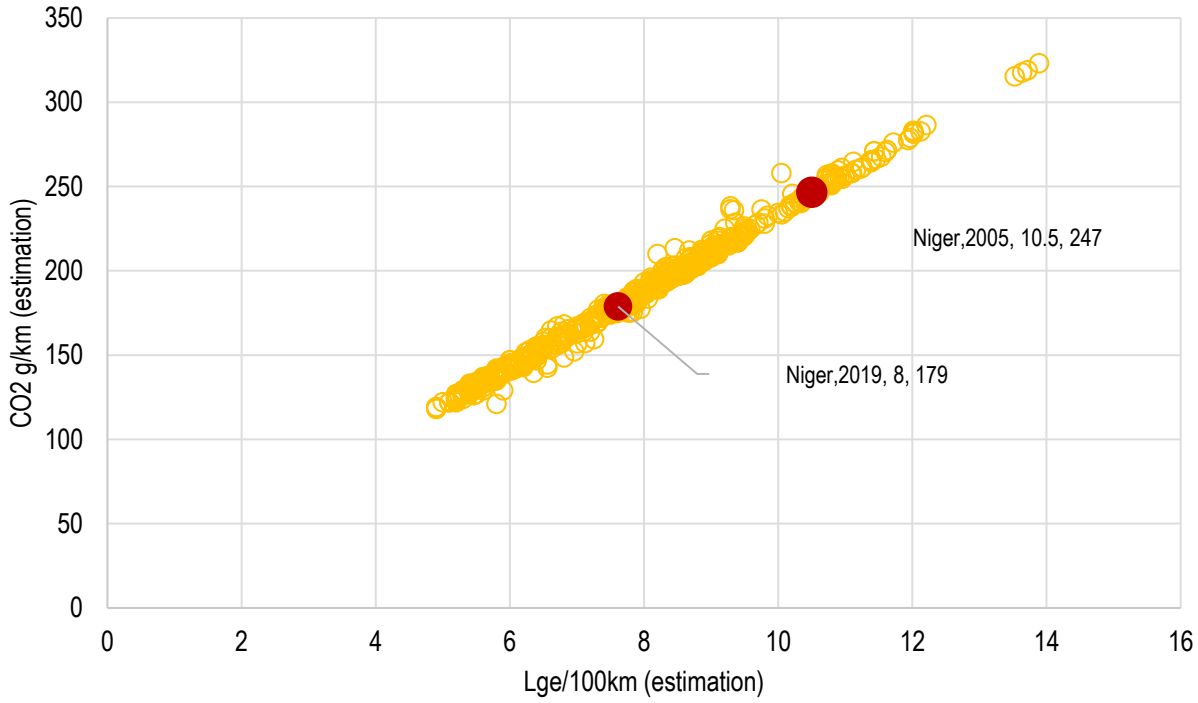
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

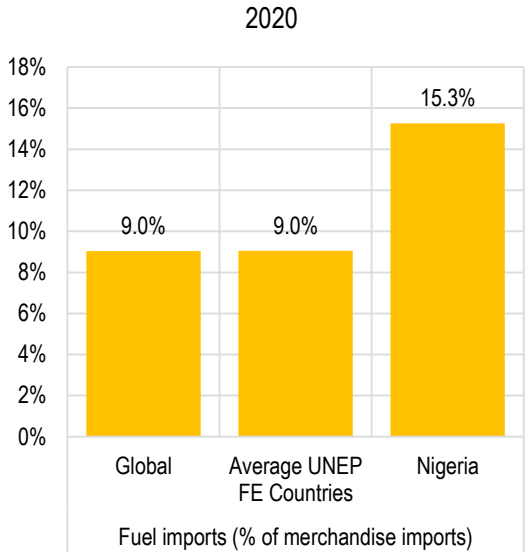
Source : UNEP

The fuel economy country baseline project for Niger is part of the activities of ECOWAS to develop a regional roadmap for fuel economy in West Africa. A national GFEI baseline dissemination workshop was organised by ECOWAS in Niger on 4-5 February 2019. The workshop brought together stakeholders in the transport sector in the country. The recommendations in the seminar included the imposition of a CO2-based importation tax to promote better fuel economy, incentivising the purchase of hybrid and electric vehicles, and the imposition of a maximum vehicle import age among other recommendations.

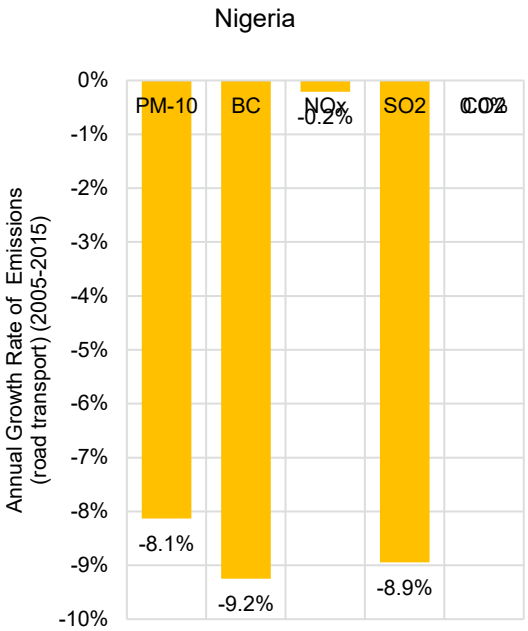
The assessment indicates that if Niger implements a fuel economy policy for first-time registered LDVs with a 2030 GFEI target, it could save 914 million litres of gasoline-equivalent & 2.15 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR NIGERIA

		Year	Source
Population (million)	206	2020	7
Income Level Category	Lower middle income		7
GDP per Capita (PPP, Curent USD)	5184	2020	7
Motorisation (Cars/1000 population)	16	2020	10
Car Sales (000)	90	2020	6
Gasoline Price $/l	0.4	2020	2
Fossil Fuel Subsidy (Million $) 2019	1647	2019	4
Road Infrastructure Length/Capita (meters)	3.1	2018	13
Employment (Transport+,000)	3149	2019	11
Fuel Economy (Lge/100 km, WLTP) -	9	2017	1
Average CO2 emissions/kilometre (g/km, WLTP) -	210	2017	1
Average displacement (cm3) -	2937	2017	1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -	108	2017	1
Average Age of newly registered cars (years) -	12	2017	1
Cumulative number of LDVs (total sample size,000) -	634		1
Diesel Share in LDV (sample,%)	0%	2017	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.070	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.016	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	0.5	2019	8
Transport CO2 Emissions per Capita (tonnes) -	0.5	2019	14
Road Transport PM Emissions per Capita (grams) -	12.2	2015	14
Road Transport NOx Emissions per Capita (grams)-	1485.8	2015	14
Road Transport BC Emissions per Capita (grams)-	5.1	2015	14
LDV Emission Standards -	Euro 3	2019	1
Diesel Sulphur Levels (ppm) -	3000	2019	1
Gasoline Sulphur Levels (ppm) -	1000	2019	1
Annual rate of economy-wide energy intensity growth	-2.3%	2000-18	16
Annual rate of transport energy consumption growth	5.1%	2000-18	16
LDV Import value (Million USD)	0	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

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2 GIZ
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4 International Energy Agency
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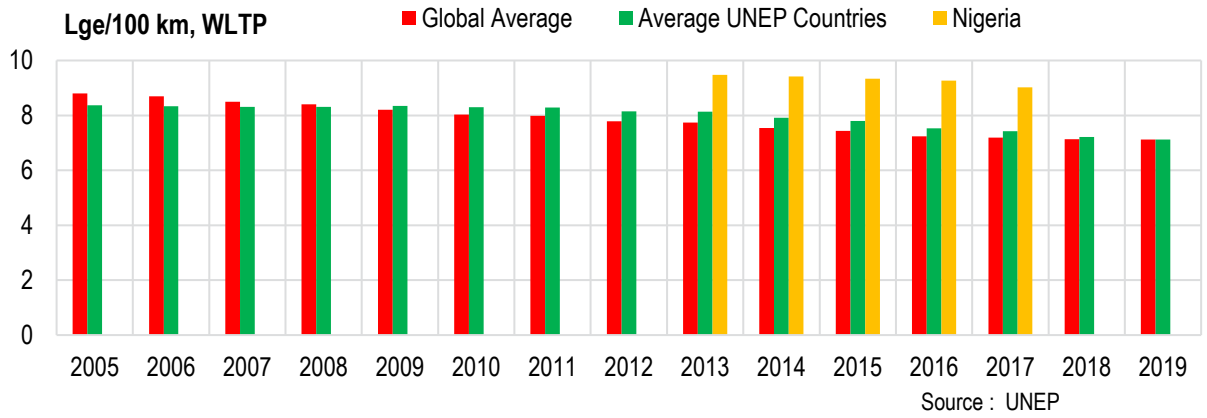
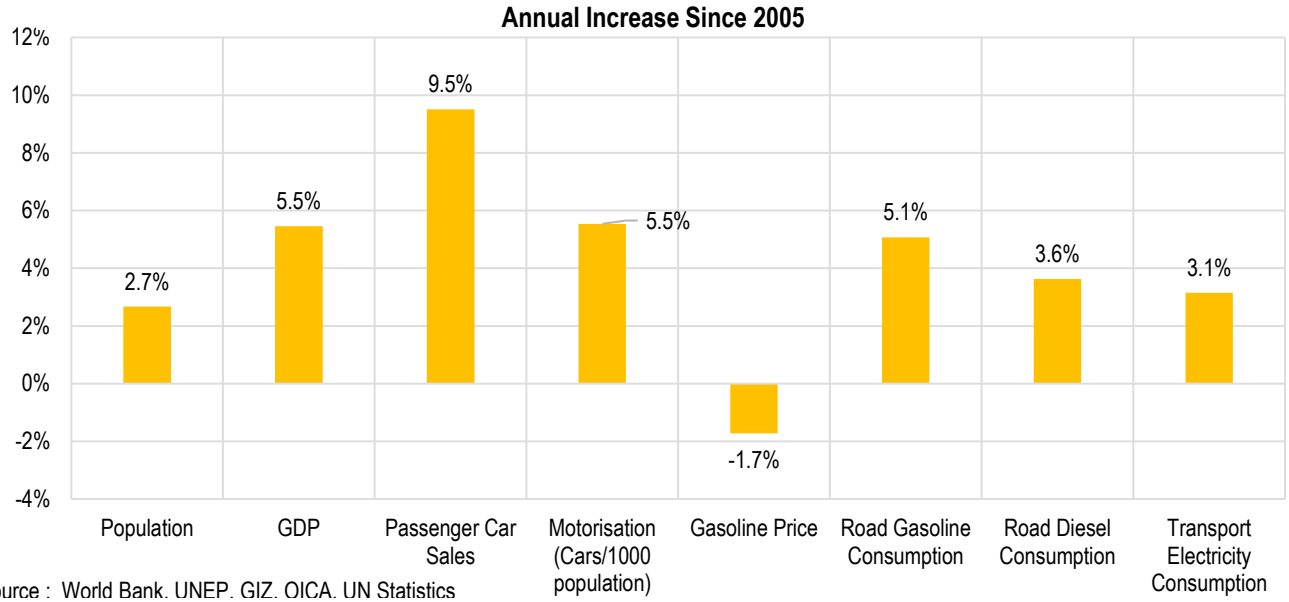
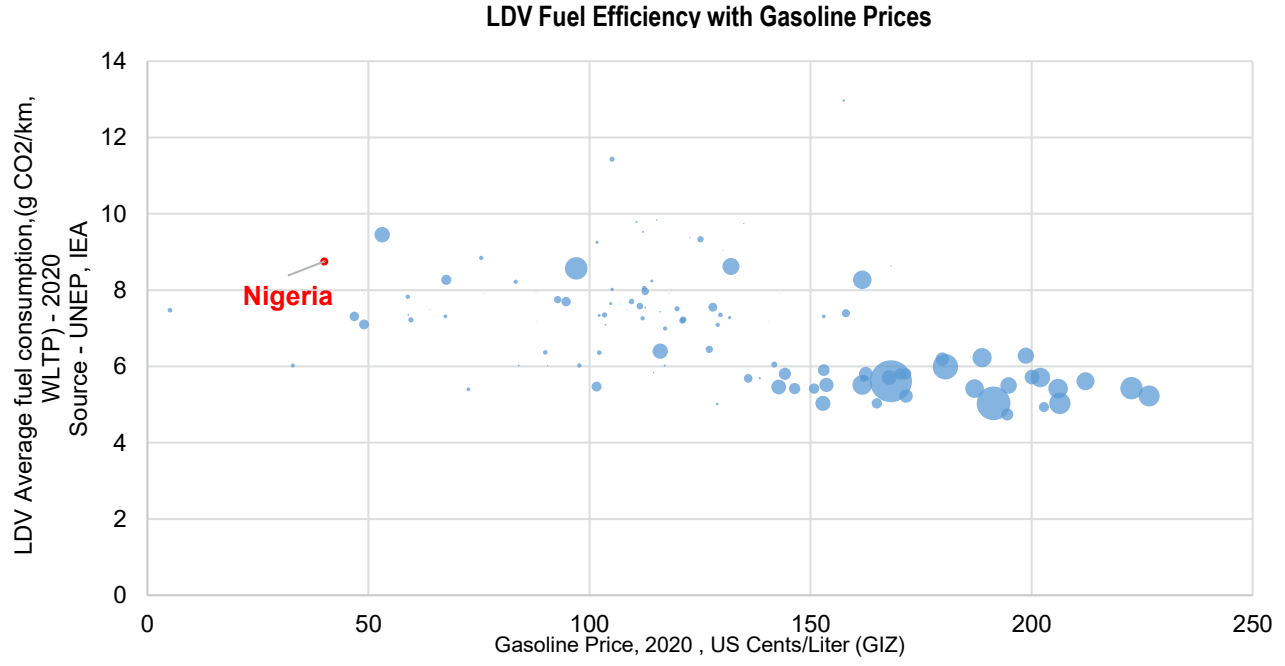
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

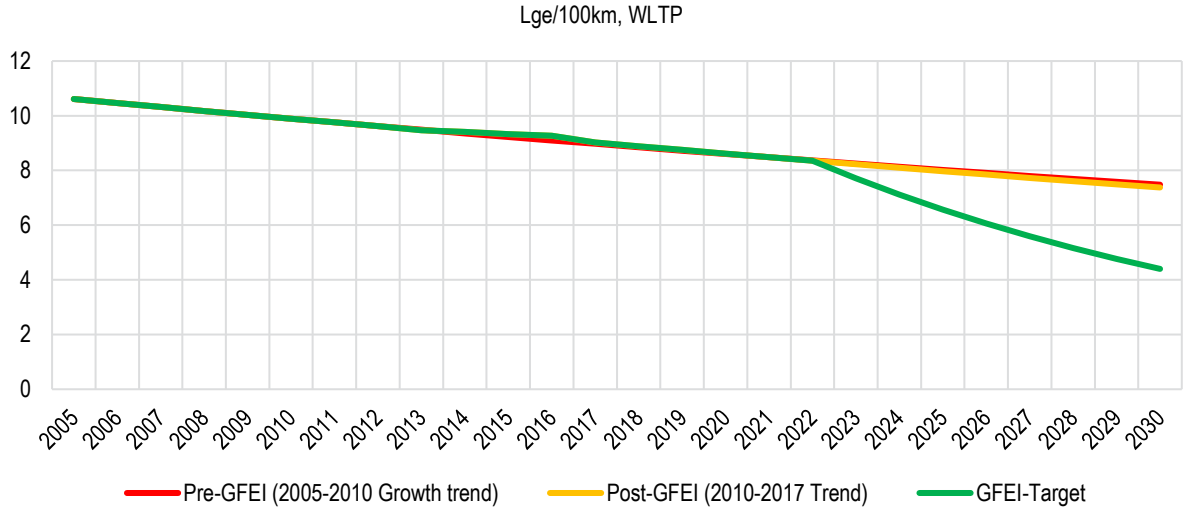
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

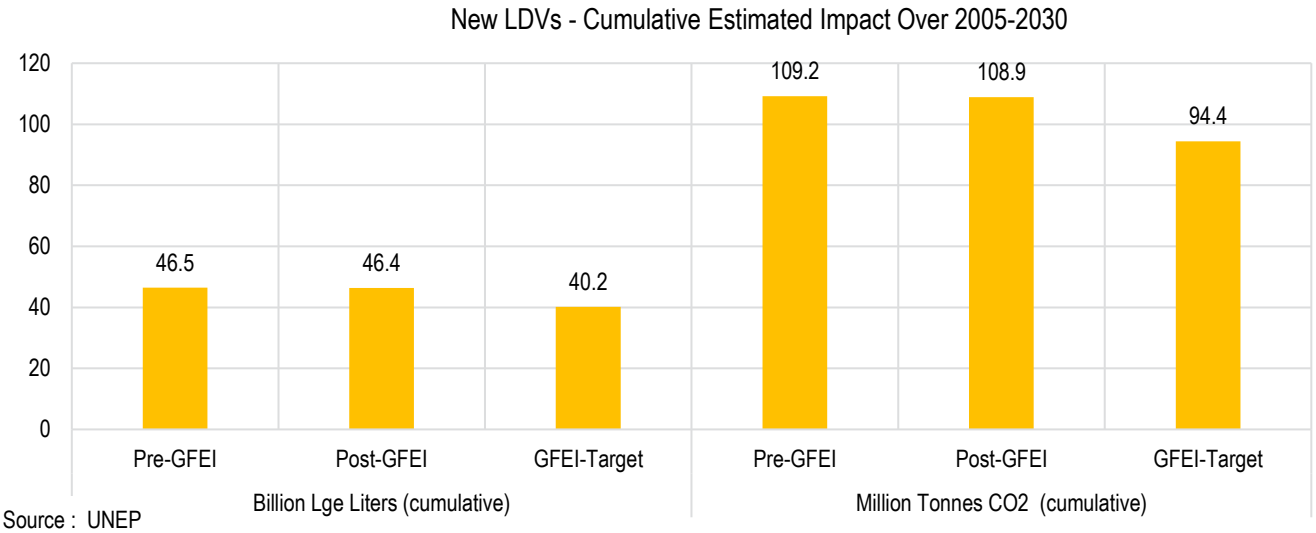
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-1.4%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-6.5%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

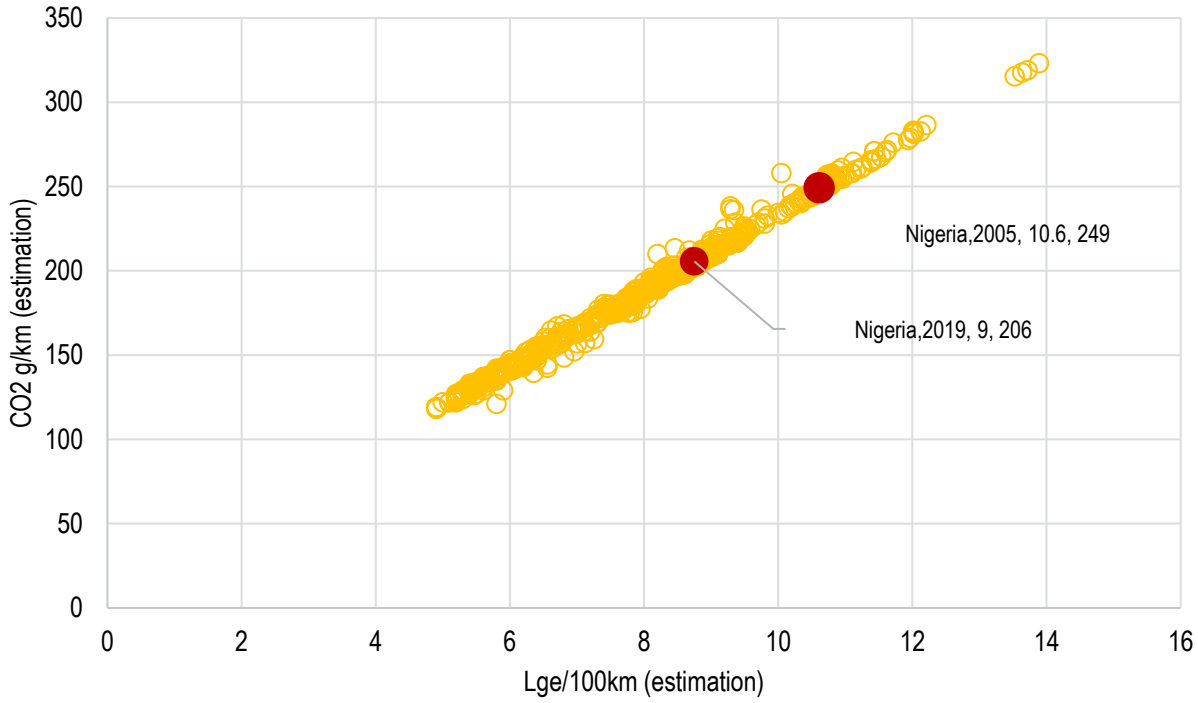
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

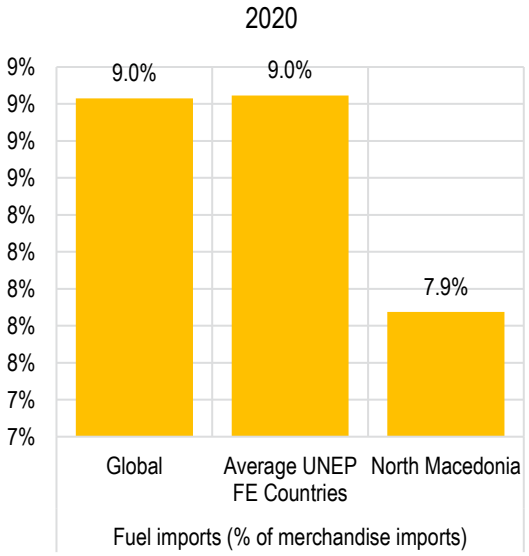
Source : UNEP

The National Automotive Design and Development Council (NADDC) and UNEP signed an agreement on 21 June 2017 to promote cleaner fuels and automotive fuel economy in Nigeria. The National Automotive Design and Development Council held a low-sulphur fuels meeting and GFEI project launch Workshop in Abuja on 24 - 25 April 2018. The workshop which was co-organised by the NADDC and the Federal Ministry of Environment was opened by the Hon. Ibrahim Jibril, Minister of State for Environment. After the GFEI project launch, the NADDC embarked on carrying out the fuel economy vehicle inventory (baseline) study together with the Nigeria Institute of Transport Technology. On 18 December 2019, Nigeria concluded and disseminated the vehicle fuel economy baseline study and proposed policies that would help achieve better fuel economy in the country. Participants proposed several measures to improve the average fuel economy, including tax waivers for fuel-efficient vehicles, vehicle labelling as well as the establishment of a data capture system, among others.

The assessment indicates that if Nigeria implements a fuel economy policy for first-time registered LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 5.3 billion litres of gasoline-equivalent & 12.60 million tonnes of CO2 cumulative from newly registered LDVs. The World Bank has estimated that in the absence of fuel economy policies, between 2010 and 2035, fuel consumption is projected to increase by 680 per cent, driven by a five-fold increase in total vehicle kilometres driven. However, applying regulations in line with European emissions target levels with a lag of 15 years would mean that new and imported vehicles should on average, emit only 130g CO2/km by 2030. This could reduce average emissions levels for private cars to approximately 137g CO2/km by 2035. The savings grow to 36 metric tons annually by 2035, with a total reduction in carbon emissions over the forecast period of 269 Mt CO2. International energy agency has estimated that the number of vehicles could grow from 14 to 37 million by 2040, with only two-times more oil consumption if more stringent fuel economy standards are introduced.

LDV FUEL ECONOMY COUNTRY REPORT FOR NORTH MACEDONIA

		Year	Source
Population (million)	2	2020	7
Income Level Category	Upper middle income		7
GDP per Capita (PPP, Curent USD)	17015	2020	7
Motorisation (Cars/1000 population)	185	2020	10
Car Sales (000)	3	2020	6
Gasoline Price $/l	1.4	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	10.3	2018	13
Employment (Transport+,000)	57	2019	11
Fuel Economy (Lge/100 km, WLTP) -	7	2013	1
Average CO2 emissions/kilometre (g/km, WLTP) -	164	2013	1
Average displacement (cm3) -	1858	2013	1
Average kerb weight (kg) -	1368	2013	1
Average power (kw) -	80	2013	1
Average Age of newly registered cars (years) -	11	2013	1
Cumulative number of LDVs (total sample size,000) -	66		1
Diesel Share in LDV (sample,%)	75%	2013	1
Is Fuel Economy included in NDC?	#N/A	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	#N/A	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.050	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.276	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	6.8	2019	8
Transport CO2 Emissions per Capita (tonnes) -	4.3	2019	14
Road Transport PM Emissions per Capita (grams) -	76.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	3635.9	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	no policy	2019	1
Diesel Sulphur Levels (ppm) -	10	2019	1
Gasoline Sulphur Levels (ppm) -	10	2019	1
Annual rate of economy-wide energy intensity growth	#N/A	2000-18	16
Annual rate of transport energy consumption growth	#DIV/0!	2000-18	16
LDV Import value (Million USD)	0	2020	3



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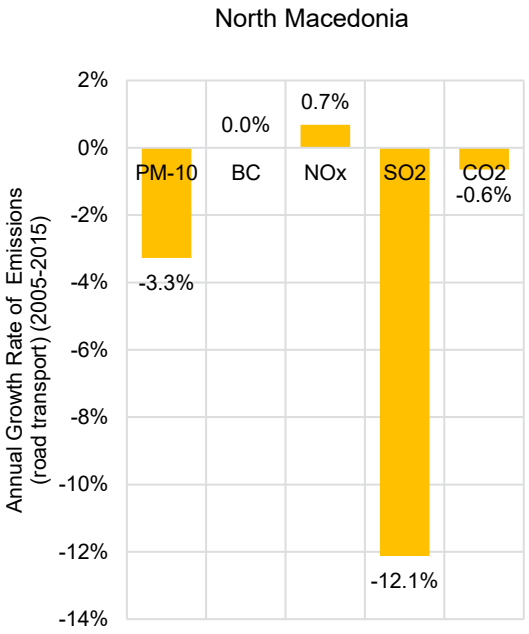

Source : IIASA

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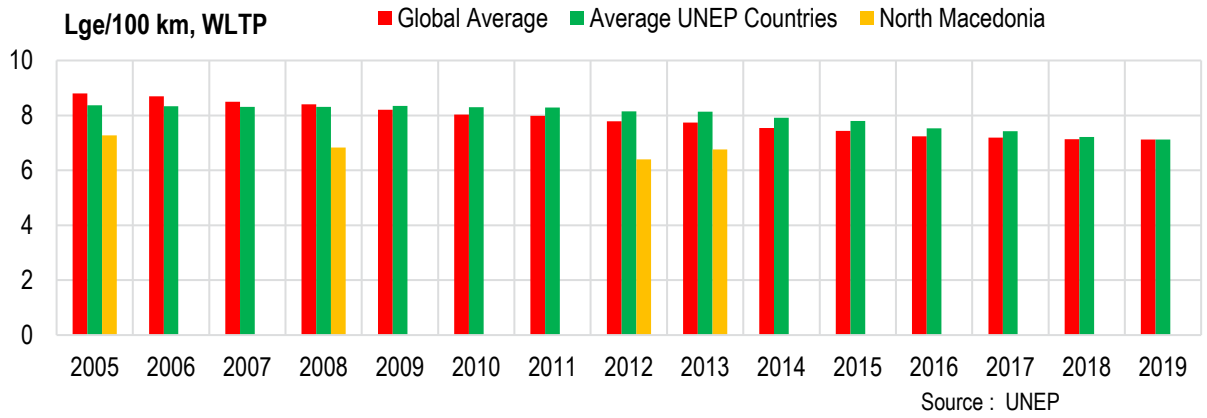
FUEL ECONOMY TRENDS



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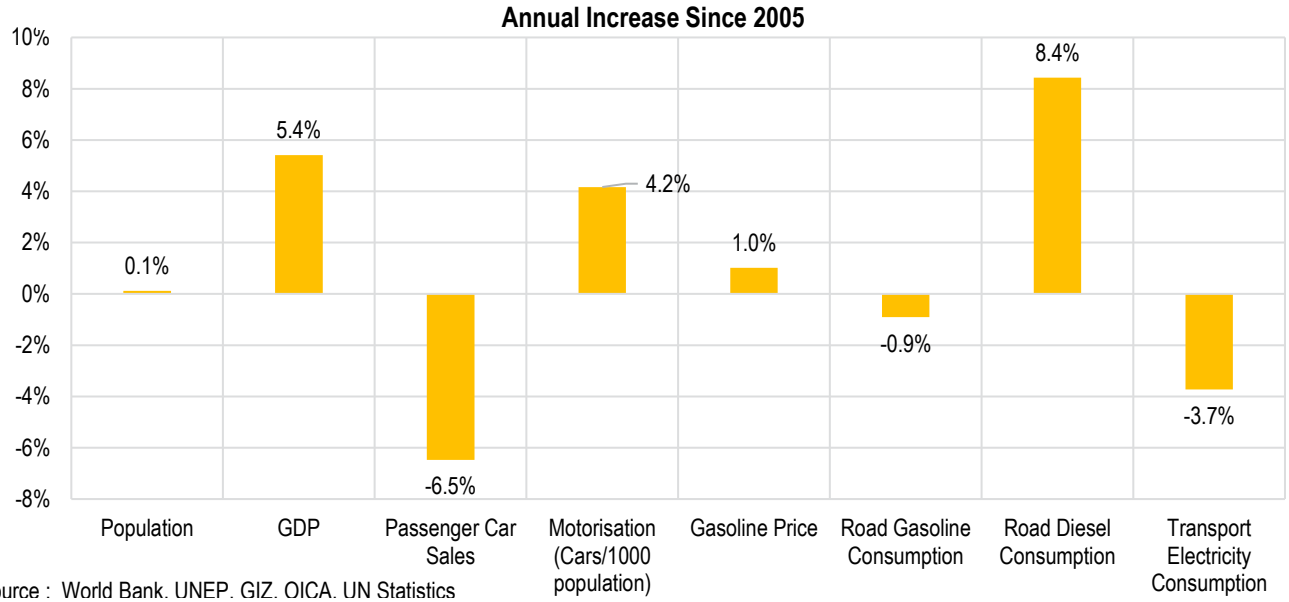

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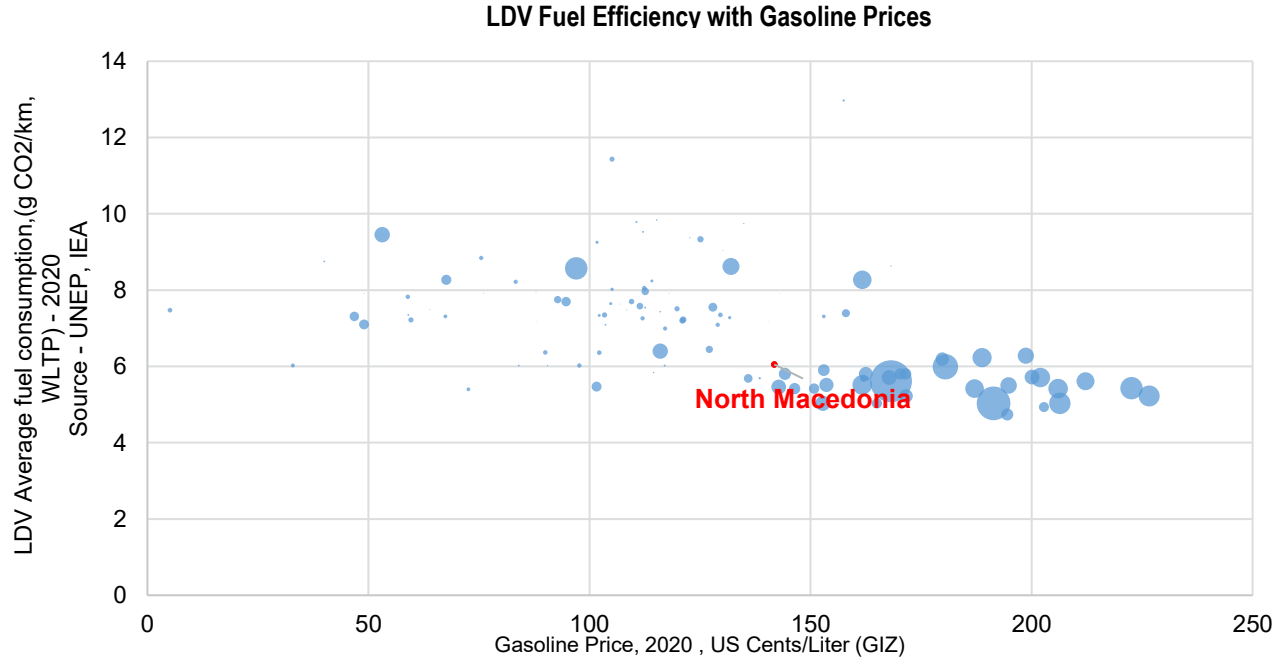


Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

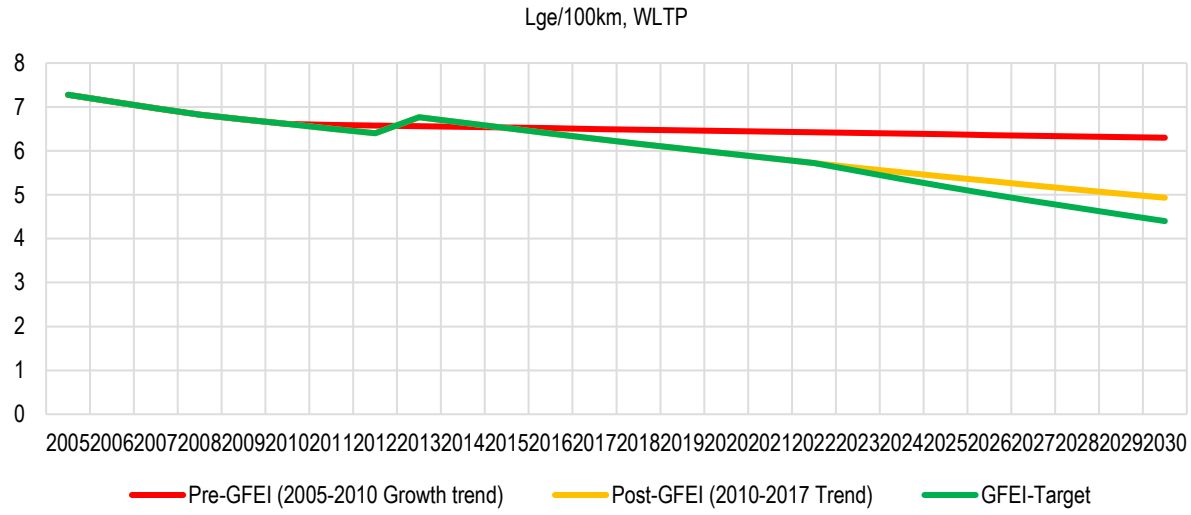
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-1.1%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-3.0%**



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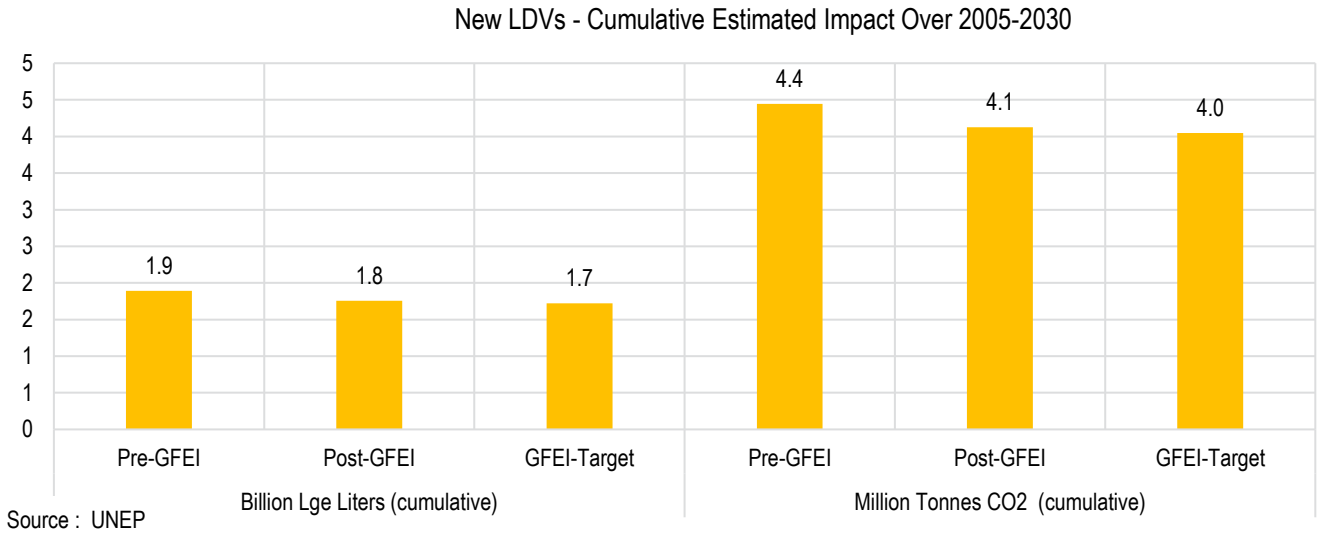

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Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

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4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

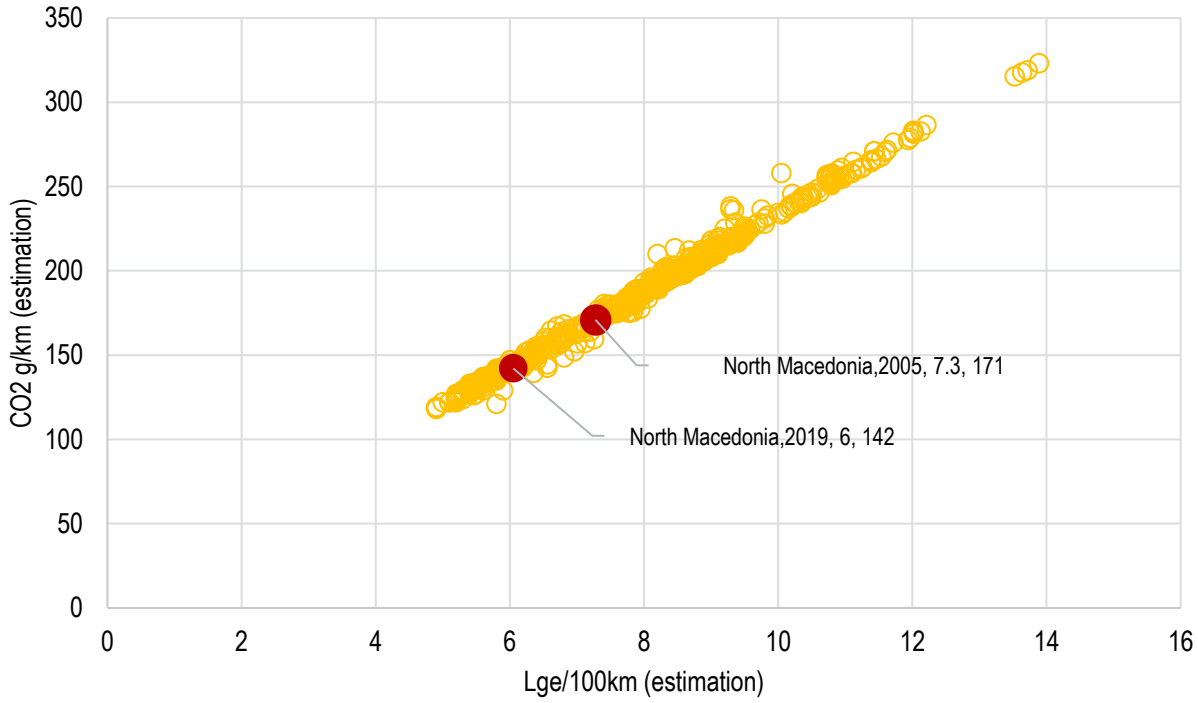
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

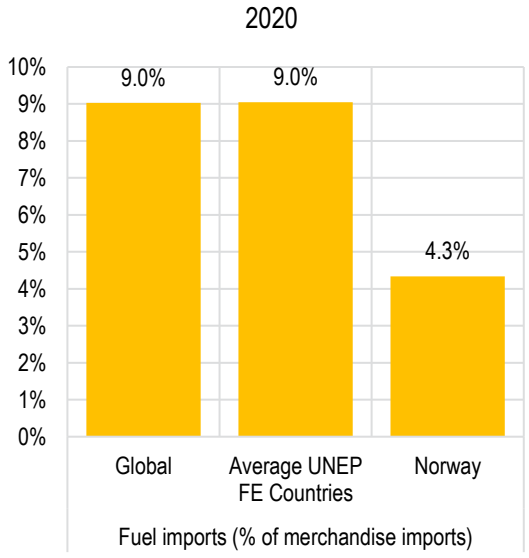
In the Republic of North Macedonia, policy development activities started in April 2015, following-up with a previous baseline project completed on 24 June 2013. In June 2016 the national draft automotive fuel economy baseline was completed. A National Working Group was established in early 2016 to monitor and support project implementation. The Working Group comprises of the Ministry of Economy - Department of Vehicles, the Faculty of Information Technology, University of Niš (Serbia), the Ministry of Environment and Physical Planning, the Macedonian Environmental Information Centre, the Ministry of Transport and Communications, Department of Freight and Passenger Transport and the Ministry of Interior - Department of Vehicles. Draft national auto fuel economy policies have been developed which includes measures such as - replacement of the current excise duty on vehicle import, subsidy program for clean vehicles, auto fuel economy labelling etc.

The Strategy for Energy Development of the Republic of North Macedonia until 2040. The strategy proposes the implementation of following measures - replacement of old vehicles with energy-efficient ones, electrification of road transport (EVs), as well as a modal shift from road to rail for freight transport and from car to bus for passenger transport, and more biking / walking in urban areas.

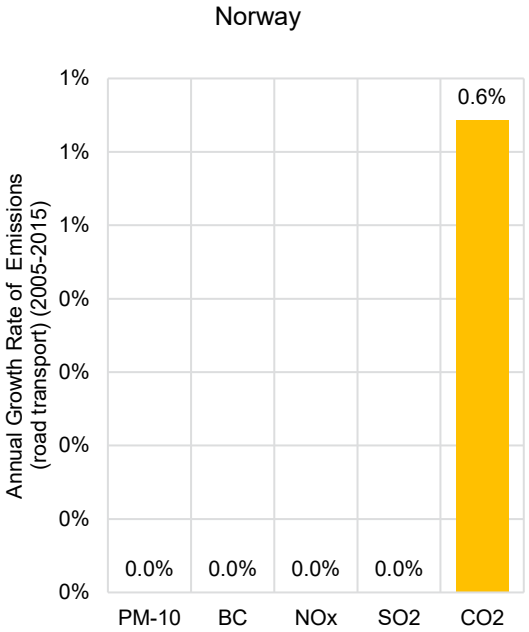
The assessment indicates that if North Macedonia implements a fuel economy policy for first-time registered LDVs with a 2030 GFEI target, it could save 164 million litres of gasoline-equivalent & 0.39 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR NORWAY

		Year	Source
Population (million)	5	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	63288	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	124	2020	6
Gasoline Price $/l	2.2	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	43.3	2018	13
Employment (Transport+,000)	247	2019	11
Fuel Economy (Lge/100 km, WLTP) -	6	2015	1
Average CO2 emissions/kilometre (g/km, WLTP) -	121	2015	1
Average displacement (cm3) -	1796	2015	1
Average kerb weight (kg) -	1561	2015	1
Average power (kw) -	102	2015	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.142	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.566	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	268.8	2019	8
Transport CO2 Emissions per Capita (tonnes) -	9.0	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	-1.2%	2000-18	16
Annual rate of transport energy consumption growth	0.6%	2000-18	16
LDV Import value (Million USD)	0	2020	3



Source : World Bank

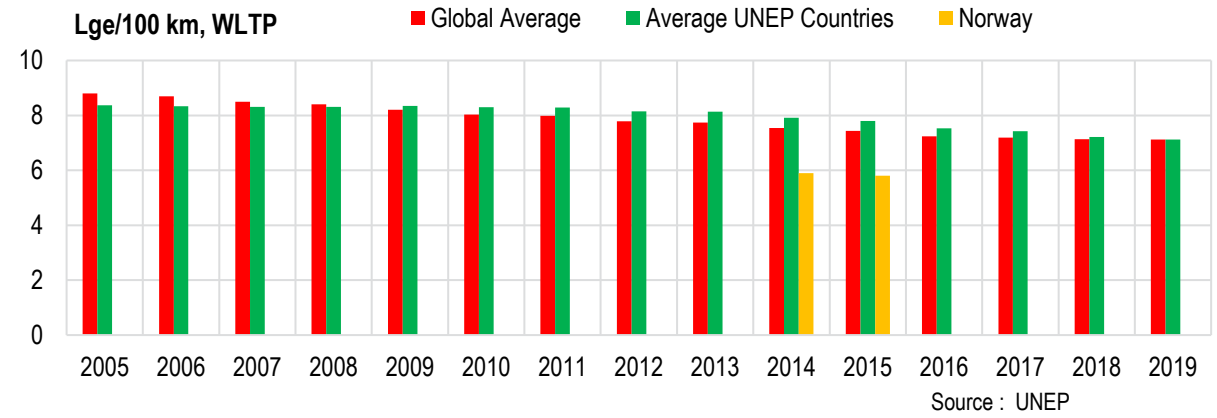


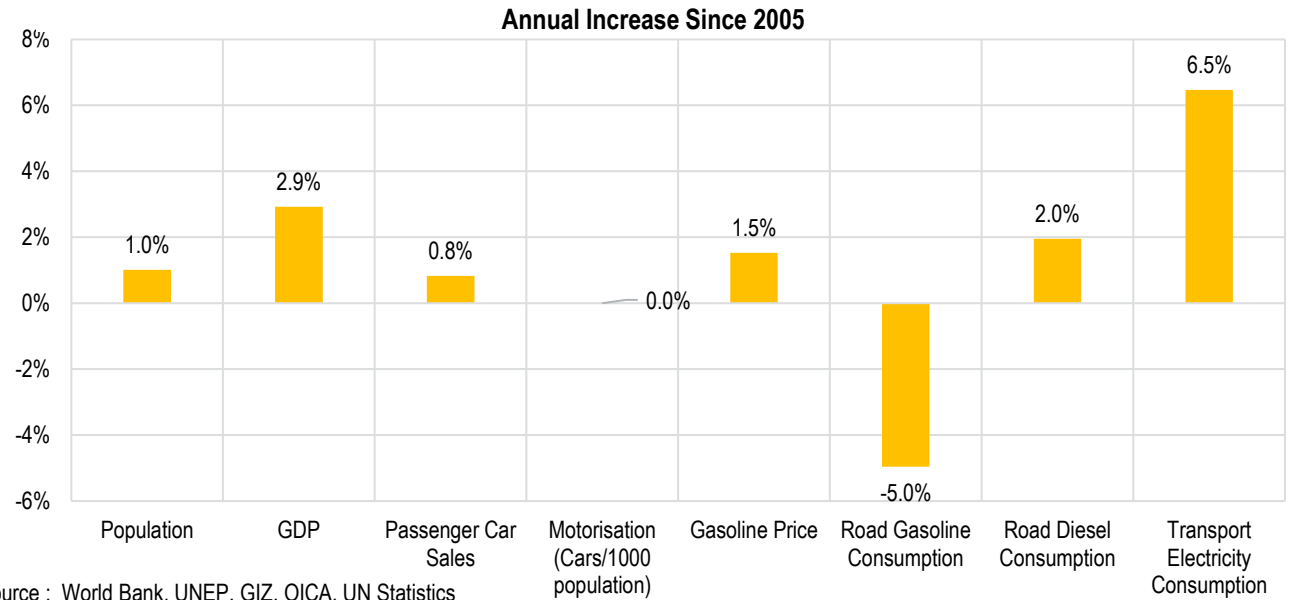
Source : IIASA

Sources & Notes

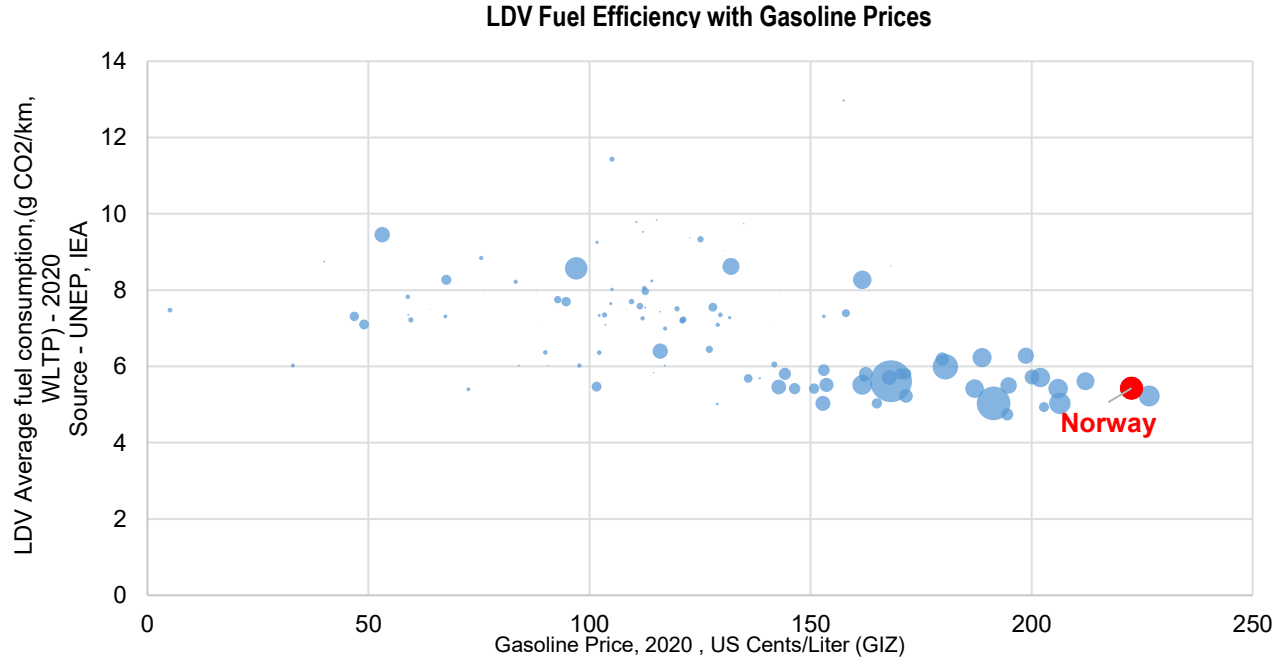
1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
7 World Bank
8 UN Statistics Division
9 SLOCAT &GIZ
10 Estimated using growth and sales data
11 Employment is for Transport; storage and communication, ILO
12 International Transport Forum
13 Koks, E.E. et al. A global multi-hazard risk analysis of road
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

FUEL ECONOMY TRENDS





Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

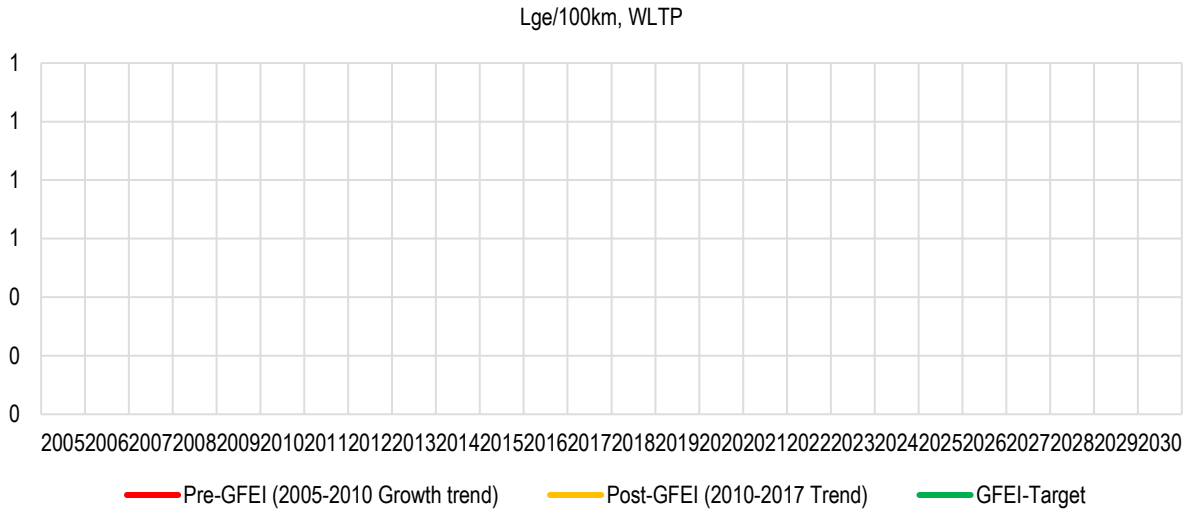
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

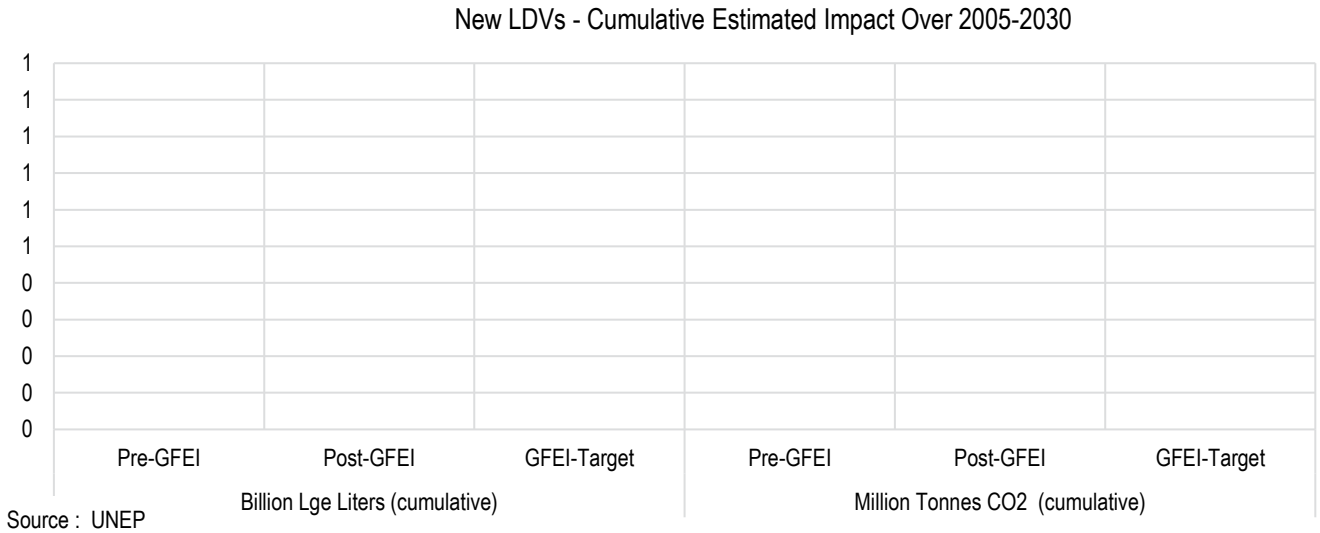
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

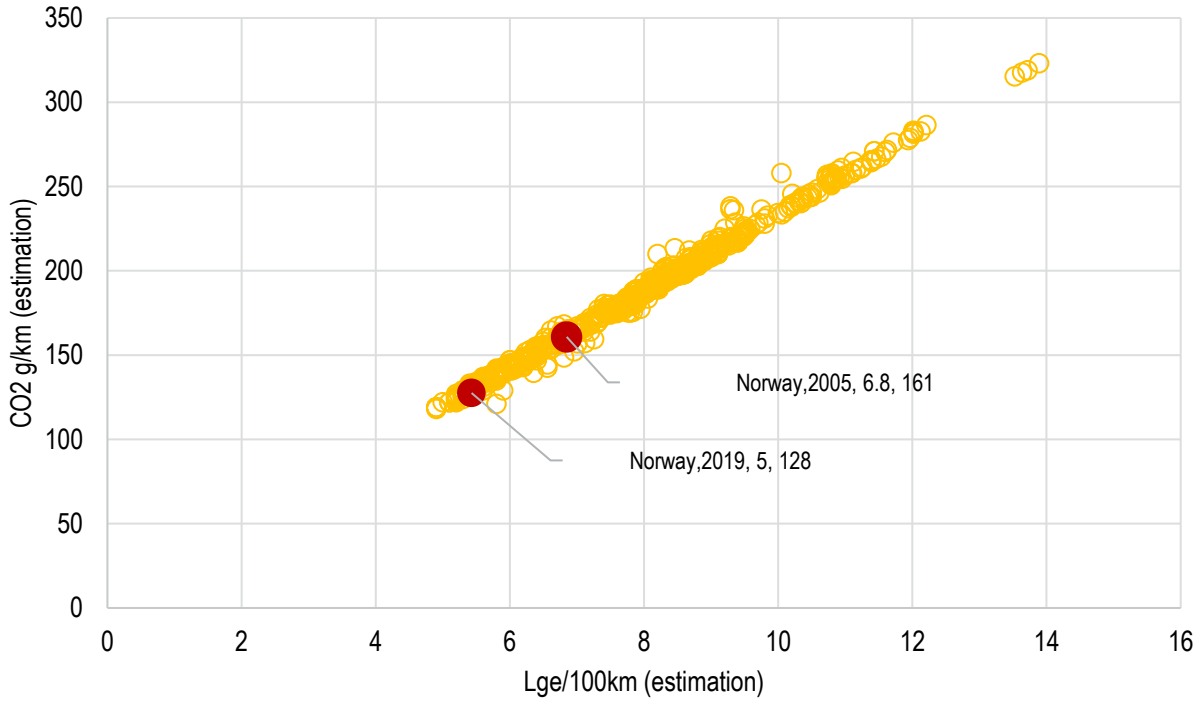
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



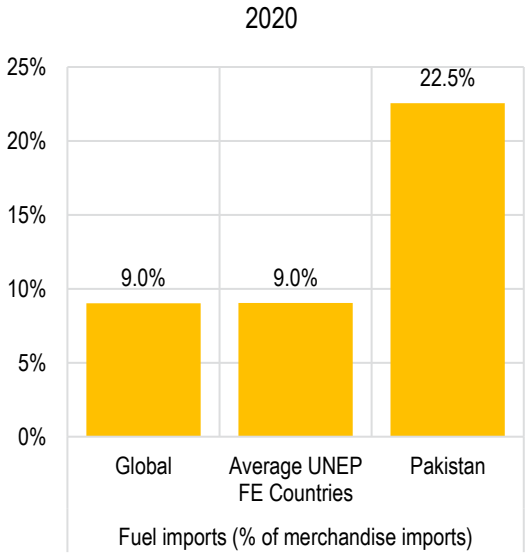
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

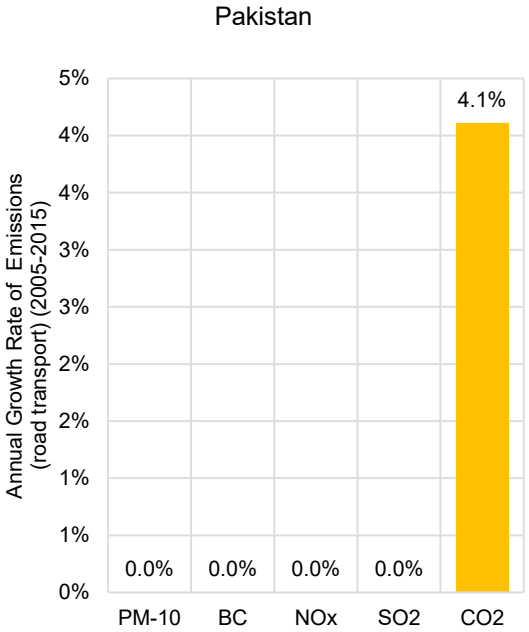
#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR PAKISTAN

		Year	Source
Population (million)	221	2020	7
Income Level Category	Lower middle income		7
GDP per Capita (PPP, Curent USD)	4811	2020	7
Motorisation (Cars/1000 population)	14	2020	10
Car Sales (000)	104	2020	6
Gasoline Price $/l	0.8	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	1.1	2018	13
Employment (Transport+,000)	4832	2019	11
Fuel Economy (Lge/100 km, WLTP) -	7	2019	1
Average CO2 emissions/kilometre (g/km, WLTP) -	155	2019	1
Average displacement (cm3) -			1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.035	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.000	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	0.0	2019	8
Transport CO2 Emissions per Capita (tonnes) -	1.0	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	Euro 2	2019	1
Diesel Sulphur Levels (ppm) -	50	2019	1
Gasoline Sulphur Levels (ppm) -	50	2019	1
Annual rate of economy-wide energy intensity growth	-1.2%	2000-18	16
Annual rate of transport energy consumption growth	3.6%	2000-18	16
LDV Import value (Million USD)	860	2020	3



Source : World Bank

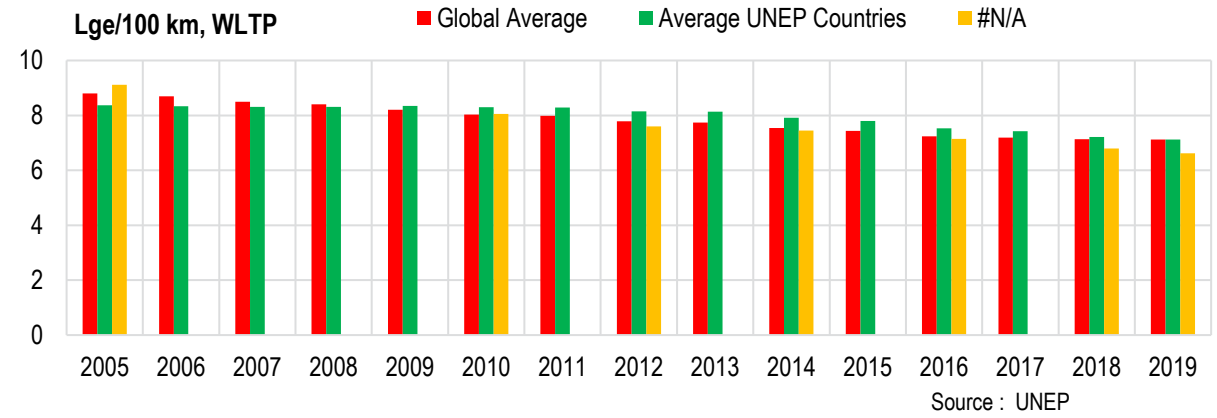


Source : IIASA

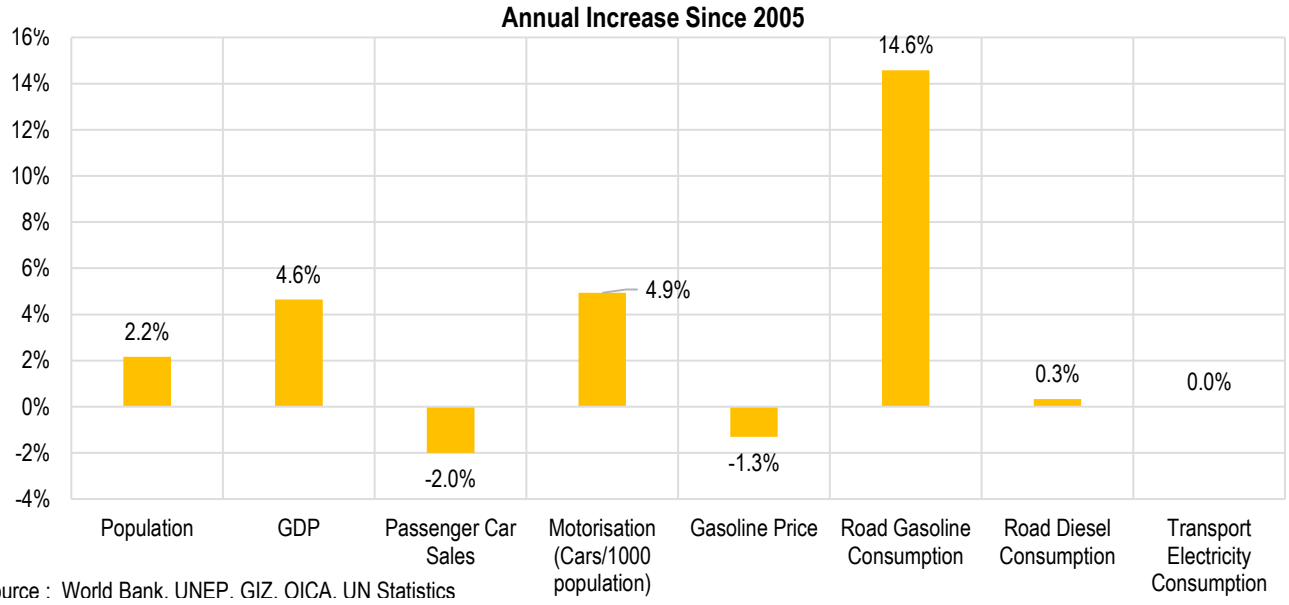
Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
7 World Bank
8 UN Statistics Division
9 SLOCAT &GIZ
10 Estimated using growth and sales data
11 Employment is for Transport; storage and communication, ILO
12 International Transport Forum
13 Koks, E.E. et al. A global multi-hazard risk analysis of road
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

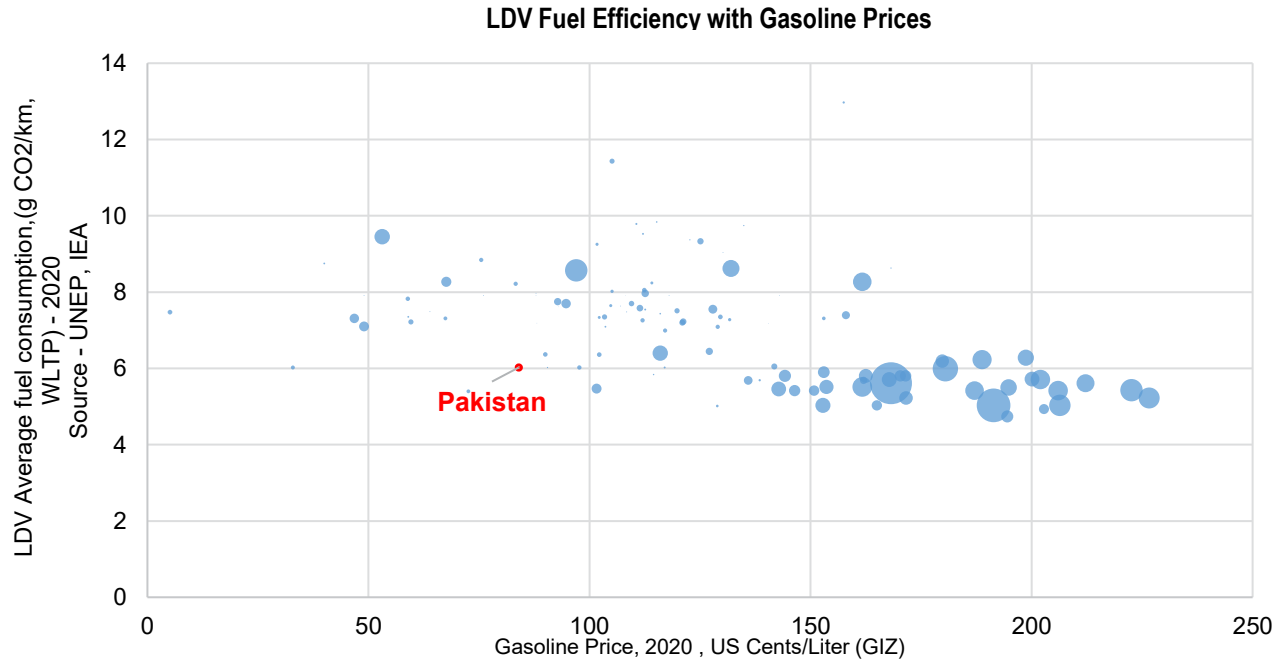
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

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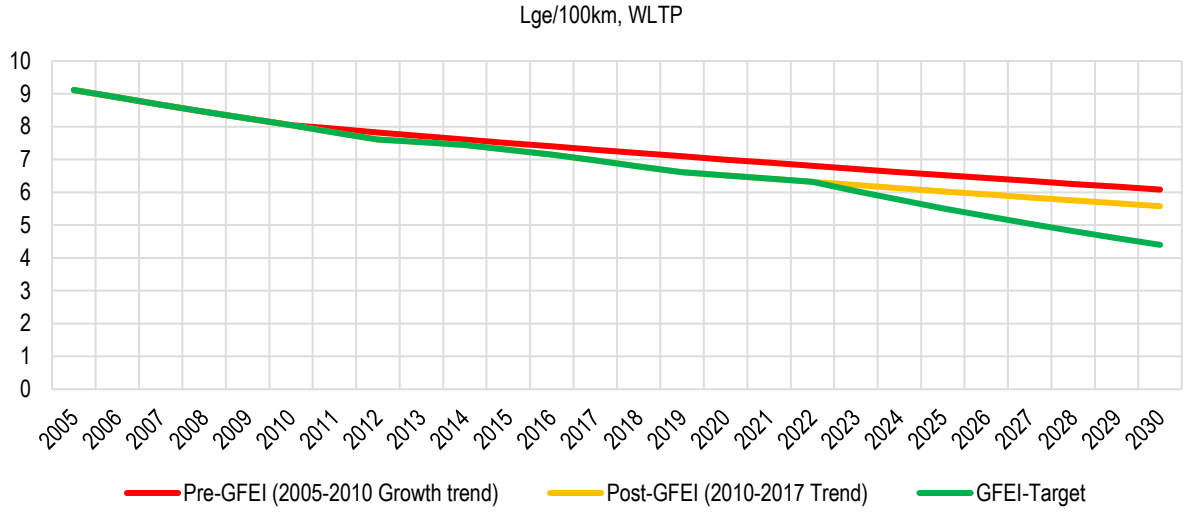
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

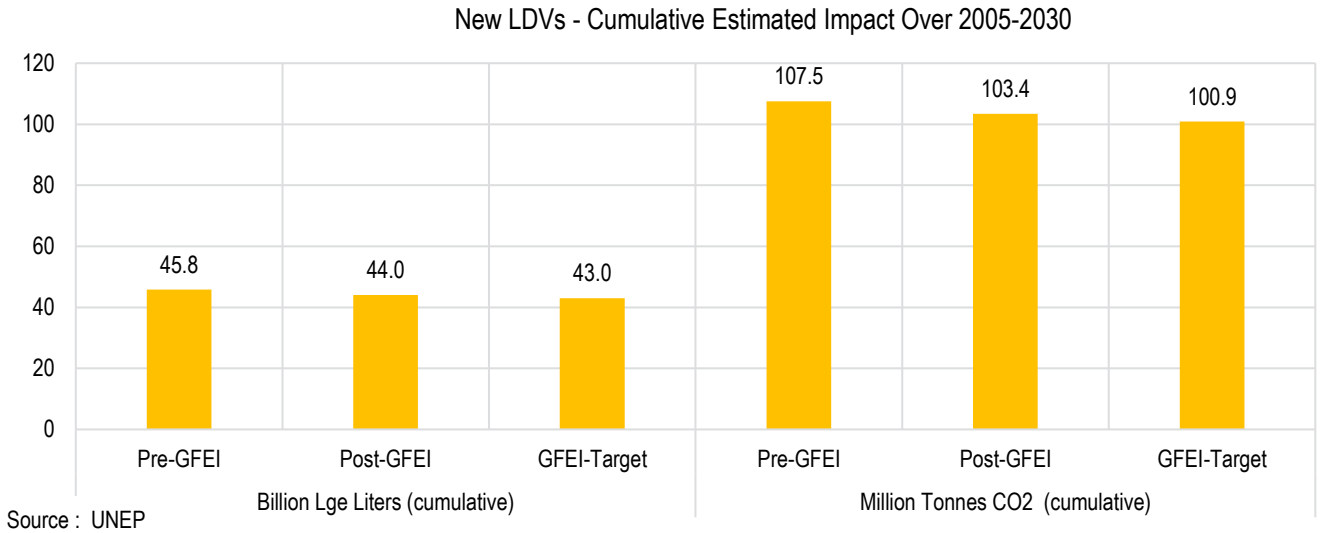
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-2.1%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-3.8%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

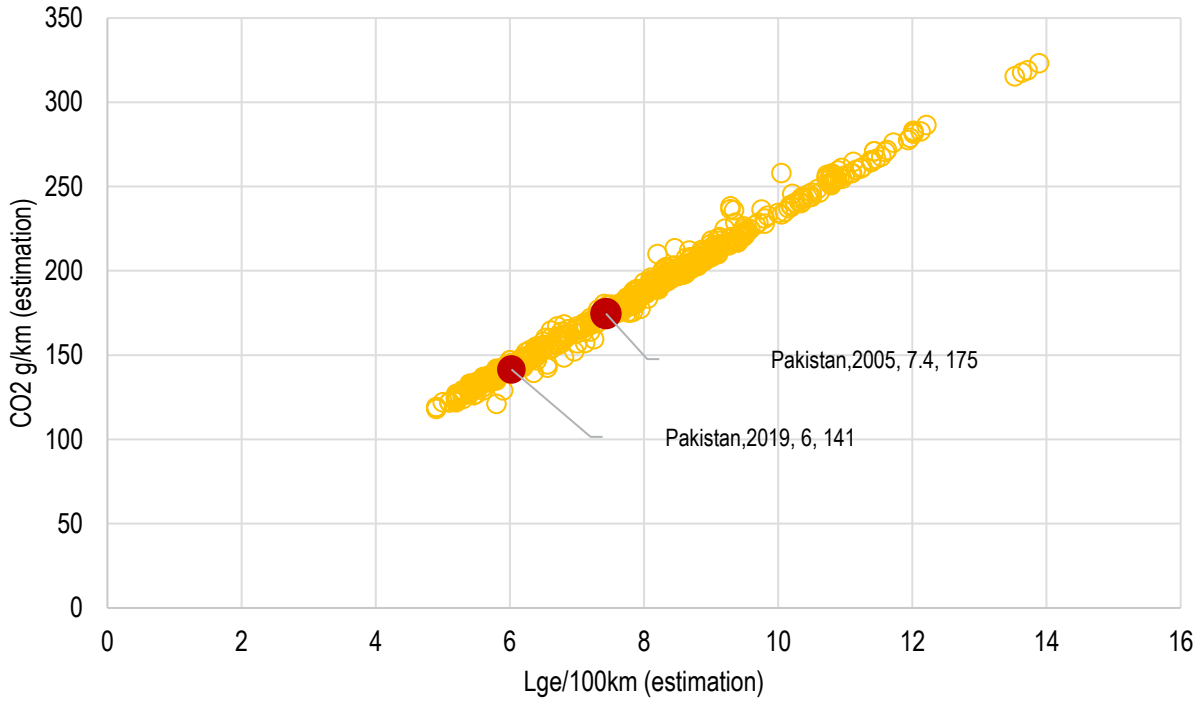
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

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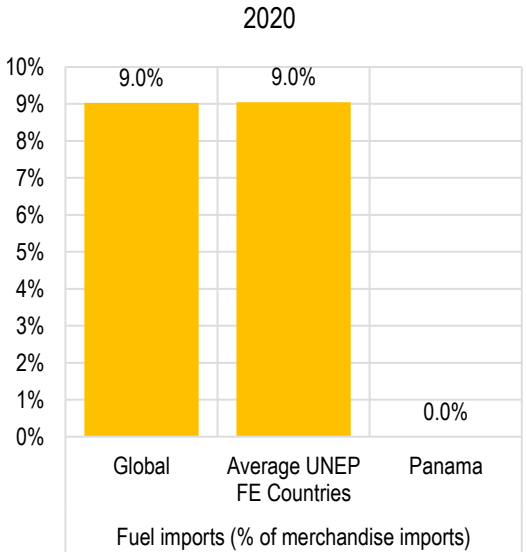
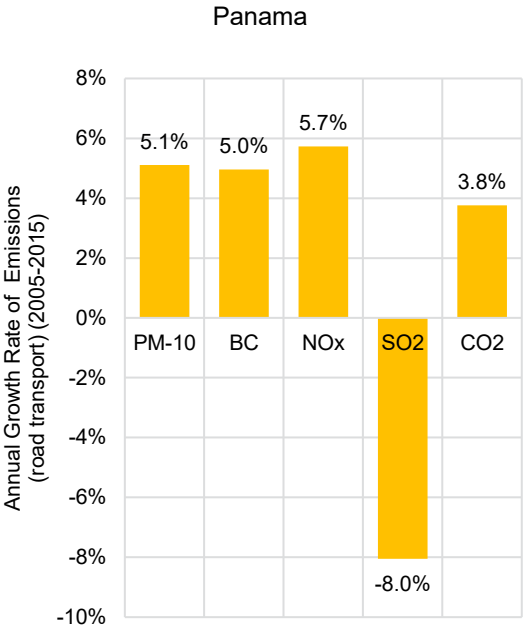
LDV FUEL ECONOMY COUNTRY REPORT FOR PANAMA

		Year	Source
Population (million)	4	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	26773	2020	7
Motorisation (Cars/1000 population)	135	2020	10
Car Sales (000)	33	2020	6
Gasoline Price $/l	0.9	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	6.0	2018	13
Employment (Transport+,000)	188	2019	11
Fuel Economy (Lge/100 km, WLTP) -	8	2016	1
Average CO2 emissions/kilometre (g/km, WLTP) -	191	2016	1
Average displacement (cm3) -	1859	2016	1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -	211		1
Diesel Share in LDV (sample,%)	21%	2016	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	No	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.173	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.123	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	12.4	2019	8
Transport CO2 Emissions per Capita (tonnes) -	2.7	2019	14
Road Transport PM Emissions per Capita (grams) -	209.2	2015	14
Road Transport NOx Emissions per Capita (grams)-	6026.3	2015	14
Road Transport BC Emissions per Capita (grams)-	94.3	2015	14
LDV Emission Standards -	no policy	2019	1
Diesel Sulphur Levels (ppm) -	15	2019	1
Gasoline Sulphur Levels (ppm) -	500	2019	1
Annual rate of economy-wide energy intensity growth	-2.7%	2000-18	16
Annual rate of transport energy consumption growth	4.3%	2000-18	16
LDV Import value (Million USD)	372	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
7 World Bank
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15 Fuel imports (% of merchandise imports) data is from World Bank
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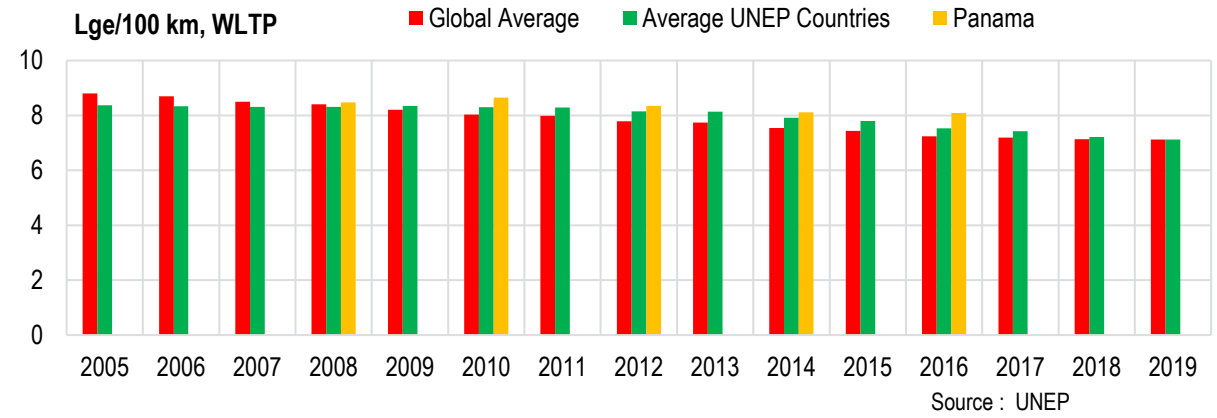
FUEL ECONOMY TRENDS



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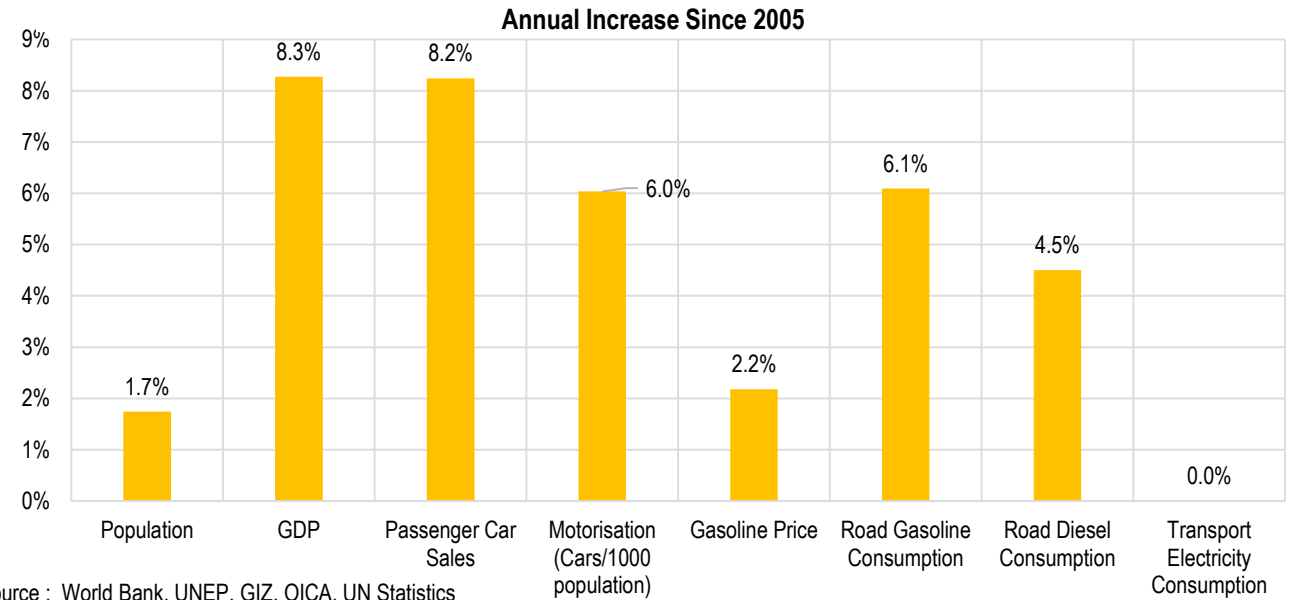
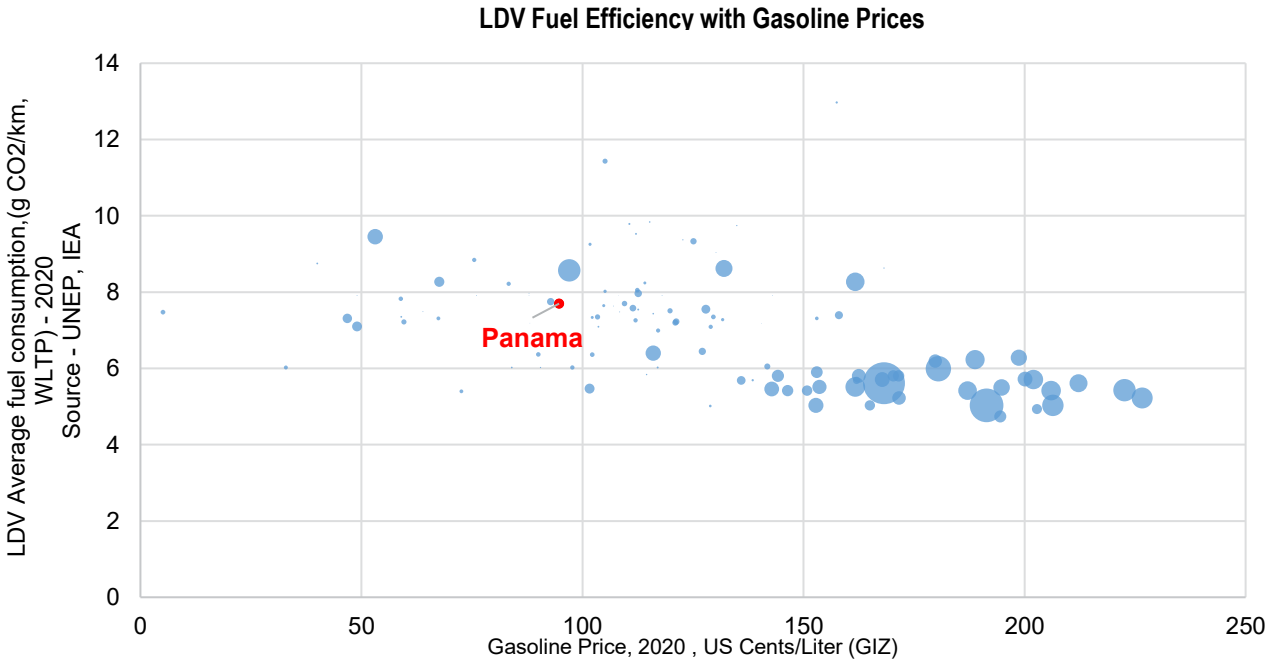


Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

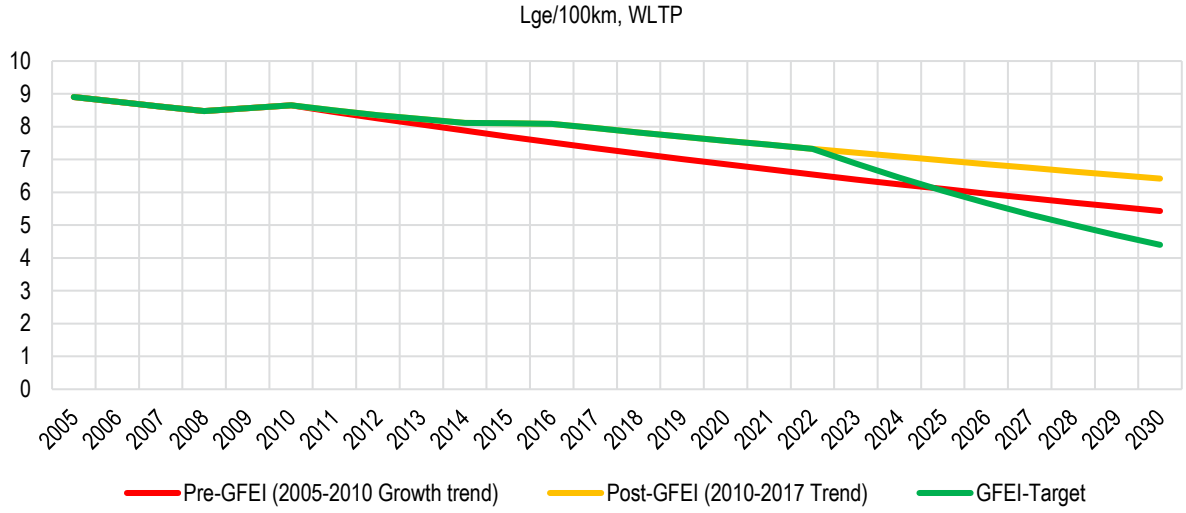
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

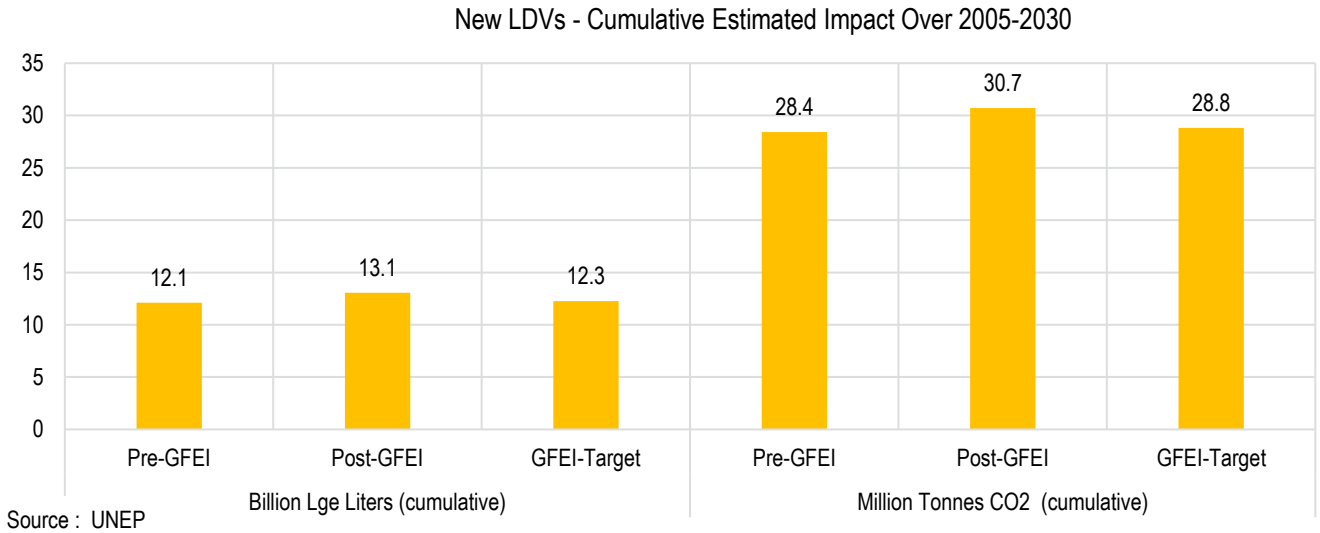
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-1.3%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-5.3%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

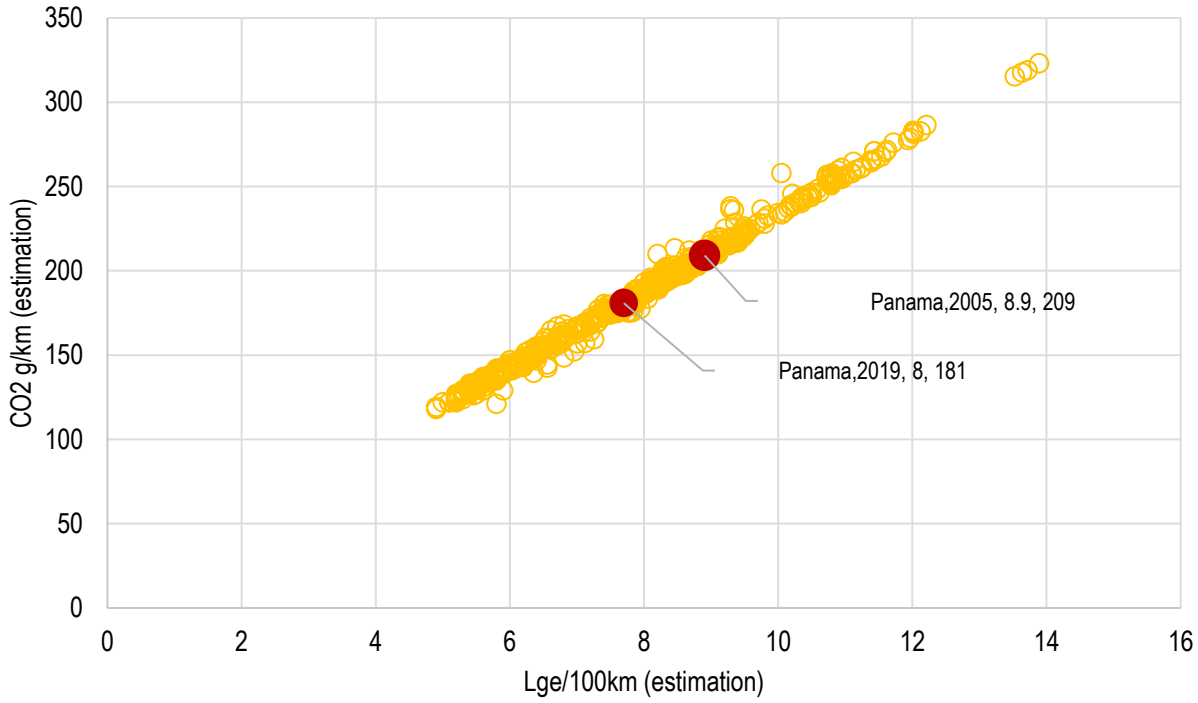
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

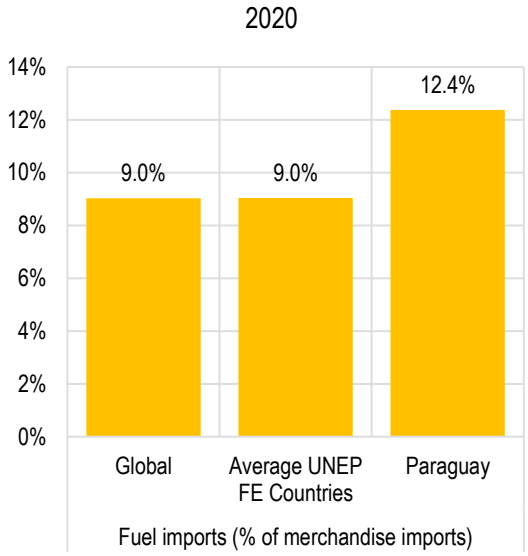
The activities to develop a fuel economy baseline (Phase I) in Panama were part of the agreement signed on 15 August 2016 with CEGESTI. Funds for Phase II activities to develop fuel economy policies for Panama were included in the agreement signed with CMMCh on 28 June 2017. On the 17-18 of November 2016, GFEI held a launch workshop in Panama, intending to help create an enabling environment that will lead to the development and implementation of a national fuel economy policy in Panama. This project was to support Panama's National Energy Plan and NDC contributions related to transport. The first phase of this project included the formation of a national working group to support the development of policies to promote auto fuel economy and securing auto registration data for the calculation of a national auto fuel economy baseline. The National Secretariat of Energy of Panama was leading this project with the support of the UNEP and GFEI regional technical partners, CEGESTI and CMMCh.

Panama's Vehicle Emission Measuring and Reporting Program is supporting the incorporation of a vehicle emissions measuring and reporting system with emission limits as part of an Inspection and Maintenance (I/M) program being developed by the Land Transit and Transport Authority (ATTT).

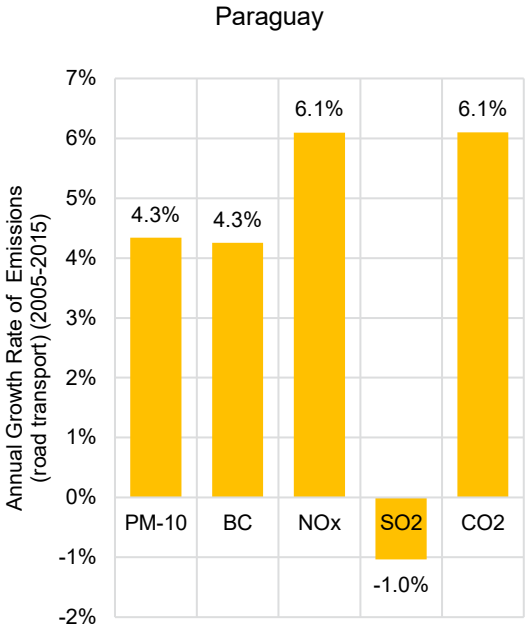
The assessment indicates that if Panama implements a fuel economy policy for first-time registered LDVs with a 2030 GFEI target, it could save 2.4 billion litres of gasoline-equivalent & 5.6 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR PARAGUAY

		Year	Source
Population (million)	7	2020	7
Income Level Category	Upper middle income		7
GDP per Capita (PPP, Curent USD)	13064	2020	7
Motorisation (Cars/1000 population)	57	2020	10
Car Sales (000)	23	2020	6
Gasoline Price $/l	1.1	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	14.8	2018	13
Employment (Transport+,000)	241	2019	11
Fuel Economy (Lge/100 km, WLTP) -	8	2018	1
Average CO2 emissions/kilometre (g/km, WLTP) -	193	2018	1
Average displacement (cm3) -	1734	2018	1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -	522		1
Diesel Share in LDV (sample,%)	18%	2018	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	No	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.118	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.220	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	0.0	2019	8
Transport CO2 Emissions per Capita (tonnes) -	1.2	2019	14
Road Transport PM Emissions per Capita (grams) -	330.7	2015	14
Road Transport NOx Emissions per Capita (grams)-	6227.6	2015	14
Road Transport BC Emissions per Capita (grams)-	163.5	2015	14
LDV Emission Standards -	no policy	2019	1
Diesel Sulphur Levels (ppm) -	50	2019	1
Gasoline Sulphur Levels (ppm) -	500	2019	1
Annual rate of economy-wide energy intensity growth	-0.3%	2000-18	16
Annual rate of transport energy consumption growth	5.7%	2000-18	16
LDV Import value (Million USD)	411	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
7 World Bank
8 UN Statistics Division
9 SLOCAT &GIZ
10 Estimated using growth and sales data
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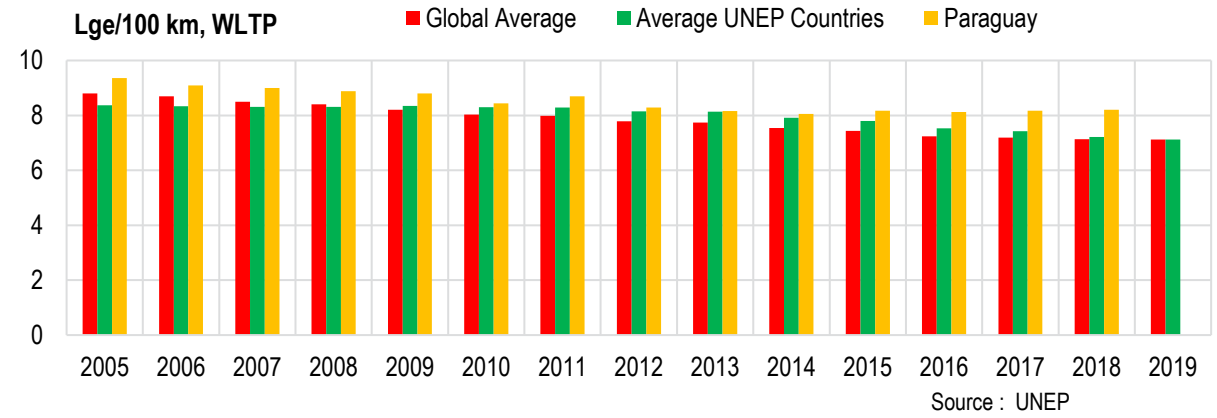
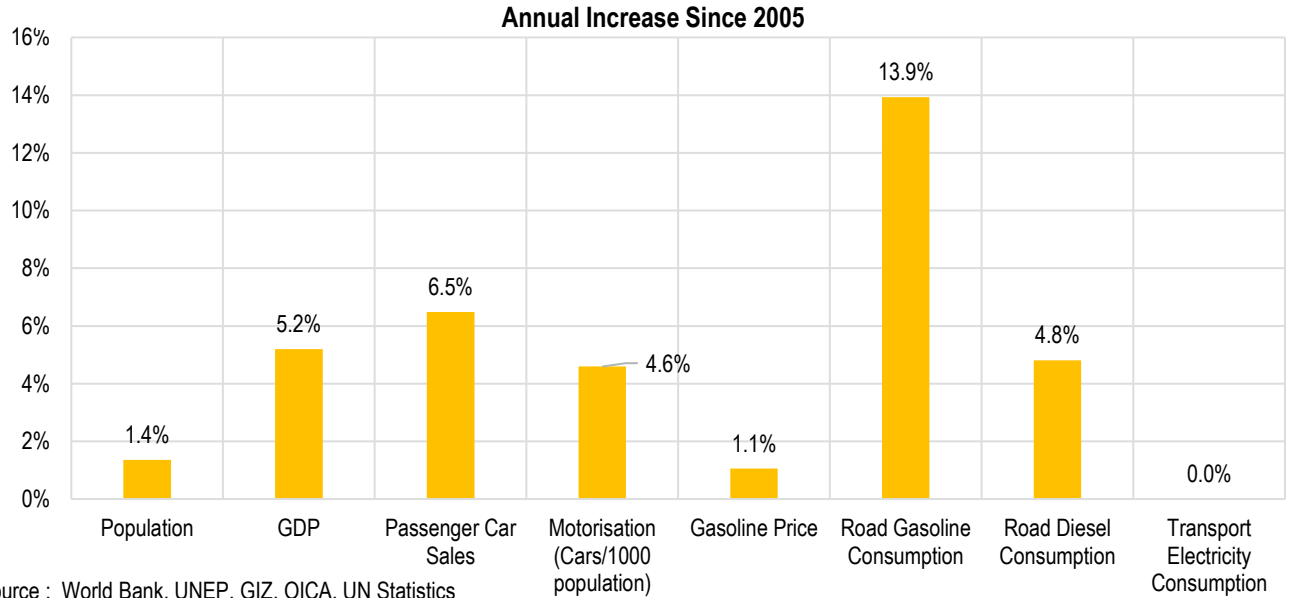
12 International Transport Forum
13 Koks, E.E. et al. A global multi-hazard risk analysis of road
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

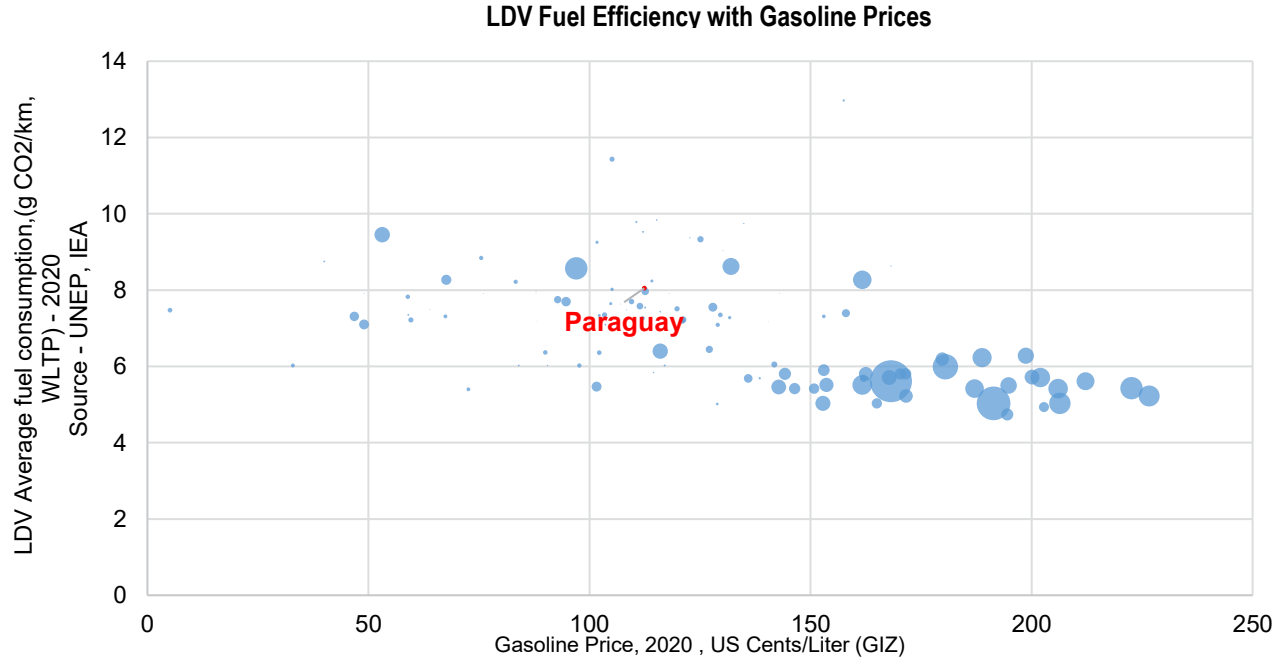
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

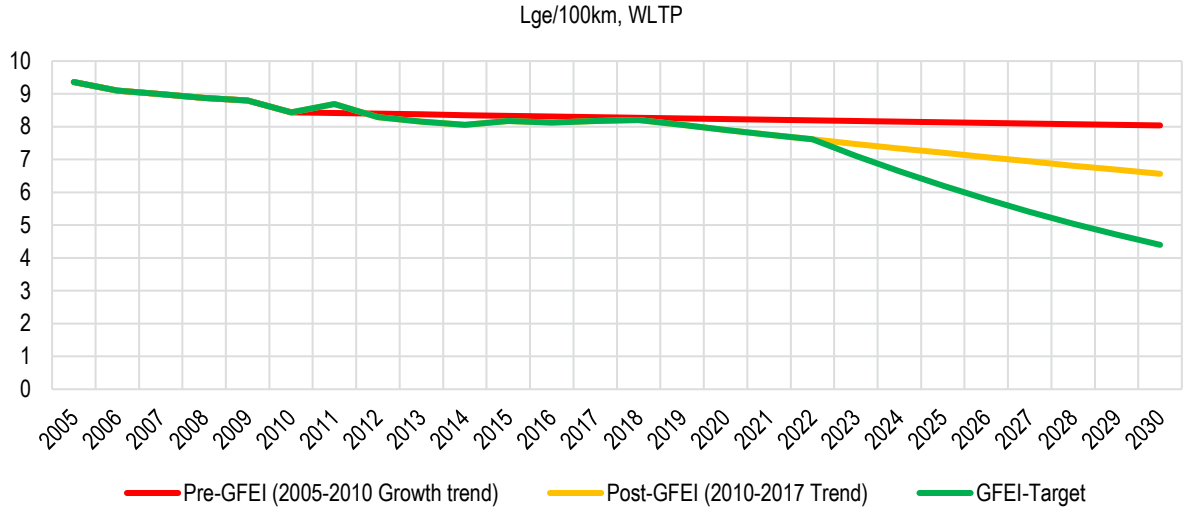
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

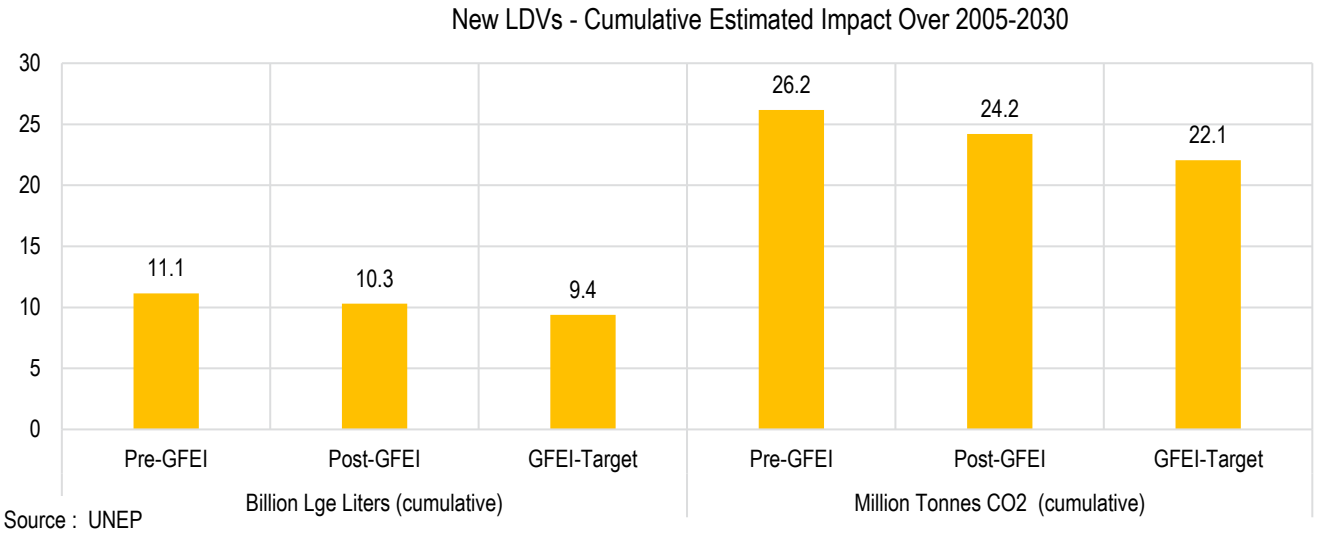
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-0.6%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-5.7%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

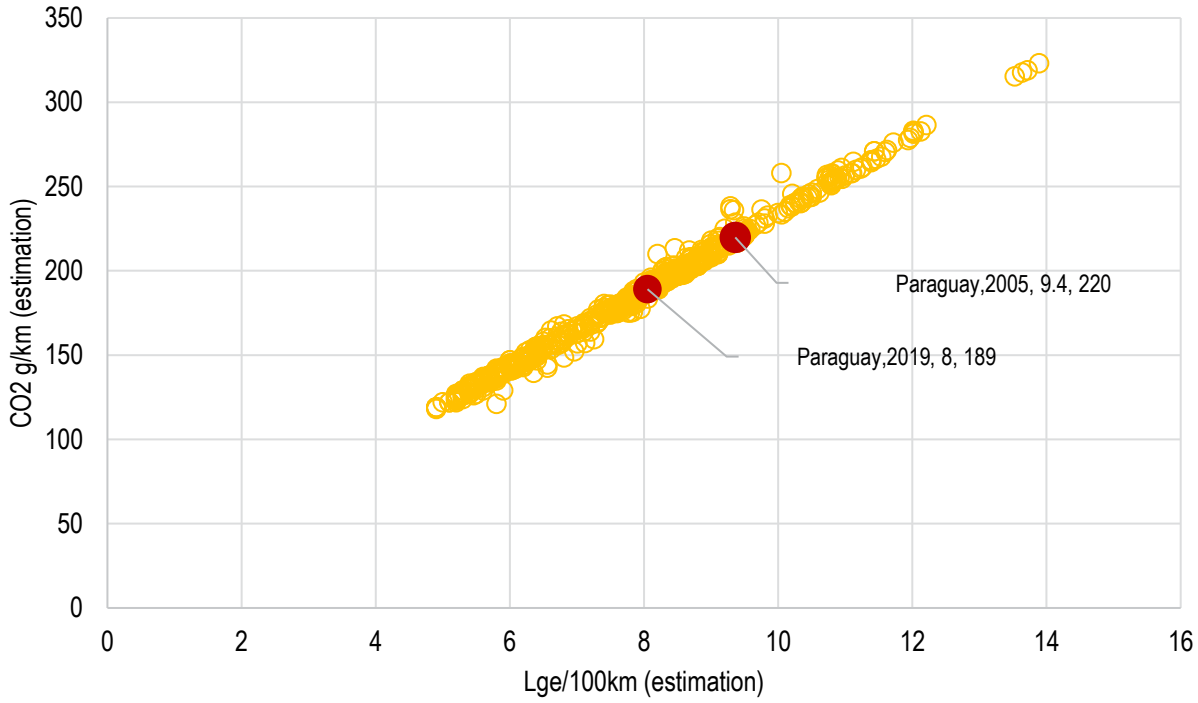
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

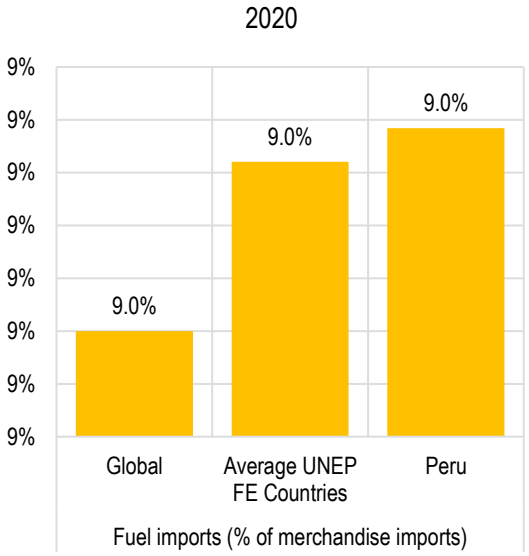
The activities to develop a fuel economy baseline in Paraguay were part of the agreement signed with CMMCh on 28 June 2017. In December 2017, the technical partner, CMMCh, travelled to Paraguay to lay the groundwork for the project. Several meetings were held with the national authorities to determine the focal point and identify a local partner. The GFEI project will provide capacity building advice and training to help officials explore the different tax and incentive options to promote clean and efficient vehicles, based on this data. In parallel, UNEP is supporting the development of vehicle emission standards and the potential to introduce a Vehicle Type-Approval program to verify and strengthen compliance with vehicle emissions standards. In the medium term, a vehicle labelling program would help make visible the advantages of acquiring efficient vehicles, give greater transparency and reliability to consumers, and help support a more reliable and effective tax system to incentivise more efficient vehicles. Other work in Paraguay is related to the imports of used vehicles and their impacts on the vehicle fleet fuel economy and road transport emissions. The first draft of the baseline study was delivered in October 2018, and the final version presented to the government in June 2019. Additionally, a CO2 emissions tax is being developed in consultation with various stakeholders.

Paraguay has established economy-wide renewable energy targets in its National Development Plan 2014–2030 to reach 60% of renewable energy in total energy consumption by 2030 and reduce 20% the share of fossil fuel within its total energy consumption.

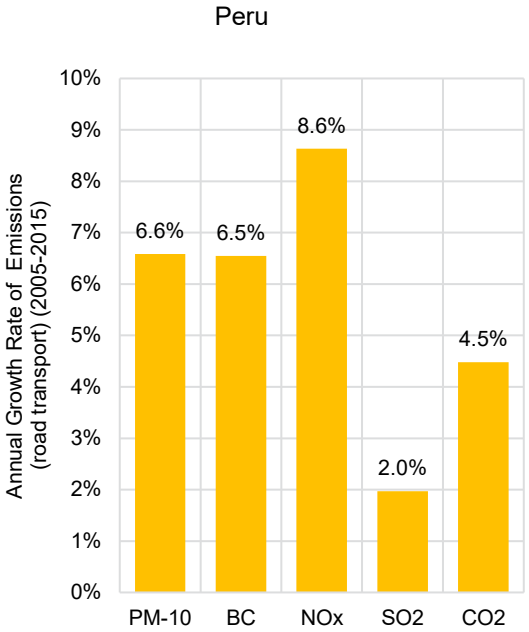
The assessment indicates that if Paraguay implements a fuel economy policy for first-time registered LDVs with a 2030 GFEI target, it could save 1.5 billion litres of gasoline-equivalent & 3.6 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR PERU

		Year	Source
Population (million)	33	2020	7
Income Level Category	Upper middle income		7
GDP per Capita (PPP, Curent USD)	11874	2020	7
Motorisation (Cars/1000 population)	49	2020	10
Car Sales (000)	81	2020	6
Gasoline Price $/l	1.2	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	7.0	2018	13
Employment (Transport+,000)	1486	2019	11
Fuel Economy (Lge/100 km, WLTP) -	7	2019	1
Average CO2 emissions/kilometre (g/km, WLTP) -	165	2019	1
Average displacement (cm3) -	1814	2019	1
Average kerb weight (kg) -	1509	2019	1
Average power (kw) -	101	2019	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -	1096		1
Diesel Share in LDV (sample,%)	16%	2017	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	No	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.063	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.145	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	2.3	2019	8
Transport CO2 Emissions per Capita (tonnes) -	1.7	2019	14
Road Transport PM Emissions per Capita (grams) -	250.8	2015	14
Road Transport NOx Emissions per Capita (grams)-	5752.4	2015	14
Road Transport BC Emissions per Capita (grams)-	124.5	2015	14
LDV Emission Standards -	Euro 4	2019	1
Diesel Sulphur Levels (ppm) -	5000	2019	1
Gasoline Sulphur Levels (ppm) -	50	2019	1
Annual rate of economy-wide energy intensity growth	-1.3%	2000-18	16
Annual rate of transport energy consumption growth	5.7%	2000-18	16
LDV Import value (Million USD)	970	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
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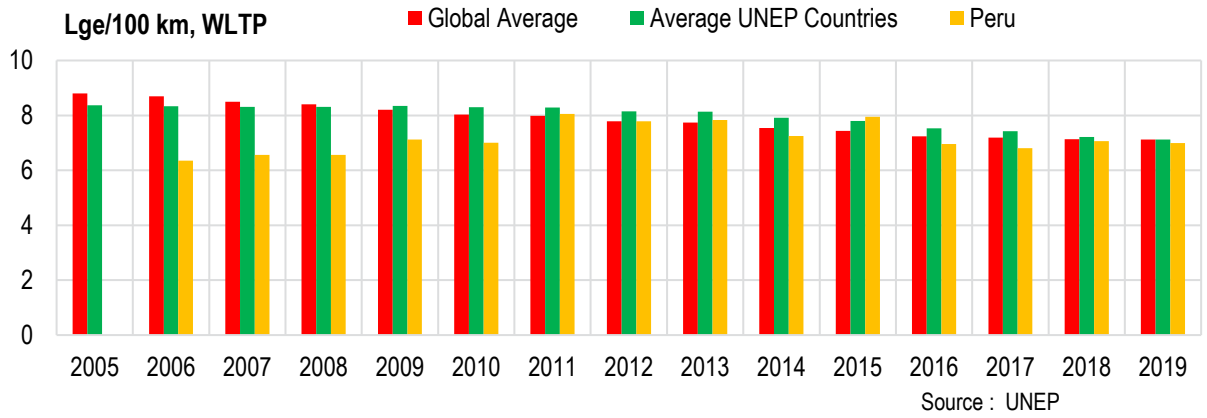
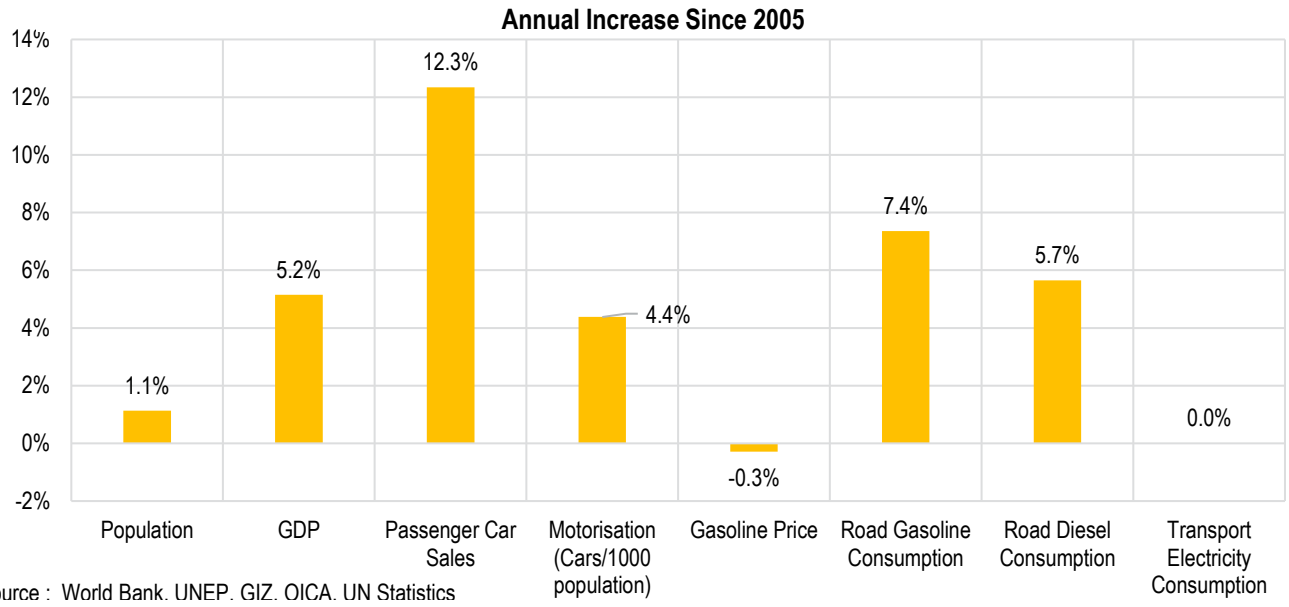
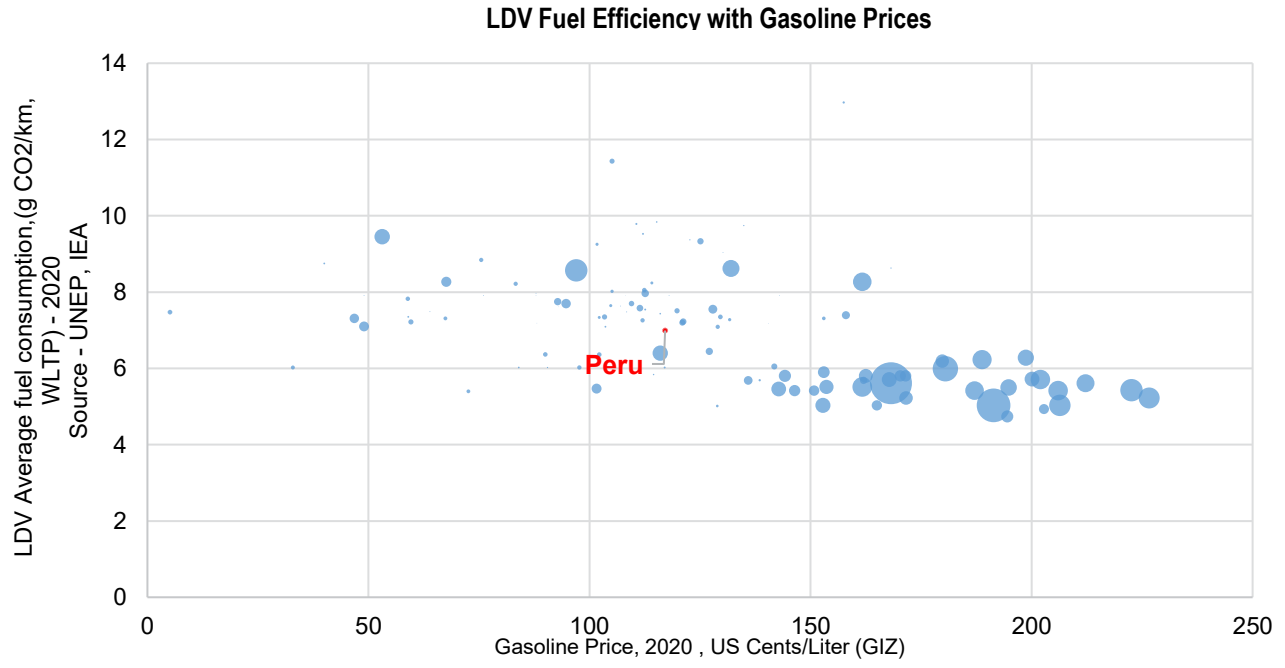
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

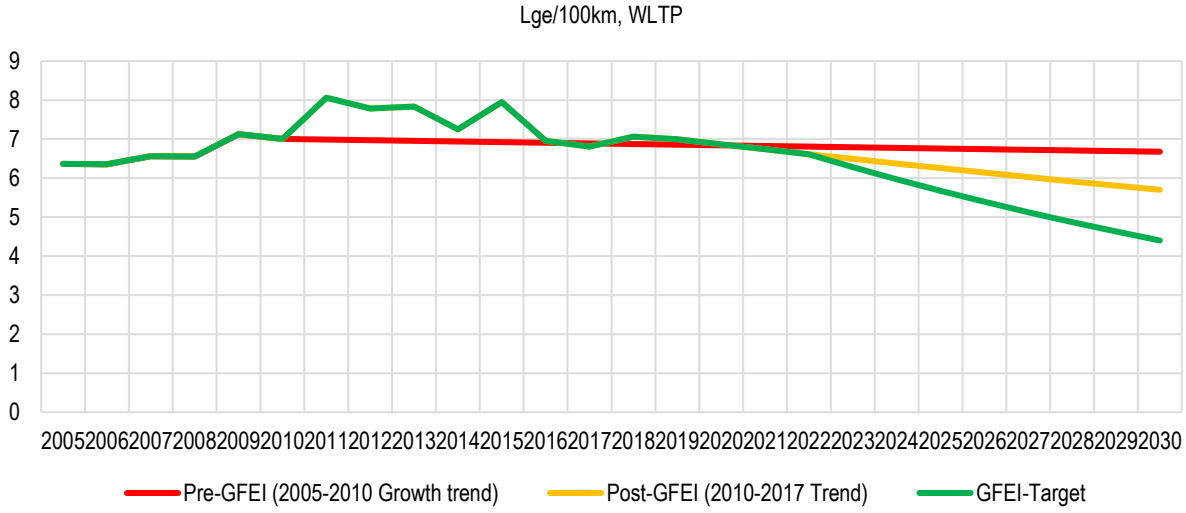
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-0.2%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-4.3%**



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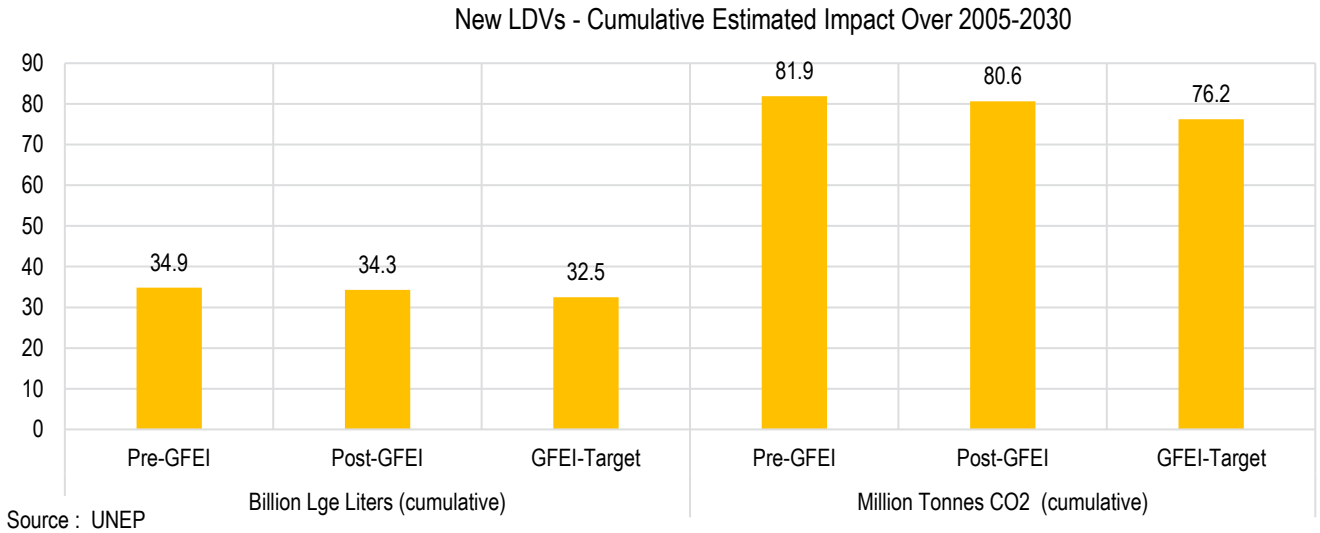


Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

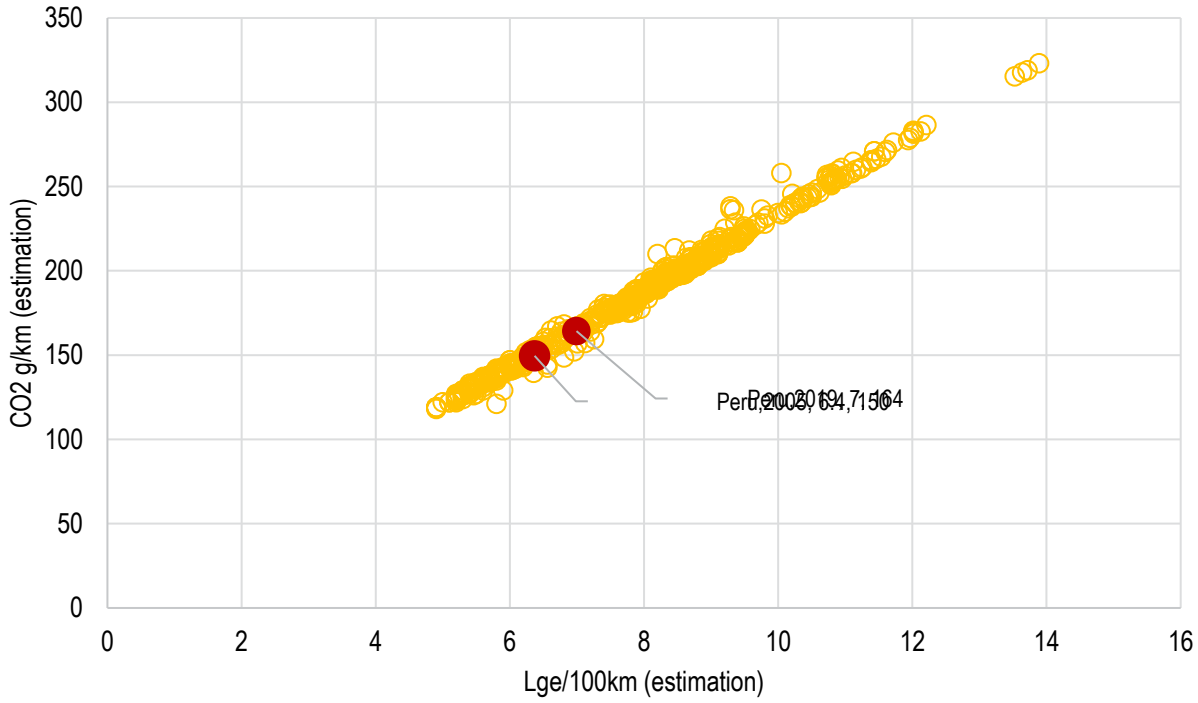
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

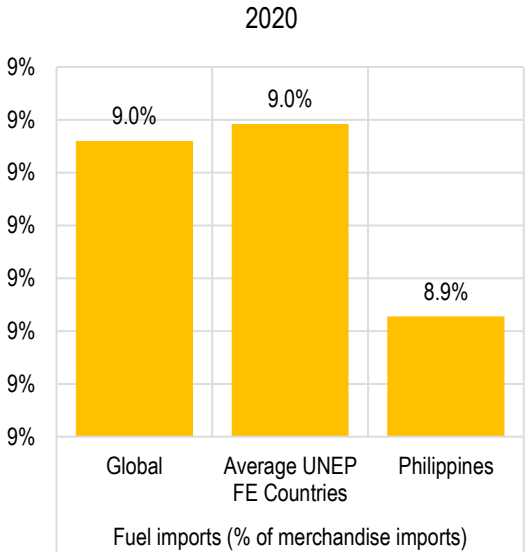
Peru launched the GFEI national project in Lima in 2012 and since 2015 has continued with GEF 5 and other co-financing. Phase II activities to update the existing fuel economy baseline and to develop fuel economy policies for Peru were part of the agreement signed with CMMCh on 28 June 2017. The Ministry of Environment of Peru (MINAM), has led this project and held numerous national working group meetings, completed an automotive fuel economy baseline, and developed policy proposals. This work has been carried out with the UNEP Program and the technical support of CMMCh. The project has supported various accomplishments and advances in moving to cleaner fuels and more efficient vehicles. The Ministry of Energy and Mines, with the endorsement of the Ministry of the Environment, Ministry of Transport and Communications and the Ministry of Economy and Finance, issued the Supreme Decree No. 025-2017-EM which establishes improved measures related to sulphur content in diesel, gasoline, and gasohol for commercialisation and use. Besides, the GEF 5 GFEI national project, Peru has committed to participating in the new GEF 7 Electric Mobility Programme with USD 2 million for the national project. The objective of the project is to promote e-mobility for low carbon urban transport and an Extended Producer Responsibility (EPR) approach in batteries and vehicle components.

Peru has set up a technical committee on adopting international technical standards (CTN UREEE) to understand how electricity rate structures should be set up regarding electric mobility, as well as who manages infrastructure installations, maintenance, and payment systems.

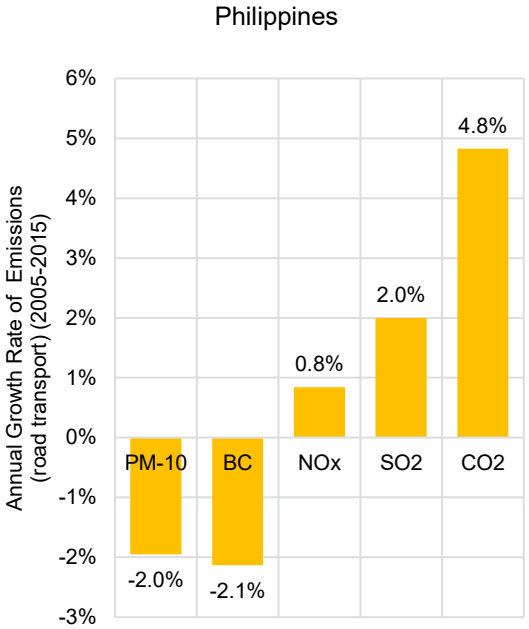
The assessment indicates that if Peru implements a fuel economy policy for first-time registered LDVs with a 2030 GFEI target, it could save 3.8 billion litres of gasoline-equivalent & 9 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR PHILIPPINES

		Year	Source
Population (million)	110	2020	7
Income Level Category	Lower middle income		7
GDP per Capita (PPP, Curent USD)	8387	2020	7
Motorisation (Cars/1000 population)	33	2020	10
Car Sales (000)	154	2020	6
Gasoline Price $/l	1.1	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	2.2	2018	13
Employment (Transport+,000)	4132	2019	11
Fuel Economy (Lge/100 km, WLTP) -	8	2019	1
Average CO2 emissions/kilometre (g/km, WLTP) -	194	2019	1
Average displacement (cm3) -	2527	2019	1
Average kerb weight (kg) -	1835	2019	1
Average power (kw) -	136	2018	1
Average Age of newly registered cars (years) -	3	2013	1
Cumulative number of LDVs (total sample size,000) -	206		1
Diesel Share in LDV (sample,%)	50%	2013	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	No	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.036	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.046	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	1.0	2019	8
Transport CO2 Emissions per Capita (tonnes) -	1.4	2019	14
Road Transport PM Emissions per Capita (grams) -	99.5	2015	14
Road Transport NOx Emissions per Capita (grams)-	1860.9	2015	14
Road Transport BC Emissions per Capita (grams)-	46.7	2015	14
LDV Emission Standards -	Euro 4	2019	1
Diesel Sulphur Levels (ppm) -	50	2019	1
Gasoline Sulphur Levels (ppm) -	50	2019	1
Annual rate of economy-wide energy intensity growth	-3.0%	2000-18	16
Annual rate of transport energy consumption growth	2.8%	2000-18	16
LDV Import value (Million USD)	1903	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

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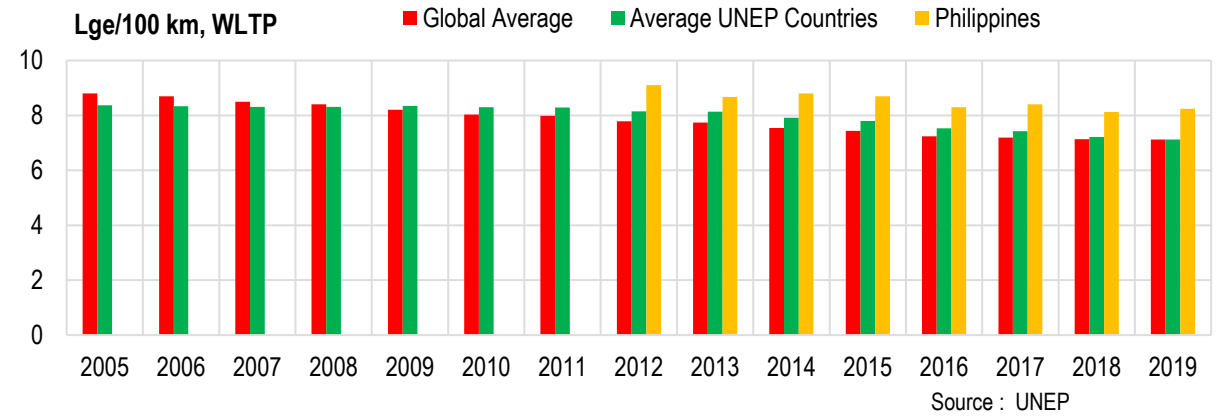
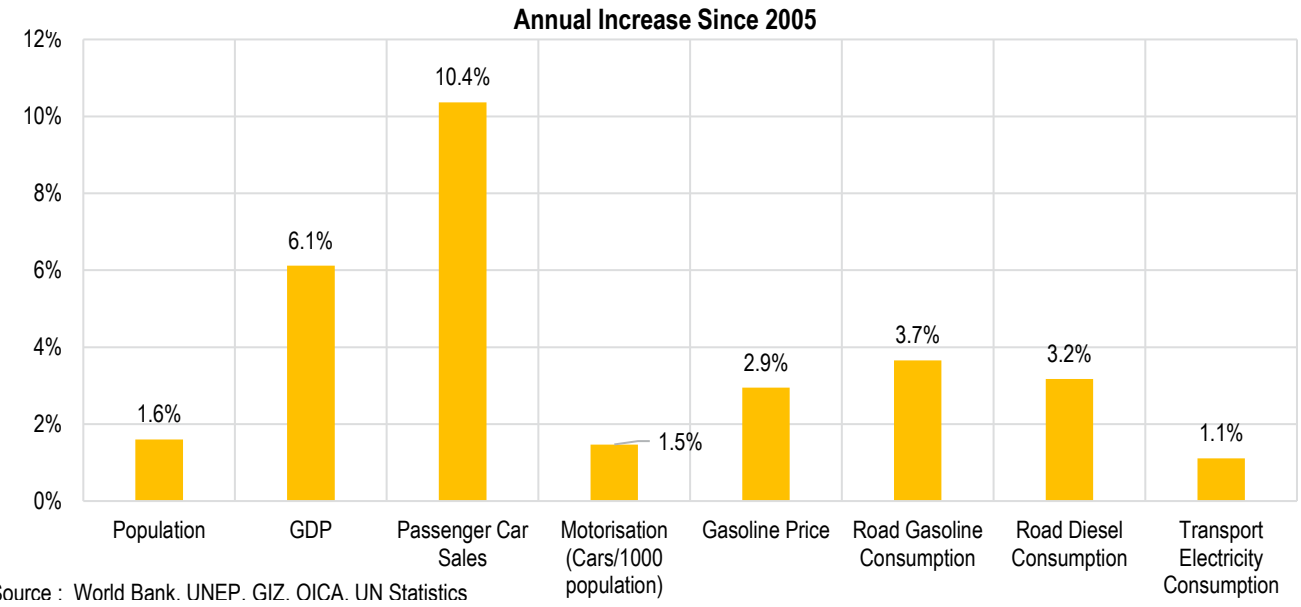
FUEL ECONOMY TRENDS



Source : UNEP



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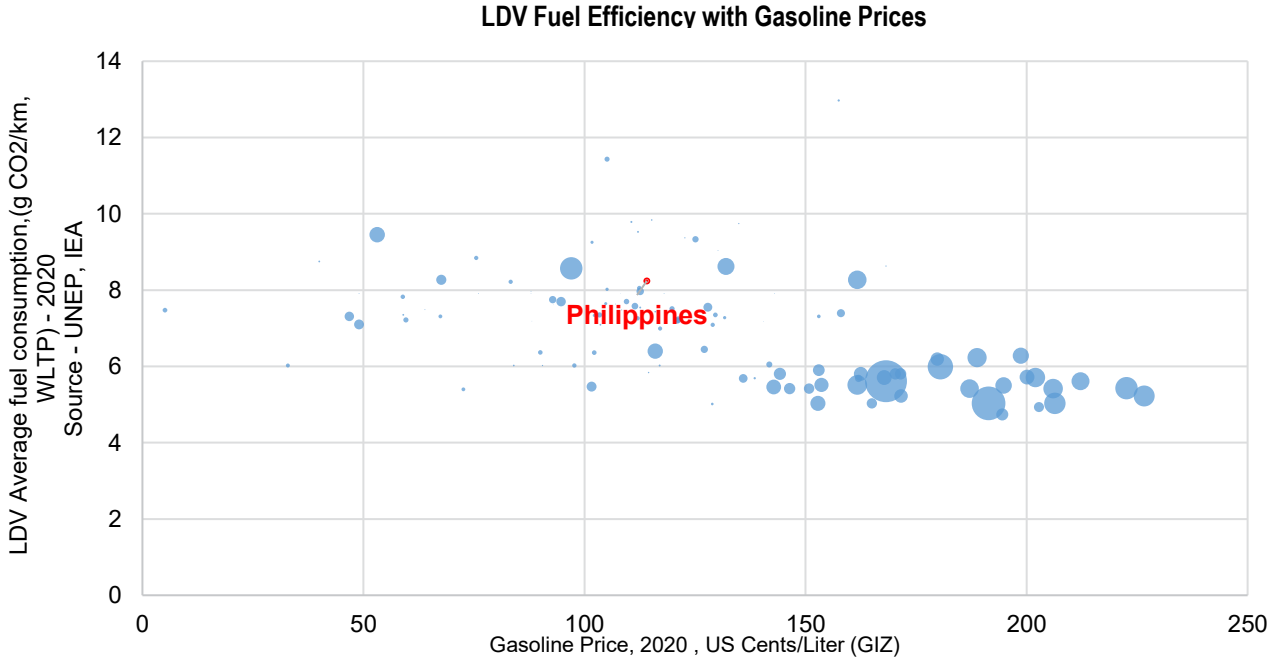


Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

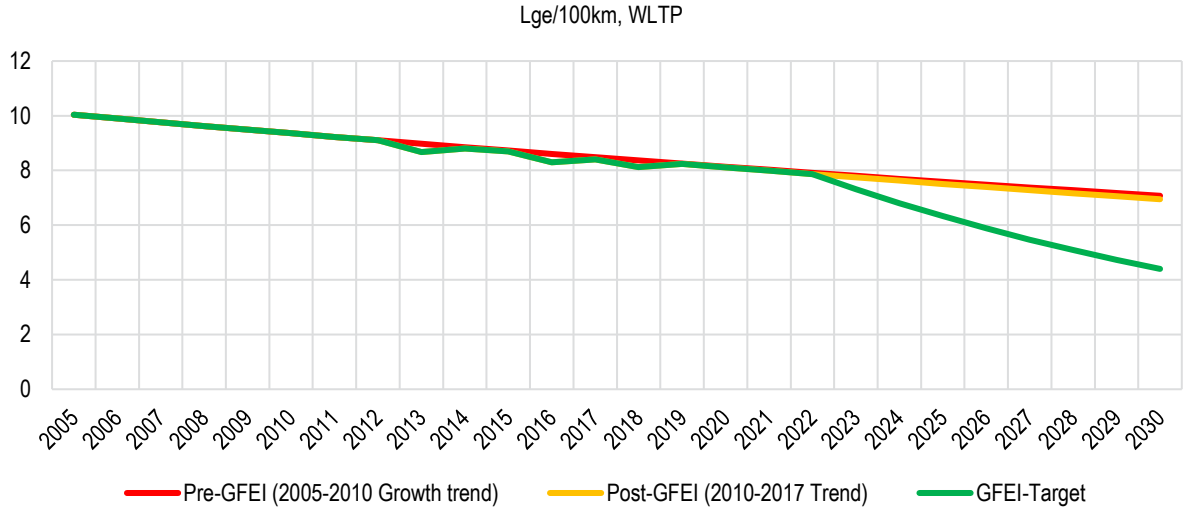
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-1.4%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-5.9%**



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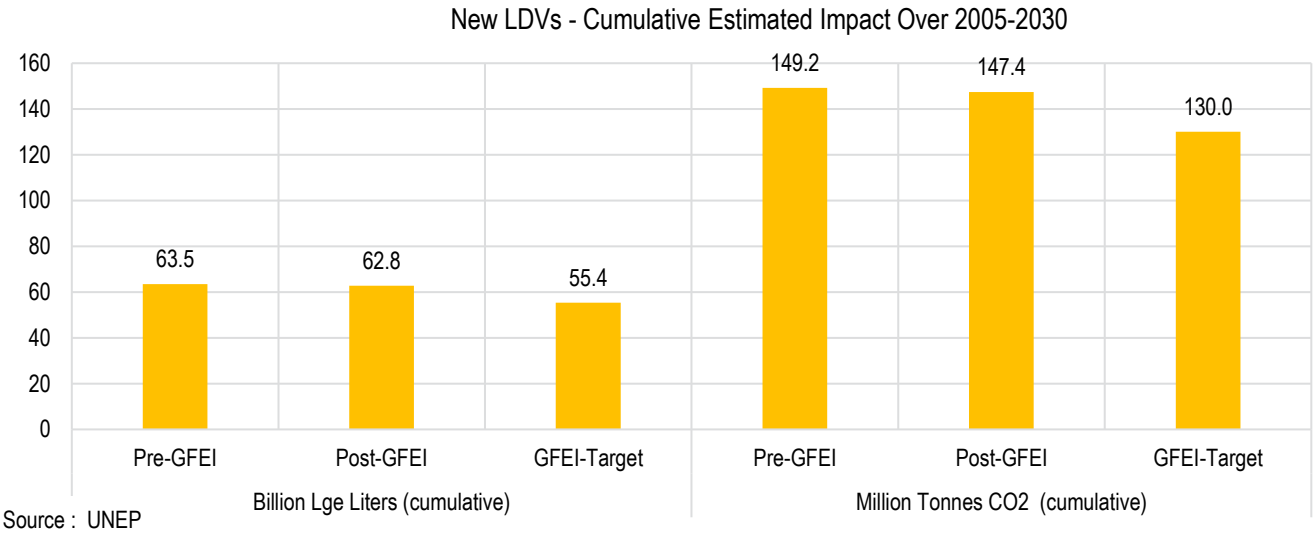


Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

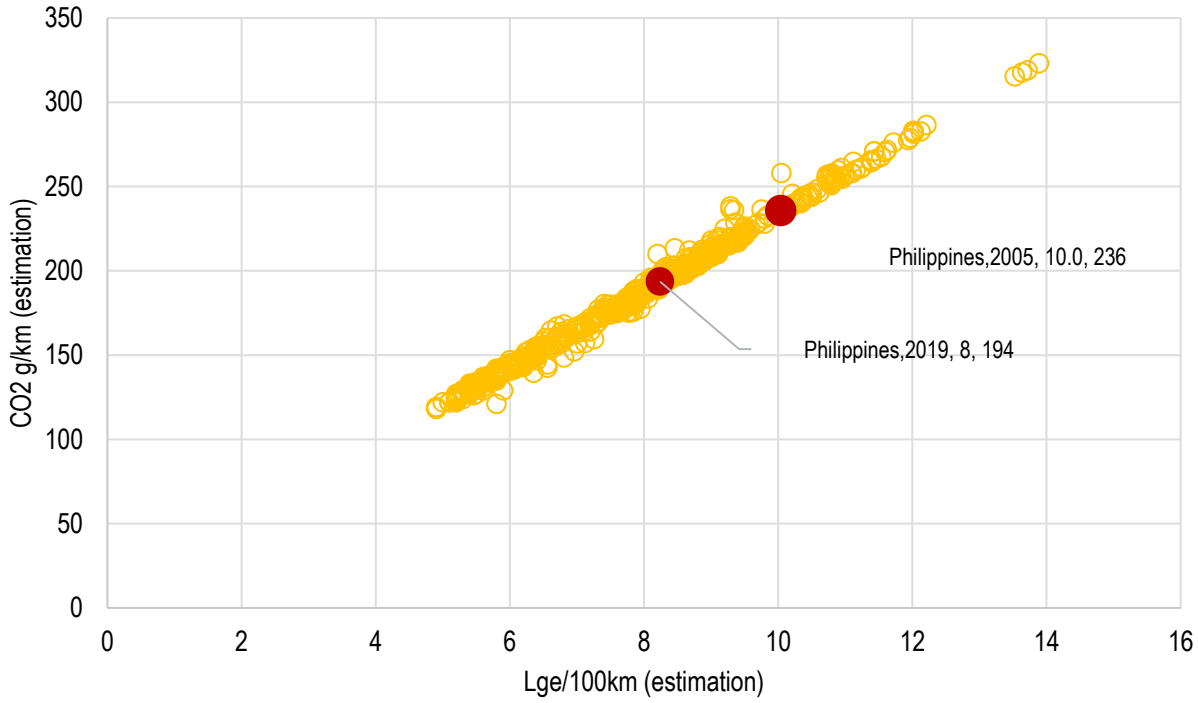
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

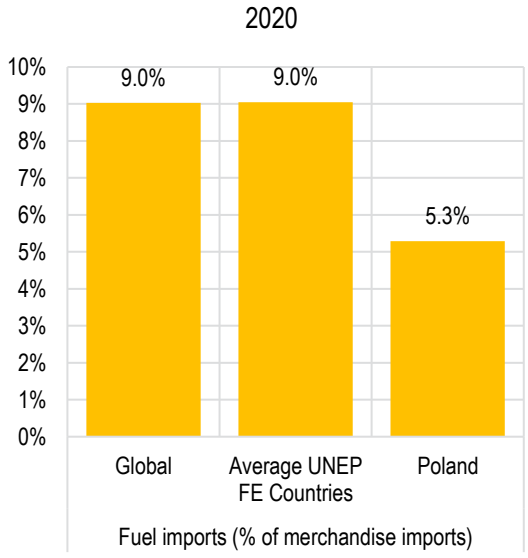
The activities in the Philippines are part of the agreement signed with Clean Air Asia on 27 July 2016 to support Asian countries in the national fuel economy policy projects. UNEP helped the Department of Finance to develop a fuel economy-based vehicle excise taxation scheme and the development of the fuel economy label with the Department of Energy. The development of the fuel economy label is implemented together with GIZ. Clean Air Asia supported the Department of Finance to analyse the economic and environmental impact of the price-based vehicle excise tax scheme and fuel tax proposed for the Philippines. Despite efforts to promote a fuel-economy based vehicle excise tax system, the price-based vehicle excise tax scheme was adopted and implemented in January 2018. UNEP supported Clean Air Asia in meeting with relevant stakeholders, including testifying in a Senate hearing to support the revision of the vehicle excise tax. According to the analysis led by Clean Air Asia, the price-based vehicle excise tax is will still result to 2% improvement in vehicle fleet fuel economy, leading to less fuel consumption and emissions. The approved vehicle excise tax also exempts electric vehicles, and for hybrid vehicles – only half of the effective excise tax is applicable. For the vehicle fuel economy labelling, several meetings have been organised by the Department of Energy with support from UNEP, Clean Air Asia and GIZ. On 10 October 2018, the GFEI supported a workshop led by the Philippines Department of Energy (DoE) to discuss with private sector representatives proposed guidelines on fuel economy labelling for light-duty vehicles. By the end of 2019, the government of the Philippines formally adopted the Energy Efficiency and Conservation Act, Republic Act 11285, that includes the new fuel economy labelling for vehicles.

Philippines has endorsed the ASEAN Fuel Economy Roadmap for Transport Sector 2018 – 2025: with Focus on Light-Duty Vehicles. The roadmap sets six aspirational goals for ASEAN. The headline goal is an aspirational target to reduce the average fuel consumption of new light-duty vehicles sold in ASEAN by 26% between 2015 and 2025, which leads to an improvement in average fuel economy to around 5.3 LGe/100km by 2025, from an estimated 7.2 LGe/100km in 2015. This improvement leads to about 17% reduction in annual LDVs CO2 emissions by 2030. Philippines Energy Efficiency and Conservation Roadmap proposes a yearly energy intensity improvement target of 1.9%.

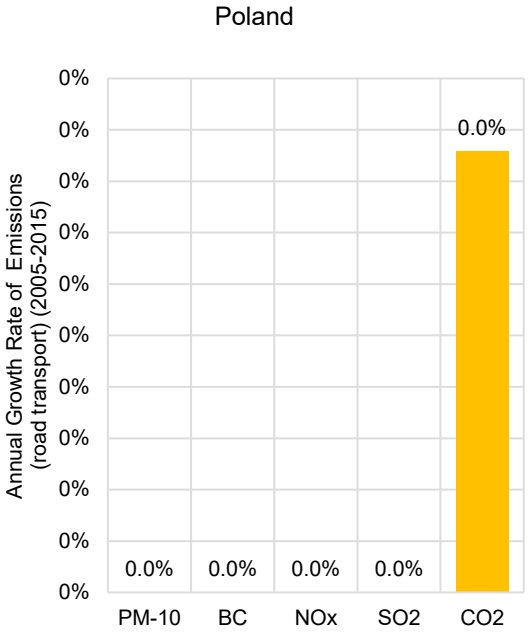
The assessment indicates that if Philippines implements a fuel economy policy for first-time registered LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 17.6 billion litres of gasoline-equivalent & 41.5 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR POLAND

		Year	Source
Population (million)	38	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	34406	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	428	2020	6
Gasoline Price $/l	1.4	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	12.1	2018	13
Employment (Transport+,000)	1596	2019	11
Fuel Economy (Lge/100 km, WLTP) -	6	2017	1
Average CO2 emissions/kilometre (g/km, WLTP) -	143	2016	1
Average displacement (cm3) -	1627	2017	1
Average kerb weight (kg) -	1271	2017	1
Average power (kw) -	147	2017	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	No	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.124	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.393	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	89.9	2019	8
Transport CO2 Emissions per Capita (tonnes) -	8.4	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	-2.7%	2000-18	16
Annual rate of transport energy consumption growth	4.8%	2000-18	16
LDV Import value (Million USD)	8839	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
7 World Bank
8 UN Statistics Division
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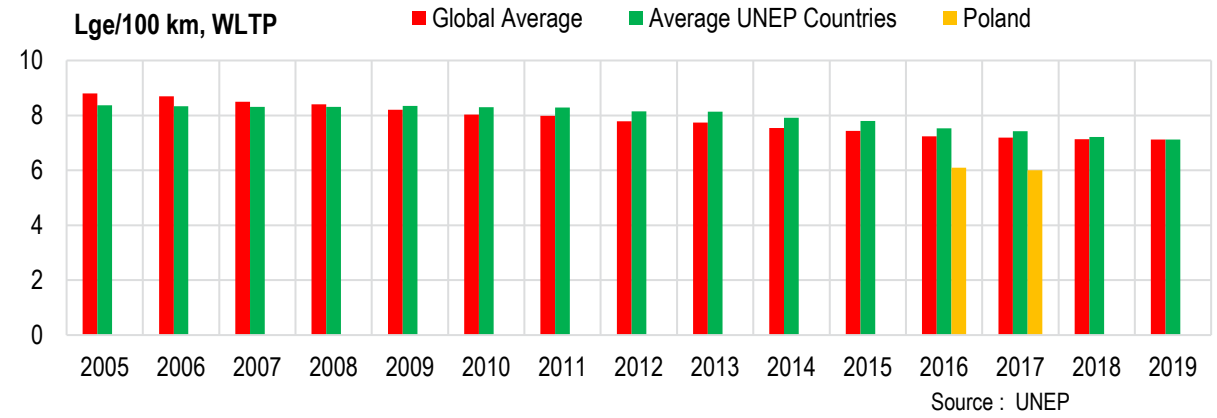
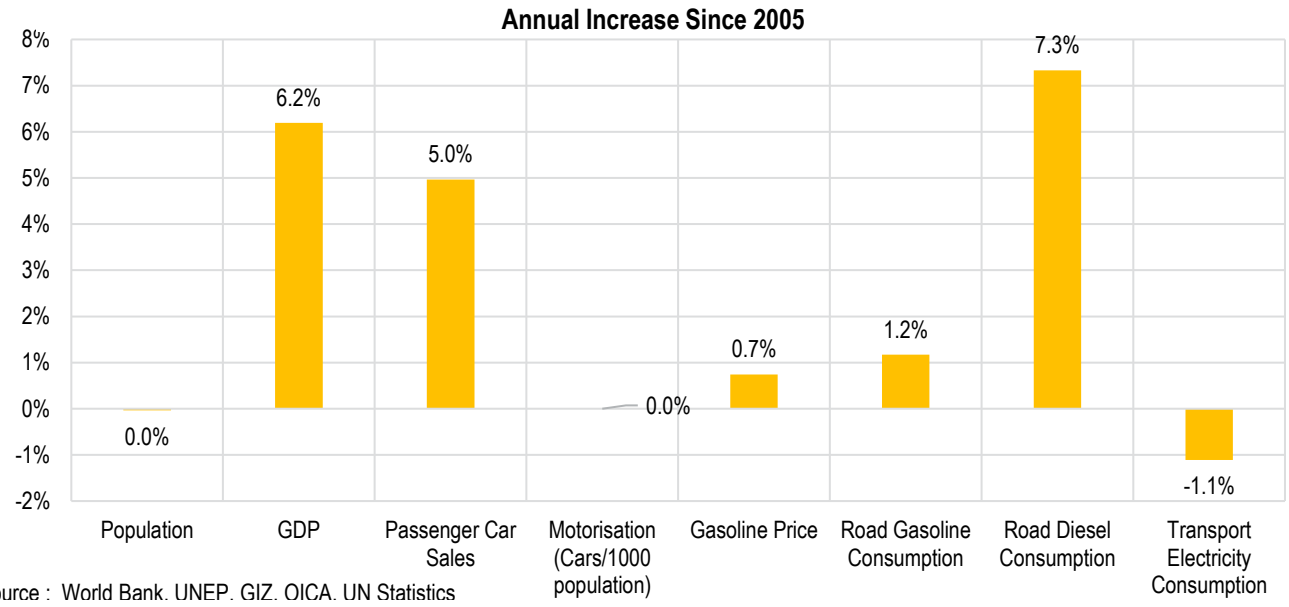
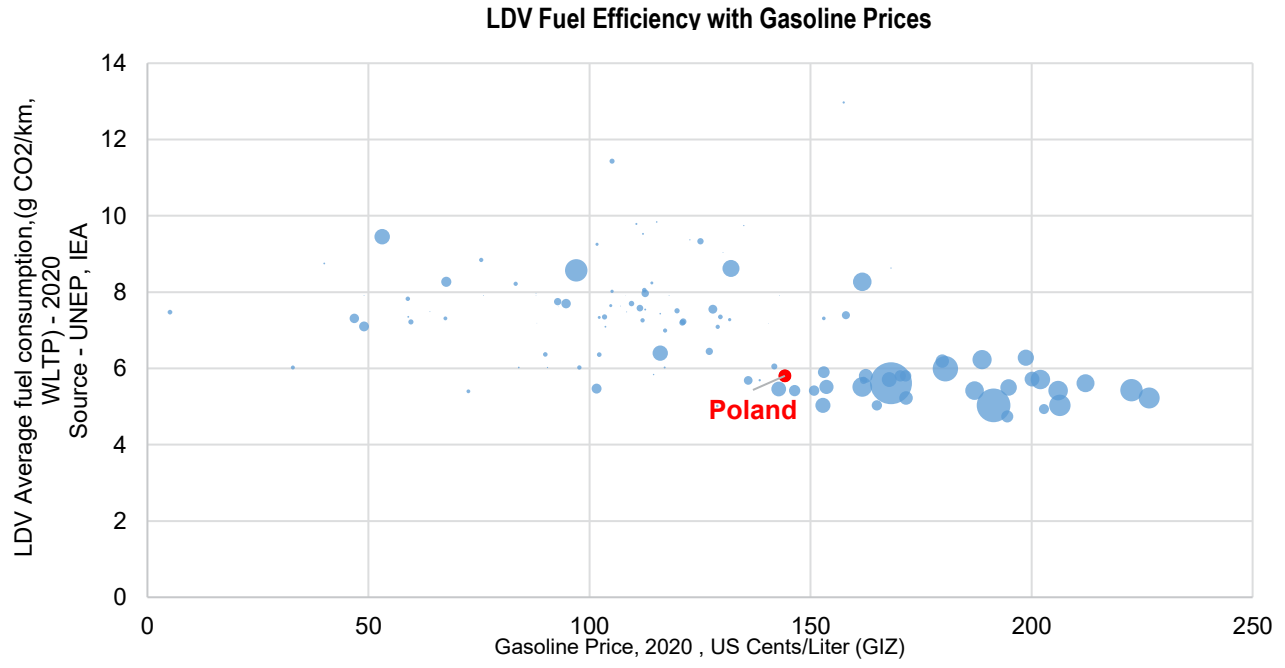
13 Koks, E.E. et al. A global multi-hazard risk analysis of road
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

FUEL ECONOMY TRENDS





Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

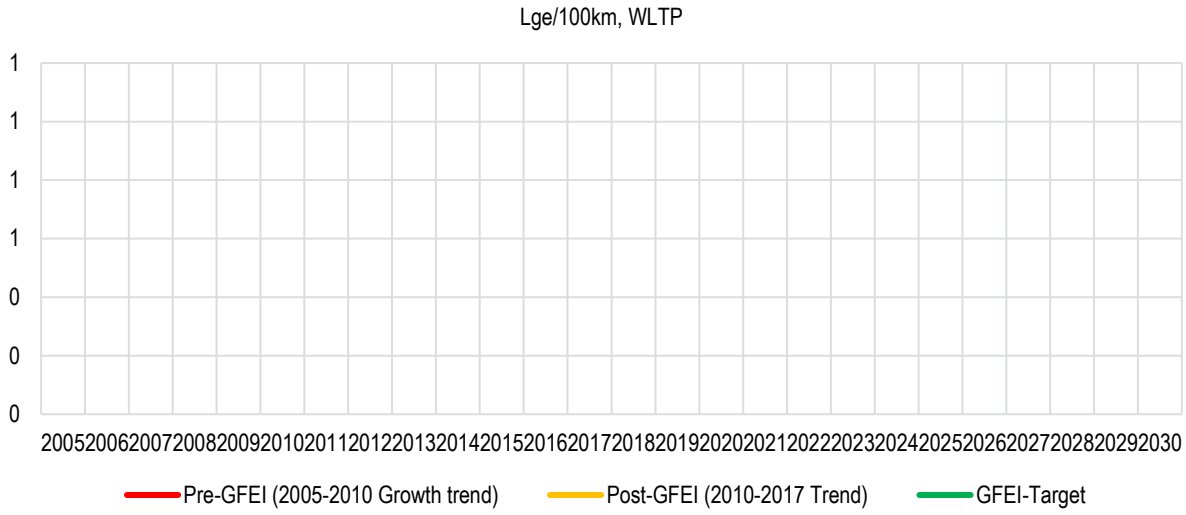
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



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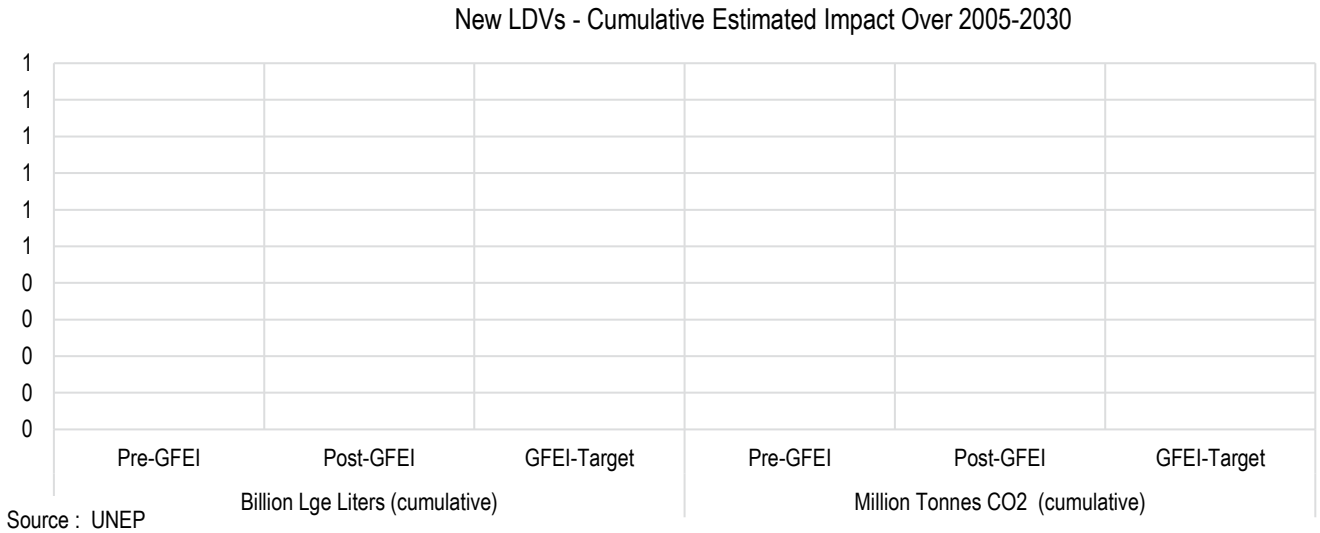


Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

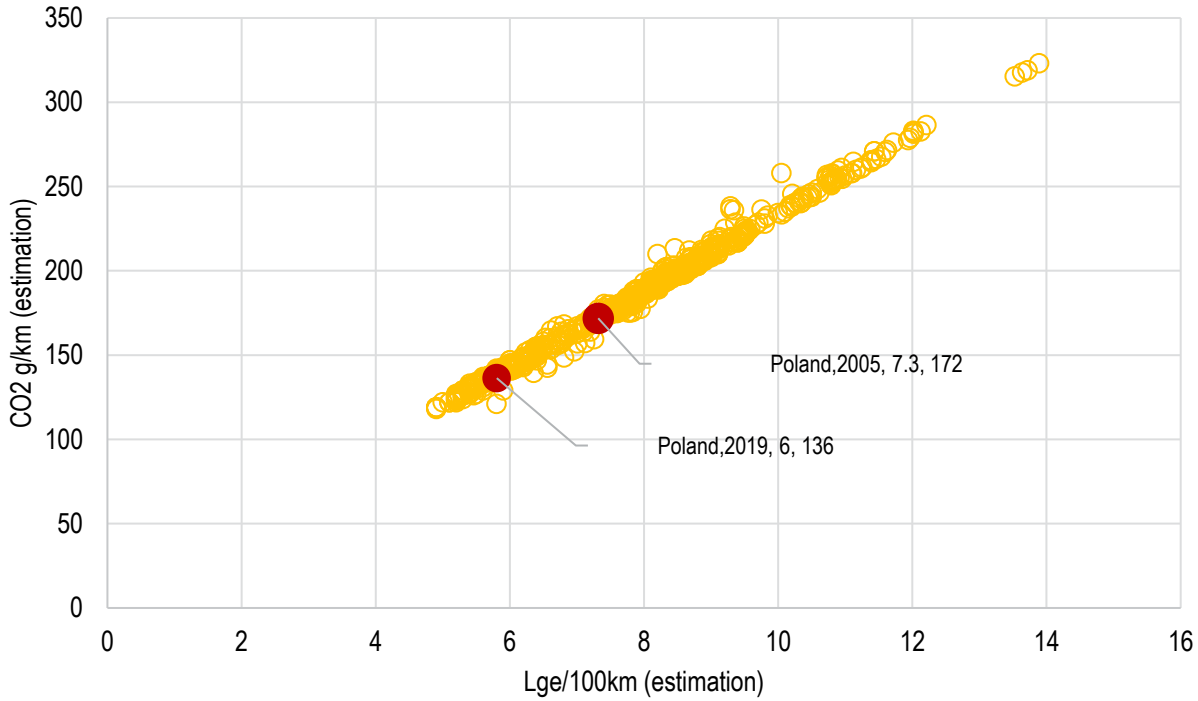
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



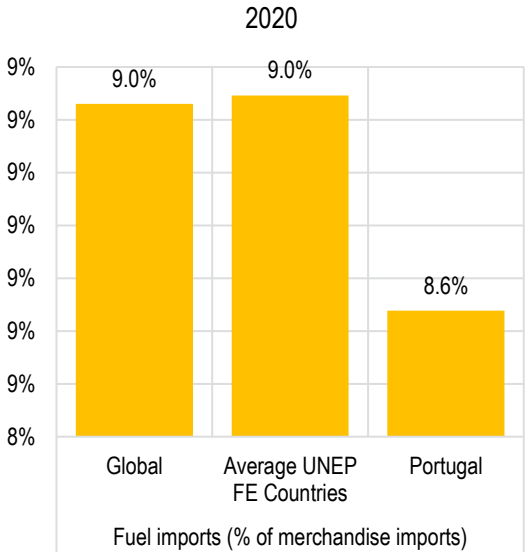
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

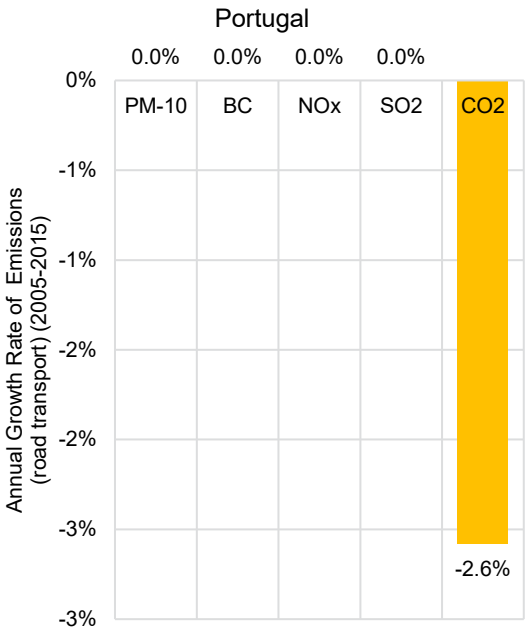
#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR PORTUGAL

		Year	Source
Population (million)	10	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	34091	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	145	2020	6
Gasoline Price $/l	1.9	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	16.2	2018	13
Employment (Transport+,000)	333	2019	11
Fuel Economy (Lge/100 km, WLTP) -	5	2015	1
Average CO2 emissions/kilometre (g/km, WLTP) -	119	2015	1
Average displacement (cm3) -	1486	2017	1
Average kerb weight (kg) -	1329	2017	1
Average power (kw) -	82	2017	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.103	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.433	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	48.0	2019	8
Transport CO2 Emissions per Capita (tonnes) -	4.7	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	-1.2%	2000-18	16
Annual rate of transport energy consumption growth	0.1%	2000-18	16
LDV Import value (Million USD)	3861	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

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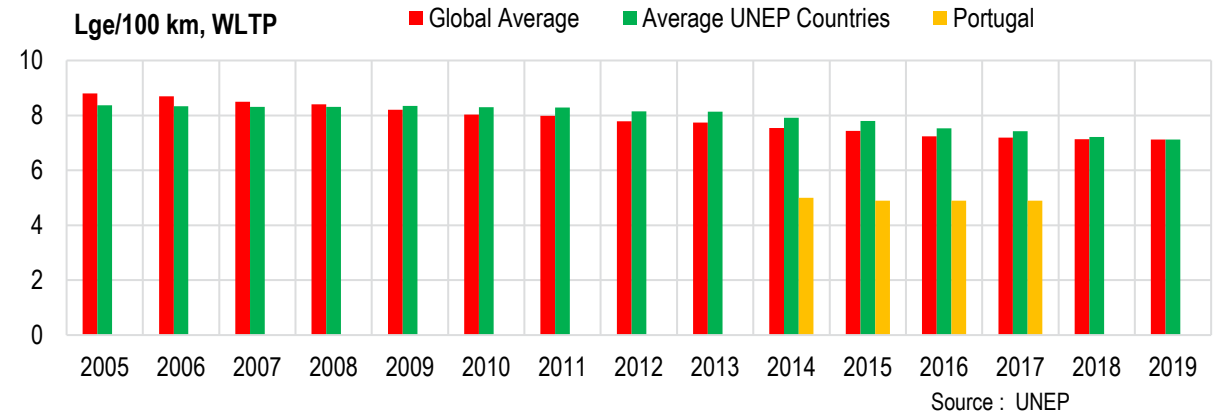
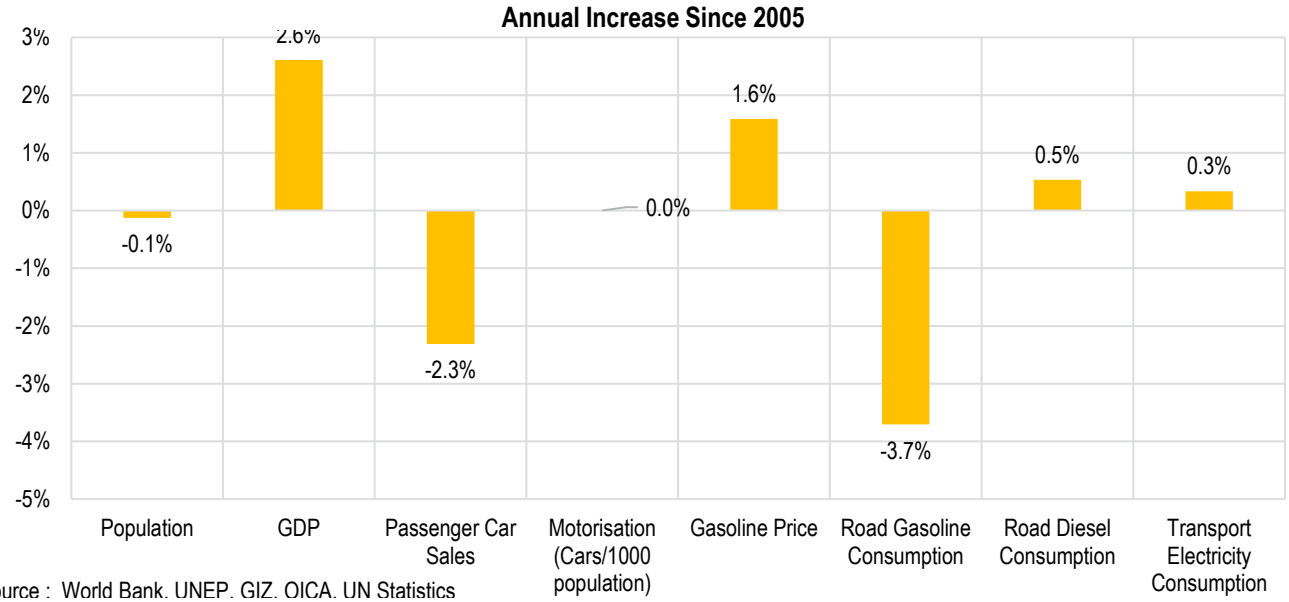
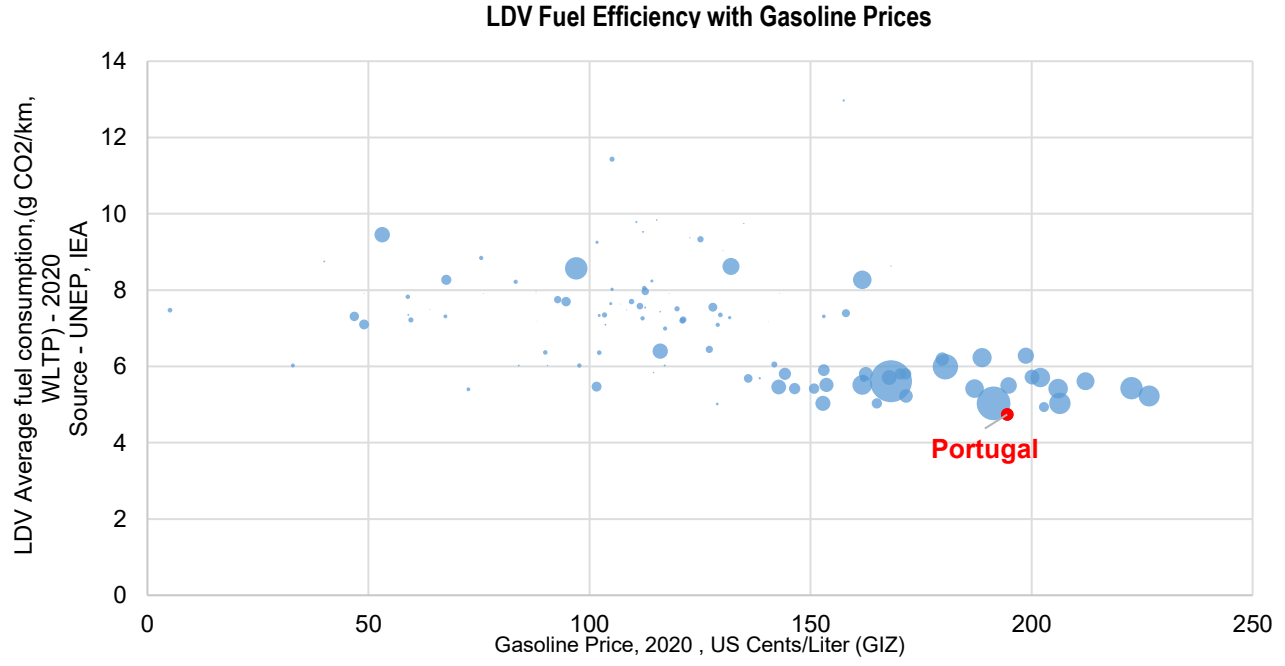
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

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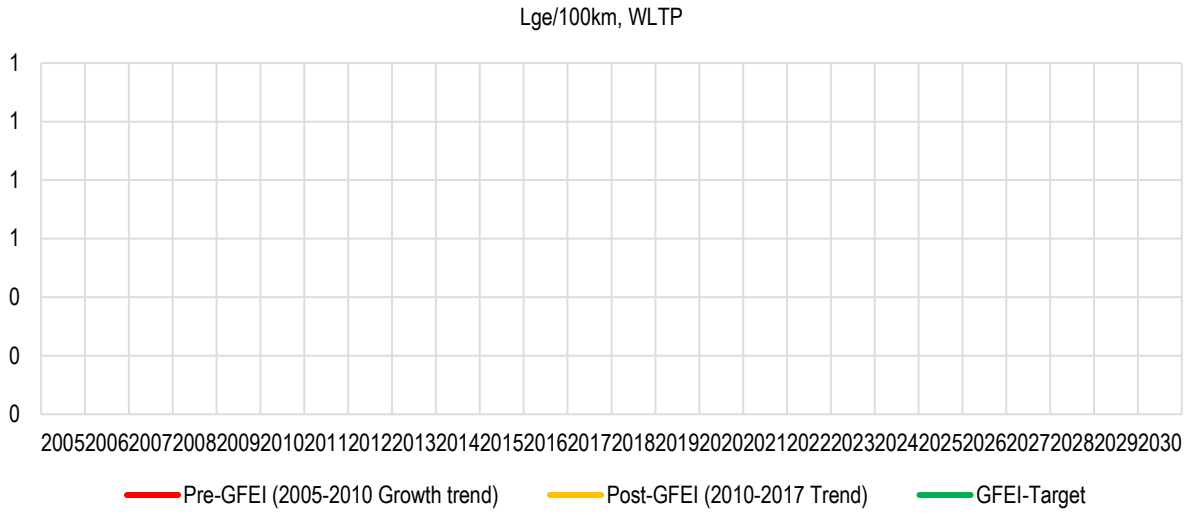
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

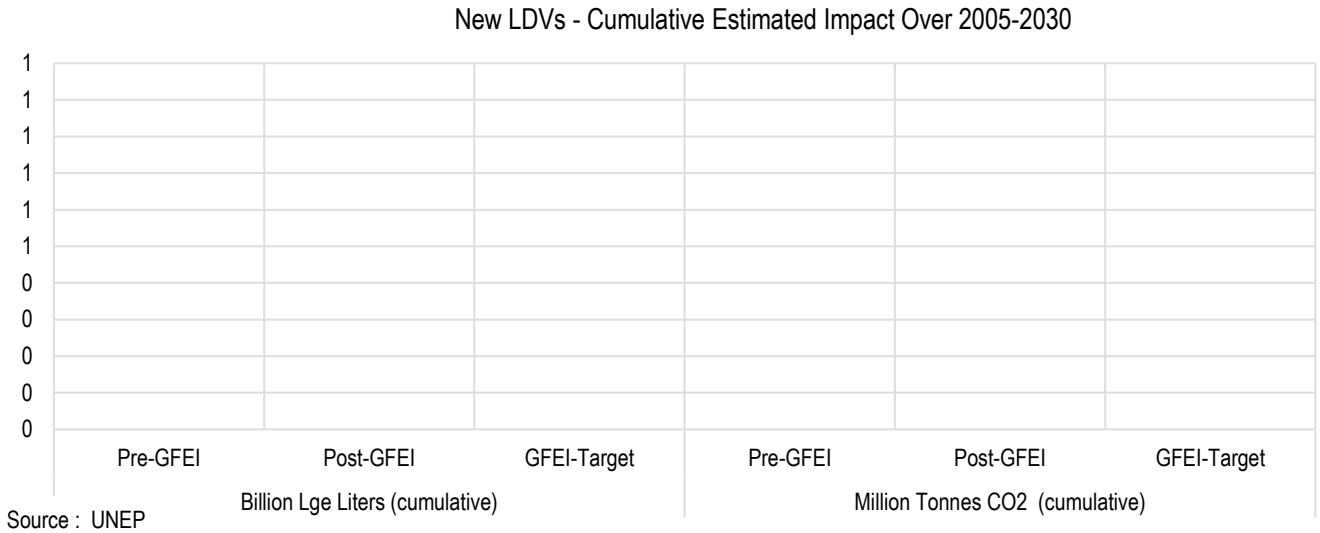
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

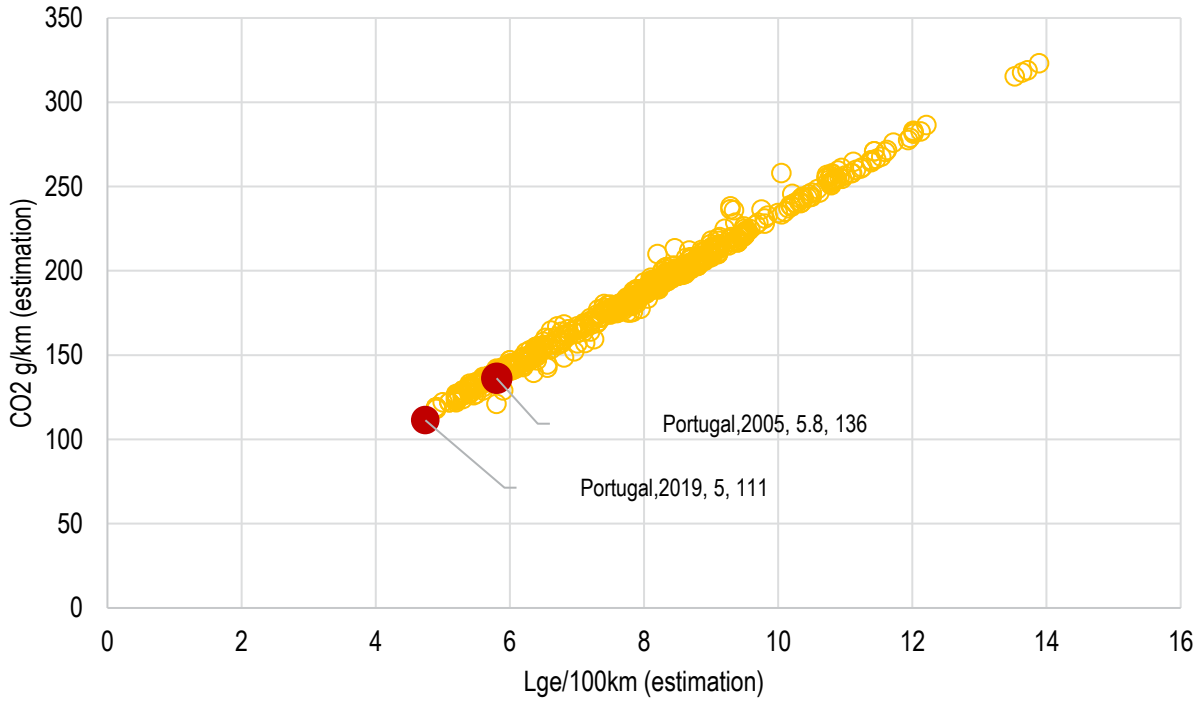
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



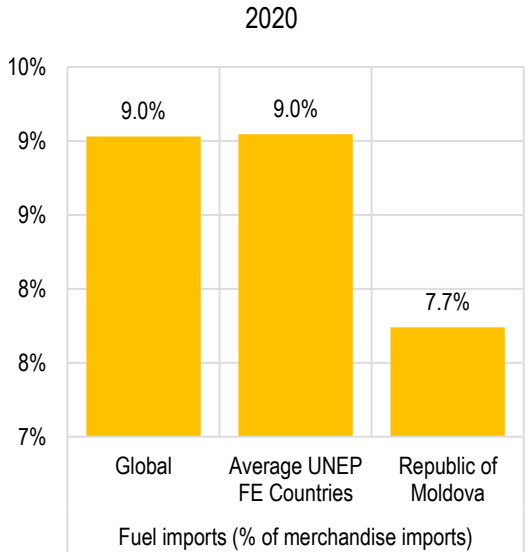
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

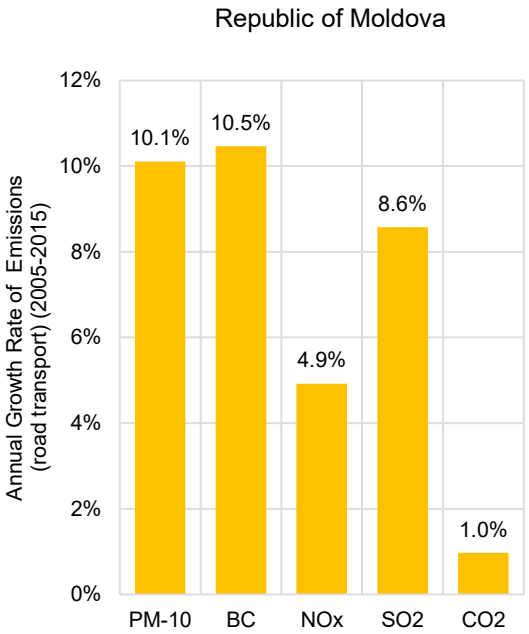
#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR REPUBLIC OF MOLDOVA

		Year	Source
Population (million)	3	2020	7
Income Level Category	Lower middle income		7
GDP per Capita (PPP, Curent USD)	12996	2020	7
Motorisation (Cars/1000 population)	187	2020	10
Car Sales (000)	24	2020	6
Gasoline Price $/l	0.9	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	12.8	2018	13
Employment (Transport+,000)	0	2019	11
Fuel Economy (Lge/100 km, WLTP) -	7	2017	1
Average CO2 emissions/kilometre (g/km, WLTP) -	156	2017	1
Average displacement (cm3) -	1726	2017	1
Average kerb weight (kg) -	2064	2017	1
Average power (kw) -	90	2017	1
Average Age of newly registered cars (years) -	6	2017	1
Cumulative number of LDVs (total sample size,000) -	113		1
Diesel Share in LDV (sample,%)	55%	2017	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	No	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.067	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.188	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	17.2	2019	8
Transport CO2 Emissions per Capita (tonnes) -	3.5	2019	14
Road Transport PM Emissions per Capita (grams) -	237.5	2015	14
Road Transport NOx Emissions per Capita (grams)-	6451.5	2015	14
Road Transport BC Emissions per Capita (grams)-	137.8	2015	14
LDV Emission Standards -	no policy	2019	1
Diesel Sulphur Levels (ppm) -	2000	2019	1
Gasoline Sulphur Levels (ppm) -	500	2019	1
Annual rate of economy-wide energy intensity growth	-2.6%	2000-18	16
Annual rate of transport energy consumption growth	8.2%	2000-18	16
LDV Import value (Million USD)	169	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
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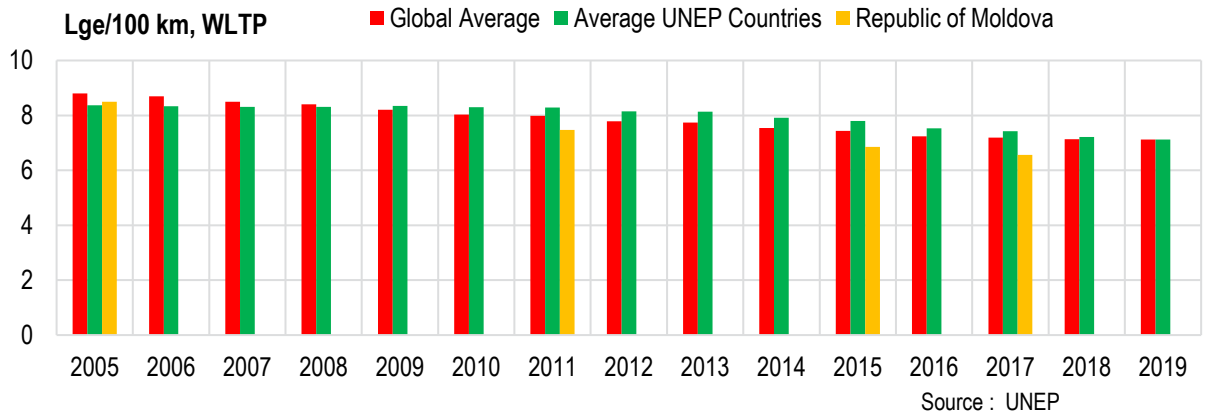
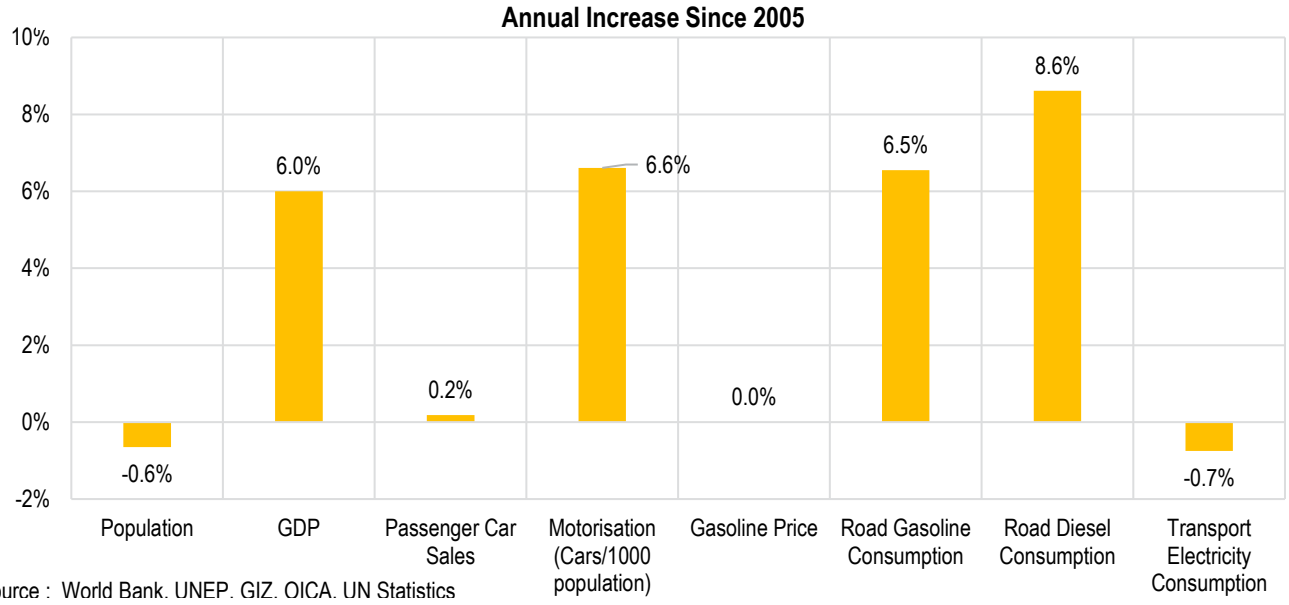
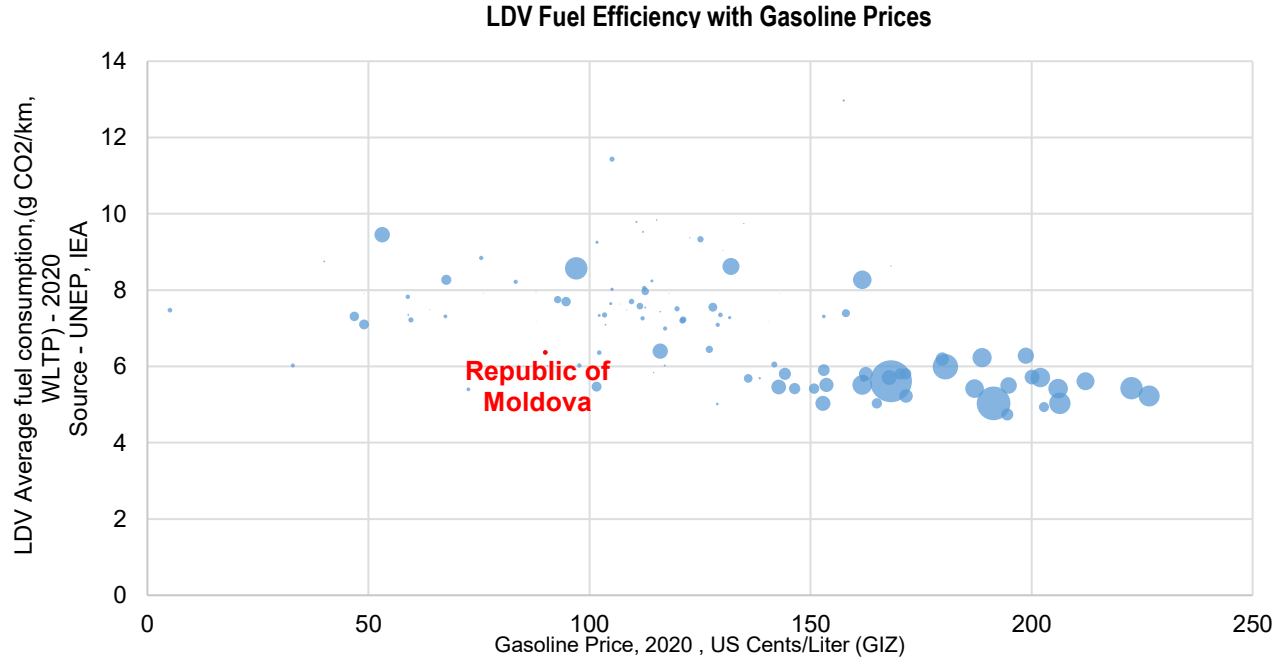
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

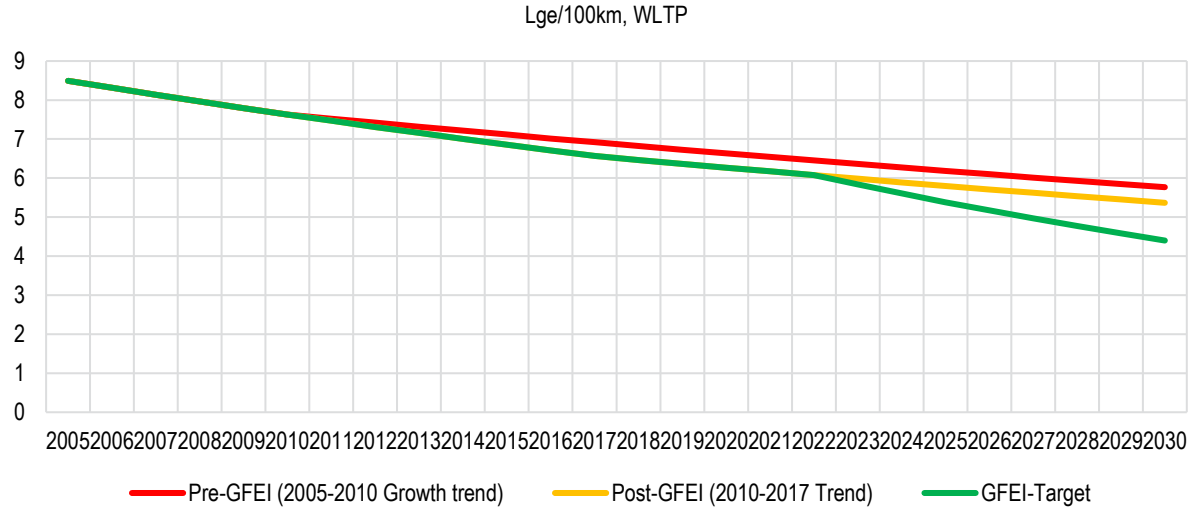
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

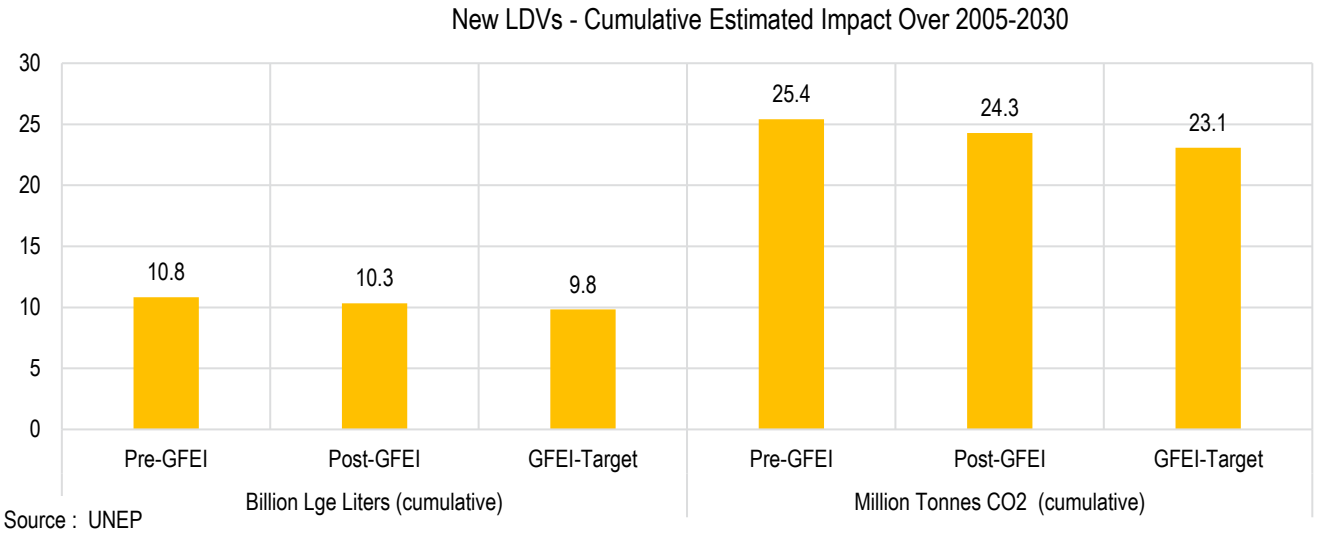
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-1.9%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-3.5%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

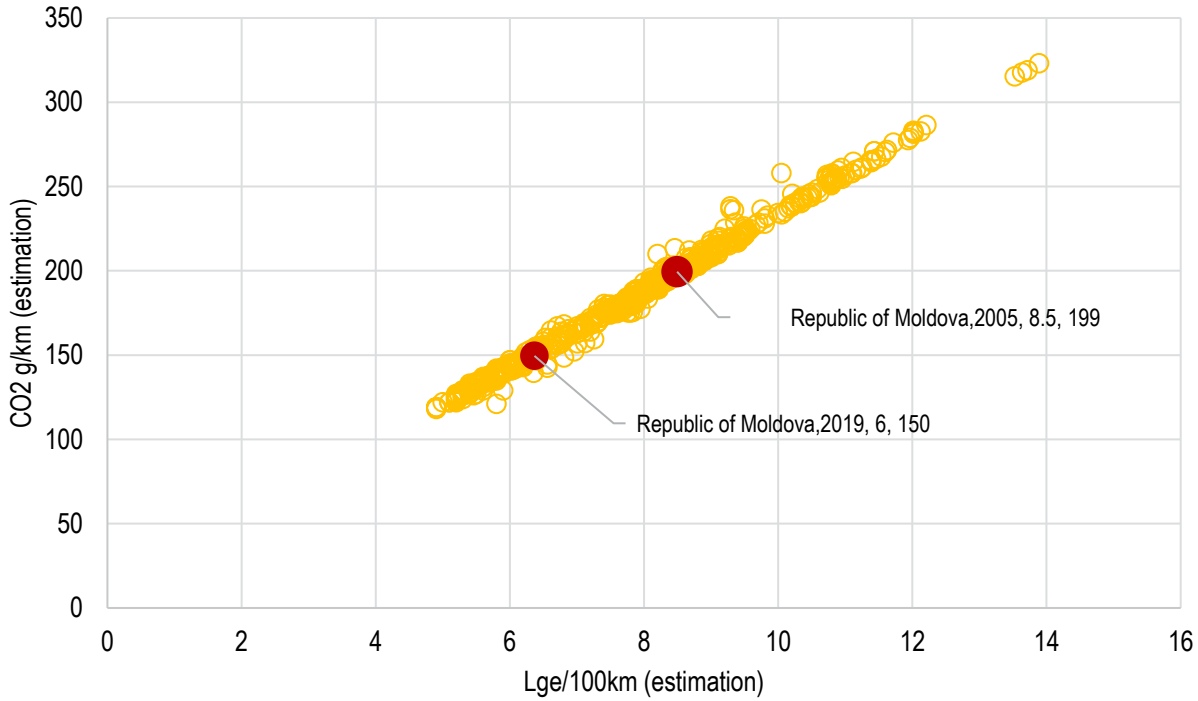
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

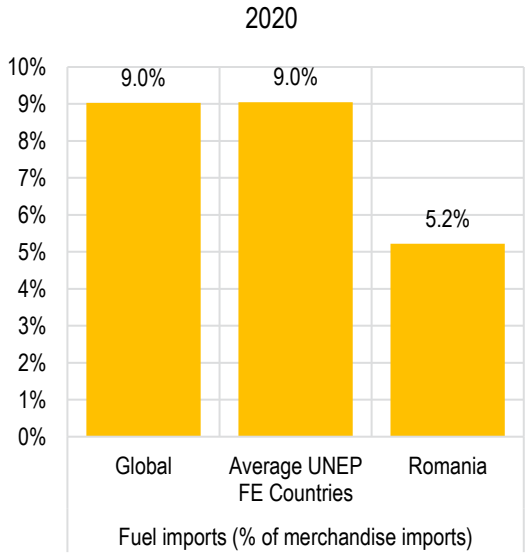
Source : UNEP

The national GFEI project agreement was signed on 14 June 2017 with the Carbon Finance Unit Moldova and completed on 31 December 2018. The Republic of Moldova's Carbon Finance Unit, together with the Ministry of Agriculture, Regional Development and Environment released the first results of an in-depth study of the country's vehicle imports spanning 2005 – 2017 to support the proposed changes to national legislation in the transposition of EU Directive 98/70/EC, as amended by Directive 2009/30/EC, relating to the quality of petrol and diesel fuels. Moldova adopted 10ppm fuel quality standards in February 2019, following UNEP support for cleaner fuels in the country. On 10 July 2018, GFEI organised a Worksop in Chisinau to disseminate the country's first-ever fuel economy trends analysis as well as develop scenarios for future fuel economy policy and fiscal incentives including for electric vehicles. With support from the GFEI and UNEP, Moldova has systematically gathered and analysed data on over 200,000 imported cars, to form the first-ever picture of the country's light-duty vehicle energy efficiency trajectory and to develop scenarios for future policy and fiscal incentives. Moldova imports vehicles from Germany, Poland, Czech Republic, Romania and Russia. There is currently a registration tax differentiation between new and used cars, but there is no circulation tax differentiation. However, hybrid electric vehicle purchases increased from almost zero in 2011 to 2,900 registered in 2017 with a new 50 per cent excise exemption. Moldova also completed a study of fuel quality and consumption. The country imports all fuel from Romania, Russia, with three-quarters of imports from Romania – a country that produces ultra-low sulfur fuel according to European standards. Moldova, however, does not have quality verification or norms of its own and is now in the process of defining a quality management system.

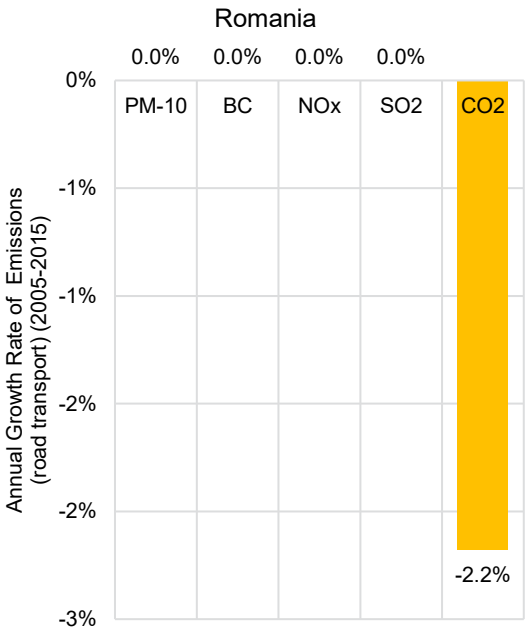
The assessment indicates that if Moldova implements a fuel economy policy for first-time LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save cumulative 1.1 billion litres of gasoline-equivalent & 2.7 million tonnes of CO2 from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR ROMANIA

		Year	Source
Population (million)	19	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	31946	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	126	2020	6
Gasoline Price $/l	1.5	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	7.2	2018	13
Employment (Transport+,000)	700	2019	11
Fuel Economy (Lge/100 km, WLTP) -	6	2017	1
Average CO2 emissions/kilometre (g/km, WLTP) -	135	2017	1
Average displacement (cm3) -	1564	2017	1
Average kerb weight (kg) -	1341	2016	1
Average power (kw) -	88	2016	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.066	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.234	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	55.0	2019	8
Transport CO2 Emissions per Capita (tonnes) -	4.1	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	-4.3%	2000-18	16
Annual rate of transport energy consumption growth	3.7%	2000-18	16
LDV Import value (Million USD)	2340	2020	3



Source : World Bank



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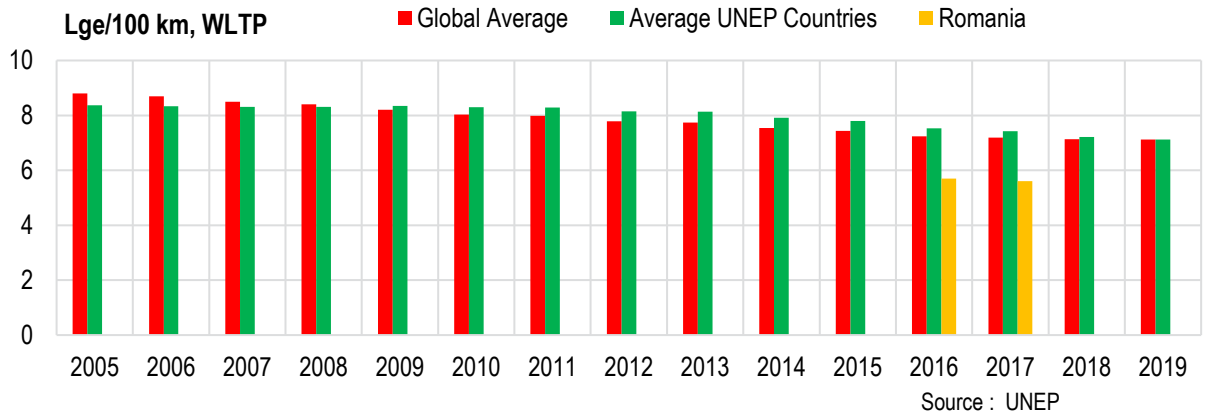
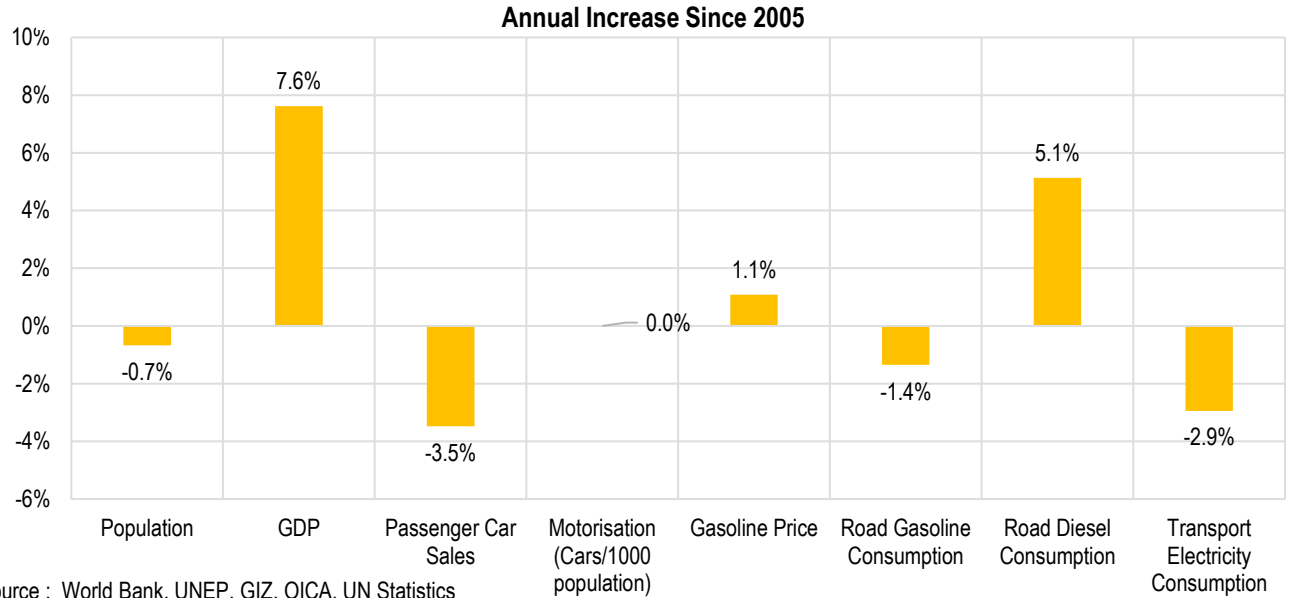
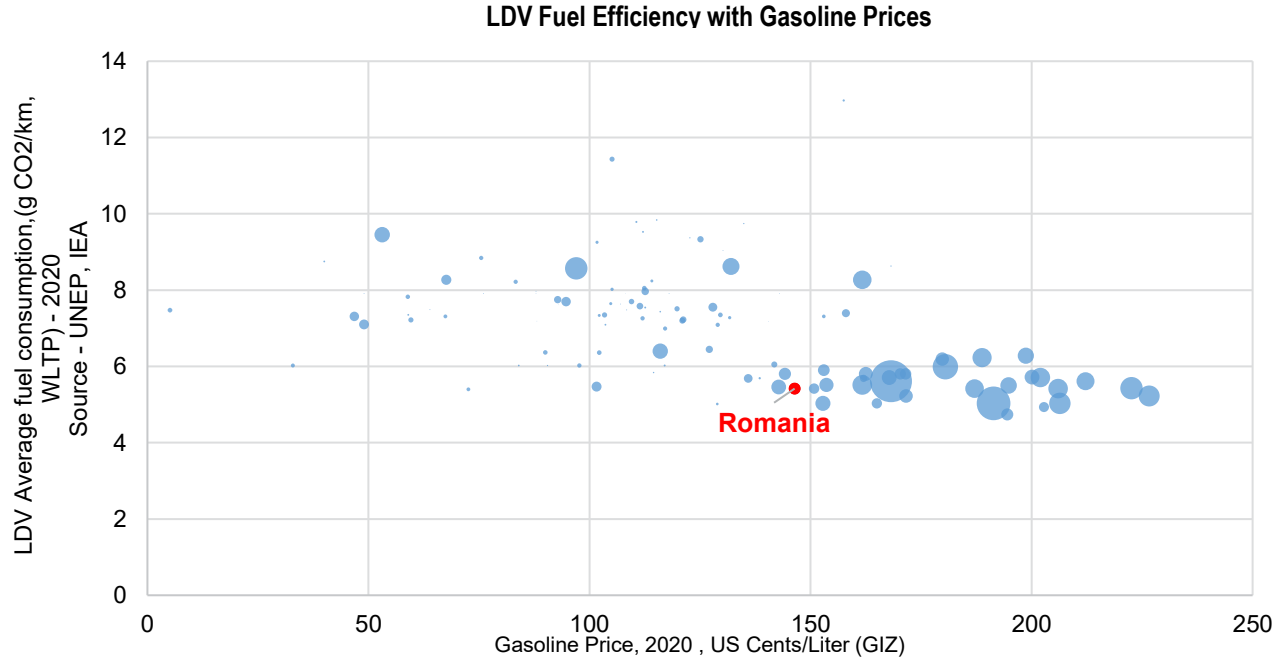
16 Tracking SDG7: The Energy Progress Report

FUEL ECONOMY TRENDS





Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

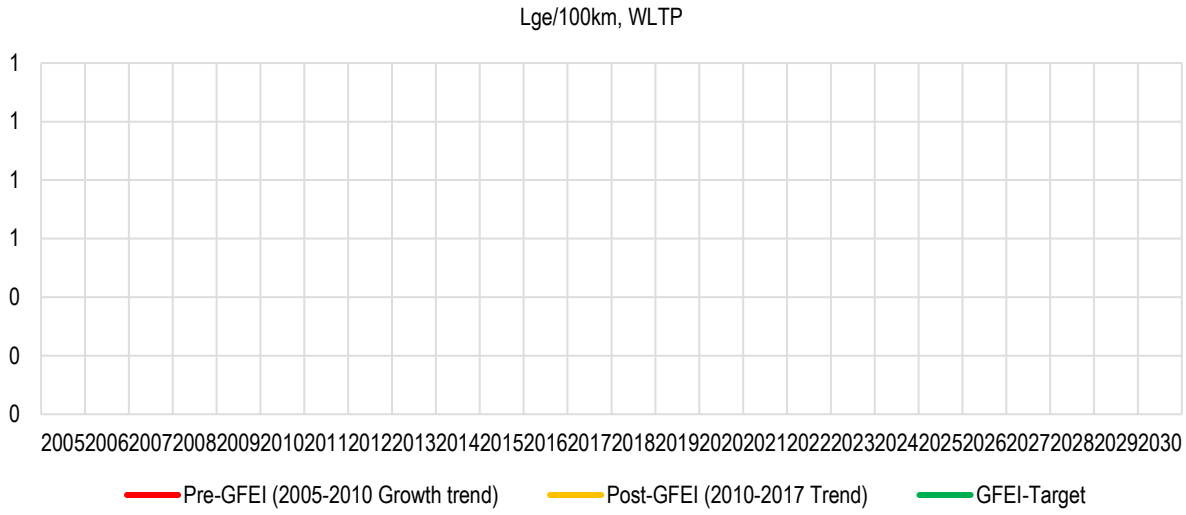
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

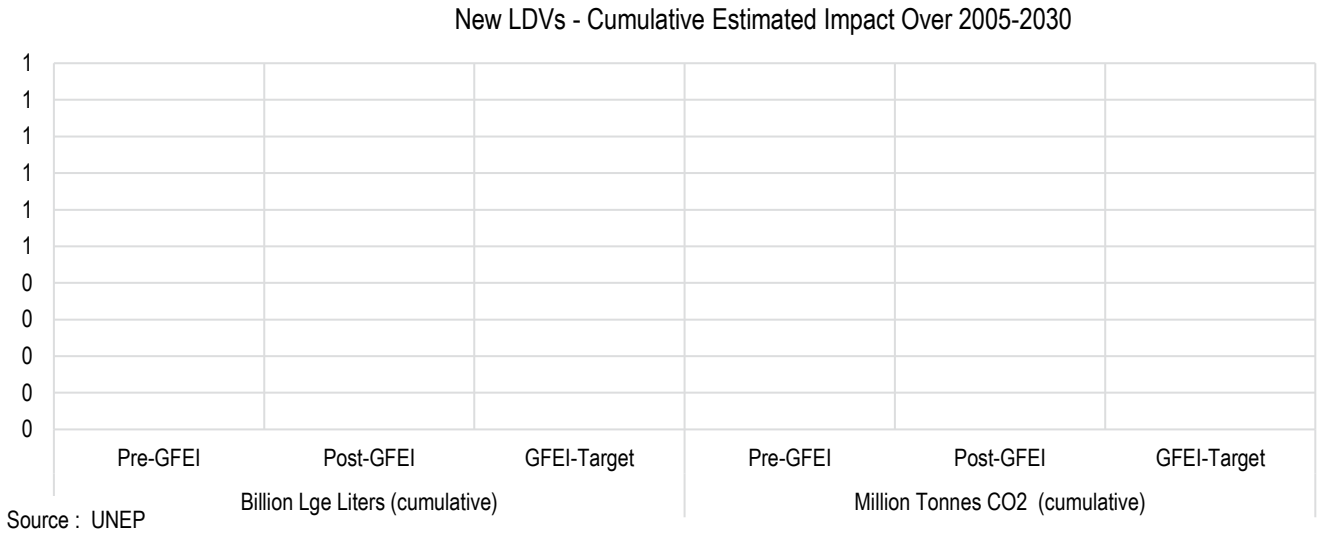
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

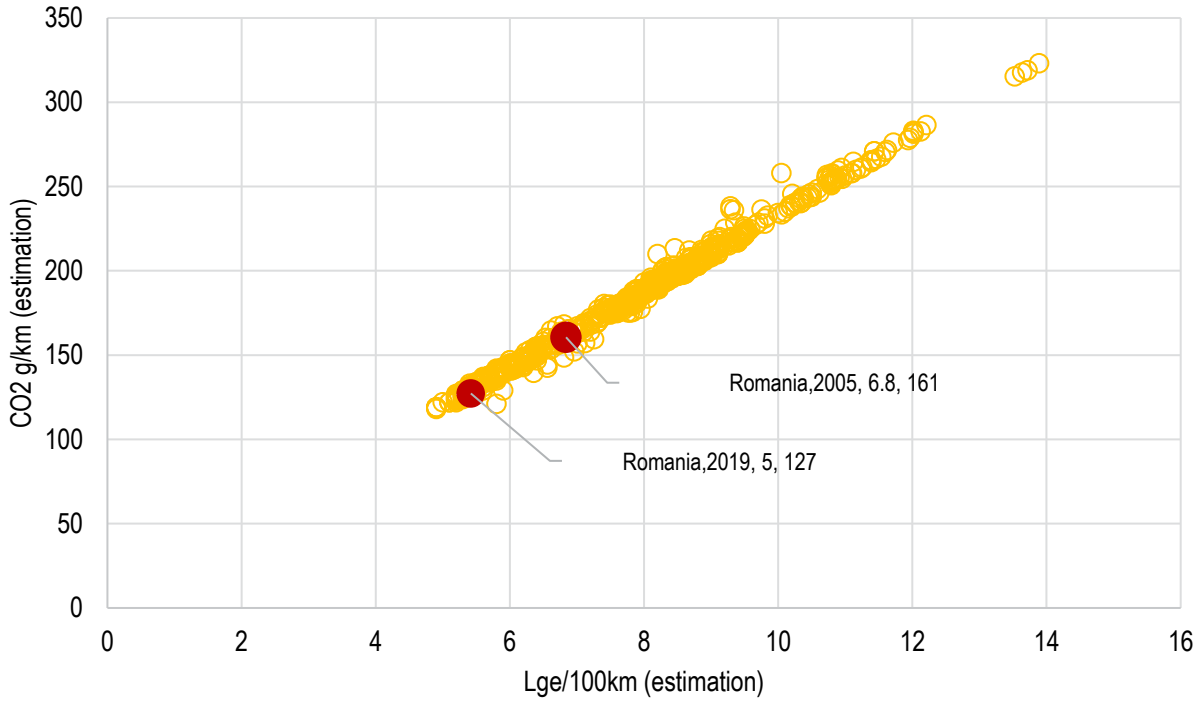
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



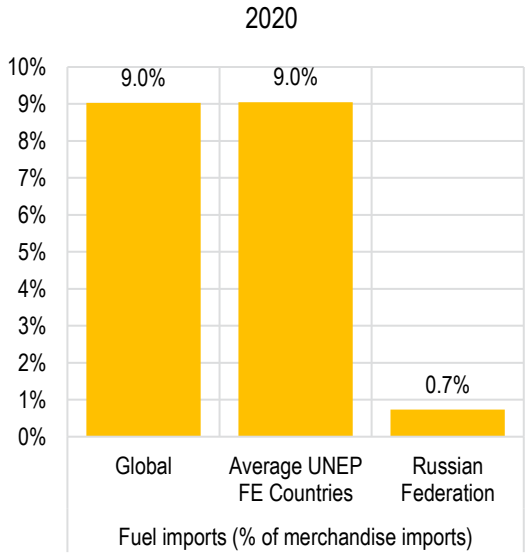
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

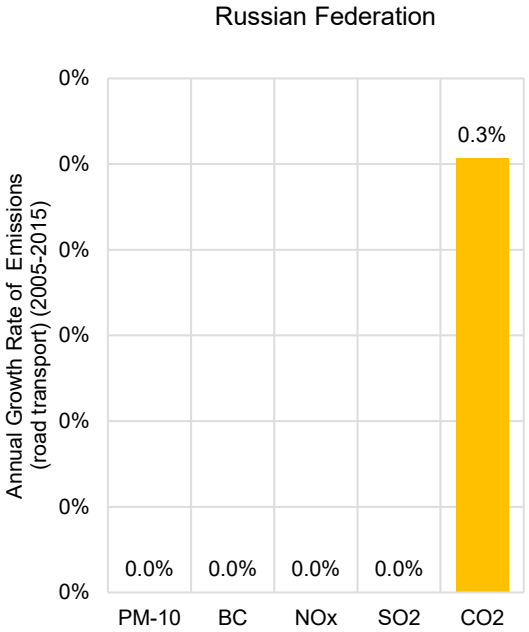
#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR RUSSIAN FEDERATION

		Year	Source
Population (million)	144	2020	7
Income Level Category	Upper middle income		7
GDP per Capita (PPP, Curent USD)	28681	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	1434	2020	6
Gasoline Price $/l	0.7	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	15.0	2018	13
Employment (Transport+,000)	7406	2019	11
Fuel Economy (Lge/100 km, WLTP) -	8	2018	1
Average CO2 emissions/kilometre (g/km, WLTP) -	193	2018	1
Average displacement (cm3) -	1923	2019	1
Average kerb weight (kg) -	1463	2019	1
Average power (kw) -	103	2019	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	No	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.237	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.139	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	566.5	2019	8
Transport CO2 Emissions per Capita (tonnes) -	12.4	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	-2.2%	2000-18	16
Annual rate of transport energy consumption growth	1.5%	2000-18	16
LDV Import value (Million USD)	5427	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
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8 UN Statistics Division
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10 Estimated using growth and sales data
11 Employment is for Transport; storage and communication, ILO
12 International Transport Forum
13 Koks, E.E. et al. A global multi-hazard risk analysis of road
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
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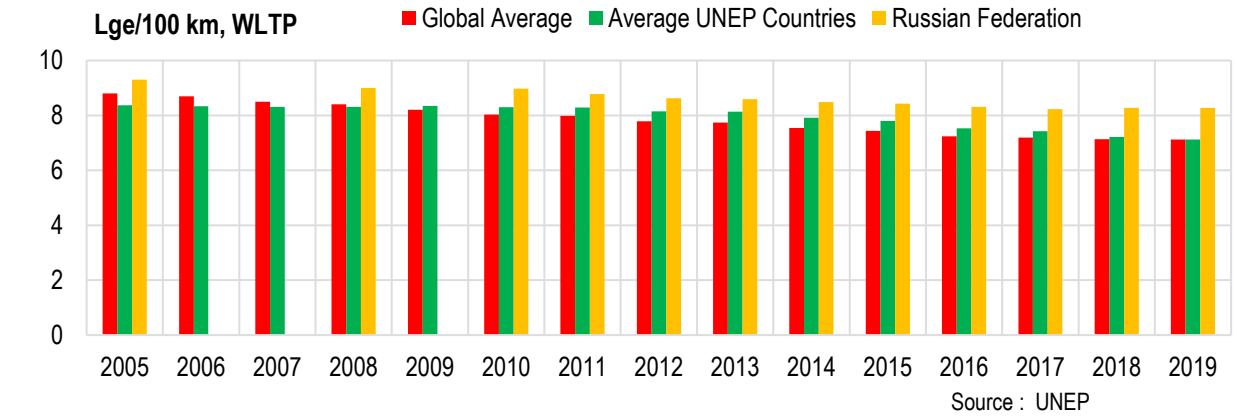
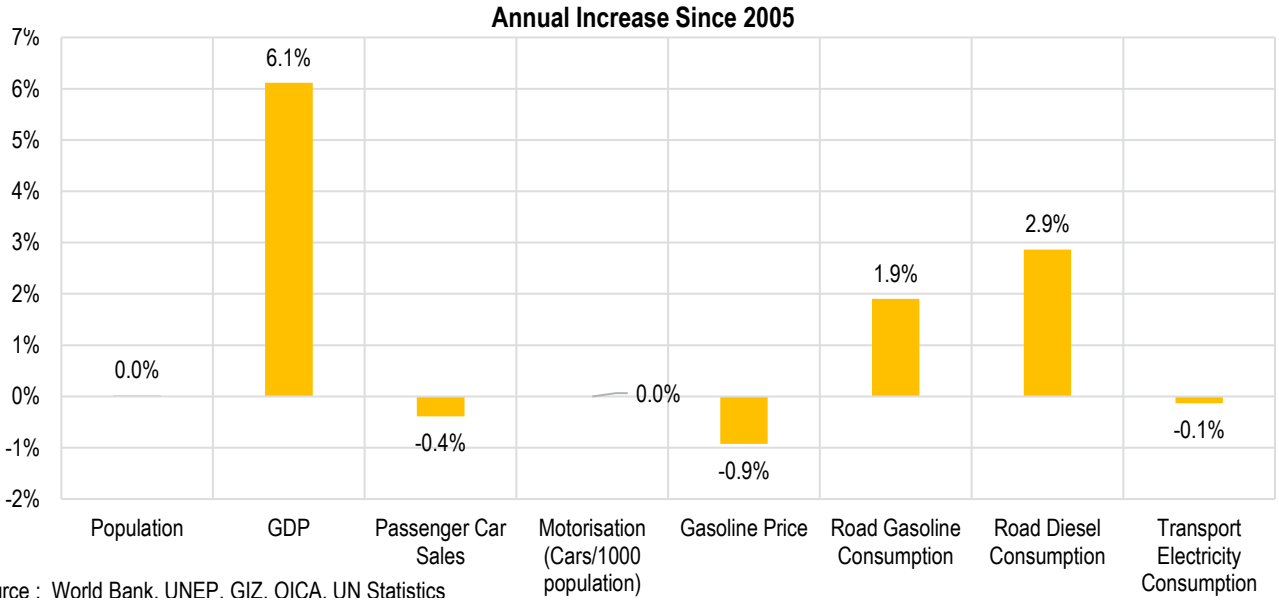
FUEL ECONOMY TRENDS





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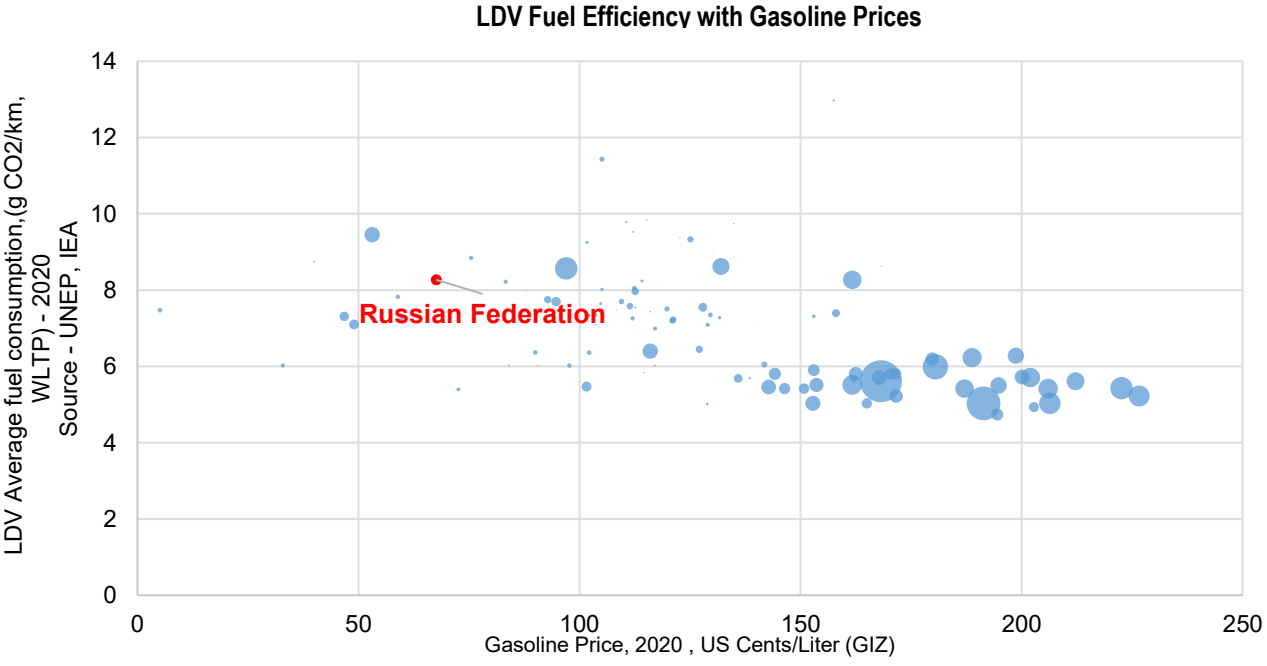


Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

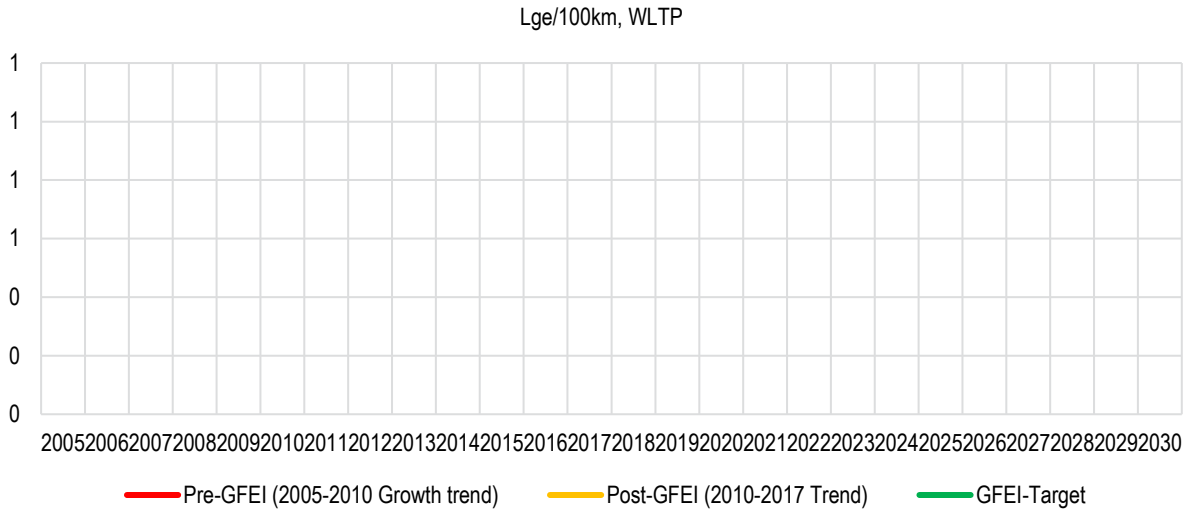
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

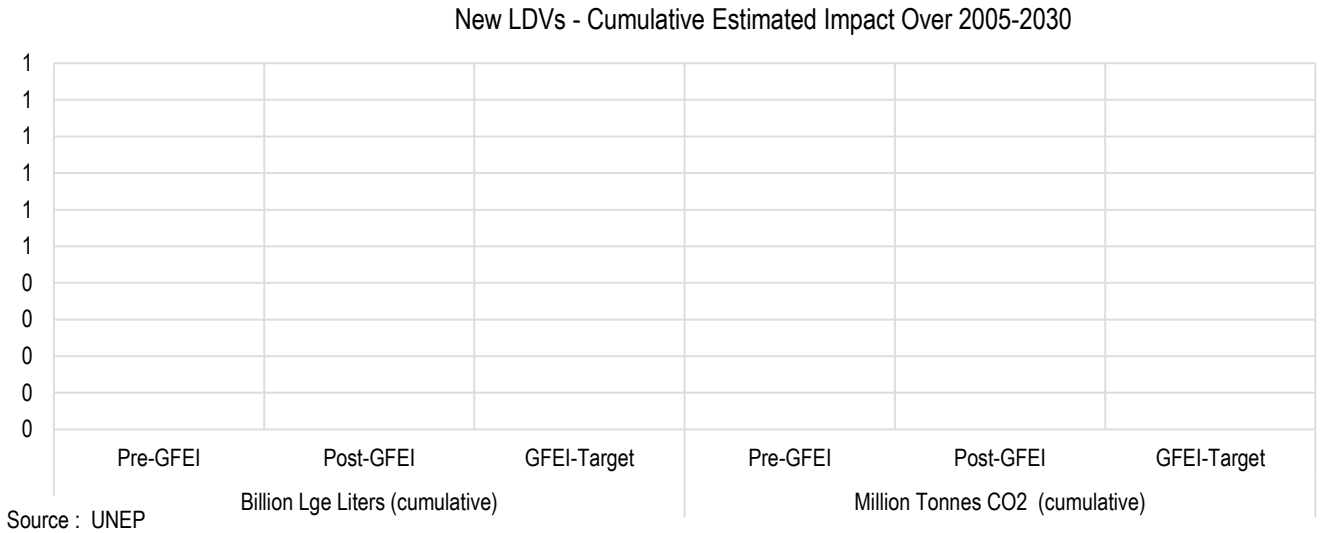
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



Source : UNEP



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Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

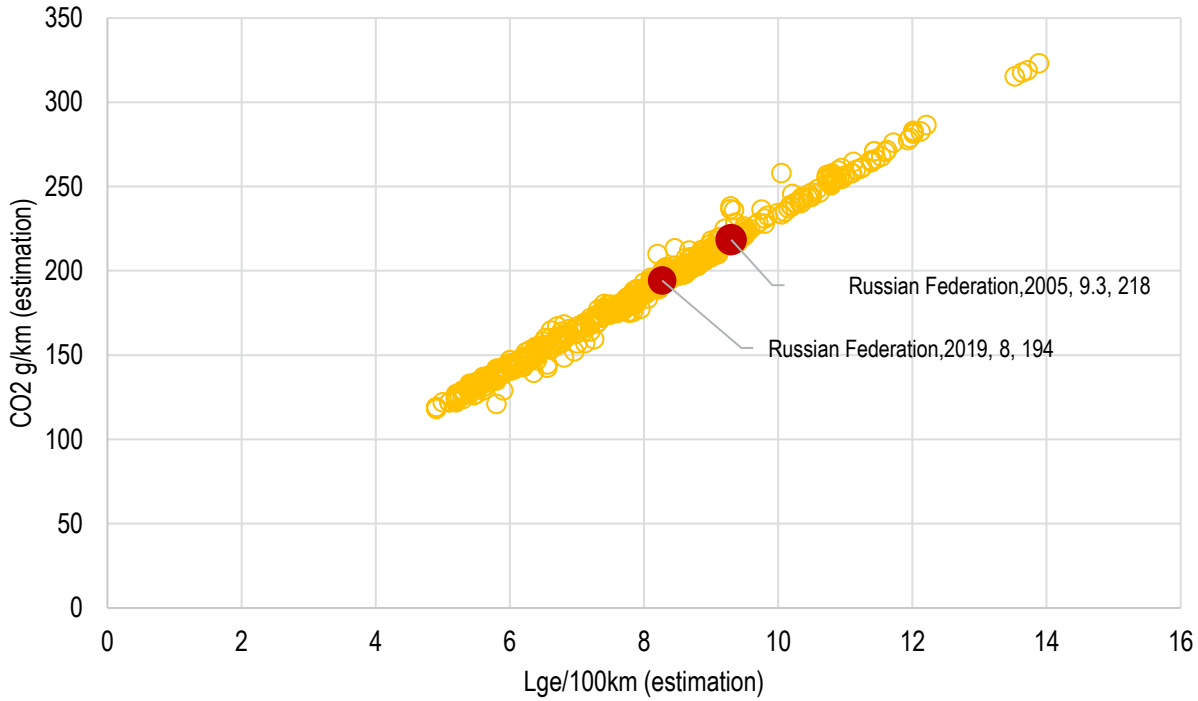
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



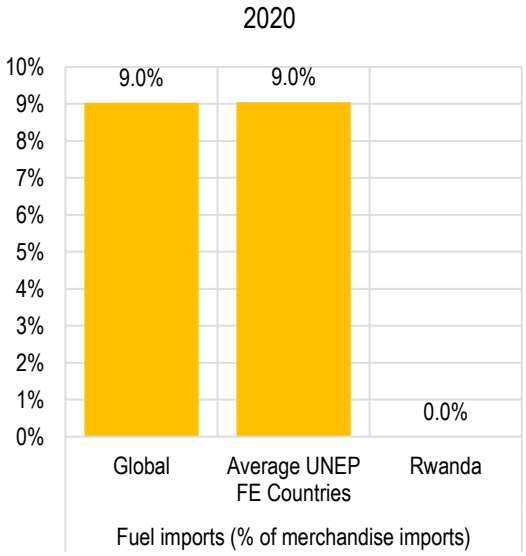
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

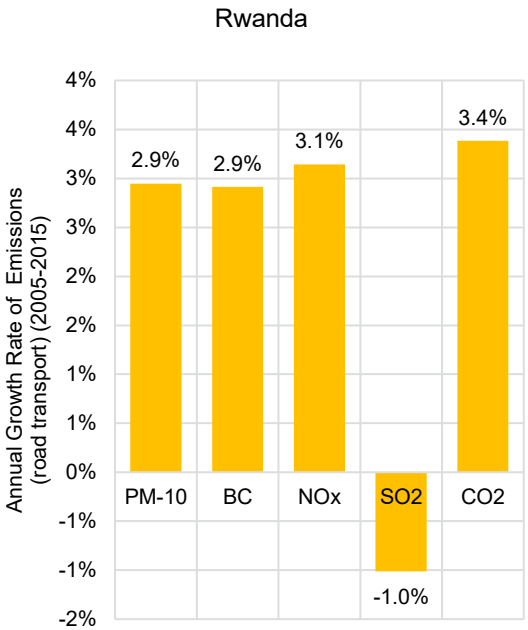
#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR RWANDA

		Year	Source
Population (million)	13	2020	7
Income Level Category	Low income		7
GDP per Capita (PPP, Curent USD)	2213	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	6	2020	6
Gasoline Price $/l	1.2	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	3.8	2018	13
Employment (Transport+,000)	204	2019	11
Fuel Economy (Lge/100 km, WLTP) -	#N/A	#N/A	1
Average CO2 emissions/kilometre (g/km, WLTP) -	#N/A	#N/A	1
Average displacement (cm3) -			1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.015	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.012	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	6302.3	2019	8
Transport CO2 Emissions per Capita (tonnes) -	0.1	2019	14
Road Transport PM Emissions per Capita (grams) -	18.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	298.1	2015	14
Road Transport BC Emissions per Capita (grams)-	8.4	2015	14
LDV Emission Standards -	Euro 2	2019	1
Diesel Sulphur Levels (ppm) -	50	2019	1
Gasoline Sulphur Levels (ppm) -	150	2019	1
Annual rate of economy-wide energy intensity growth	-3.7%	2000-18	16
Annual rate of transport energy consumption growth	5.1%	2000-18	16
LDV Import value (Million USD)	20	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

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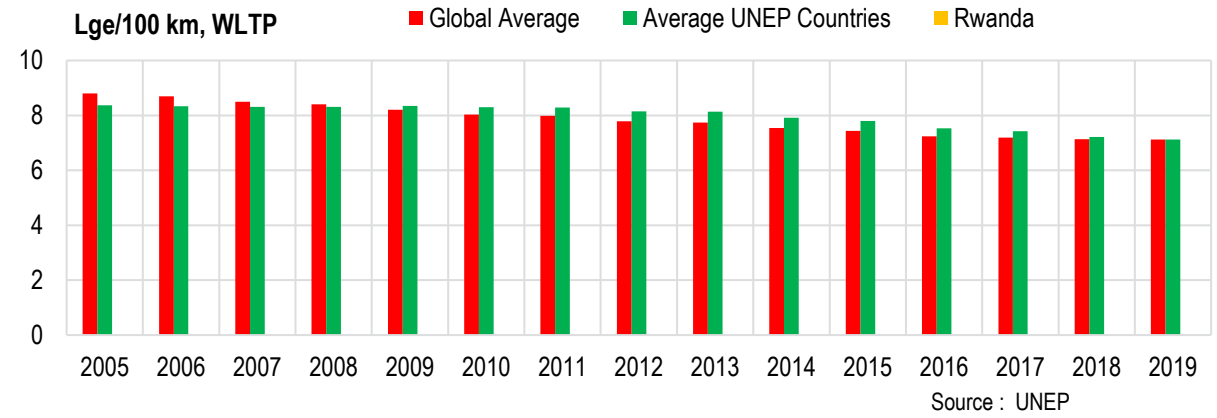
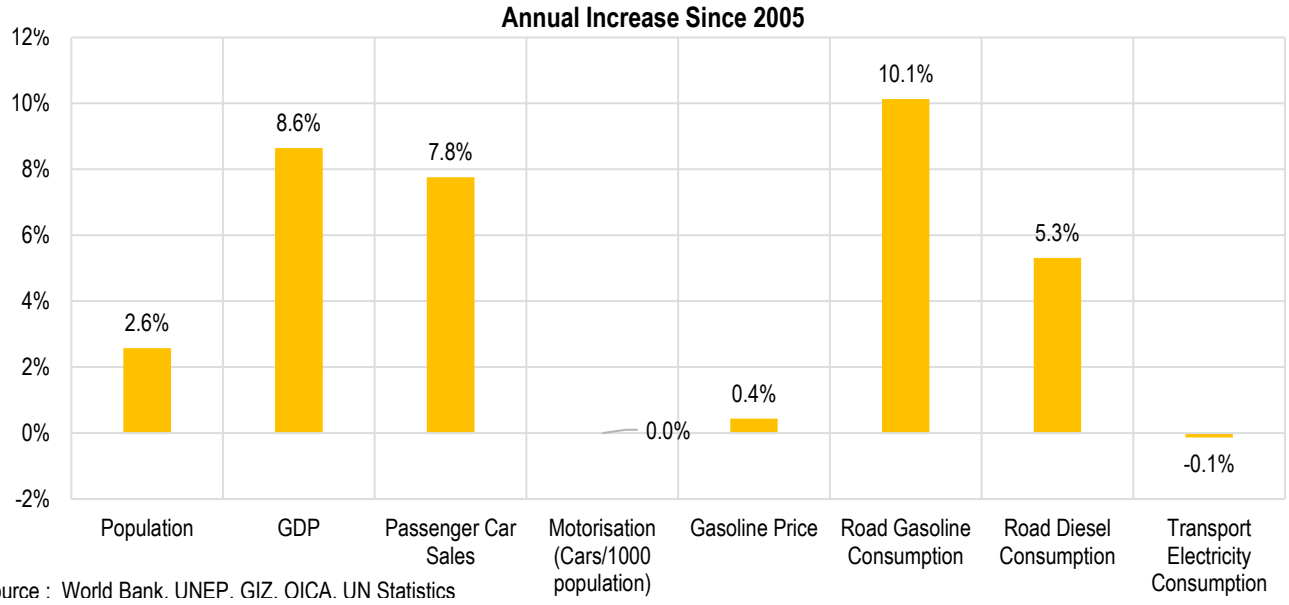


Source : UNEP



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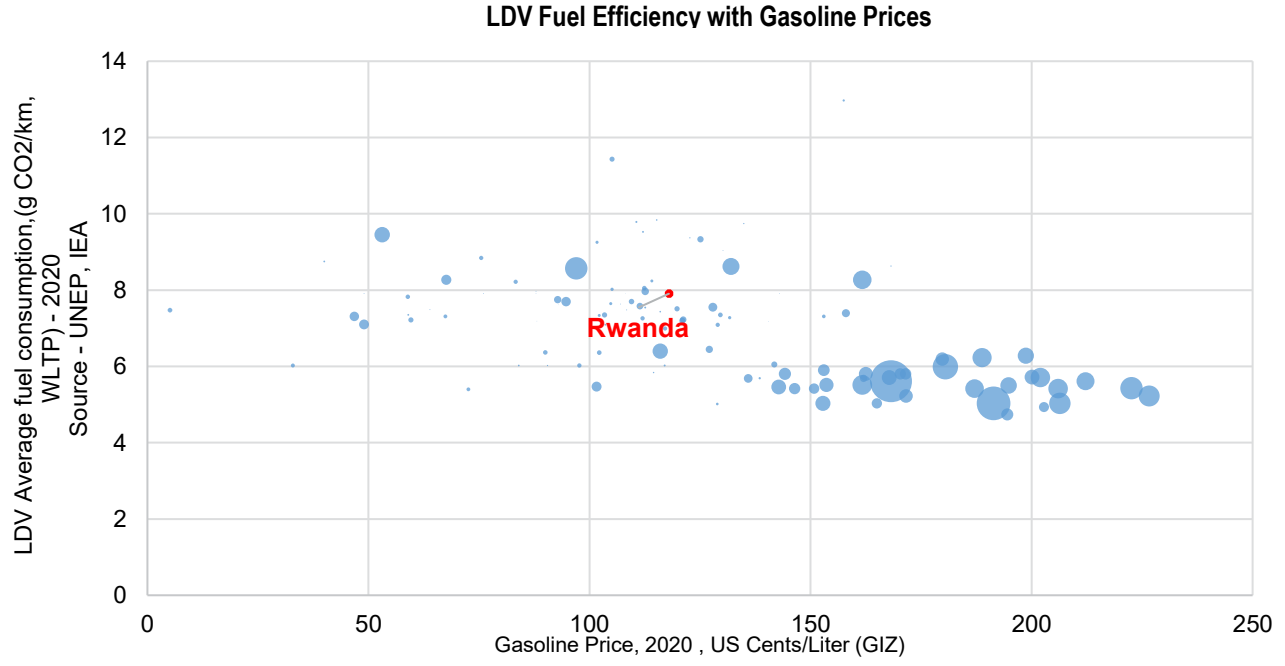


Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

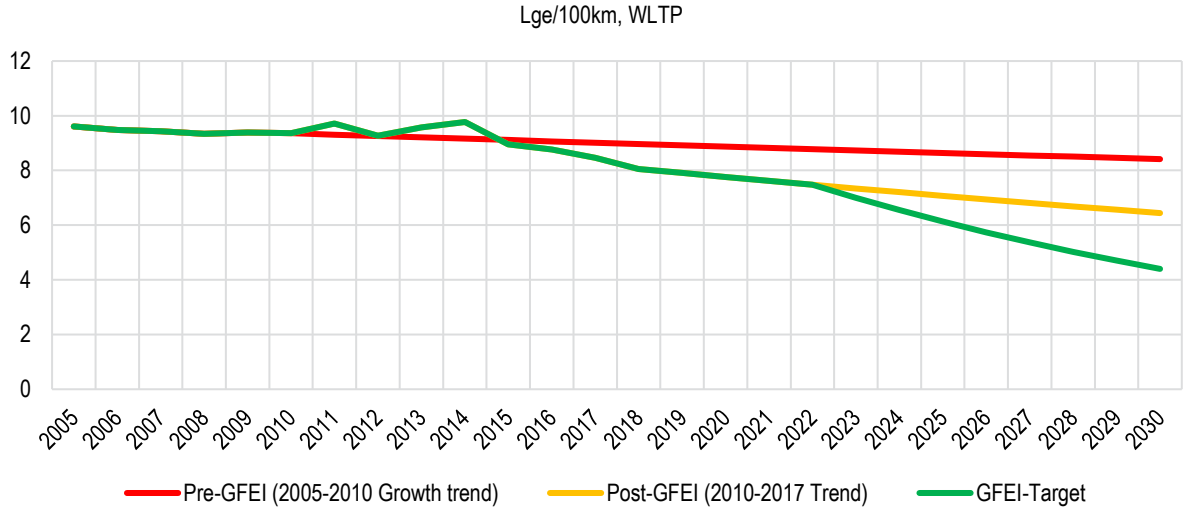
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-1.9%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-5.5%**



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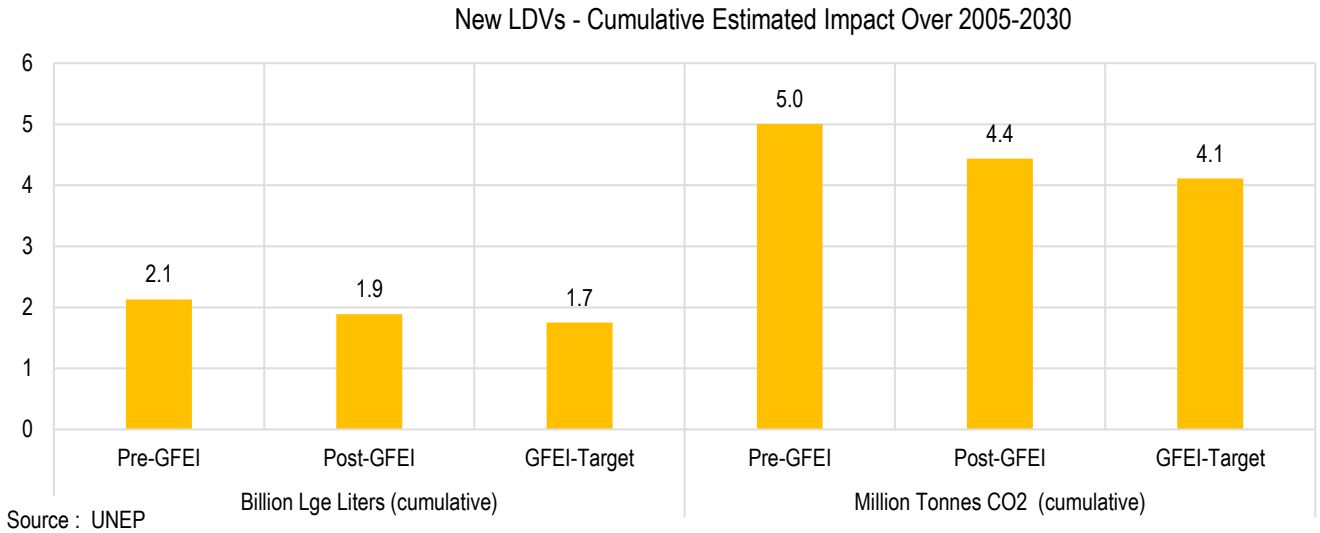

Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

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5) The Impact assessment assumes

a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

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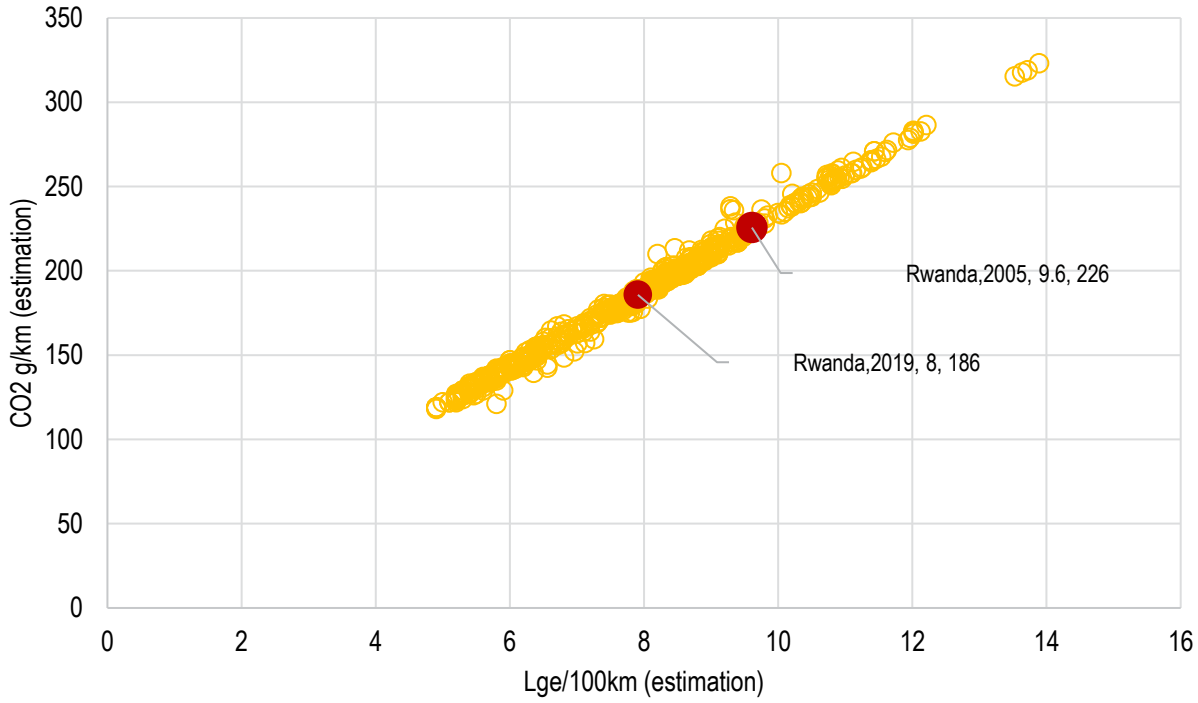
d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

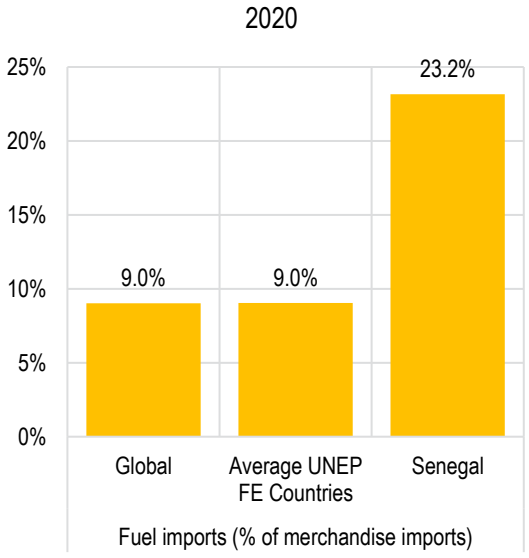
UNEP signed an agreement with the Rwanda Environment Management Authority (REMA) on 6 March 2018 with the objective of promoting clean and efficient vehicle policies. Partners of the Rwanda Environment Management Authority have carried out the background and feasibility study for electric mobility in Rwanda. The country is in the process of building a green city where electric mobility will be a crucial component of city mobility. Rwanda's nationally determined contribution has suggested implementation of the following fuel economy specific strategies - Enforcing Fleet renewal and scrappage (heavy, medium, minibus), Setting emission standards (equivalent to Euro standards), use of higher fuel efficiencies and low carbon technologies for new vehicles, standardised compliance and inspections for non-Rwandan registered vehicles etc.

Rwanda's energy policy suggests following barriers for improving energy efficiency, i.e. low level of awareness among energy end-users about energy conservation practices, options and benefits and insufficient information about improved energy technologies; Insufficient incentives, including financing mechanisms to invest in modern, efficient technologies and practices and to introduce fuel/technology substitution, and dominance of energy-inefficient technologies, including traditional stoves; lights and other appliances.

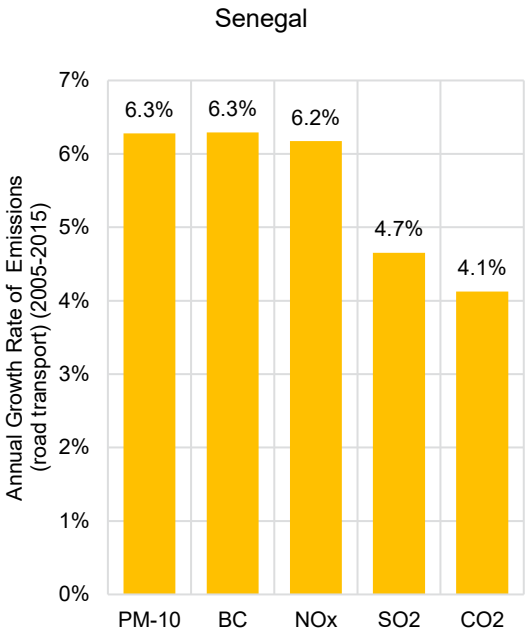
The assessment indicates that if Rwanda implements a fuel economy policy for first-time LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 349 million litres of gasoline-equivalent & 0.82 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR SENEGAL

		Year	Source
Population (million)	17	2020	7
Income Level Category	Lower middle income		7
GDP per Capita (PPP, Curent USD)	3502	2020	7
Motorisation (Cars/1000 population)	23	2020	10
Car Sales (000)	3	2020	6
Gasoline Price $/l	1.3	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	4.6	2018	13
Employment (Transport+,000)	223	2019	11
Fuel Economy (Lge/100 km, WLTP) -	10	2016	1
Average CO2 emissions/kilometre (g/km, WLTP) -	246	2016	1
Average displacement (cm3) -			1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -	28		1
Diesel Share in LDV (sample,%)	60%	2016	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.014	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.042	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	4875.1	2019	8
Transport CO2 Emissions per Capita (tonnes) -	0.6	2019	14
Road Transport PM Emissions per Capita (grams) -	111.8	2015	14
Road Transport NOx Emissions per Capita (grams)-	1804.1	2015	14
Road Transport BC Emissions per Capita (grams)-	55.8	2015	14
LDV Emission Standards -	0	2019	1
Diesel Sulphur Levels (ppm) -	3000	2019	1
Gasoline Sulphur Levels (ppm) -	1000	2019	1
Annual rate of economy-wide energy intensity growth	-0.9%	2000-18	16
Annual rate of transport energy consumption growth	3.6%	2000-18	16
LDV Import value (Million USD)	169	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

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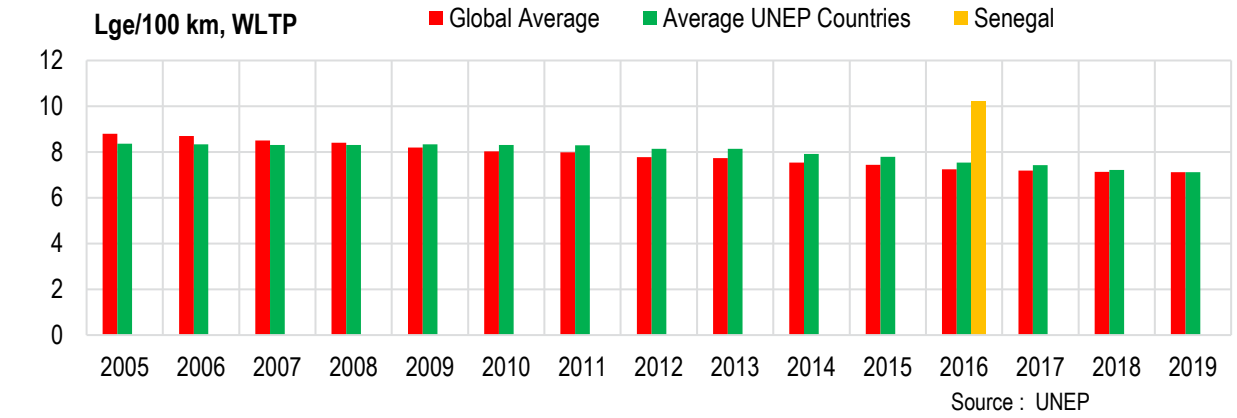

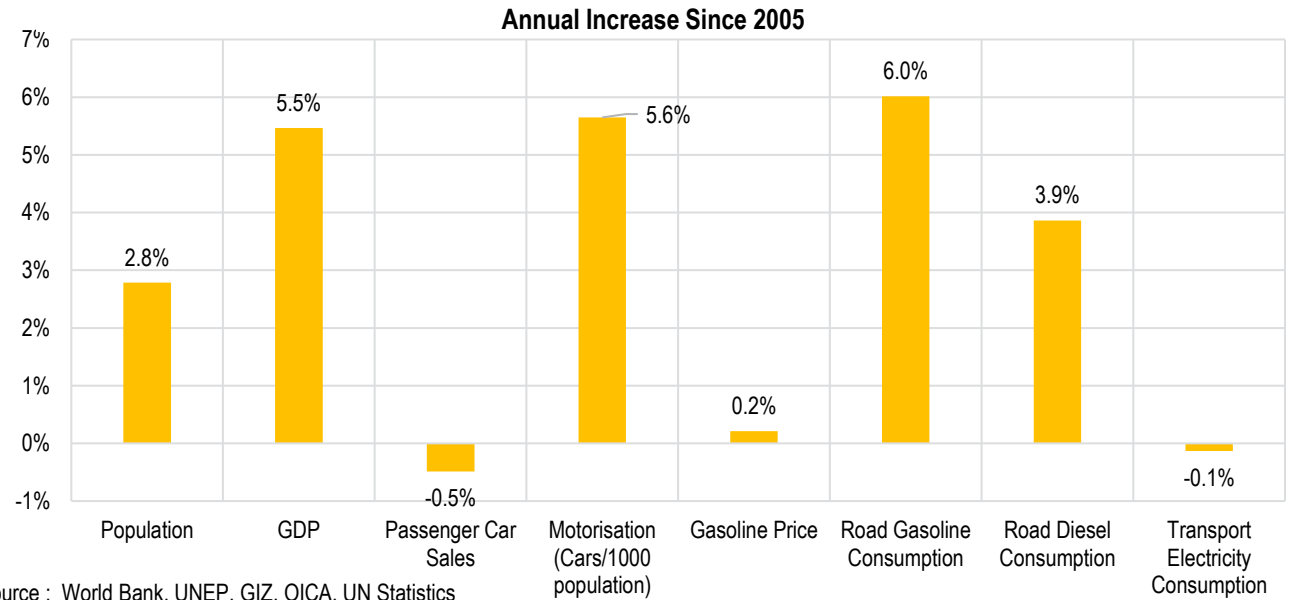

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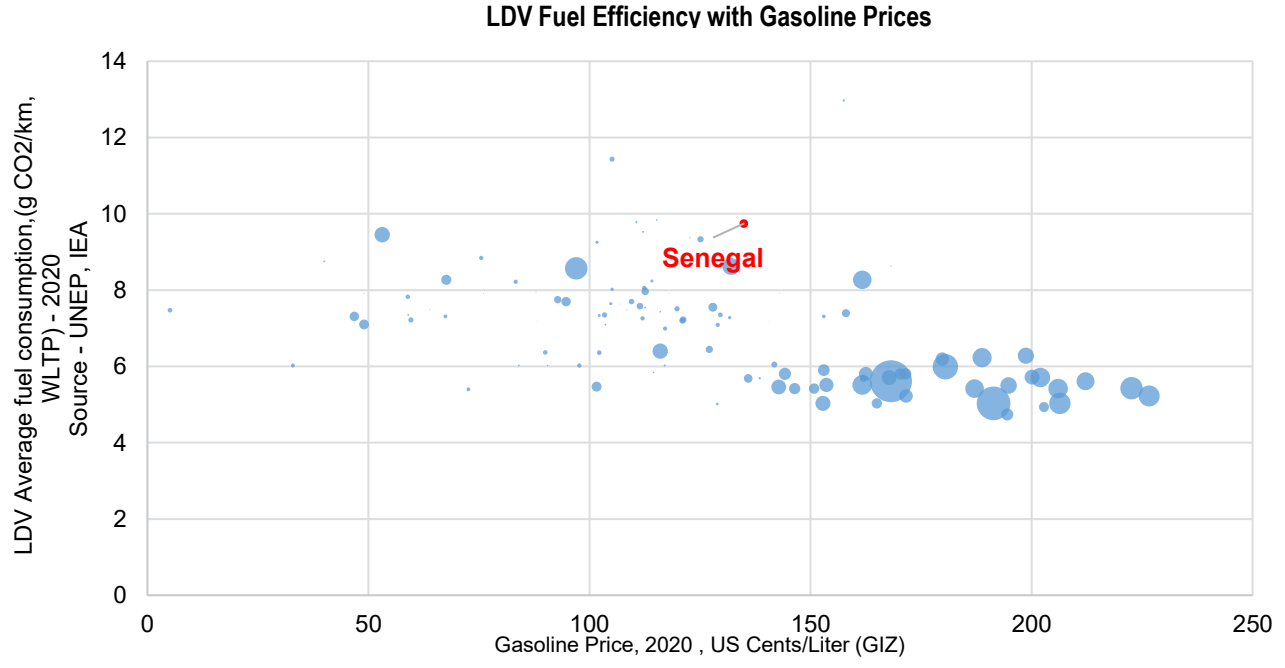

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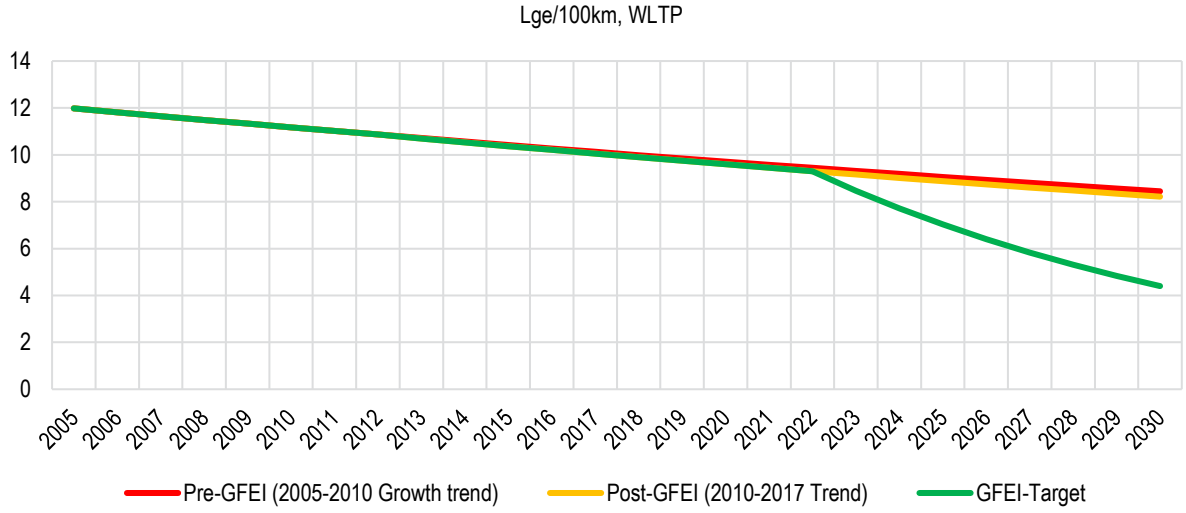
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-1.5%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-7.5%**



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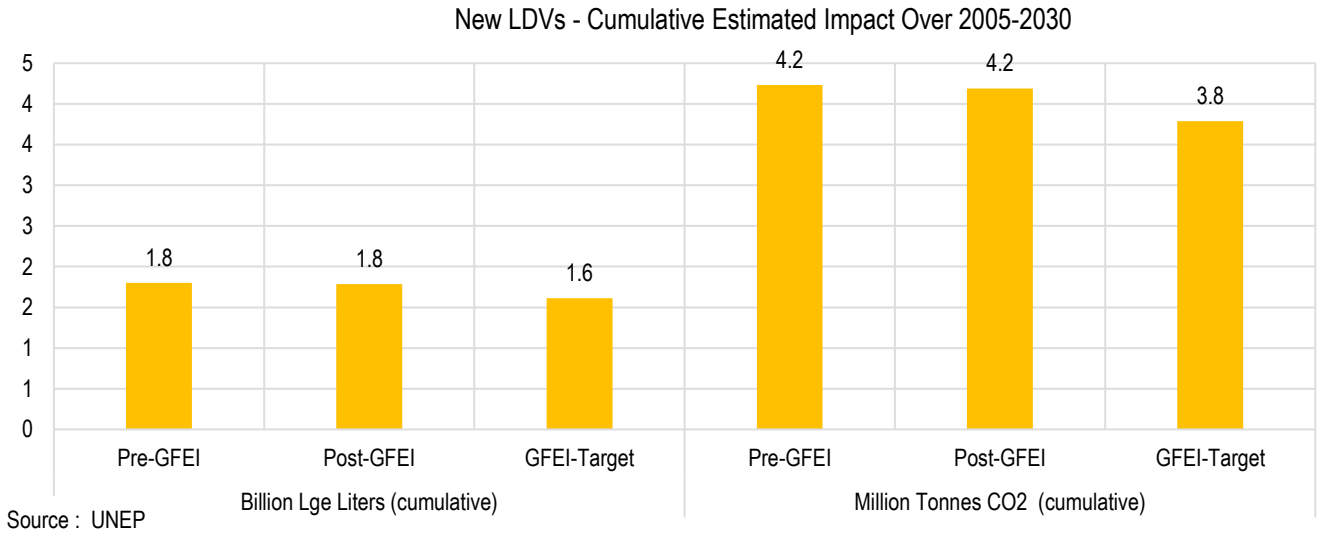


Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

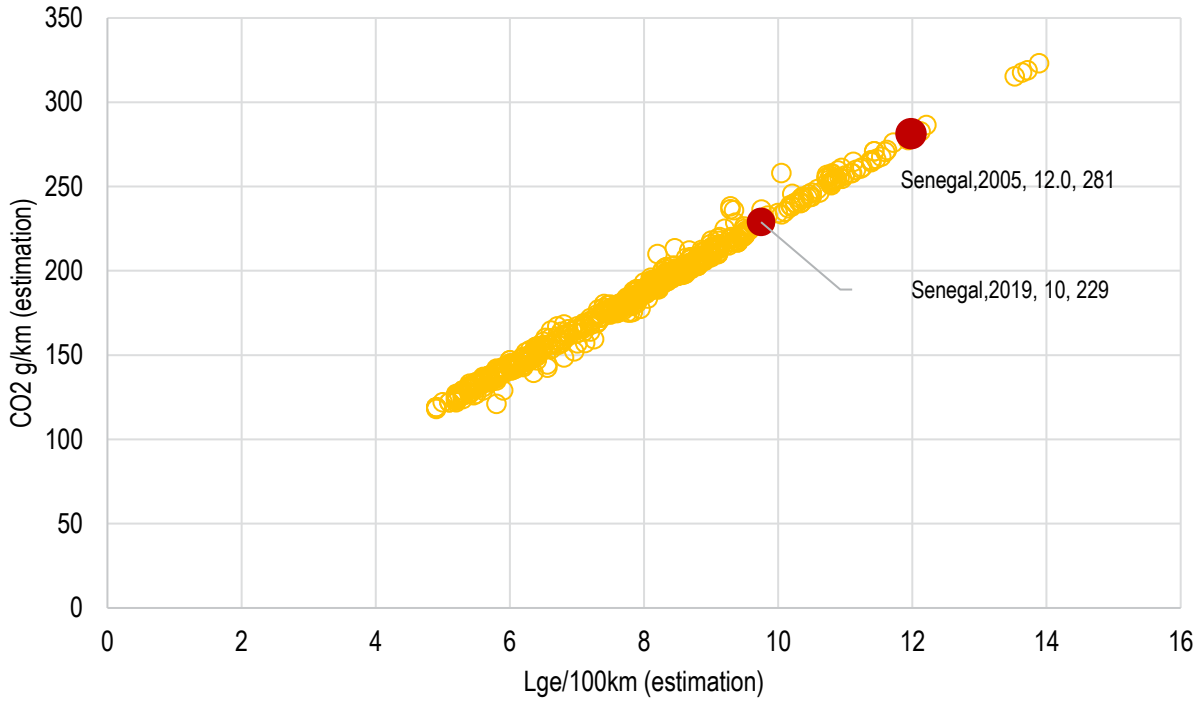
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

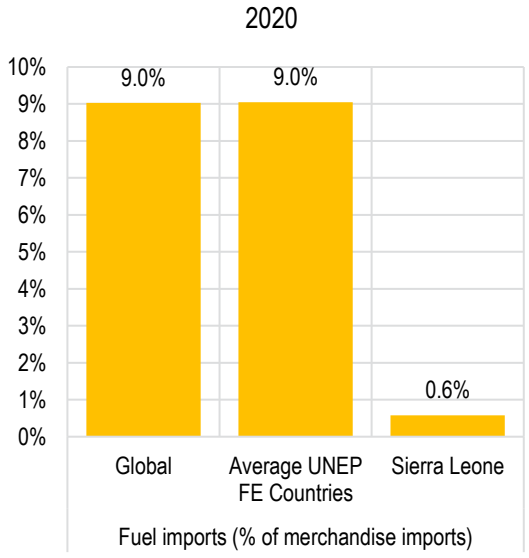
The Global Fuel Economy Initiative (GFEI) launched a national project to see to the development of Strategies for Promoting Cleaner and Efficient Vehicles on 3 November 2017 at the Ecole Supérieure Polytechnique in Dakar. The fuel economy baseline project was signed with Ecole Supérieure Polytechnique (ESP) de Dakar, Senegal on 5 October 2017 to carry out the vehicle Inventory (baseline) and propose policy options for the promotion of fuel economy in Senegal. ESP in conjunction with the Direction des Transports Routiers on 3 November 2017 organised a country project inception workshop. This served as the beginning of the data collection that fed into the vehicle inventory study. The inventory report showed an increase in second-hand vehicles in the market hitting 72% of the total new registrations in 2016. Also, in 2016, the average age of the vehicle fleet was found to be 18 years, and 40% of vehicles were over 20 years old. The transportation sector in Senegal is the second largest energy consumption sector.

On 9 August 2018, ESP in conjunction with the Direction des Transports Routiers organised a validation workshop for the draft fuel economy inventory report and made proposals for the fuel economy policies that Senegal could adopt. It was notable that the recommendations considered the necessity of consideration of non-fossil fuel sources if the GFEI target of 4.2 l/100 km is to be achieved in Senegal by 2050. By the end of the validation workshop, all participants were sensitised on the danger posed by air pollutants and climate emissions from Senegal's vehicle fleet. Therefore, to help Senegal meet the GFEI global fuel economy target by 2030 the stakeholders agreed on the following recommendations: 1) The application of taxes on the most polluting vehicles corresponding to their consumption per 100km; 2) Bonuses/incentives for the use of electric and/or hybrid vehicles; 3) Fuel tax increase of 20%, corresponding to the 2016 pump prices. The policy scenarios proposed from the study were submitted to the Direction des Transports Routiers for possible inclusion in the country's plans towards cleaner mobility.

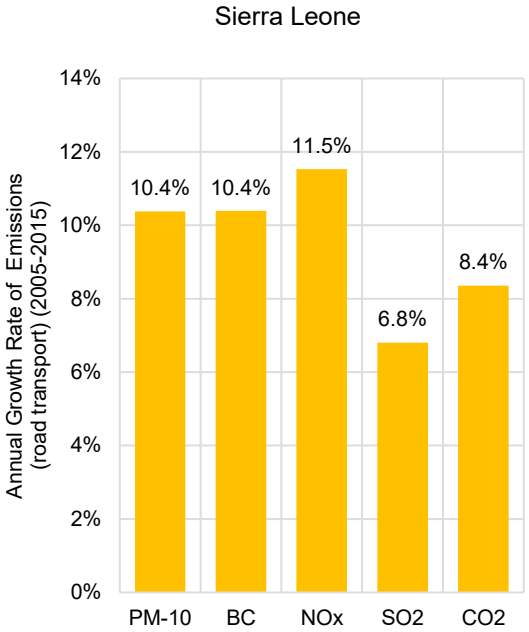
The assessment indicates that if Senegal implements a fuel economy policy for LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 241 million litres of gasoline-equivalent & 0.57 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR SIERRA LEONE

		Year	Source
Population (million)	8	2020	7
Income Level Category	Low income		7
GDP per Capita (PPP, Curent USD)	1726	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	2	2020	6
Gasoline Price $/l	0.9	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	5.3	2018	13
Employment (Transport+,000)	63	2019	11
Fuel Economy (Lge/100 km, WLTP) -	#N/A	#N/A	1
Average CO2 emissions/kilometre (g/km, WLTP) -	#N/A	#N/A	1
Average displacement (cm3) -			1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.019	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.008	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	#VALUE!	2019	8
Transport CO2 Emissions per Capita (tonnes) -	0.2	2019	14
Road Transport PM Emissions per Capita (grams) -	30.1	2015	14
Road Transport NOx Emissions per Capita (grams)-	817.0	2015	14
Road Transport BC Emissions per Capita (grams)-	14.8	2015	14
LDV Emission Standards -	0	2019	1
Diesel Sulphur Levels (ppm) -	3000	2019	1
Gasoline Sulphur Levels (ppm) -	0	2019	1
Annual rate of economy-wide energy intensity growth	-3.9%	2000-18	16
Annual rate of transport energy consumption growth	7.8%	2000-18	16
LDV Import value (Million USD)	38	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
7 World Bank
8 UN Statistics Division
9 SLOCAT &GIZ
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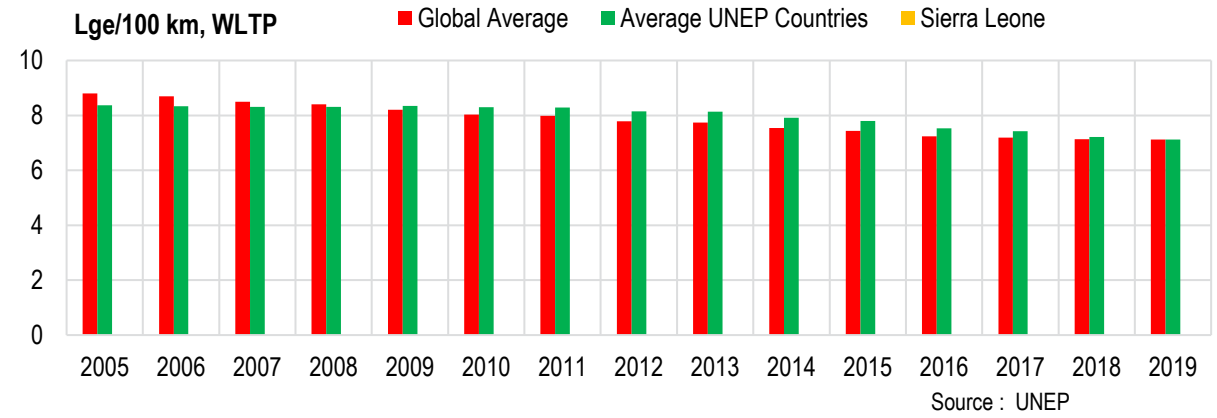
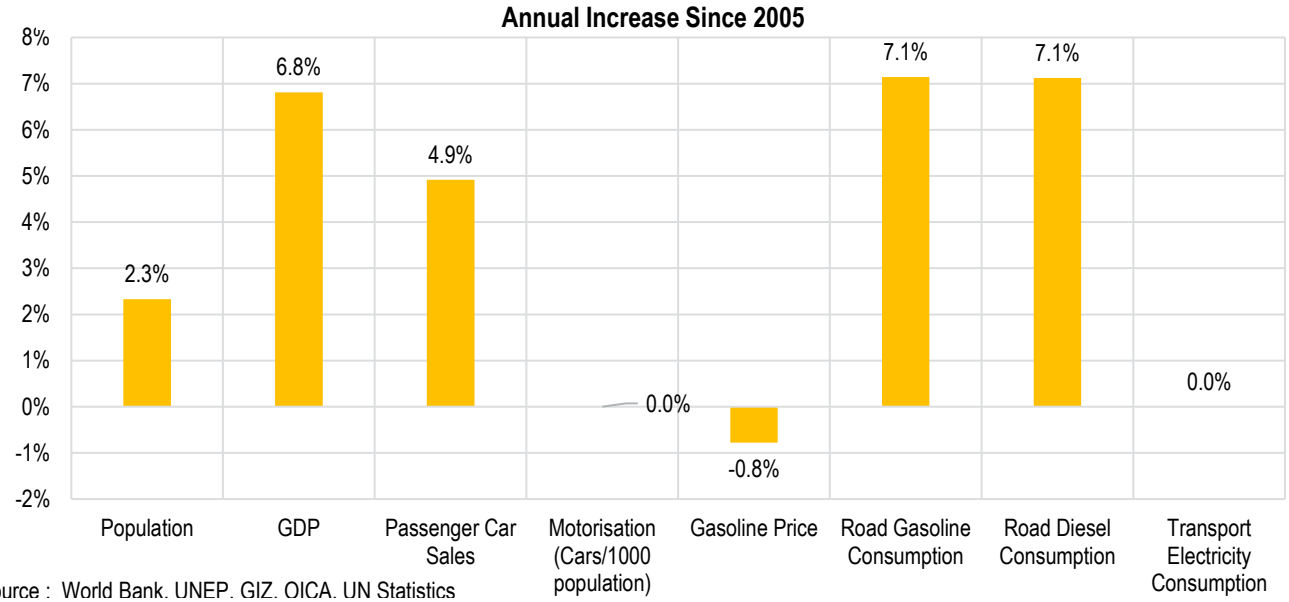
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

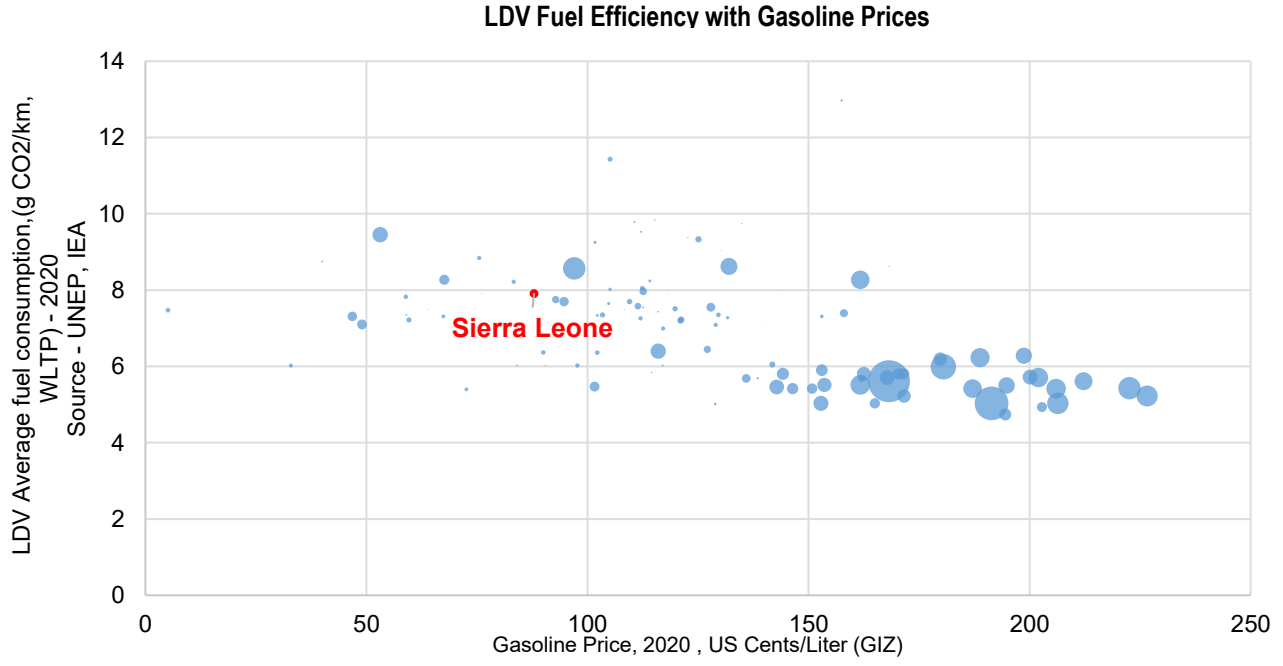
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

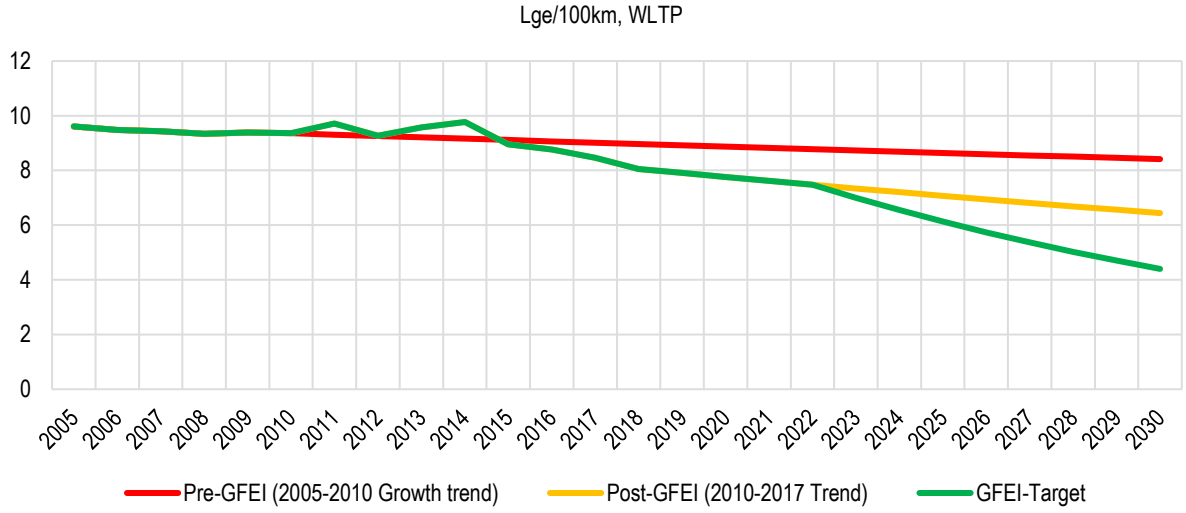
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

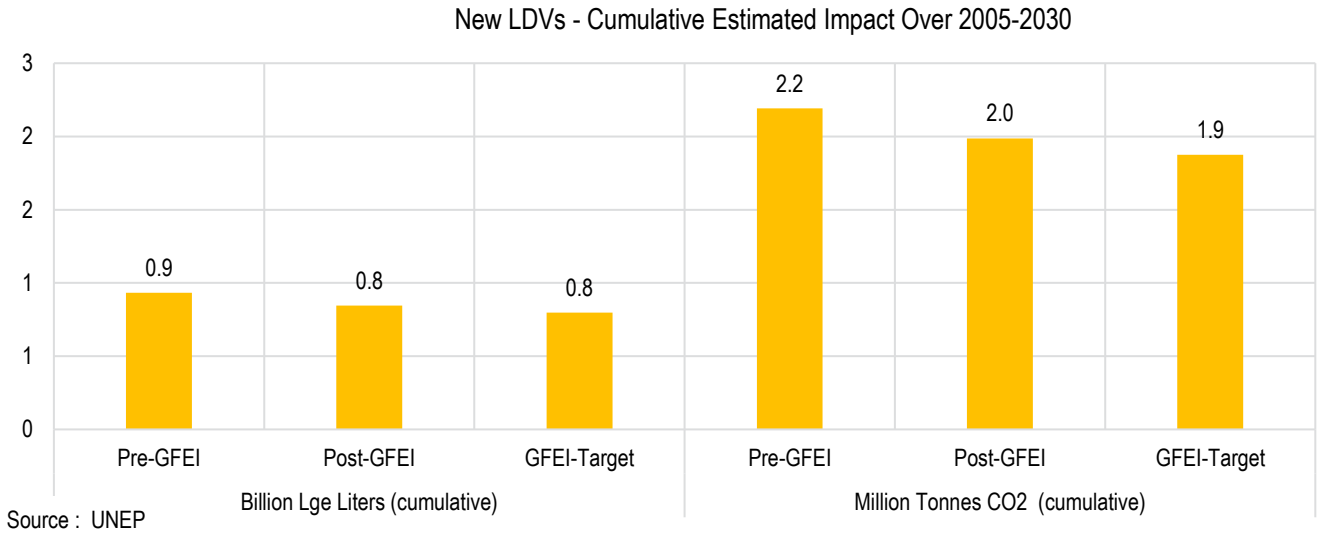
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-1.9%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-5.5%**



Source : UNEP



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Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

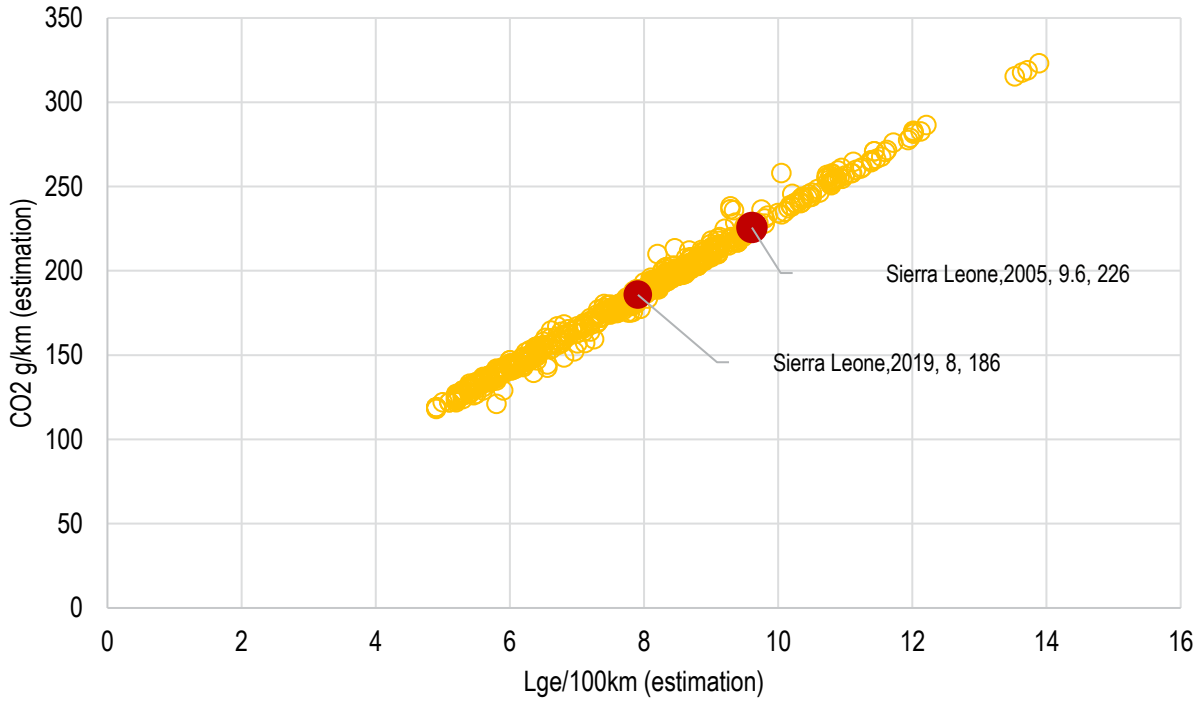
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

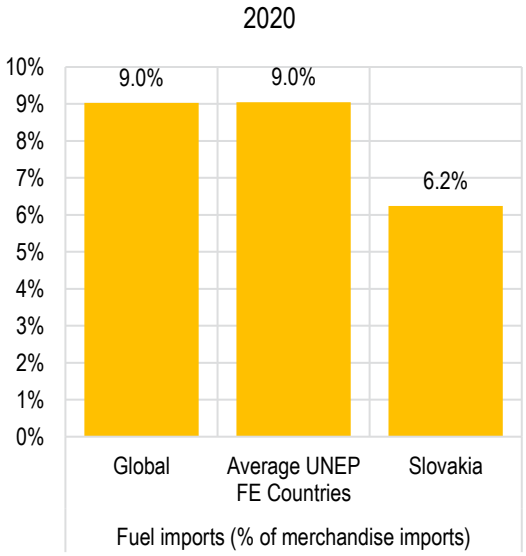
The GFEI activities in Sierra Leone was part of the activities of ECOWAS to develop a regional roadmap for fuel economy in West Africa. In 2019, the regional GFEI expert provided support to the Sierra Leone EPA in analysing the vehicle inventory data. Sierra Leone doesn't have any vehicle import restrictions. However, all vehicles older than four years from the date of manufacture are subjected to an incremental tax or additional excise duty at the time of registration.

The current National Energy Efficiency Policy (NEEP) does not consider the transport sector. It prioritises following sectors and industries - Energy Efficient Lighting, High-Performance Distribution of Electricity, Energy Efficiency Standards and Labelling, Energy Efficiency in Buildings, Energy Efficiency in Industries. The nationally determined contribution to the Paris Agreement proposes - development and enforcement of regulations on regular maintenance of vehicles (vehicle emission testing) and development of economy-wide energy efficiency programmes through sensitisation and awareness-raising campaigns.

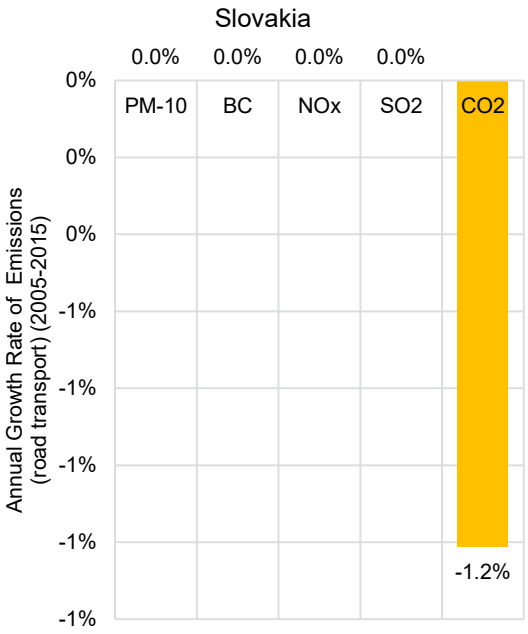
The assessment indicates that if Sierra Leone implements a fuel economy policy for LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 142 million litres of gasoline-equivalent & 0.33 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR SLOVAKIA

		Year	Source
Population (million)	5	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	32015	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	76	2020	6
Gasoline Price $/l	1.7	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	11.7	2018	13
Employment (Transport+,000)	253	2019	11
Fuel Economy (Lge/100 km, WLTP) -	6	2017	1
Average CO2 emissions/kilometre (g/km, WLTP) -	142	2016	1
Average displacement (cm3) -	1625	2017	1
Average kerb weight (kg) -	1388	2017	1
Average power (kw) -	97	2017	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.103	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.358	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	97.1	2019	8
Transport CO2 Emissions per Capita (tonnes) -	6.6	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	-3.9%	2000-18	16
Annual rate of transport energy consumption growth	3.7%	2000-18	16
LDV Import value (Million USD)	2216	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

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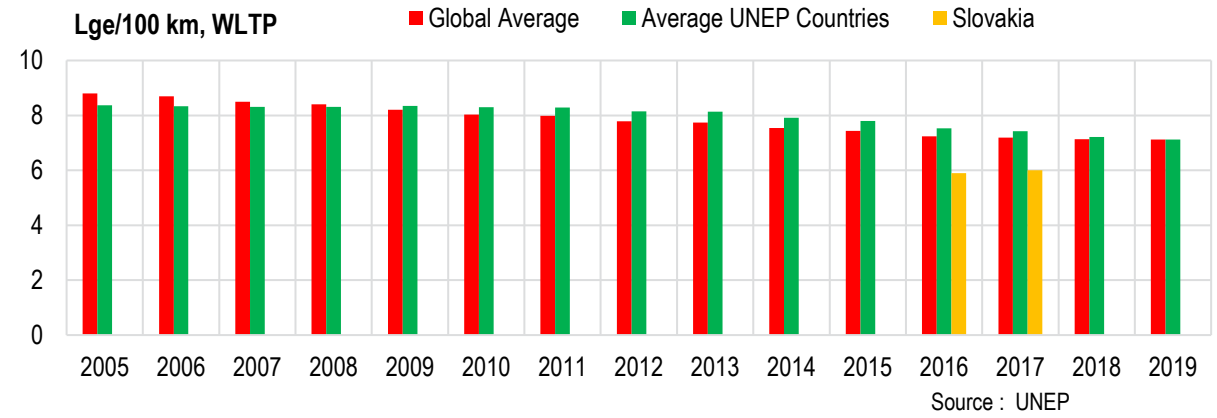
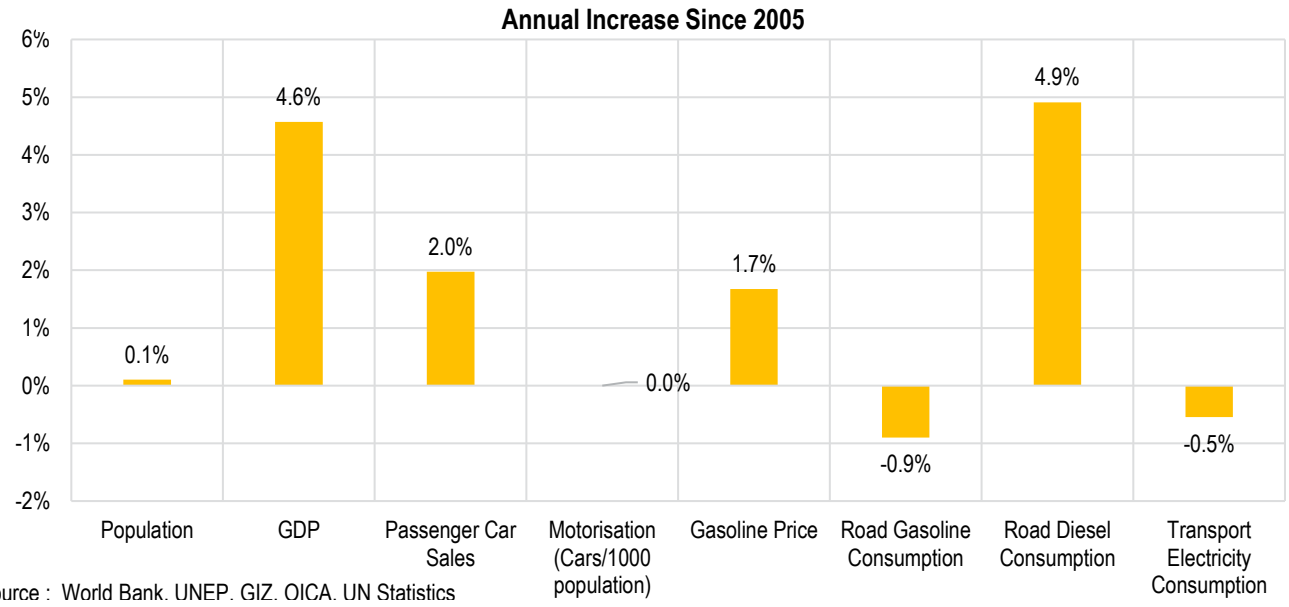
FUEL ECONOMY TRENDS





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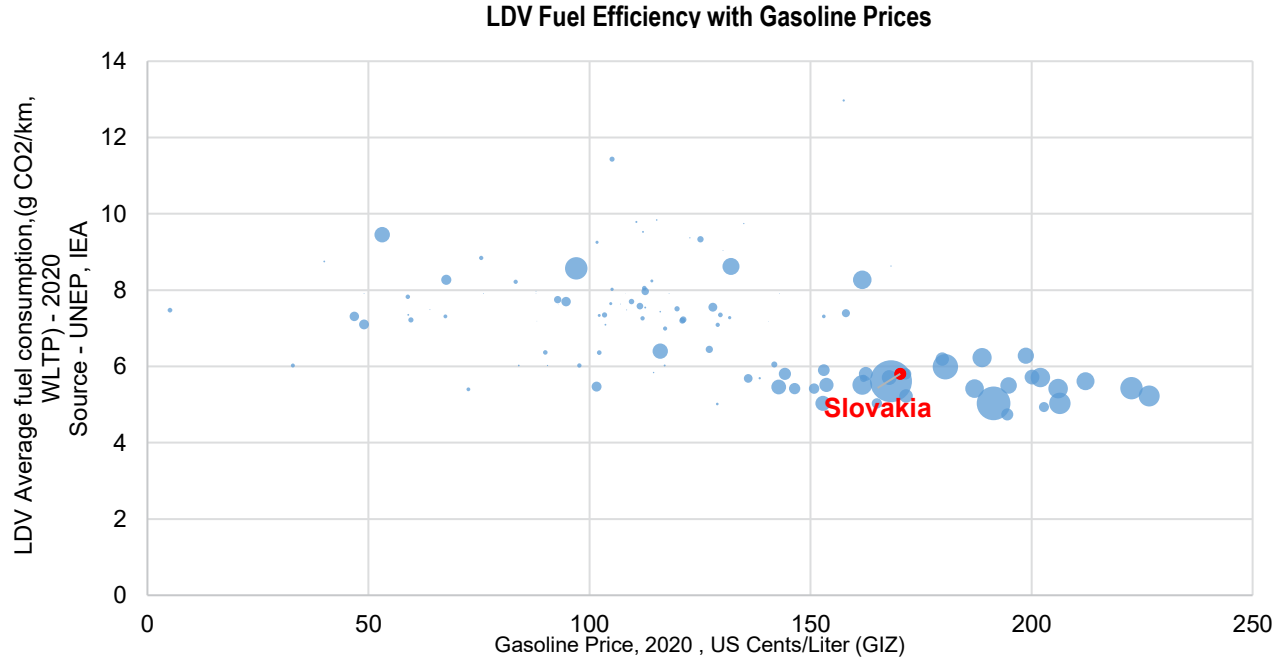


Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

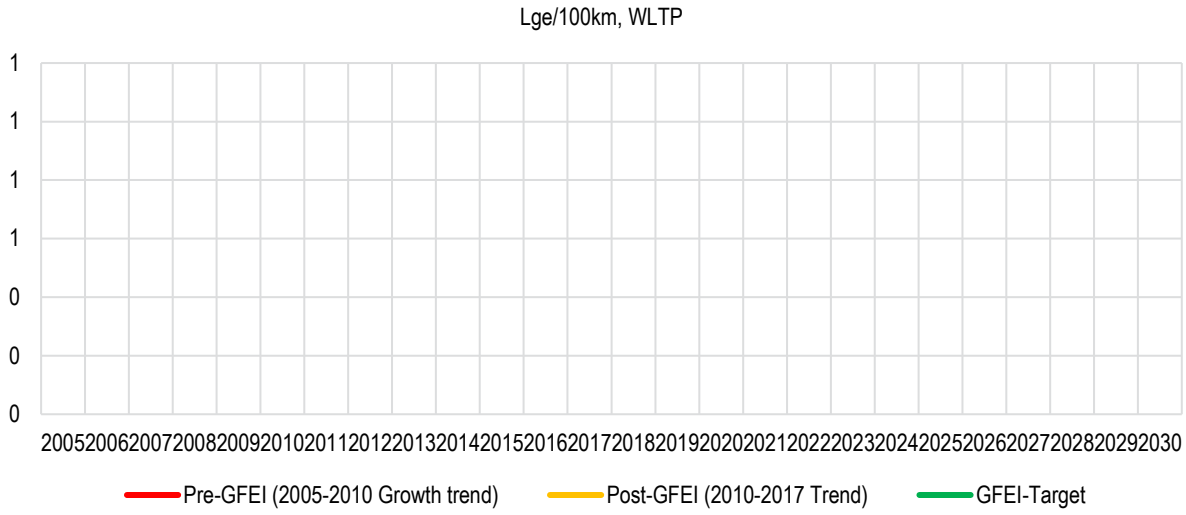
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



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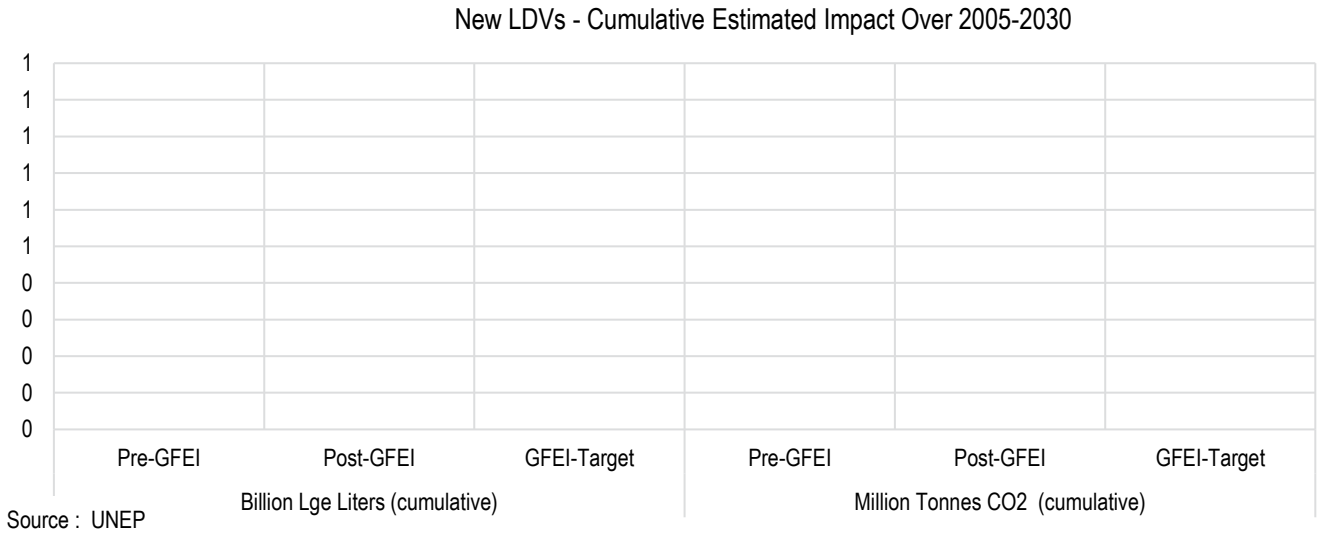

Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

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3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

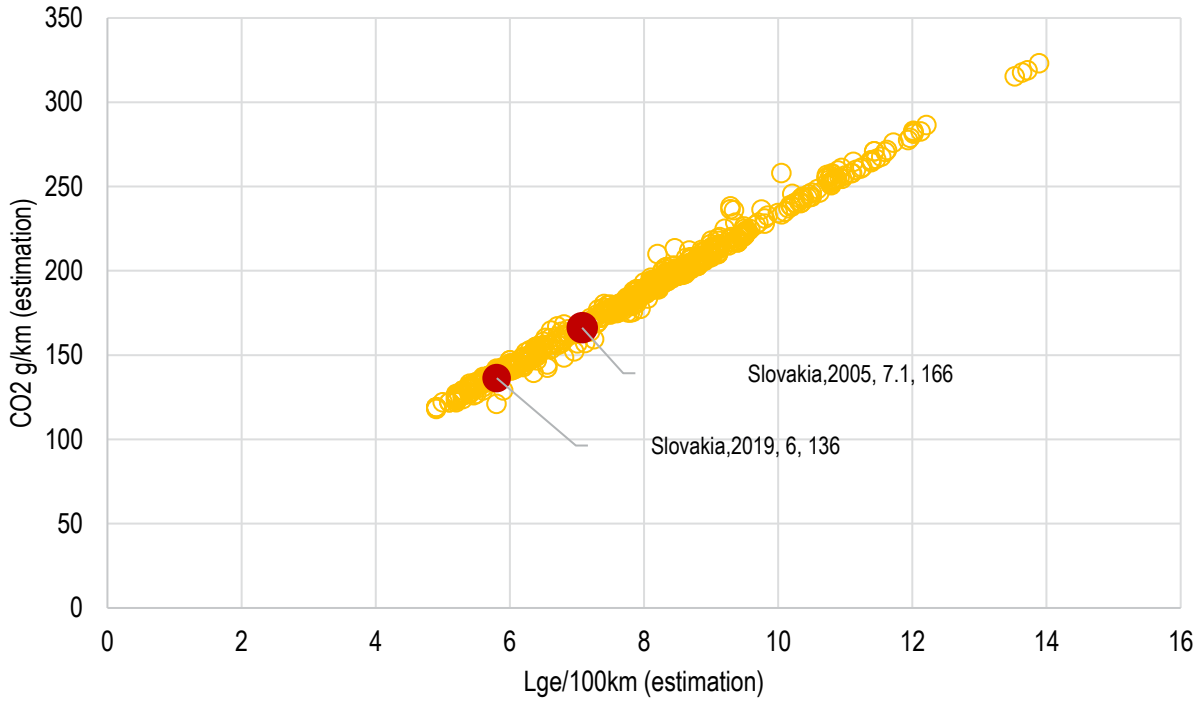
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



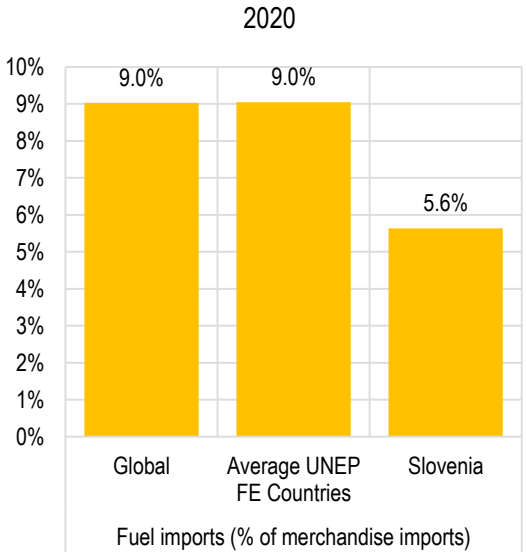
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR SLOVENIA

		Year	Source
Population (million)	2	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	40124	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	60	2020	6
Gasoline Price $/l	1.5	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	24.9	2018	13
Employment (Transport+,000)	90	2019	11
Fuel Economy (Lge/100 km, WLTP) -	6	2016	1
Average CO2 emissions/kilometre (g/km, WLTP) -	136	2016	1
Average displacement (cm3) -	1566	2017	1
Average kerb weight (kg) -	1385	2017	1
Average power (kw) -	92	2017	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.189	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.697	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	110.0	2019	8
Transport CO2 Emissions per Capita (tonnes) -	7.4	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	-1.8%	2000-18	16
Annual rate of transport energy consumption growth	2.5%	2000-18	16
LDV Import value (Million USD)	1741	2020	3



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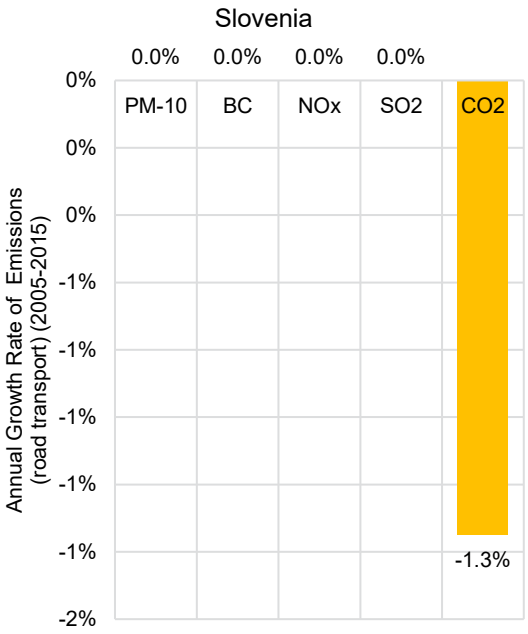

Source : IIASA

Sources & Notes

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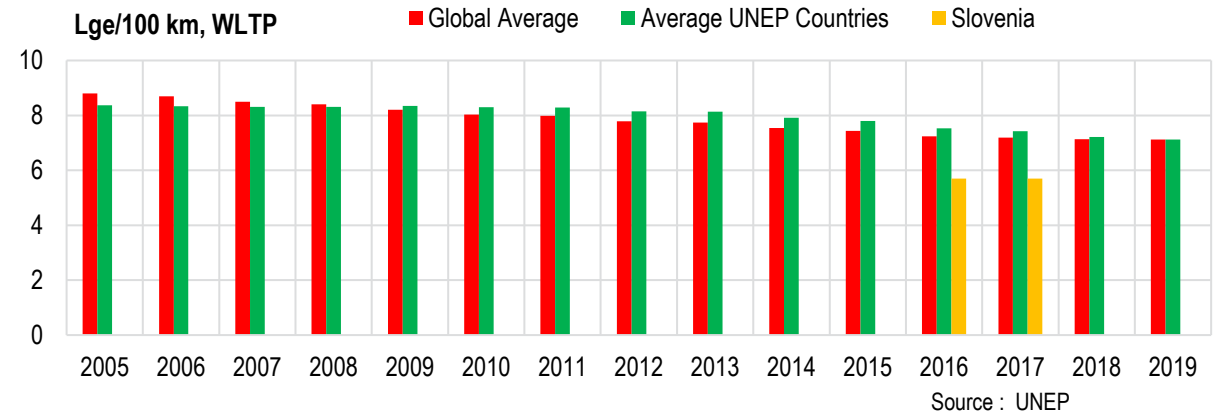
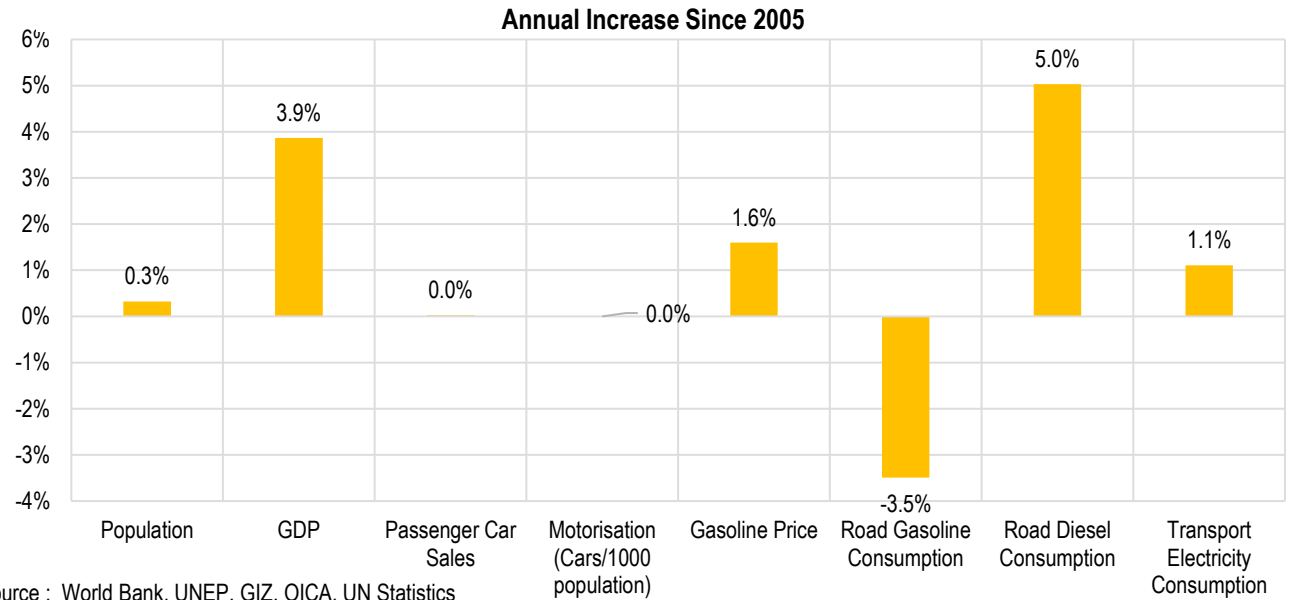
FUEL ECONOMY TRENDS





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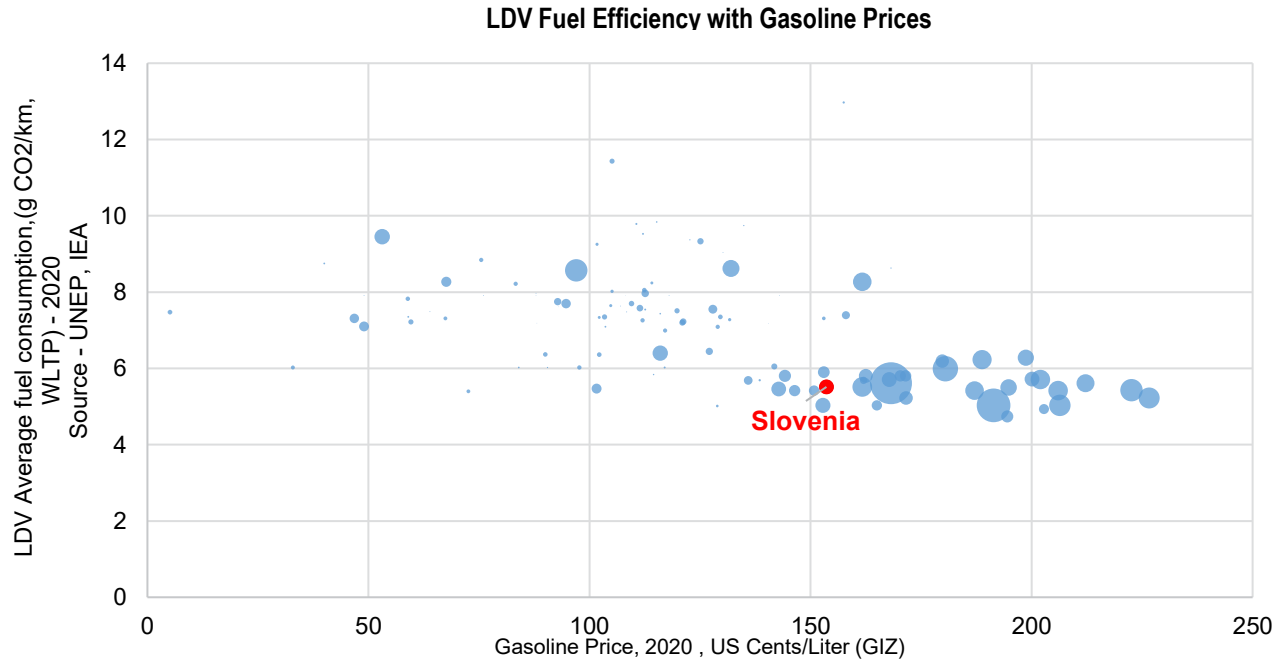

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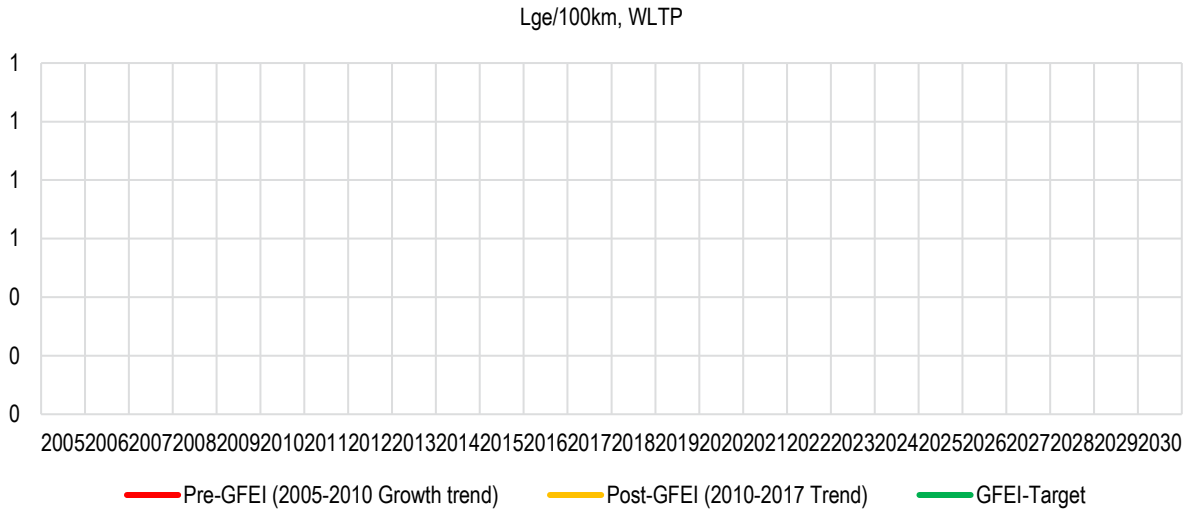
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



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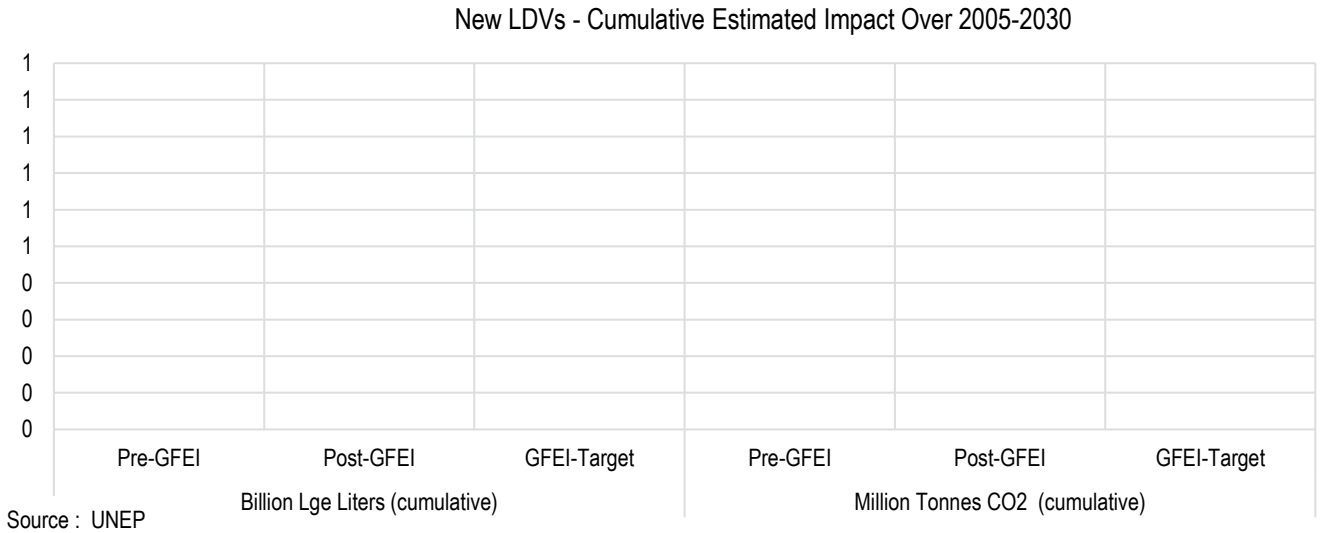

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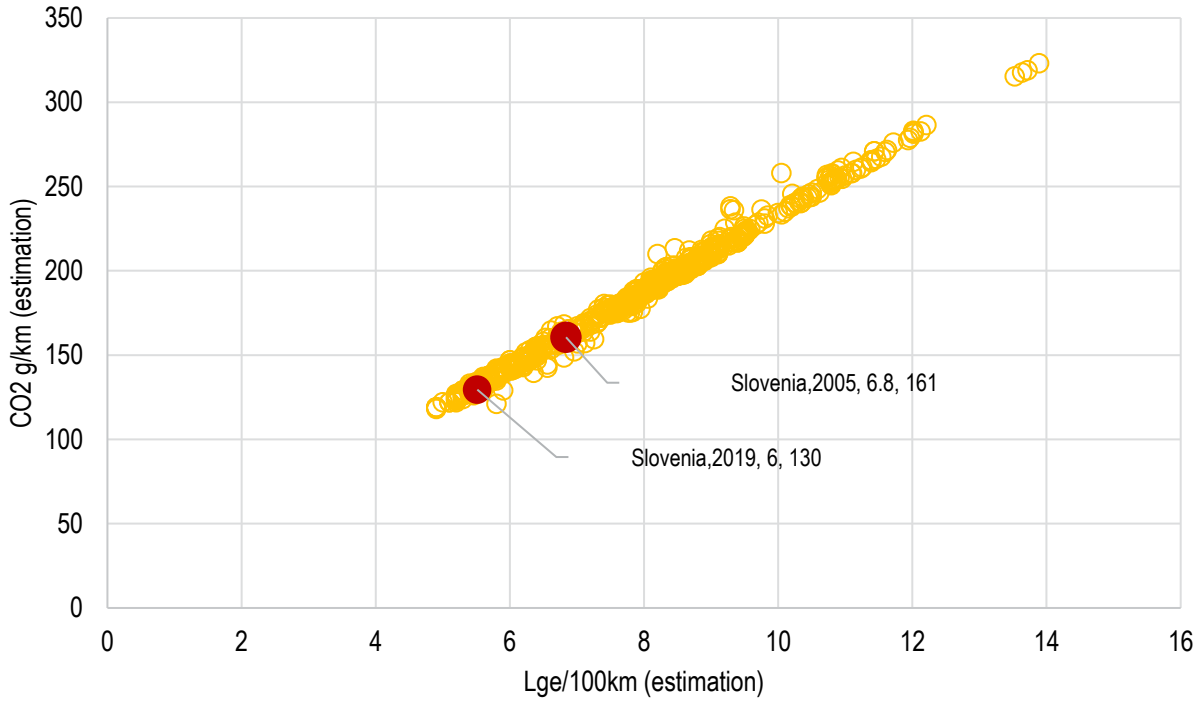


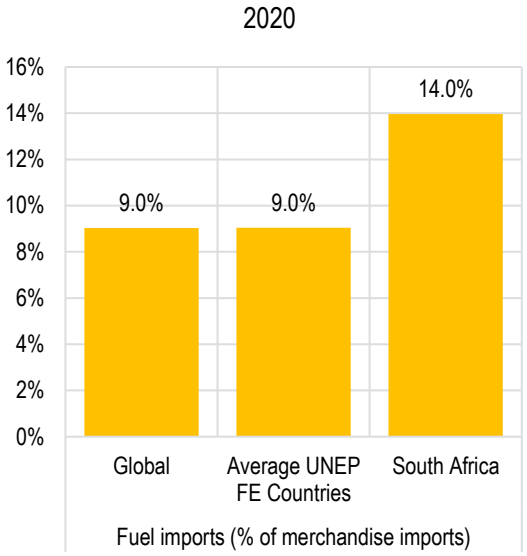
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

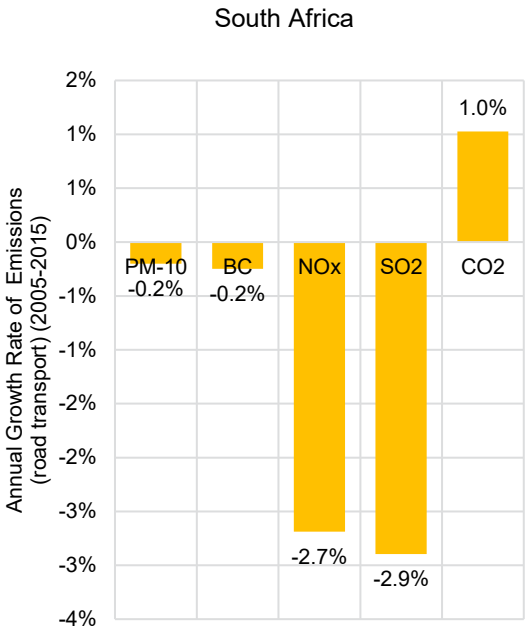
#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR SOUTH AFRICA

		Year	Source
Population (million)	59	2020	7
Income Level Category	Upper middle income		7
GDP per Capita (PPP, Curent USD)	13356	2020	7
Motorisation (Cars/1000 population)	115	2020	10
Car Sales (000)	248	2020	6
Gasoline Price $/l	1.3	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	7.5	2018	13
Employment (Transport+,000)	1053	2019	11
Fuel Economy (Lge/100 km, WLTP) -	7	2018	1
Average CO2 emissions/kilometre (g/km, WLTP) -	174	2019	1
Average displacement (cm3) -	1804	2019	1
Average kerb weight (kg) -	1476	2012	1
Average power (kw) -	96	2008	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.123	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.167	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	48.6	2019	8
Transport CO2 Emissions per Capita (tonnes) -	8.5	2019	14
Road Transport PM Emissions per Capita (grams) -	175.8	2015	14
Road Transport NOx Emissions per Capita (grams)-	4168.7	2015	14
Road Transport BC Emissions per Capita (grams)-	86.6	2015	14
LDV Emission Standards -	Euro 2	2019	1
Diesel Sulphur Levels (ppm) -	500	2019	1
Gasoline Sulphur Levels (ppm) -	500	2019	1
Annual rate of economy-wide energy intensity growth	-1.5%	2000-18	16
Annual rate of transport energy consumption growth	2.2%	2000-18	16
LDV Import value (Million USD)	2103	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
7 World Bank
8 UN Statistics Division
9 SLOCAT &GIZ
10 Estimated using growth and sales data
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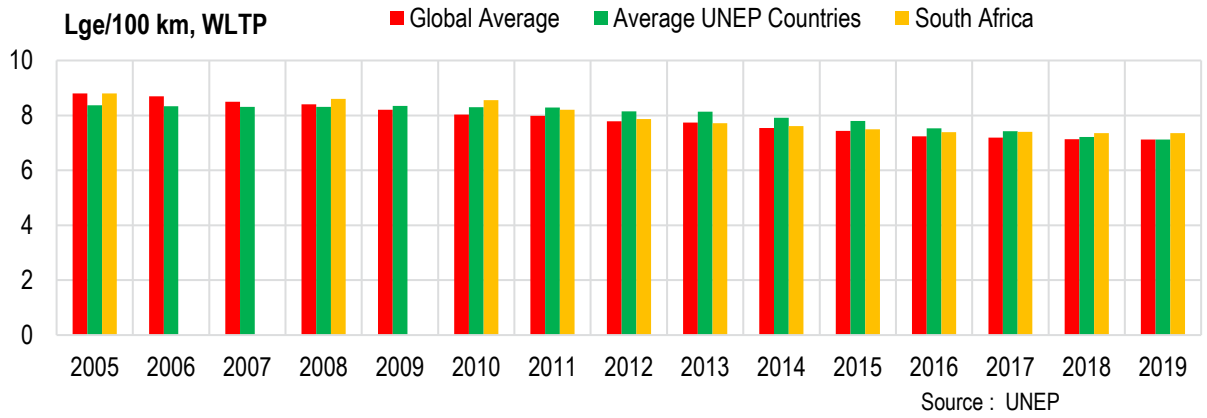
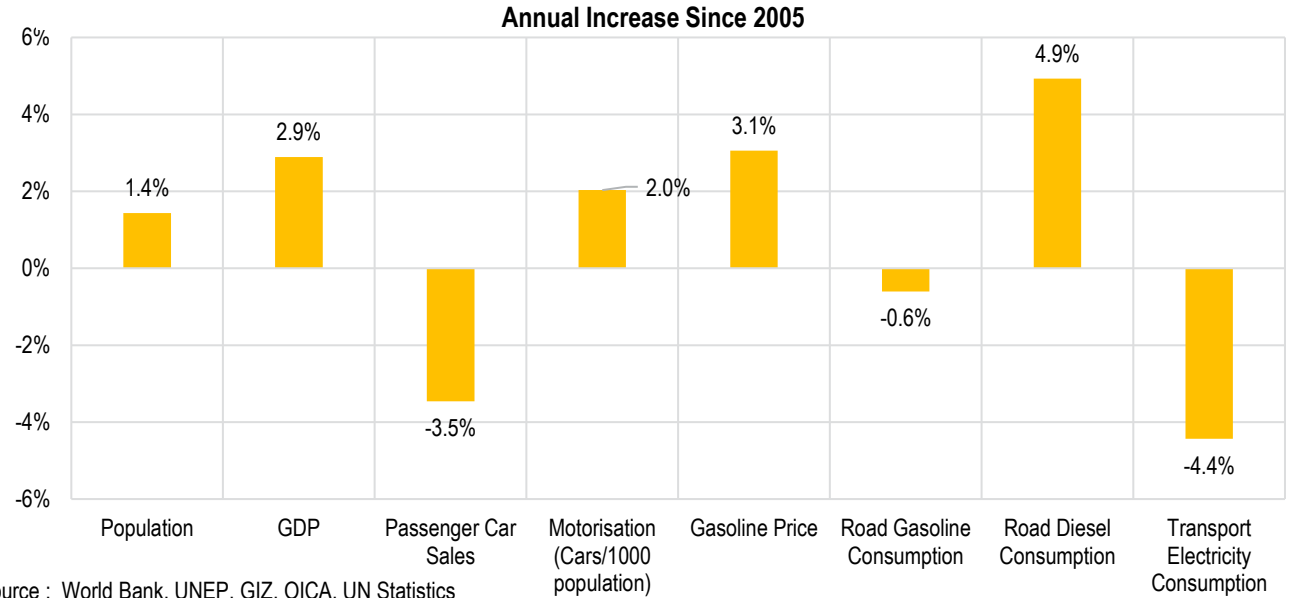
13 Koks, E.E. et al. A global multi-hazard risk analysis of road
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

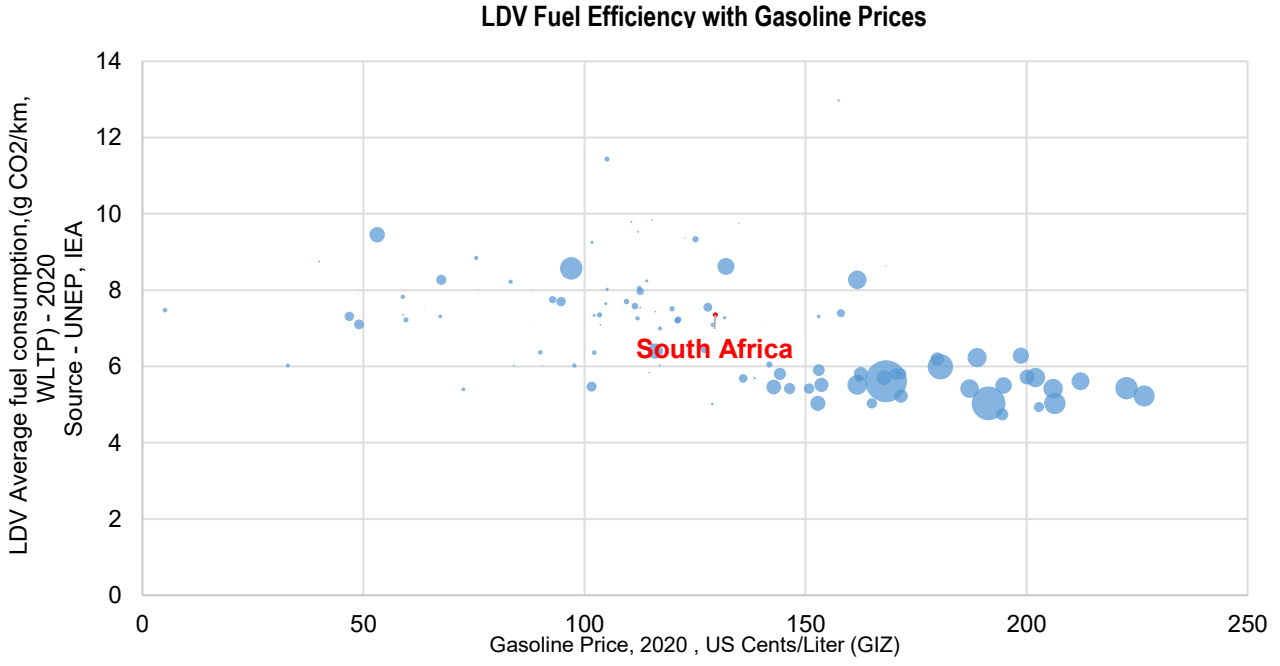
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

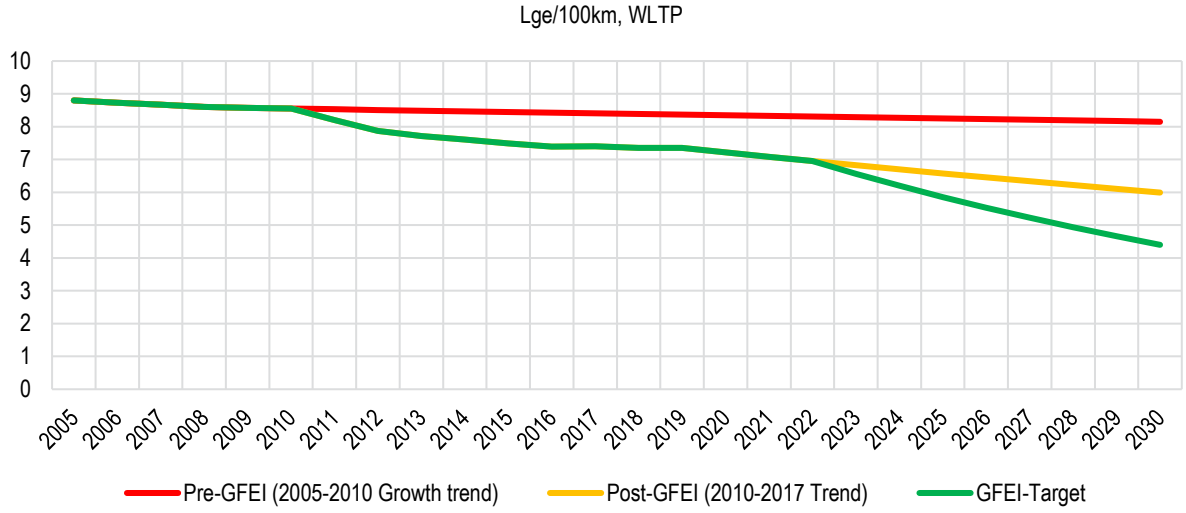
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-1.7%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-4.8%**



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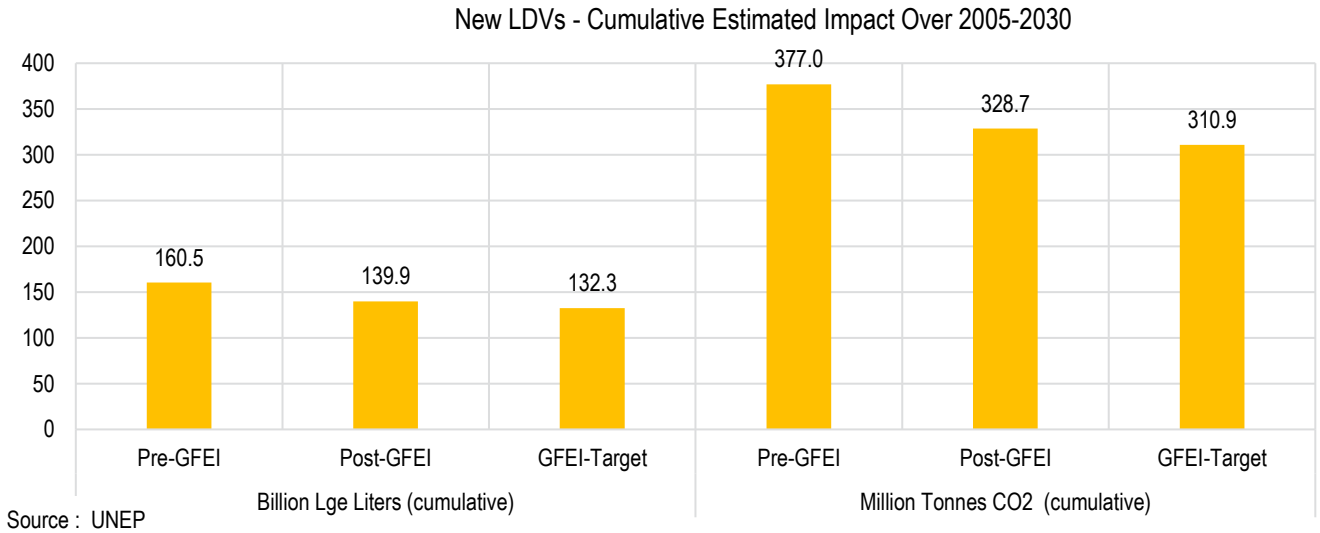


Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

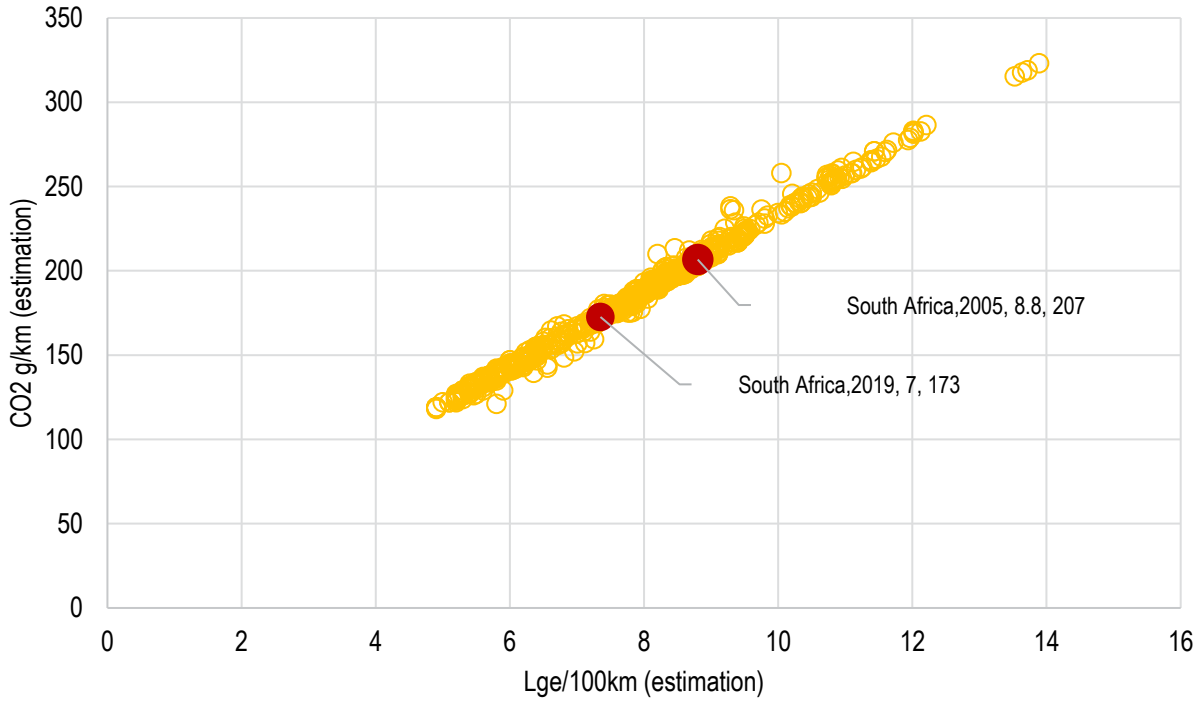
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

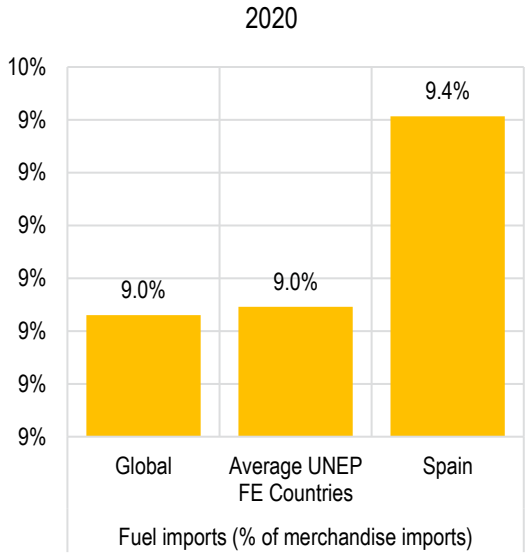
Source : UNEP

The Transport Sector uses three-quarters of South Africa's petroleum products. The 2005 National Energy Efficiency Strategy (NEES) included targets for improvements in energy efficiency to be achieved by 2015 relative to a 2000 baseline. For the transport sector, the goal was – 9%. The Department of Transport (DoT) launched the Green Transport Strategy (GTS) in 2018. The main strategies included are - converting 5% of the public and national sector fleet to cleaner alternative fuel and efficient technologies vehicles, ideally powered through renewable energy, promoting norms and standards for fuel economy and putting in place regulations that promote improved efficiency in fossil-fuel-powered vehicles with improved environmental impact, ensuring a shift from road to rail transport for both passengers and freight to reduce the heavy load on our roads (congestion) by encouraging a 30% shift for freight transport, from the road to rail, and a 20% shift of passenger transport from private cars to public transport and eco-mobility transport and investing in green energy infrastructures like biogas filling stations, and electric car charging points.

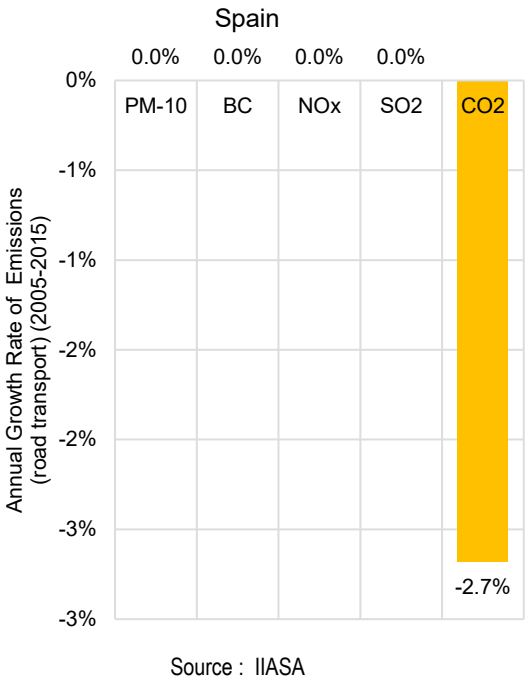
The assessment indicates that if South Africa implements a fuel economy policy for LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 23.5 billion litres of gasoline-equivalent & 55 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR SPAIN

		Year	Source
Population (million)	47	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	38343	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	1057	2020	6
Gasoline Price $/l	1.7	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	11.6	2018	13
Employment (Transport+,000)	1646	2019	11
Fuel Economy (Lge/100 km, WLTP) -	5	2017	1
Average CO2 emissions/kilometre (g/km, WLTP) -	130	2017	1
Average displacement (cm3) -	1542	2017	1
Average kerb weight (kg) -	1334	2017	1
Average power (kw) -	86	2016	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.112	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.492	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	83.1	2019	8
Transport CO2 Emissions per Capita (tonnes) -	5.5	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	-1.4%	2000-18	16
Annual rate of transport energy consumption growth	0.4%	2000-18	16
LDV Import value (Million USD)	13844	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
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4 International Energy Agency
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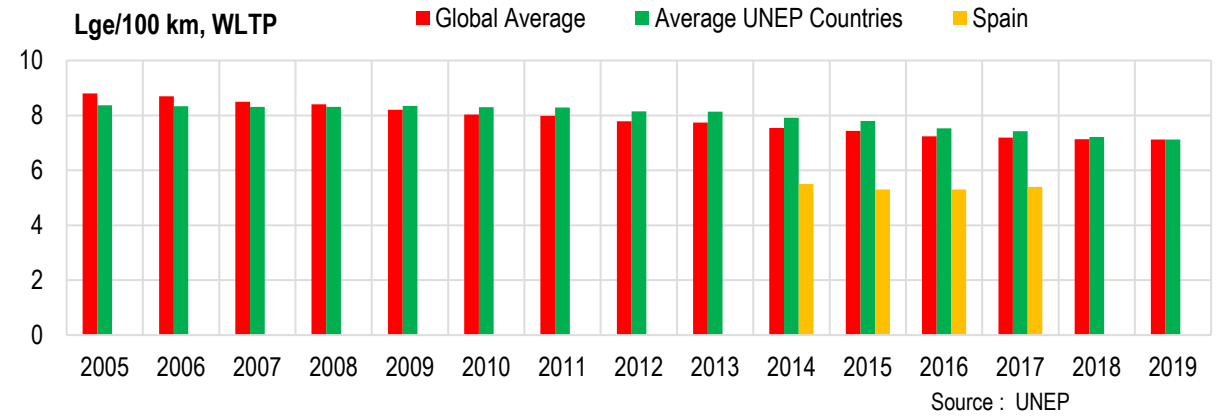
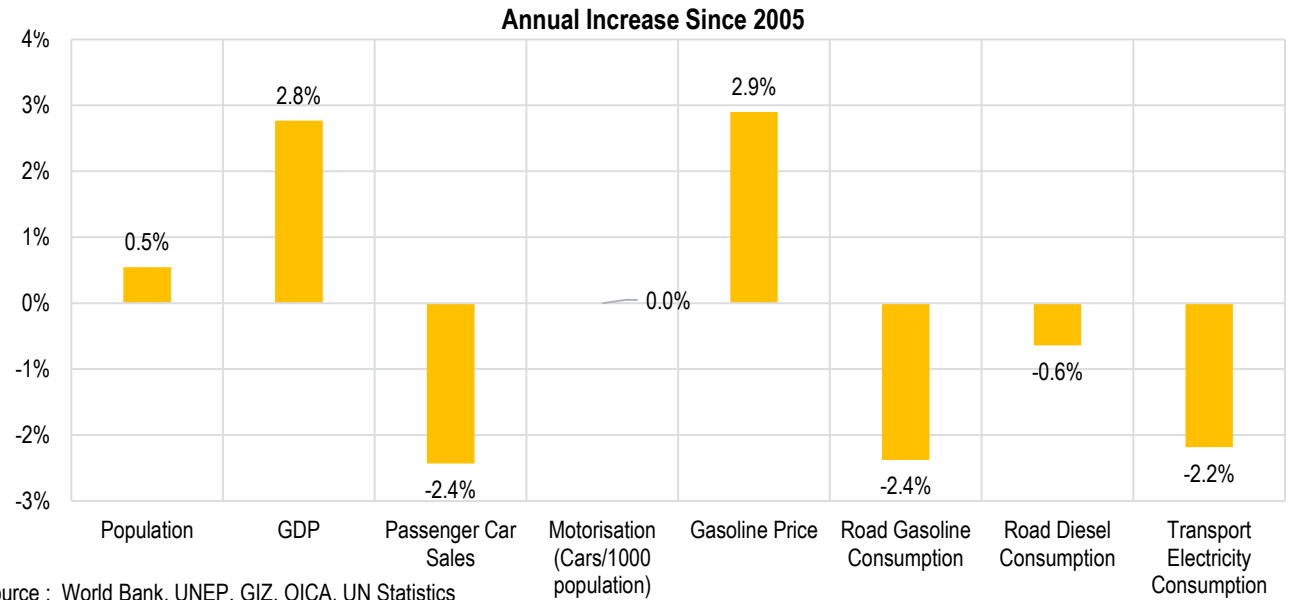
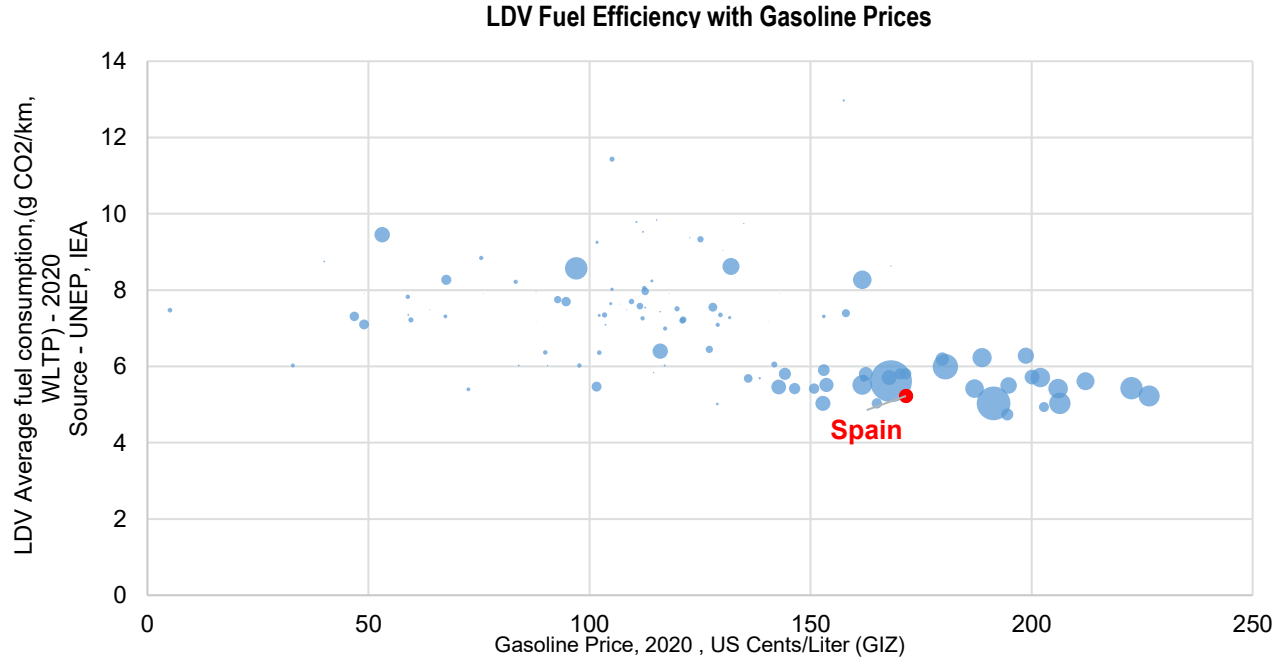
FUEL ECONOMY TRENDS





Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

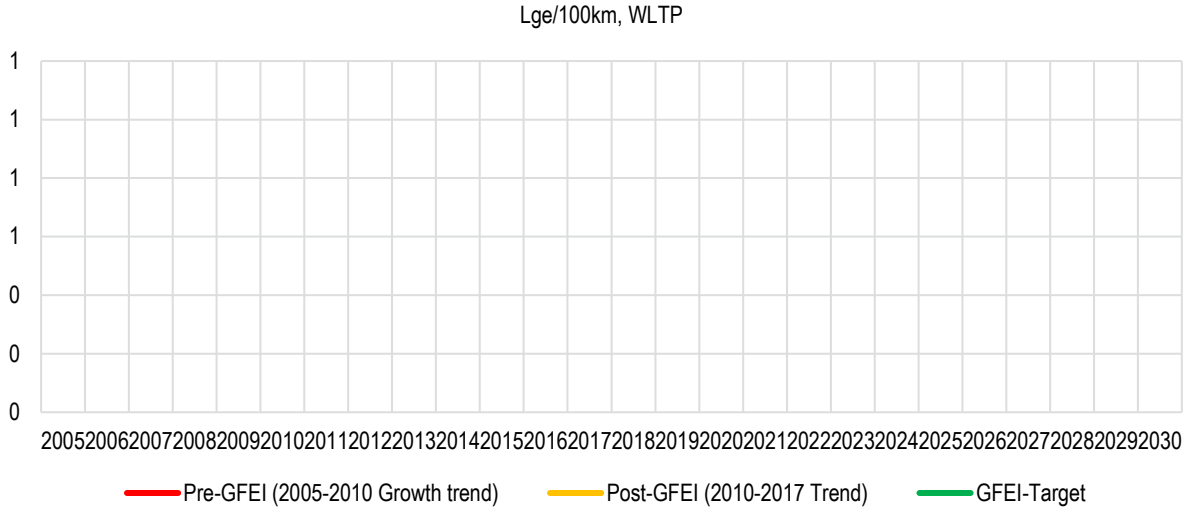
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

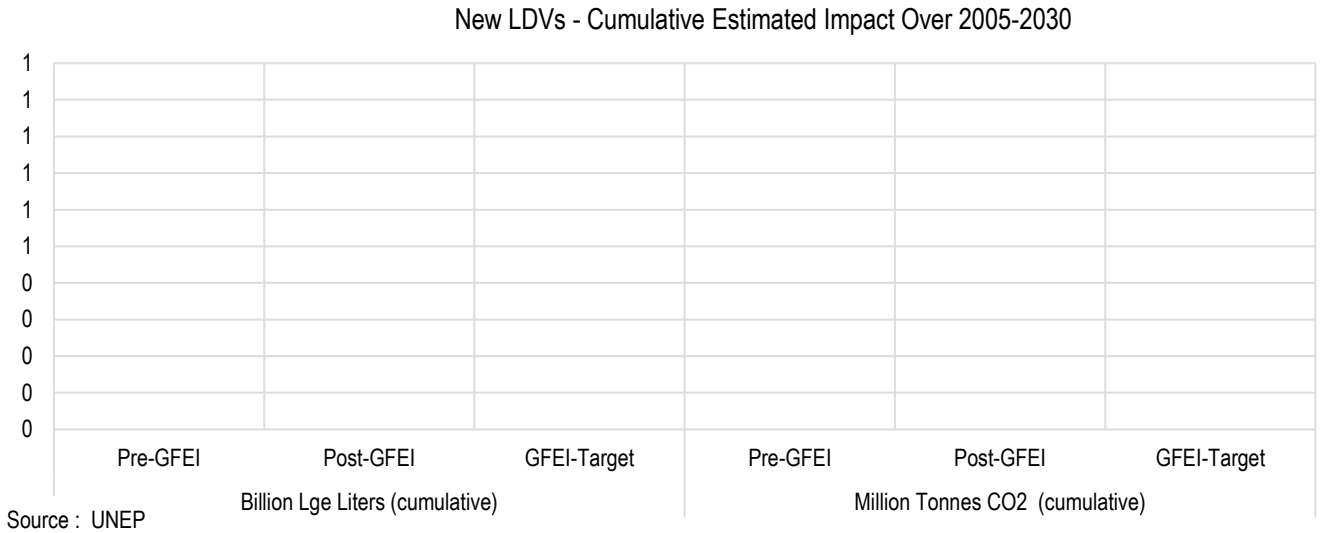
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **#N/A**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **#N/A**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

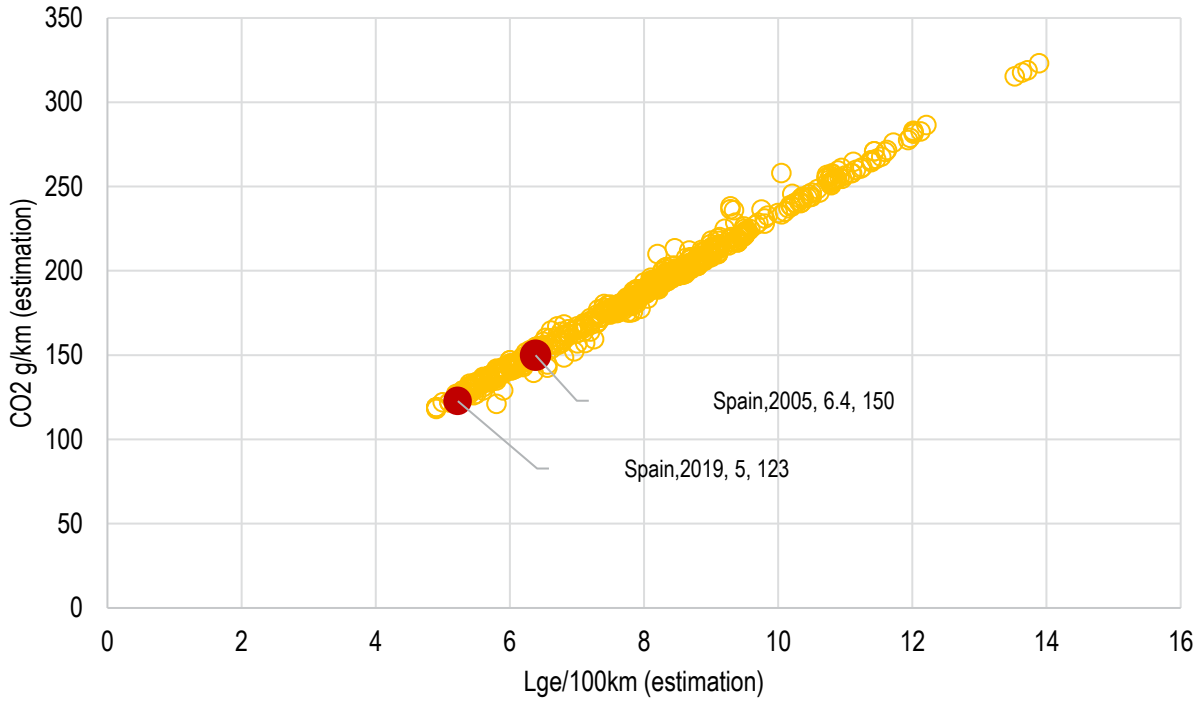
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



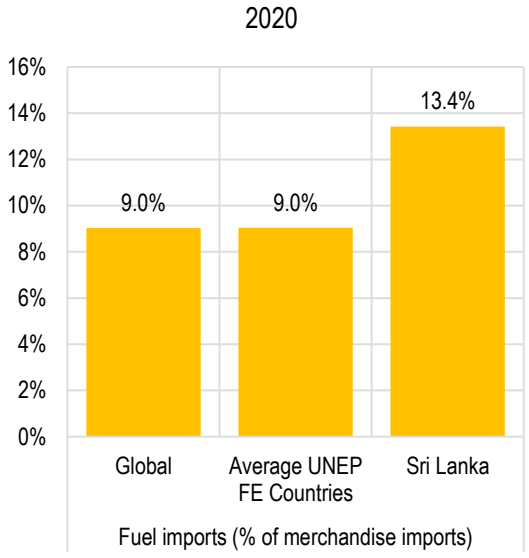
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

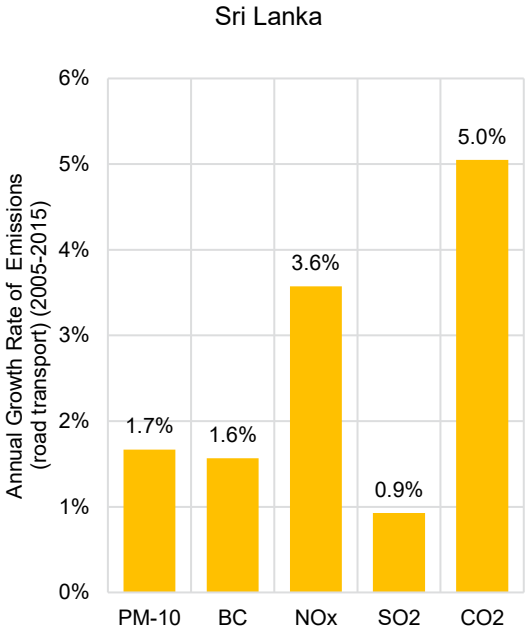
#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR SRI LANKA

		Year	Source
Population (million)	22	2020	7
Income Level Category	Lower middle income		7
GDP per Capita (PPP, Curent USD)	13220	2020	7
Motorisation (Cars/1000 population)	32	2020	10
Car Sales (000)	7	2020	6
Gasoline Price $/l	1.0	2020	2
Fossil Fuel Subsidy (Million $) 2019	120	2019	4
Road Infrastructure Length/Capita (meters)	4.3	2018	13
Employment (Transport+,000)	620	2019	11
Fuel Economy (Lge/100 km, WLTP) -	7	2015	1
Average CO2 emissions/kilometre (g/km, WLTP) -	158	2015	1
Average displacement (cm3) -	1127	2015	1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -	81	2016	1
Average Age of newly registered cars (years) -	0	2015	1
Cumulative number of LDVs (total sample size,000) -	28		1
Diesel Share in LDV (sample,%)	4%	2015	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.065	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.076	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	179.6	2019	8
Transport CO2 Emissions per Capita (tonnes) -	1.3	2019	14
Road Transport PM Emissions per Capita (grams) -	271.6	2015	14
Road Transport NOx Emissions per Capita (grams)-	4236.4	2015	14
Road Transport BC Emissions per Capita (grams)-	127.2	2015	14
LDV Emission Standards -	Euro 1	2019	1
Diesel Sulphur Levels (ppm) -	350	2019	1
Gasoline Sulphur Levels (ppm) -	1000	2019	1
Annual rate of economy-wide energy intensity growth	-3.1%	2000-18	16
Annual rate of transport energy consumption growth	3.5%	2000-18	16
LDV Import value (Million USD)	237	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
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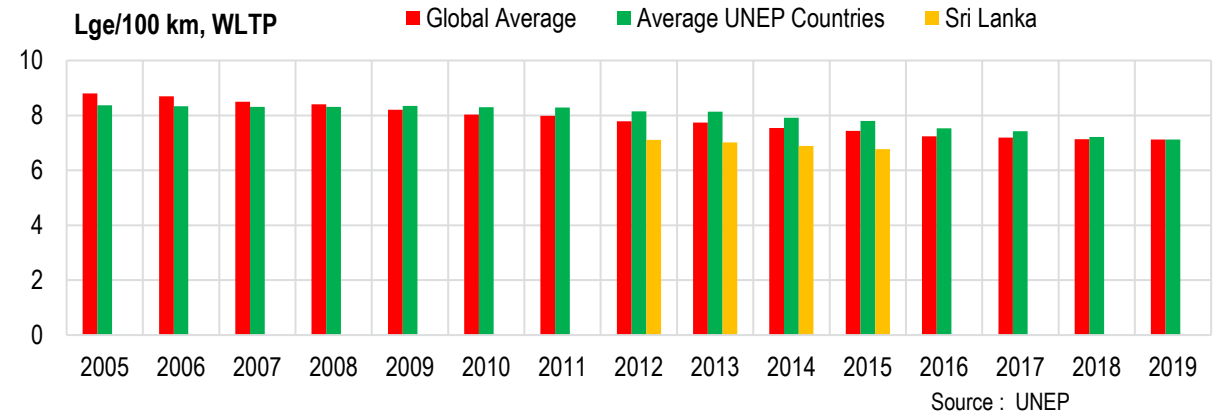
FUEL ECONOMY TRENDS



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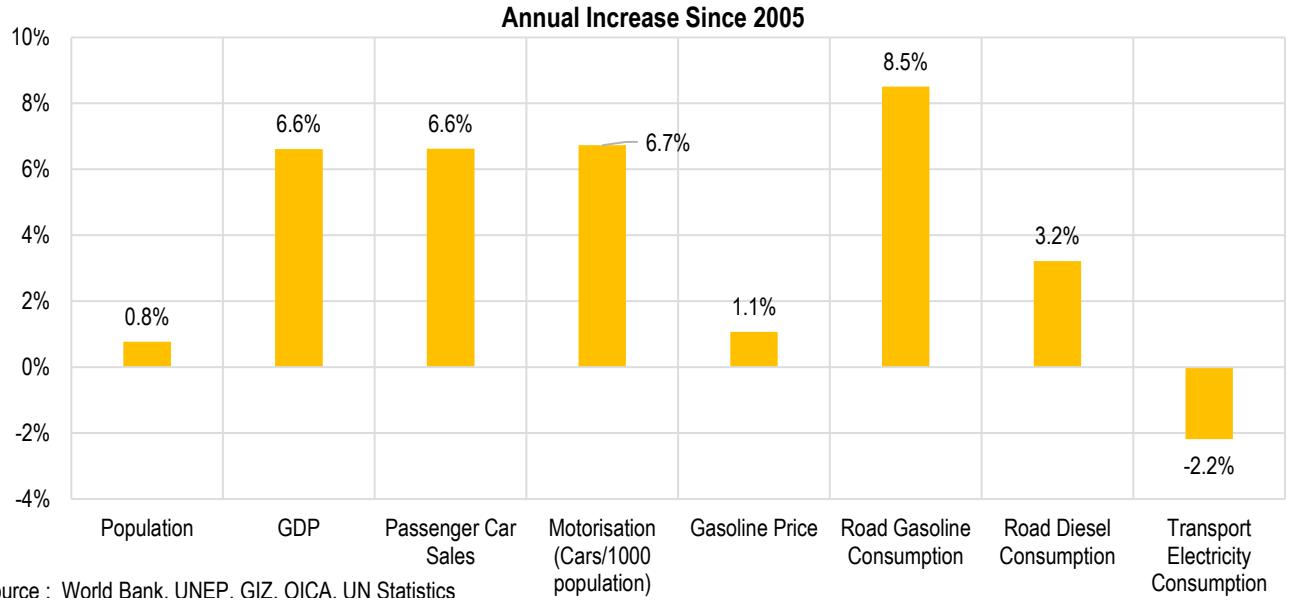
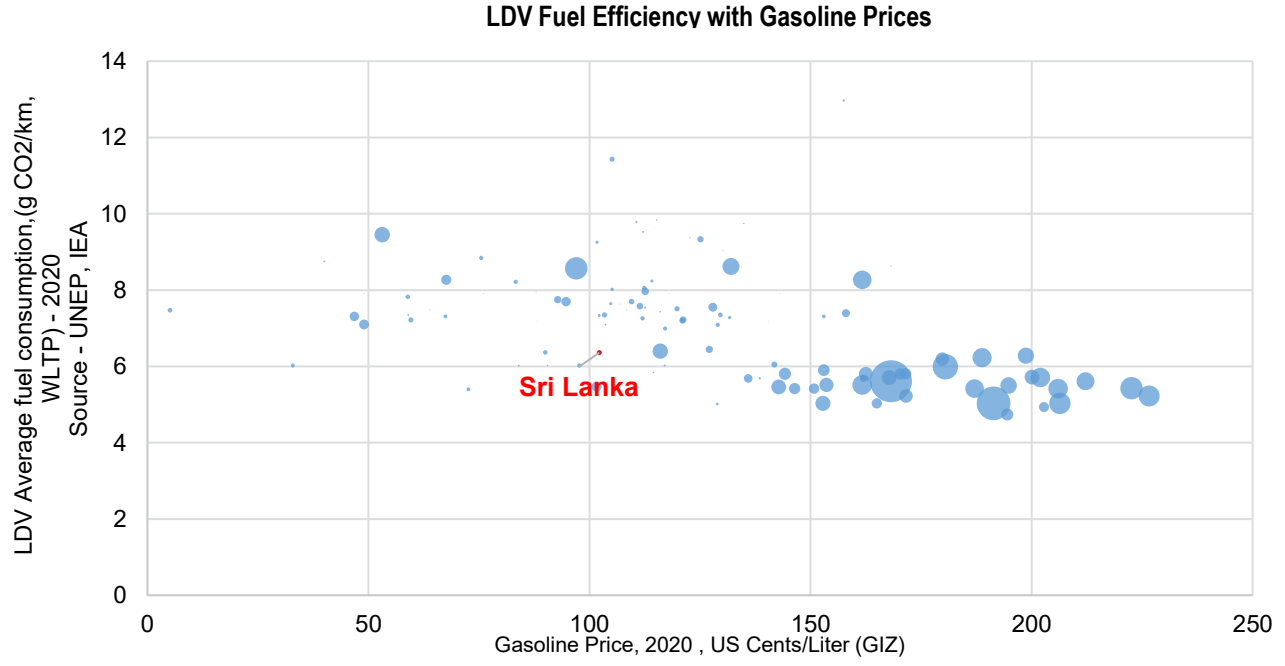


Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

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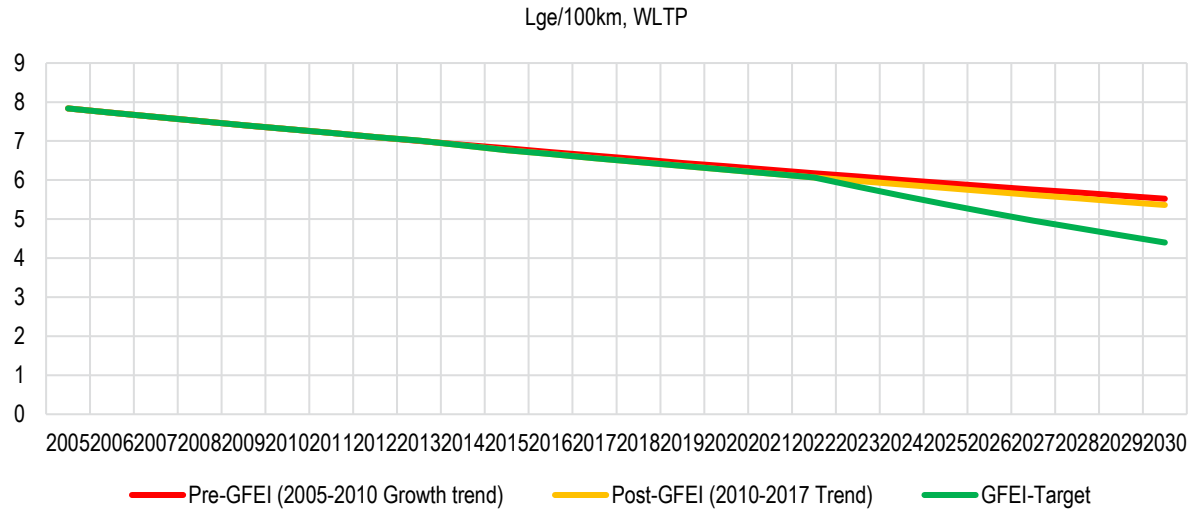
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

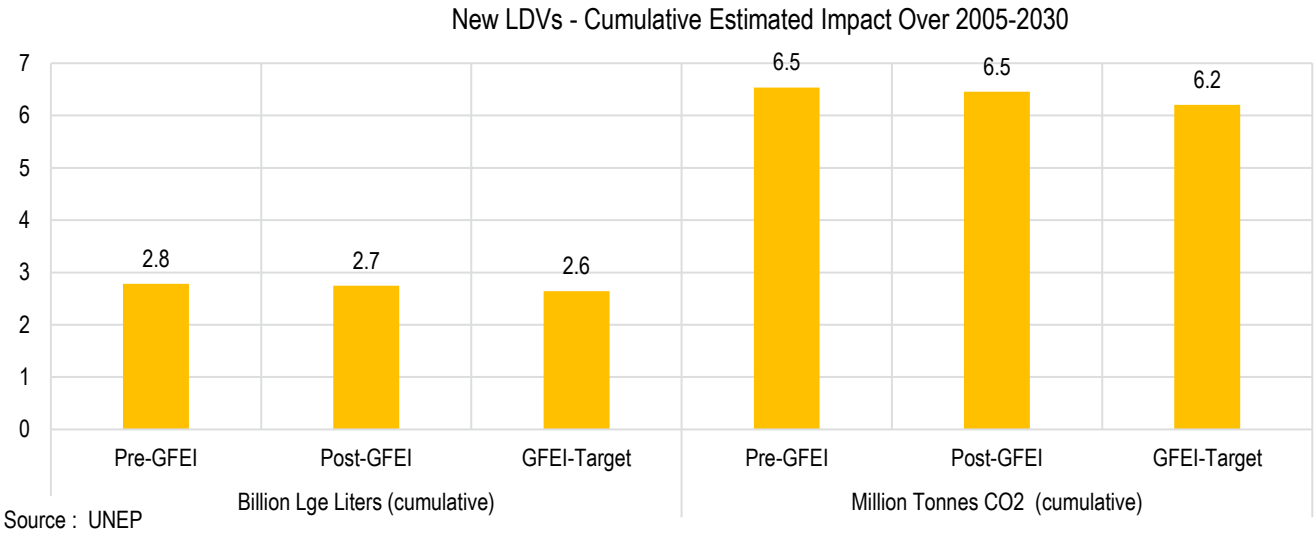
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-1.5%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-3.5%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

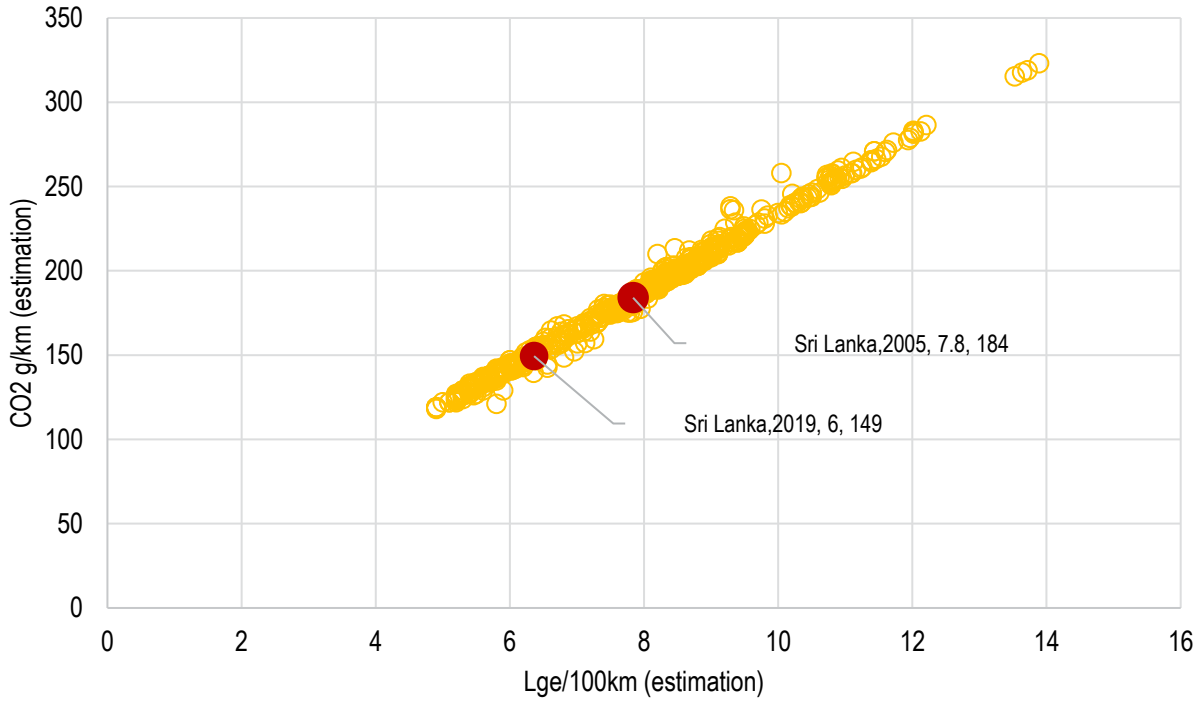
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

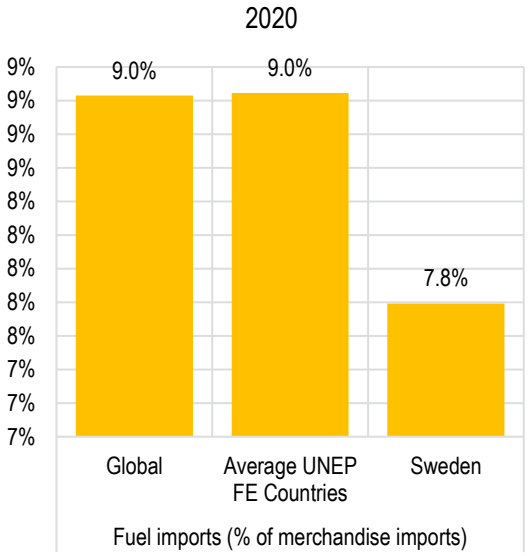
The GFEI national project for Sri Lanka was signed in an agreement with Clean Air Sri Lanka, the leading non-governmental organisations in the country promoting better air quality including sustainable transport on 23 August 2016. The activities of Clean Air Sri Lanka and UNEP supported the discussions in revising the vehicle excise tax in the country to provide a more streamlined allocation and collection of tax. Activities also included the promotion of hybrid and electric vehicles in the country. Sri Lanka presented the updates on its fuel economy policy development at the side-event on Regional Policy Dialogue on Fuel Economy in Asia & 2nd APEC Workshop on Policy Dialogue on Fuel Economy Platform at the Better Air Quality Conference in Kuching, Malaysia in November 2018. These updates include the inclusion of fuel economy labelling and other policies as part of the Nationally Determined Contributions of Sri Lanka, a CO2 tax, and the enforcement of Euro 4 vehicle emission standards for imported vehicles.

Sri Lanka, under the nationally determined contribution for Paris Agreement has committed a target of reducing GHG emissions by 10% against business-as-usual (BAU) scenario.

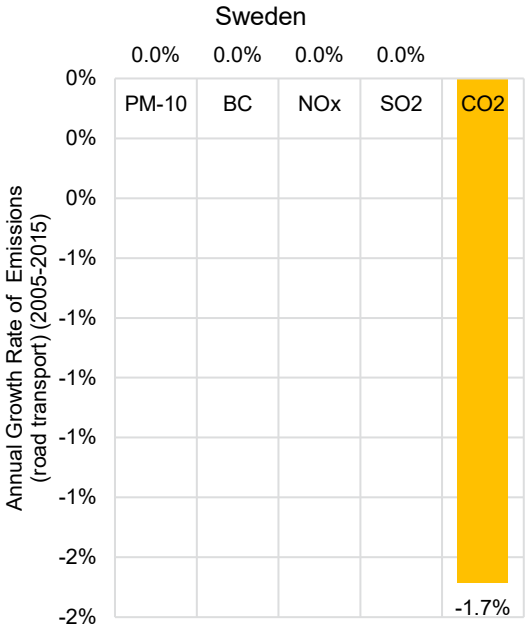
The assessment indicates that if Sri Lanka implements a fuel economy policy for first-time registered LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 293 million litres of gasoline-equivalent & 0.7 million tonnes of CO2 cumulative from newly registered LDVs. Research indicates that by 2030 there could be 1.2 million LDVs on the road and gasoline and diesel consumption could grow by 4.5% and 2.6% per annum respectively.

LDV FUEL ECONOMY COUNTRY REPORT FOR SWEDEN

		Year	Source
Population (million)	10	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	54930	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	292	2020	6
Gasoline Price $/l	2.0	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	35.7	2018	13
Employment (Transport+,000)	499	2019	11
Fuel Economy (Lge/100 km, WLTP) -	6	2017	1
Average CO2 emissions/kilometre (g/km, WLTP) -	139	2017	1
Average displacement (cm3) -	1762	2017	1
Average kerb weight (kg) -	1533	2017	1
Average power (kw) -	113	2017	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.196	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.391	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	264.5	2019	8
Transport CO2 Emissions per Capita (tonnes) -	4.4	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	-1.9%	2000-18	16
Annual rate of transport energy consumption growth	-0.2%	2000-18	16
LDV Import value (Million USD)	8396	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
7 World Bank
8 UN Statistics Division
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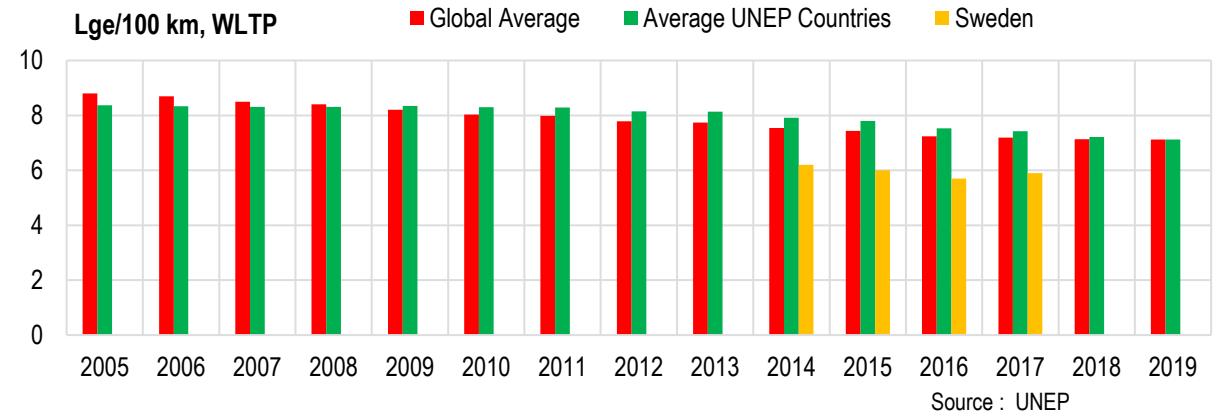
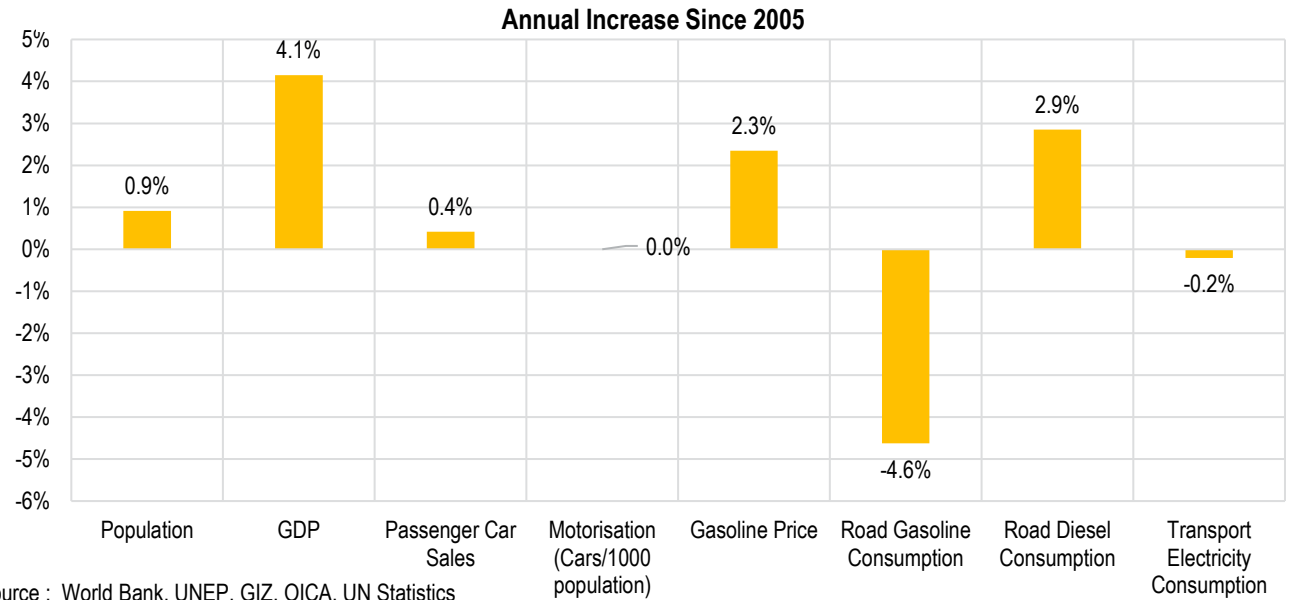
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

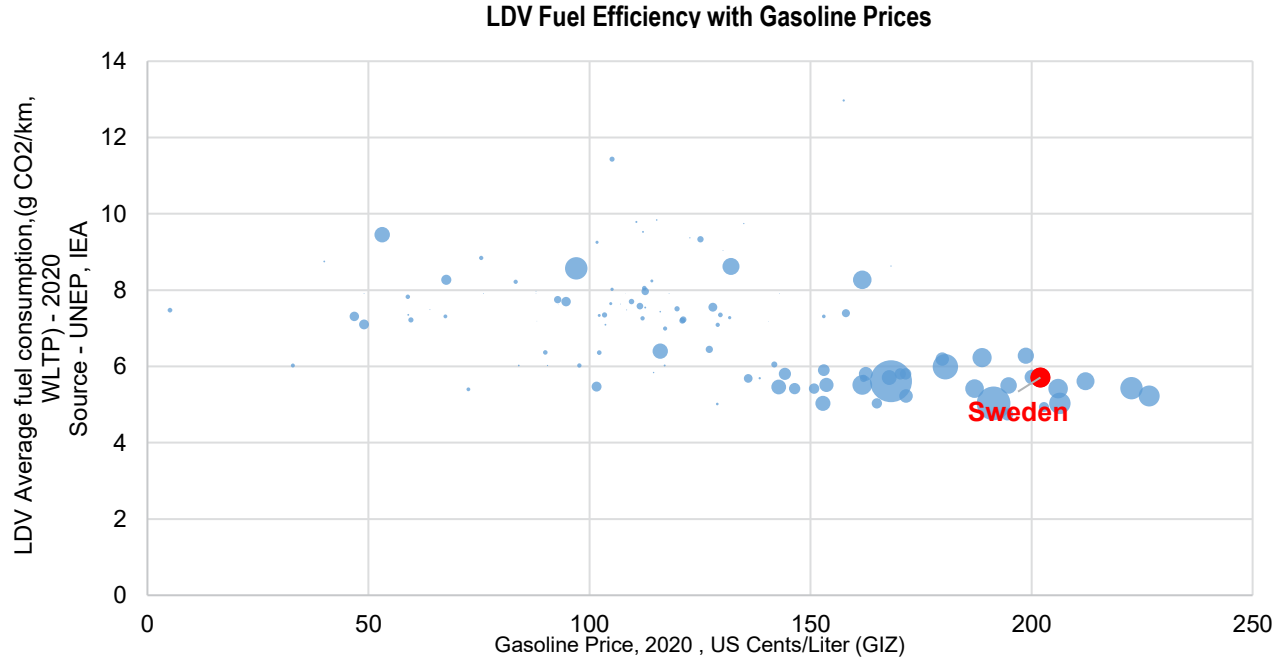
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

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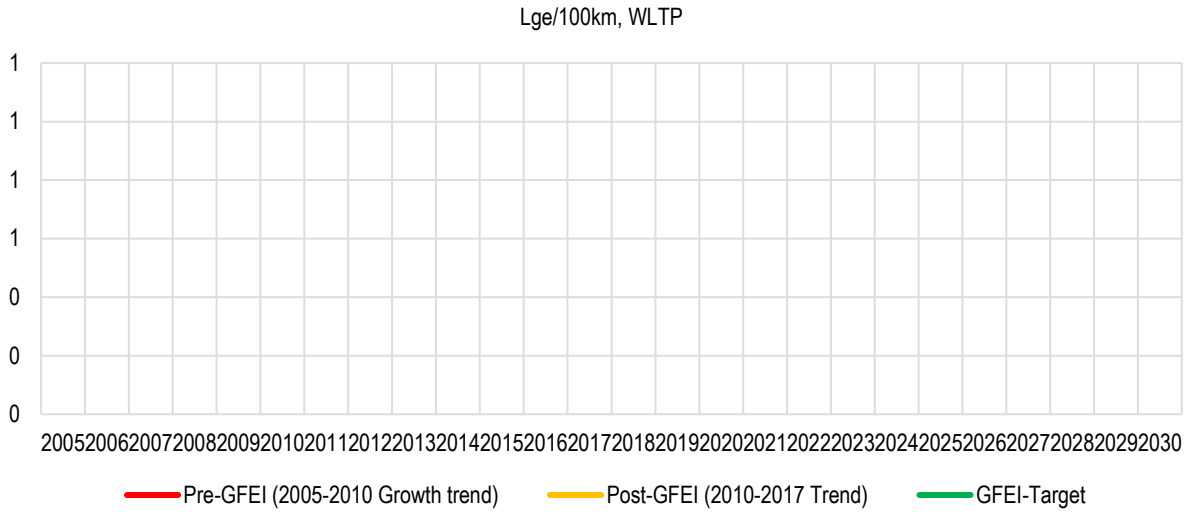
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

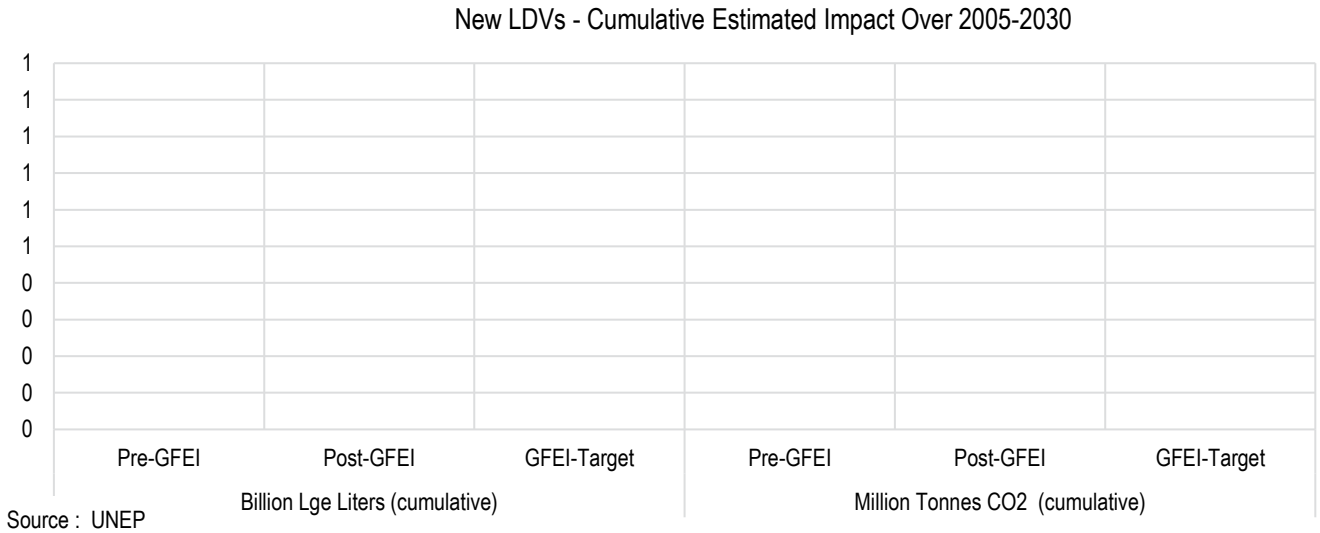
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

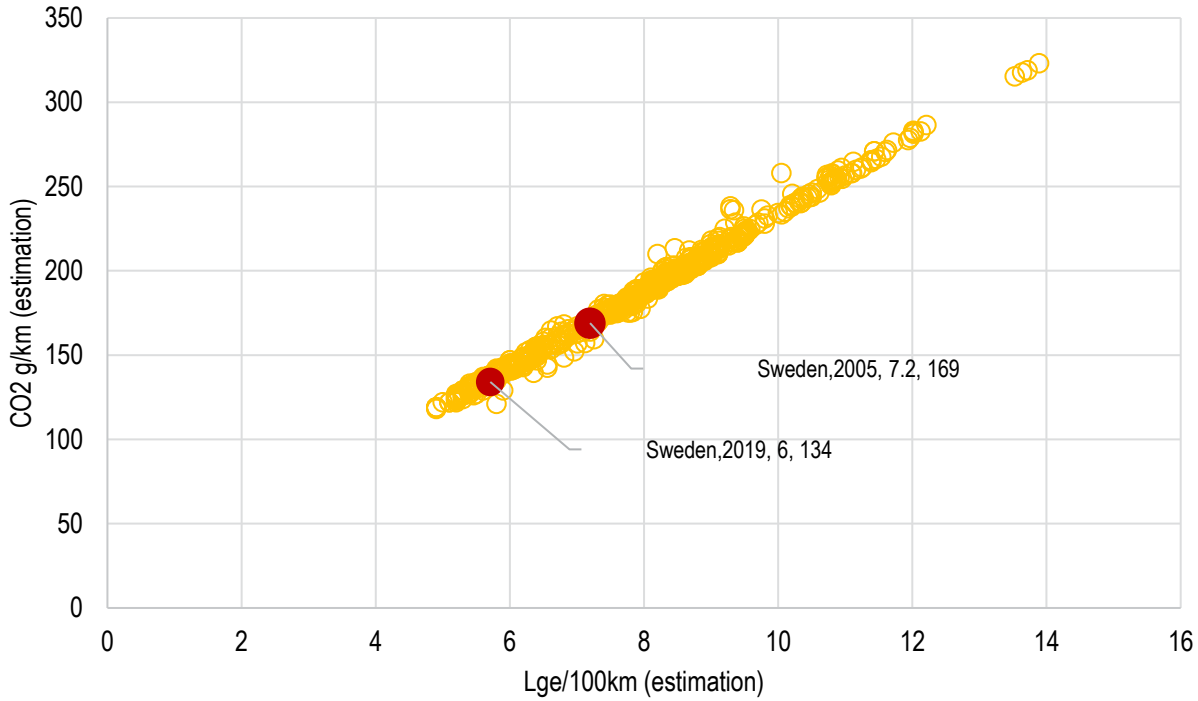
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



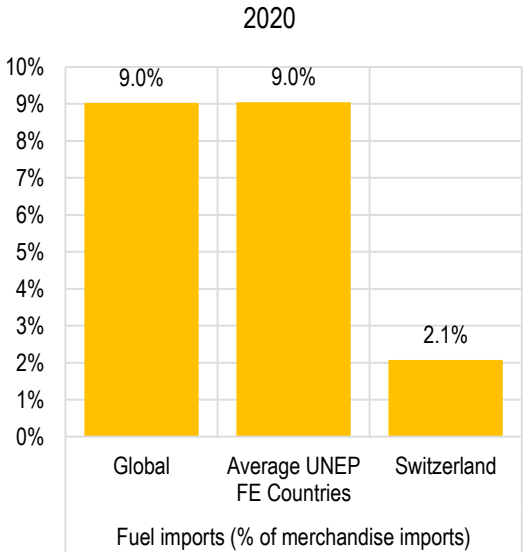
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

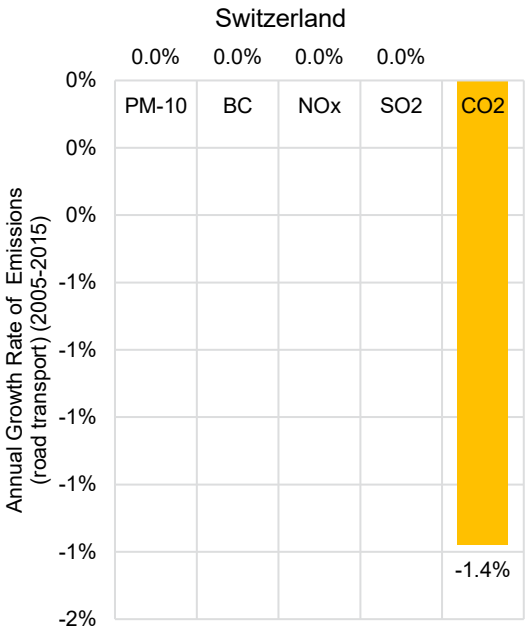
#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR SWITZERLAND

		Year	Source
Population (million)	9	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	71761	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	237	2020	6
Gasoline Price $/l	1.8	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	12.4	2018	13
Employment (Transport+,000)	402	2019	11
Fuel Economy (Lge/100 km, WLTP) -	6	2015	1
Average CO2 emissions/kilometre (g/km, WLTP) -	152	2015	1
Average displacement (cm3) -	1824	2015	1
Average kerb weight (kg) -	1514	2015	1
Average power (kw) -	118	2015	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.270	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.332	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	352.2	2019	8
Transport CO2 Emissions per Capita (tonnes) -	4.6	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	-2.0%	2000-18	16
Annual rate of transport energy consumption growth	-0.1%	2000-18	16
LDV Import value (Million USD)	10113	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

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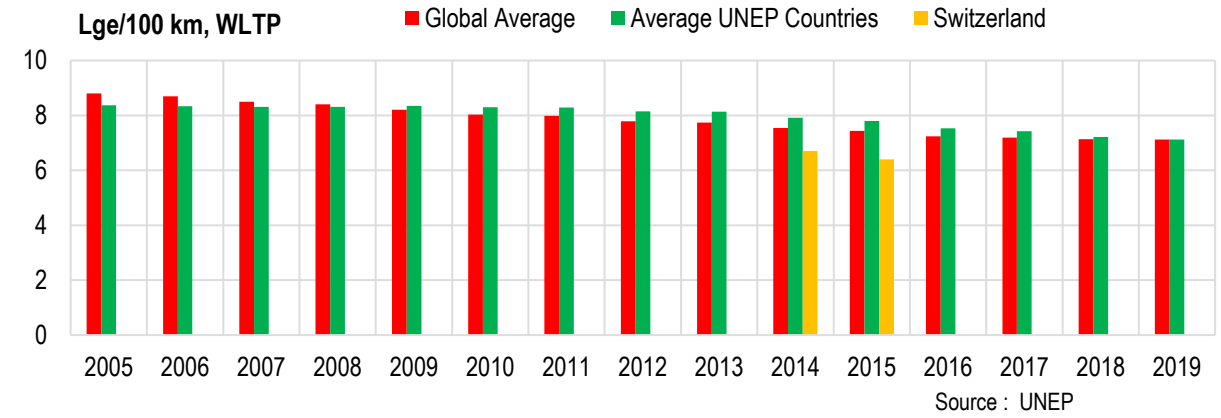
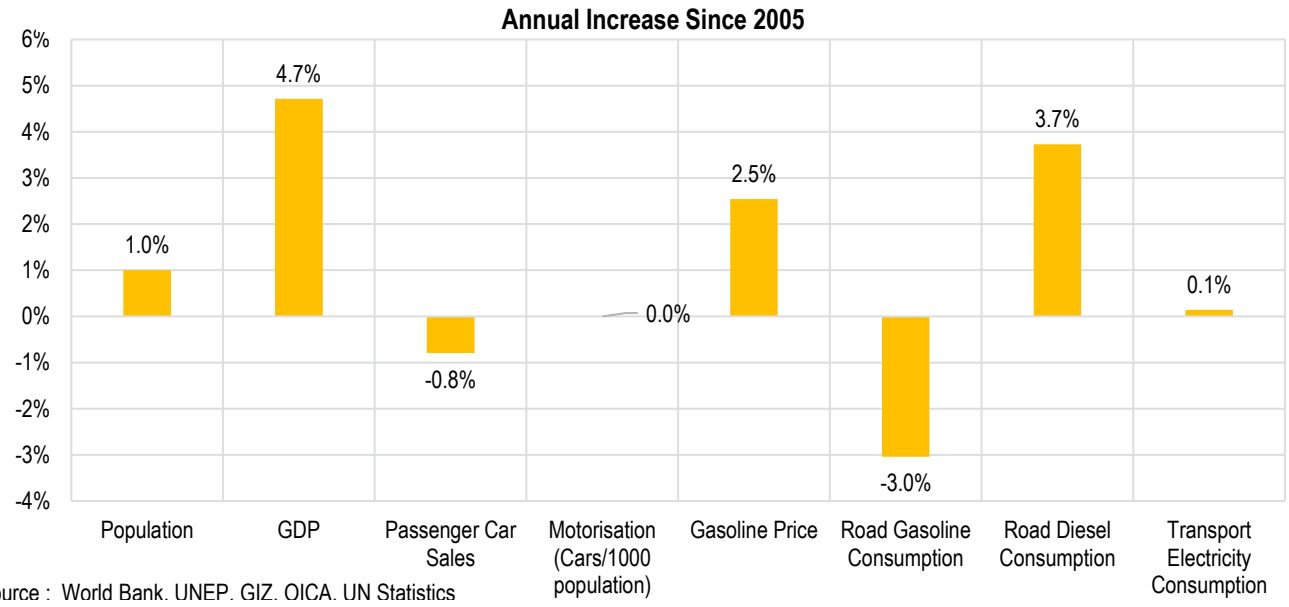
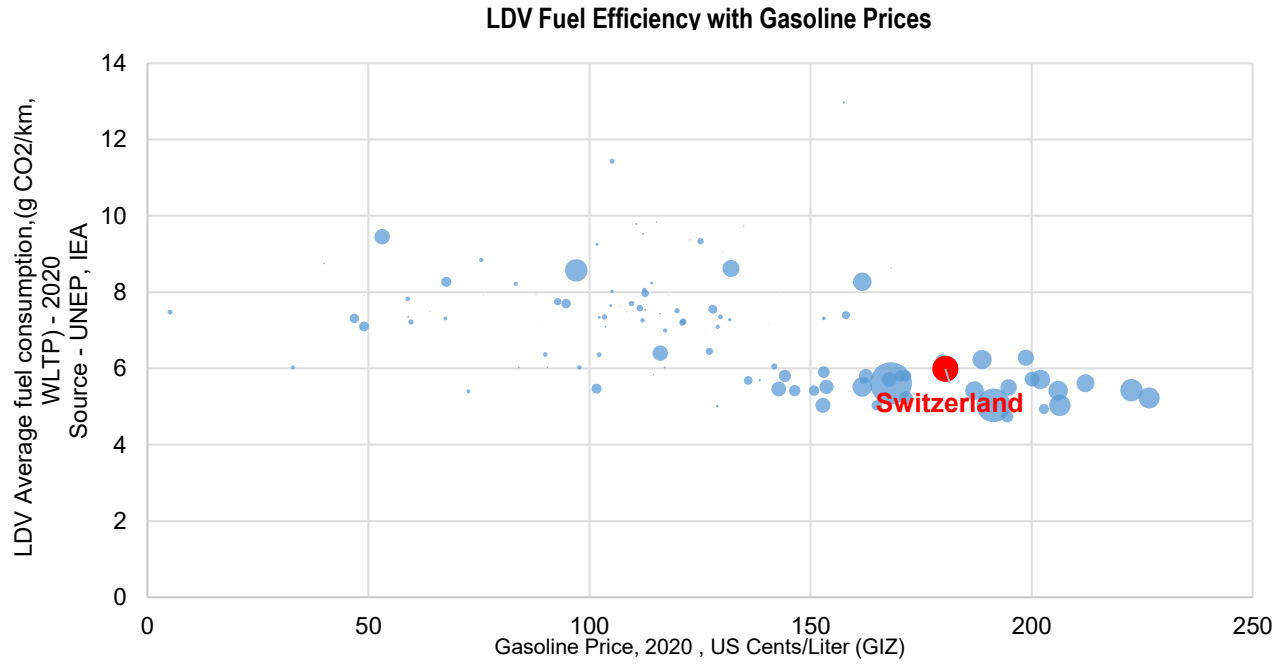
FUEL ECONOMY TRENDS





Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

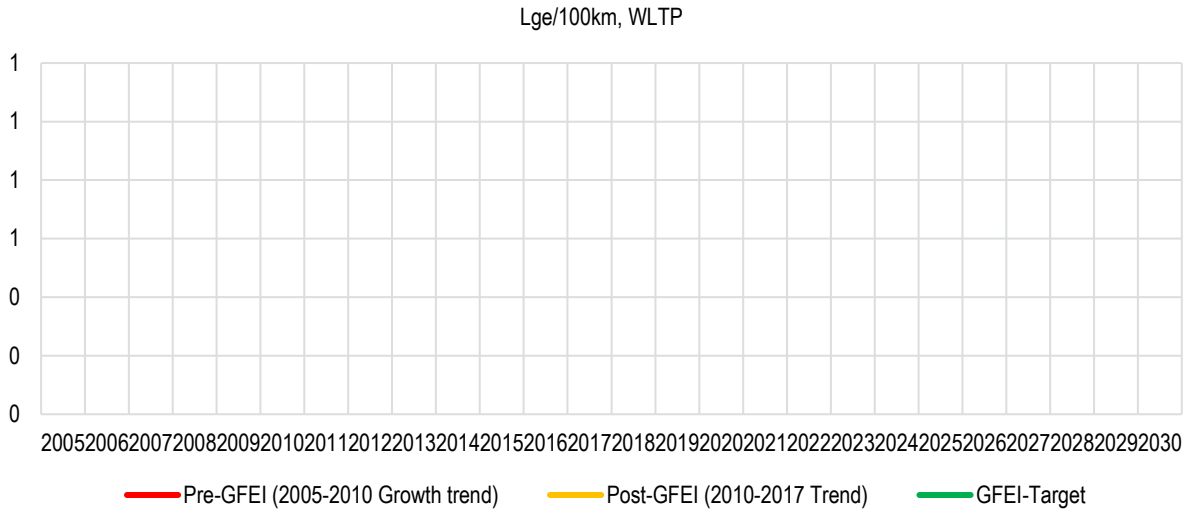
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

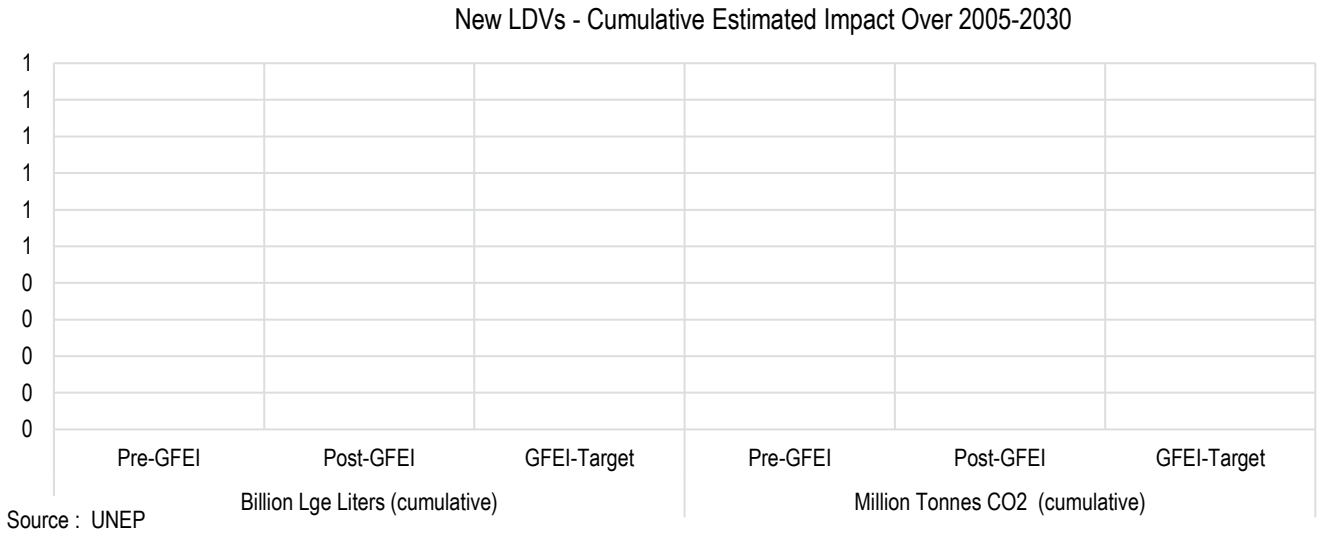
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

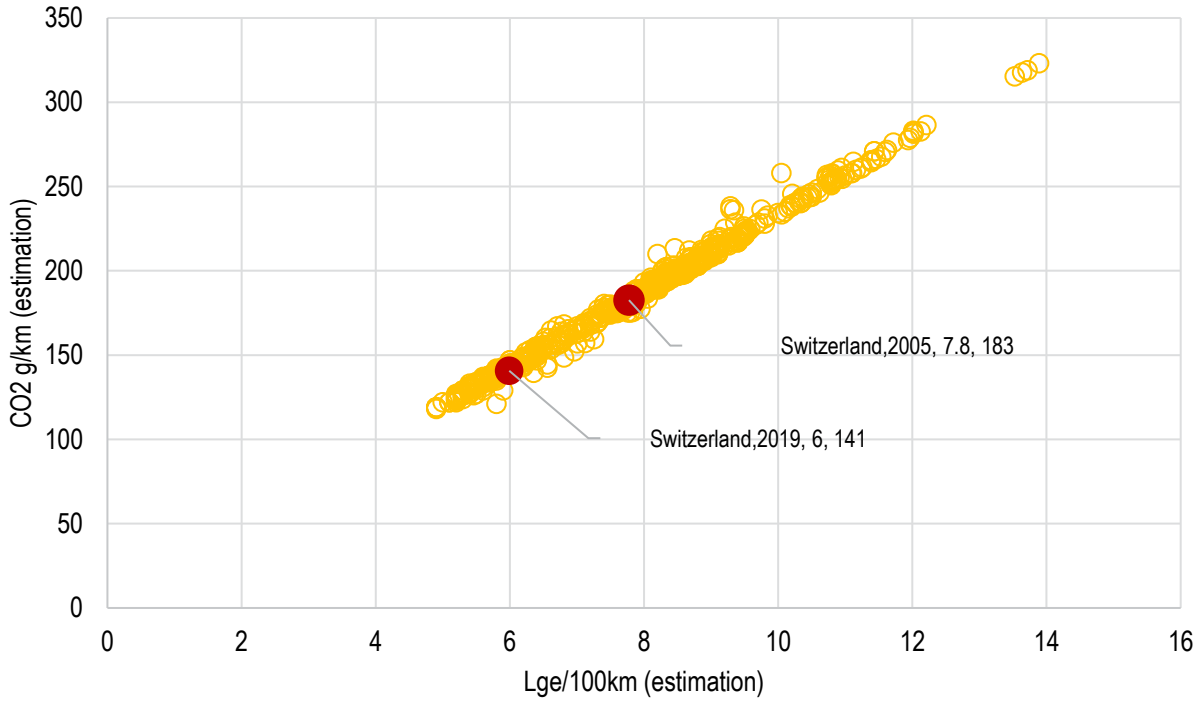
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



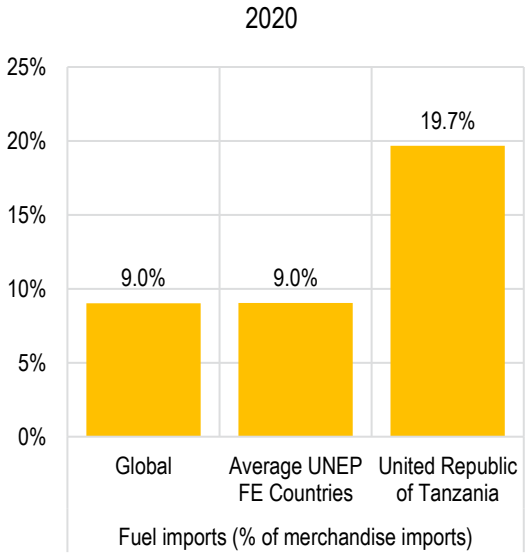
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

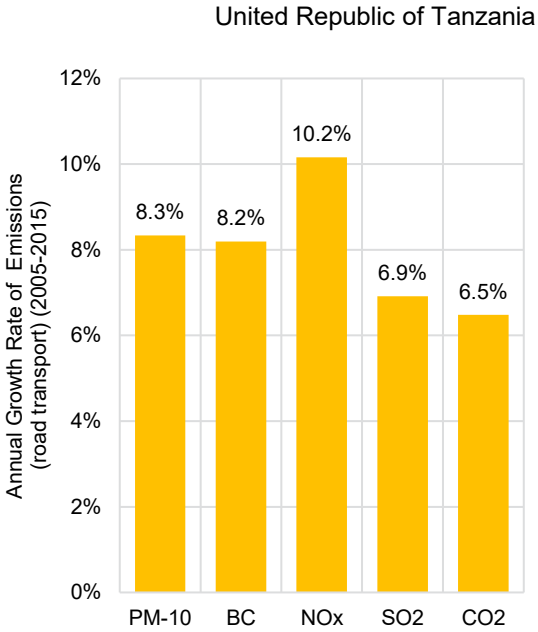
#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR UNITED REPUBLIC OF TANZANIA

		Year	Source
Population (million)	60	2020	7
Income Level Category	Lower middle income		7
GDP per Capita (PPP, Curent USD)	2697	2020	7
Motorisation (Cars/1000 population)	5	2020	10
Car Sales (000)	26	2020	6
Gasoline Price $/l	1.1	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	6.3	2018	13
Employment (Transport+,000)	0	2019	11
Fuel Economy (Lge/100 km, WLTP) -	7	2019	1
Average CO2 emissions/kilometre (g/km, WLTP) -	174	2019	1
Average displacement (cm3) -	1913	2019	1
Average kerb weight (kg) -	1373	2019	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	15	2018	1
Cumulative number of LDVs (total sample size,000) -	506		1
Diesel Share in LDV (sample,%)	4%	2019	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.011	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.015	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	91.3	2019	8
Transport CO2 Emissions per Capita (tonnes) -	0.2	2019	14
Road Transport PM Emissions per Capita (grams) -	73.6	2015	14
Road Transport NOx Emissions per Capita (grams)-	1269.5	2015	14
Road Transport BC Emissions per Capita (grams)-	35.9	2015	14
LDV Emission Standards -	0	2019	1
Diesel Sulphur Levels (ppm) -	50	2019	1
Gasoline Sulphur Levels (ppm) -	150	2019	1
Annual rate of economy-wide energy intensity growth	-3.7%	2000-18	16
Annual rate of transport energy consumption growth	7.6%	2000-18	16
LDV Import value (Million USD)	216	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
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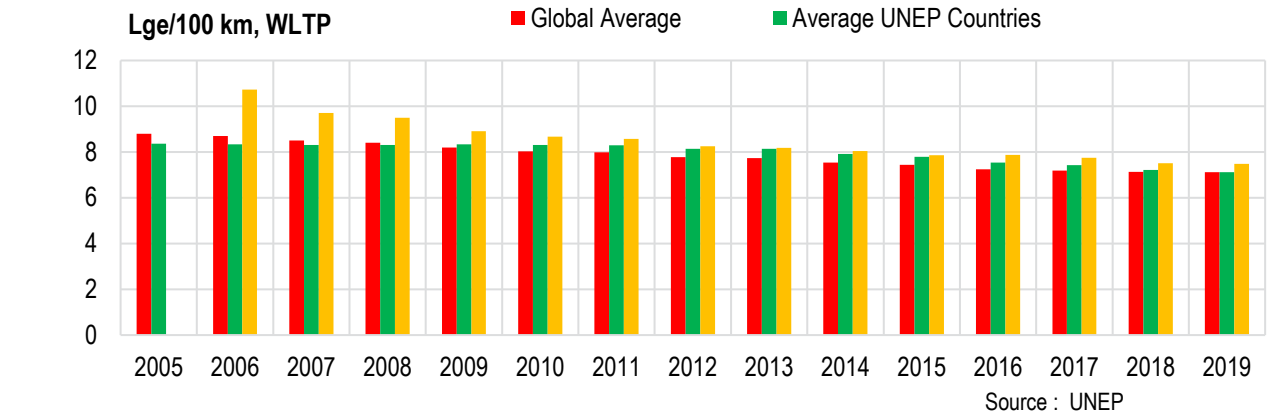
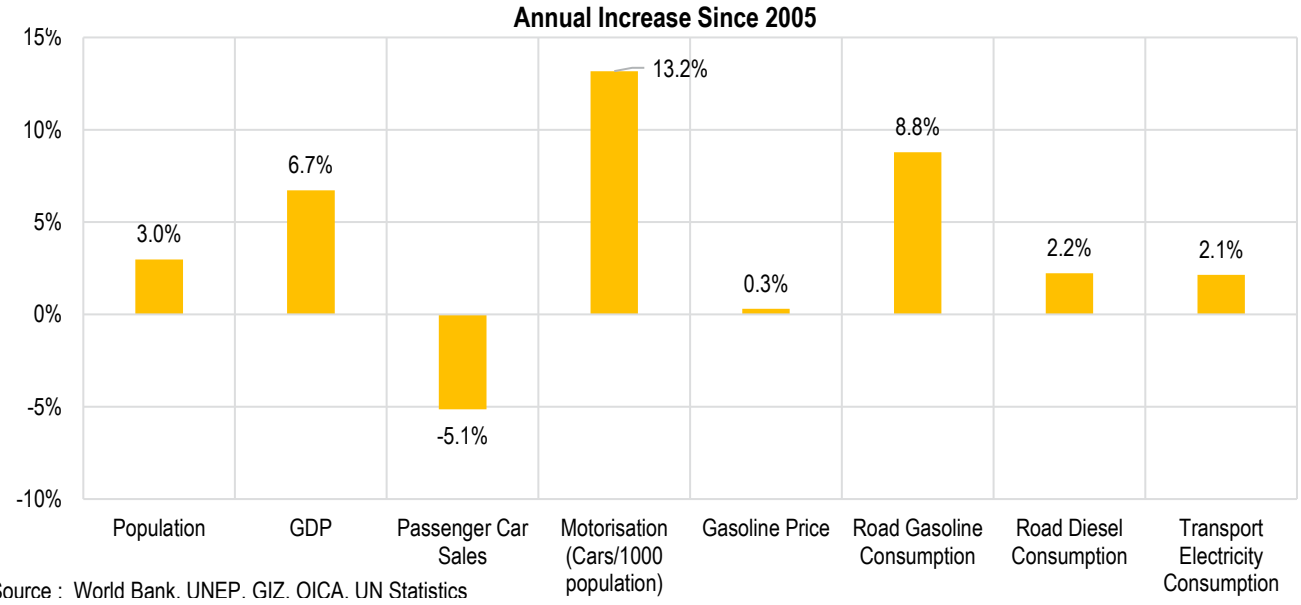
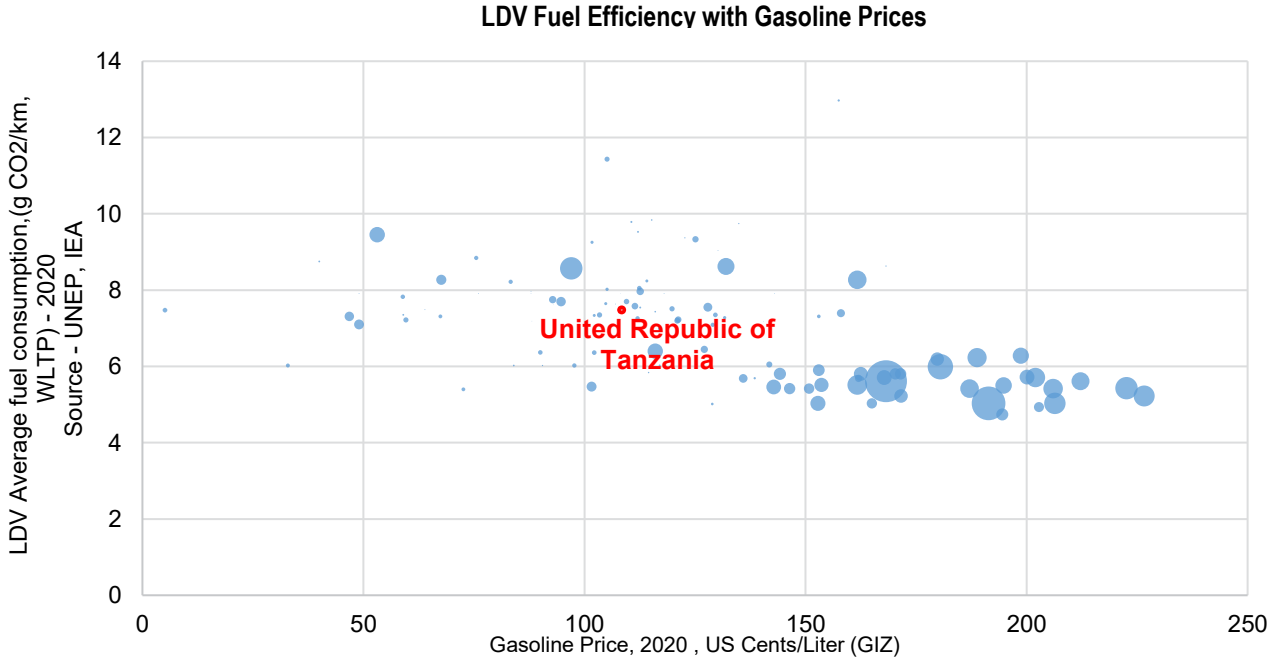
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

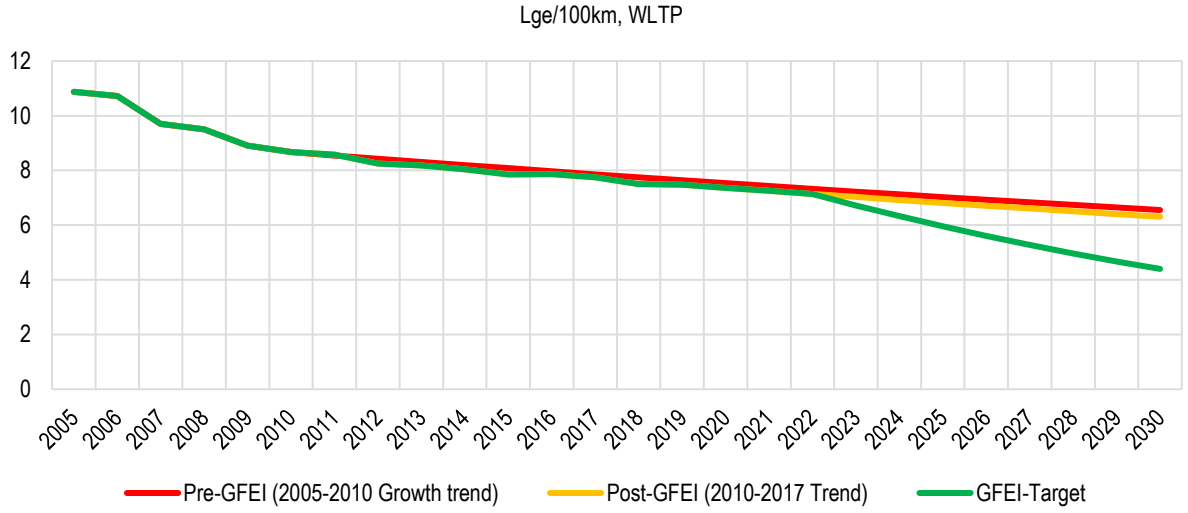
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

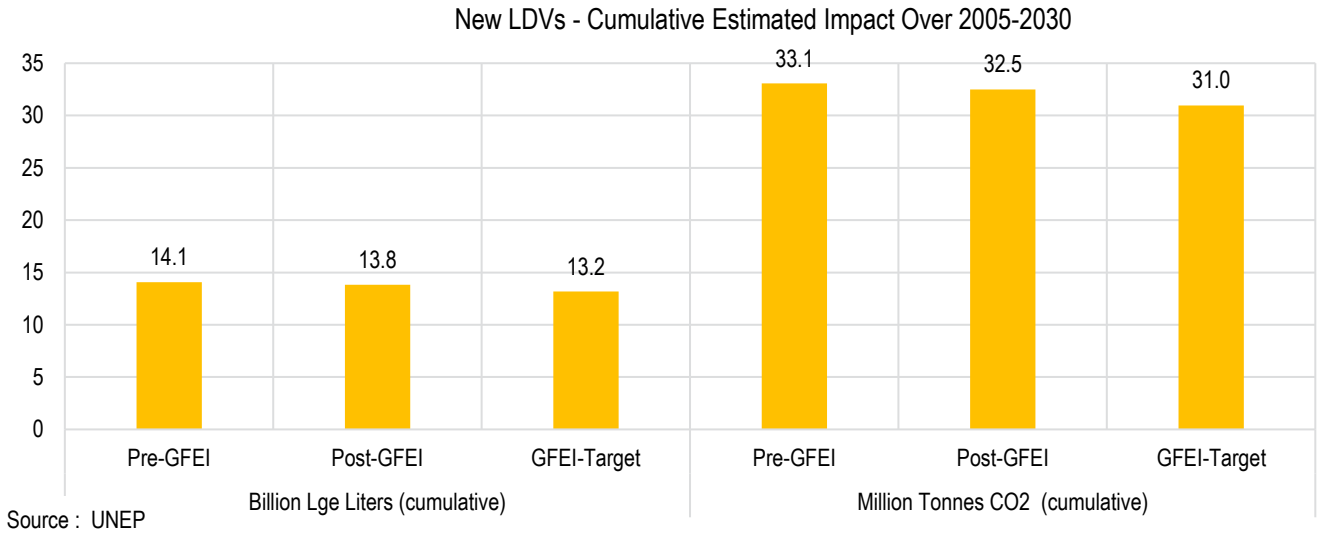
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-1.6%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-5.0%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

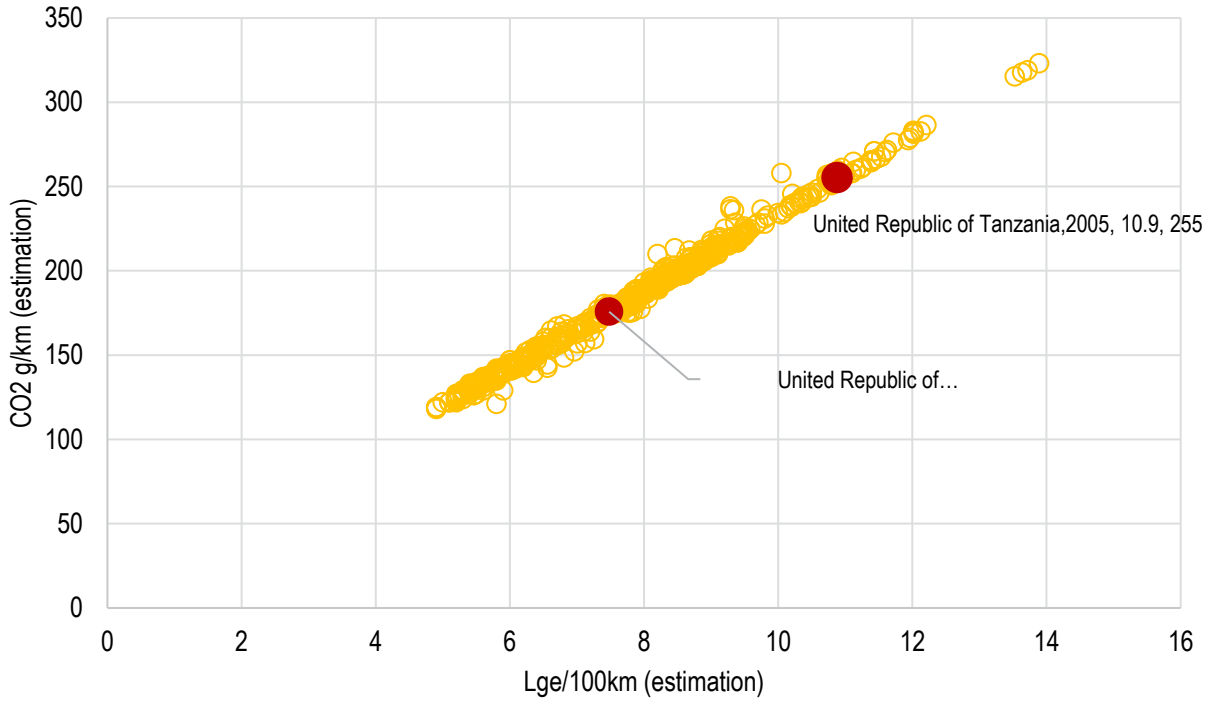
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

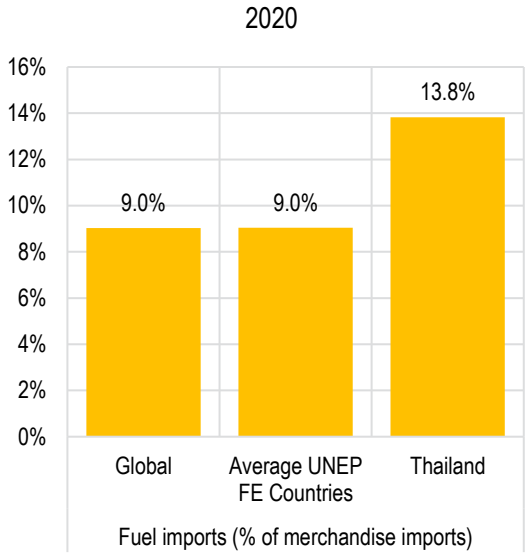
In 2018, an agreement was reached that the University of Dar es Salaam through the Bureau of Industrial Cooperation (BICO) would do the data collection and analysis for the Tanzania project. The Tanzanian government also gave direction to involve a non-governmental agency to assist in the coordination of activities nationally. An agreement for the national engagement was signed with the Environment Compliance Institute (ECI). The two agencies, Energy and Water Utilities Regulatory Authority (EWURA) and Surface and Marine Transport Regulatory Authority (SUMATRA) led an interagency task force overseeing the baseline and policy proposal development. With this agreement, the country held the project inception workshop on 19 July 2019. A technical working group was formed, drawing its membership from key government institutions in the country. The working group conducted a technical review of the baseline study and guided the development of policy proposals for Tanzania. The fuel economy baseline assessment and policy proposals were then disseminated in a national workshop on 26 November 2019. Participants in the meeting agreed to set forth short term and long-term interventions as part of the different policy proposals/interventions. Tax cuts for fuel-efficient vehicles were proposed as short-term interventions.

The National Climate Change Strategy of Tanzania recommends implementation of following transport-specific strategies - Promoting fuel switch in transport facilities. b) Improving systems for rapid transportation. c) Promoting the use of mass transport facilities d) Establishing infrastructures for and promoting the use of non-motorised transport. e) Proper urban transport planning to facilitate efficient and low GHG modes of transportation f) Developing NAMAs on transport systems. The 2015 Tanzania's National Energy Policy has set a goal on improving energy efficiency and conservation, i.e. to improve the energy efficiency of energy production, transformation, transmission, transport and energy end-use.

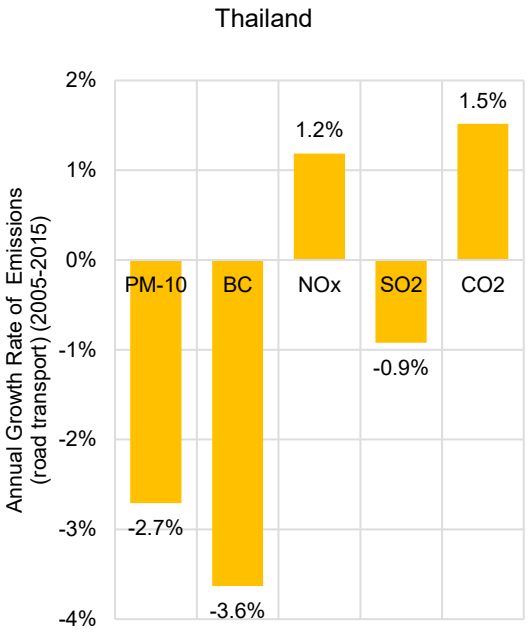
The assessment indicates that if Tanzania implements a fuel economy policy for first-time registered LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 1.3 billion litres of gasoline-equivalent & 3.1 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR THAILAND

		Year	Source
Population (million)	70	2020	7
Income Level Category	Upper middle income		7
GDP per Capita (PPP, Curent USD)	18226	2020	7
Motorisation (Cars/1000 population)	119	2020	10
Car Sales (000)	343	2020	6
Gasoline Price $/l	1.2	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	8.1	2018	13
Employment (Transport+,000)	1582	2019	11
Fuel Economy (Lge/100 km, WLTP) -	8	2017	1
Average CO2 emissions/kilometre (g/km, WLTP) -	180	2017	1
Average displacement (cm3) -	1959	2017	1
Average kerb weight (kg) -	1519	2019	1
Average power (kw) -	93	2010	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.104	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.195	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	3.1	2019	8
Transport CO2 Emissions per Capita (tonnes) -	4.0	2019	14
Road Transport PM Emissions per Capita (grams) -	337.6	2015	14
Road Transport NOx Emissions per Capita (grams)-	5641.8	2015	14
Road Transport BC Emissions per Capita (grams)-	141.9	2015	14
LDV Emission Standards -	Euro 4	2019	1
Diesel Sulphur Levels (ppm) -	50	2019	1
Gasoline Sulphur Levels (ppm) -	10	2019	1
Annual rate of economy-wide energy intensity growth	-0.4%	2000-18	16
Annual rate of transport energy consumption growth	2.8%	2000-18	16
LDV Import value (Million USD)	1075	2020	3



Source : World Bank



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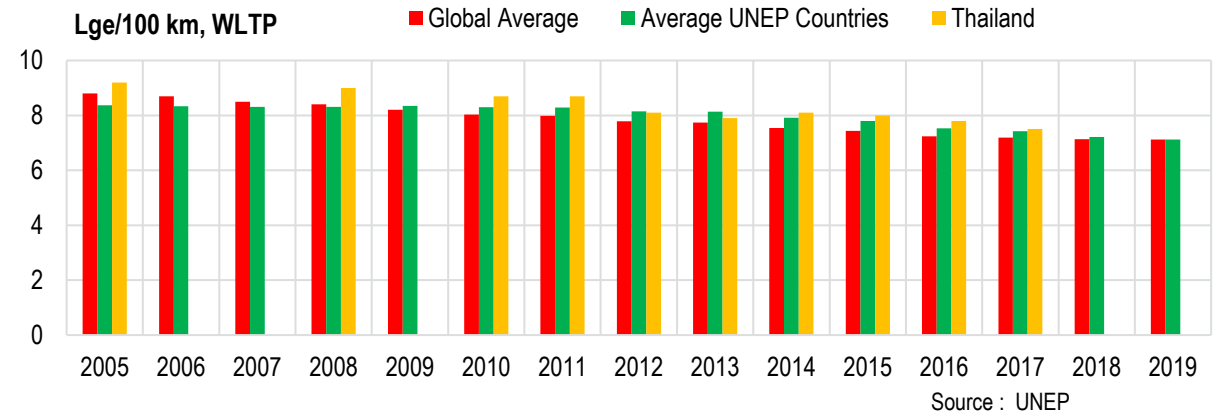
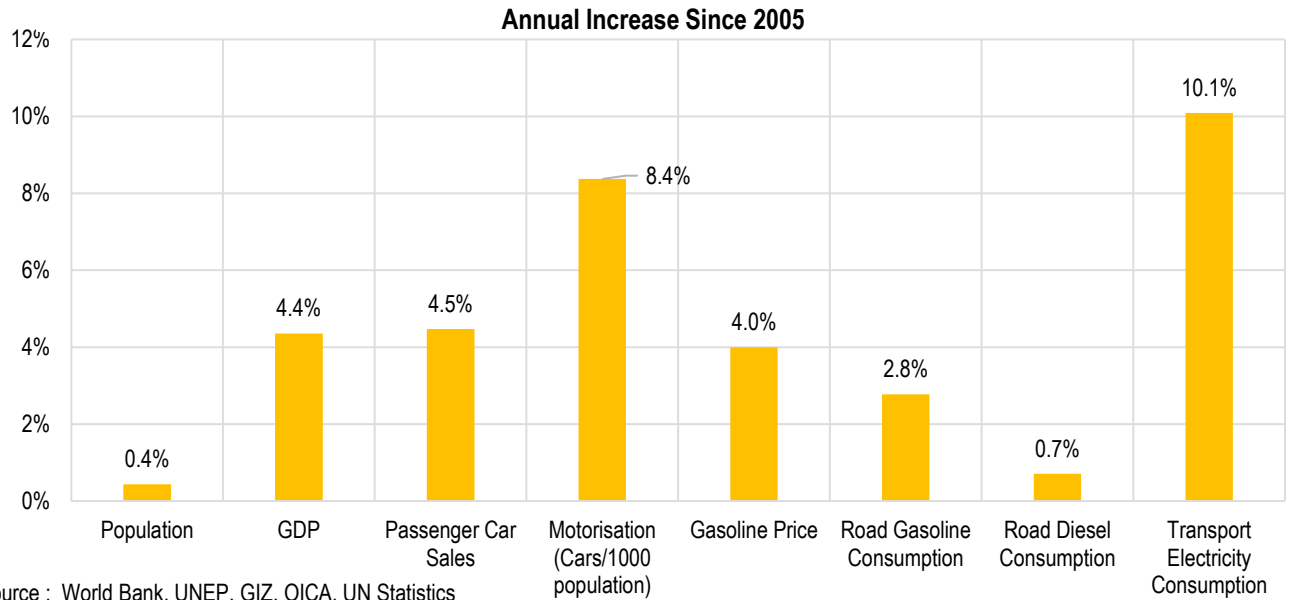
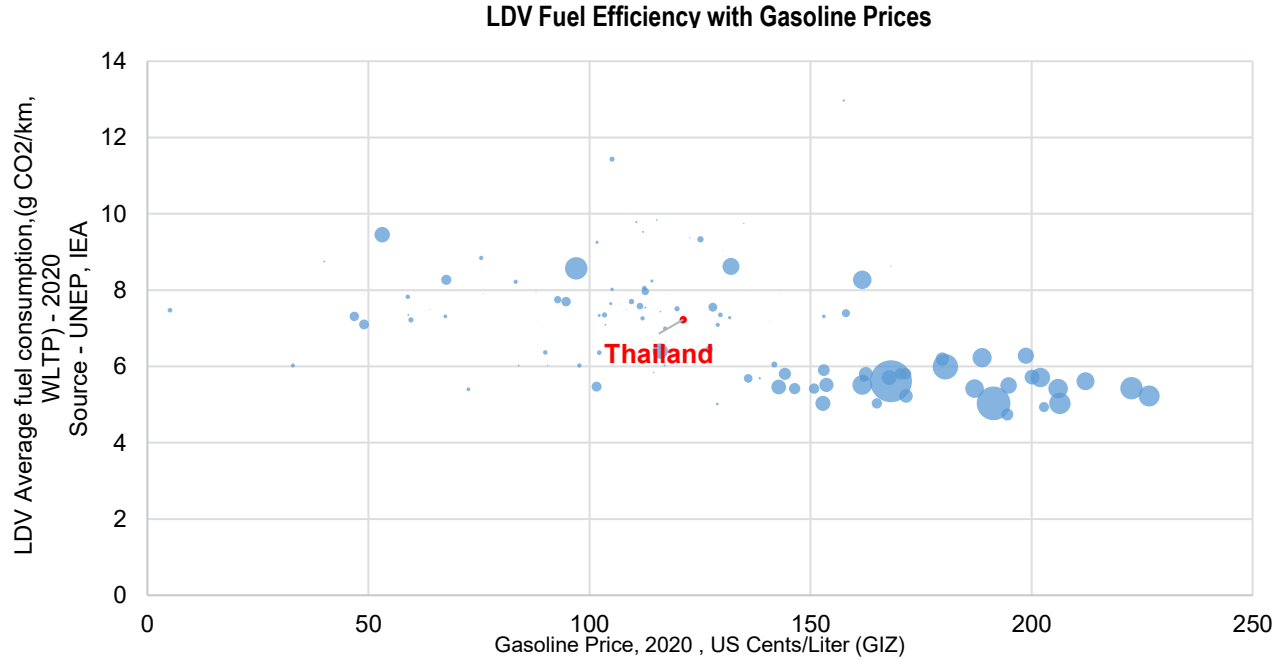
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

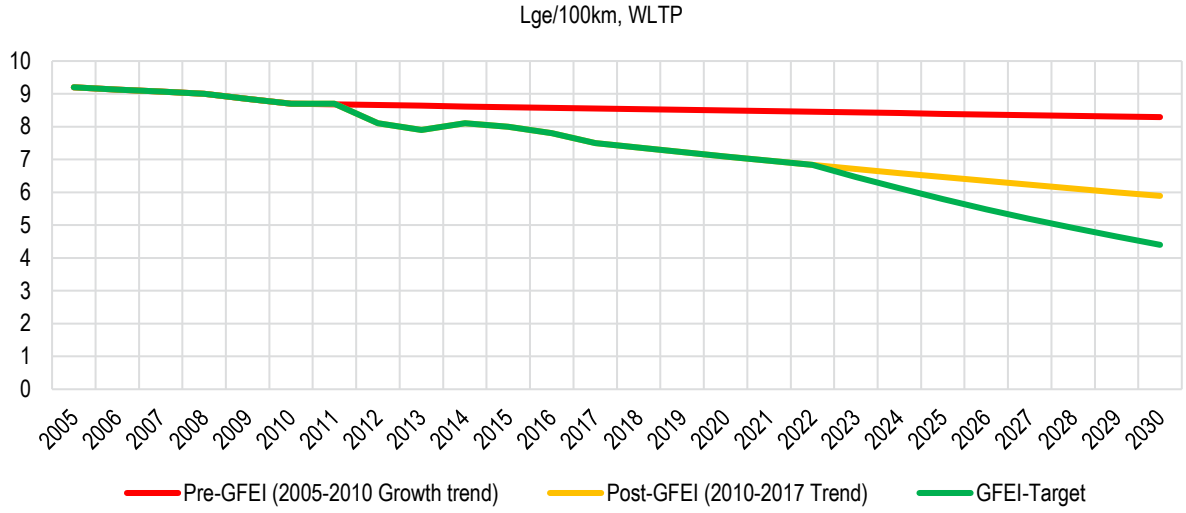
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

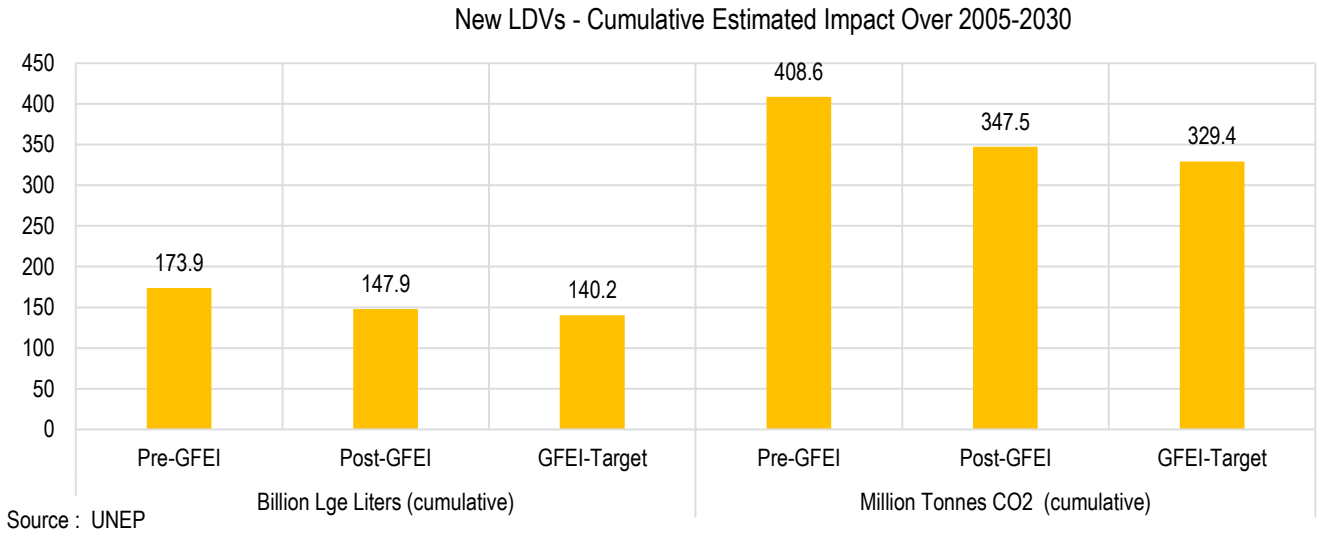
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-2.0%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-4.7%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

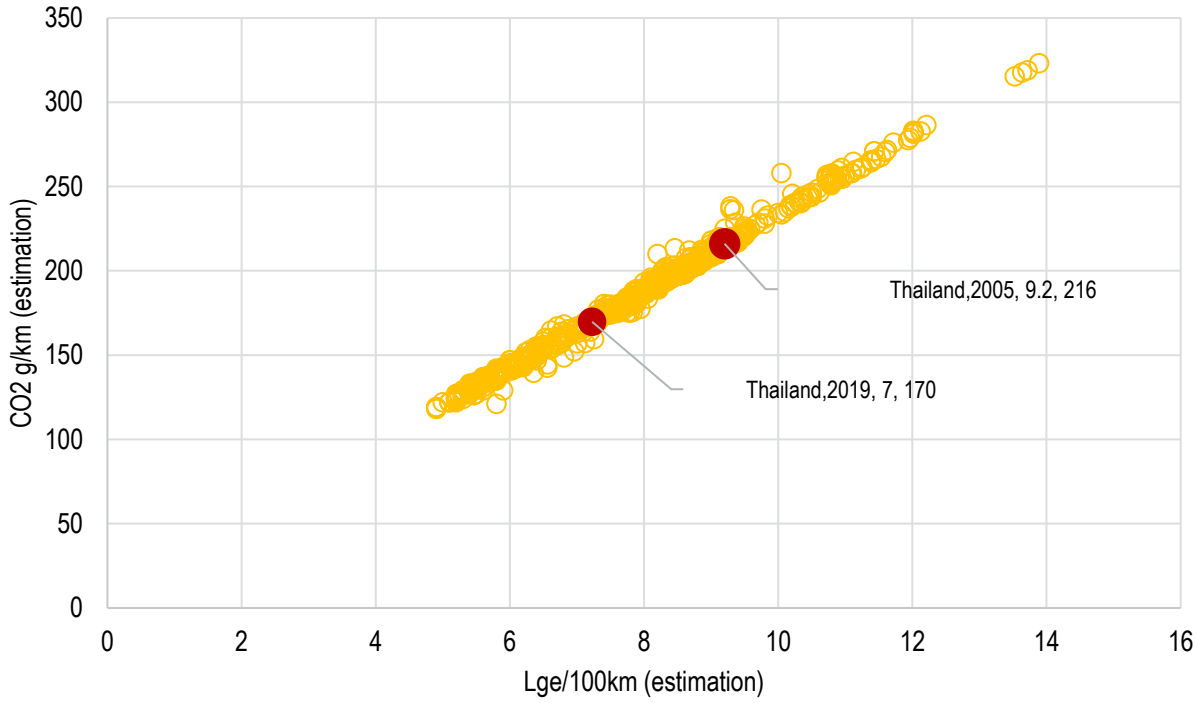
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

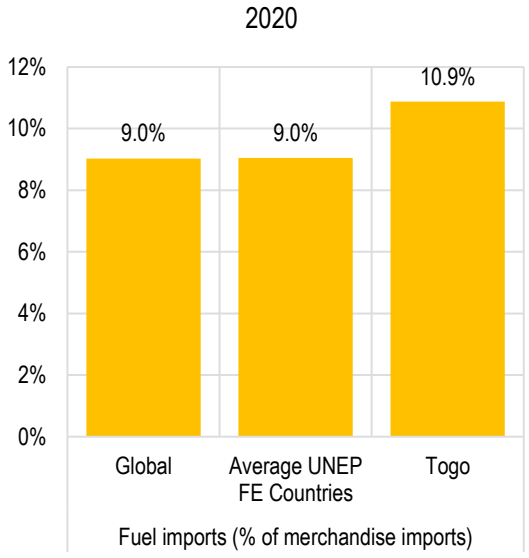
Thailand has endorsed the ASEAN Fuel Economy Roadmap for Transport Sector 2018 – 2025: with Focus on Light-Duty Vehicles. The roadmap sets six aspirational goals for ASEAN. The headline goal is an aspirational target to reduce the average fuel consumption of new light-duty vehicles sold in ASEAN by 26% between 2015 and 2025, which leads to an improvement in average fuel economy to around 5.3 LGe/100km by 2025, from an estimated 7.2 LGe/100km in 2015. This improvement leads to about 17% reduction in annual LDVs CO2 emissions by 2030.

Experimental investigation of Fuel Economy Potential of Hybrid Vehicles under Real-World Driving Conditions in Bangkok has illustrated that hybrid cars were capable of reducing fuel consumption in all traffic conditions and driving with a maximum of 47.3%.

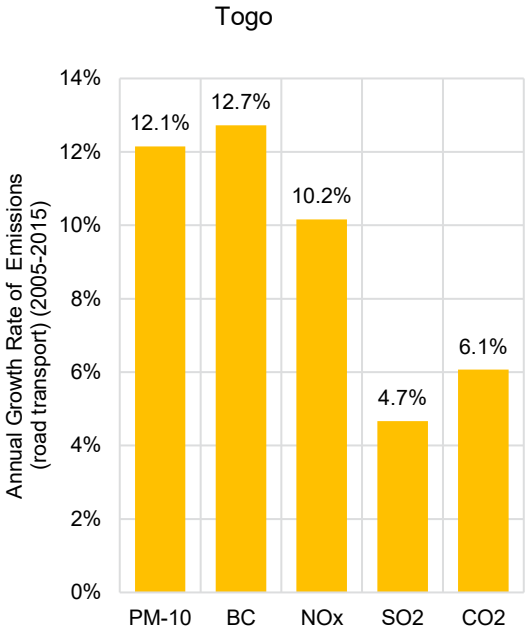
The assessment indicates that if Thailand implements a fuel economy policy for LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 36 billion litres of gasoline-equivalent & 86 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR TOGO

		Year	Source
Population (million)	8	2020	7
Income Level Category	Low income		7
GDP per Capita (PPP, Curent USD)	2223	2020	7
Motorisation (Cars/1000 population)	19	2020	10
Car Sales (000)	9	2020	6
Gasoline Price $/l	0.9	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	4.4	2018	13
Employment (Transport+,000)	172	2019	11
Fuel Economy (Lge/100 km, WLTP) -	8	2016	1
Average CO2 emissions/kilometre (g/km, WLTP) -	197	2016	1
Average displacement (cm3) -			1
Average kerb weight (kg) -	1274	2016	1
Average power (kw) -	78	2016	1
Average Age of newly registered cars (years) -	16	2016	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	10%	2016	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.020	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.020	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	26.0	2019	8
Transport CO2 Emissions per Capita (tonnes) -	0.4	2019	14
Road Transport PM Emissions per Capita (grams) -	104.4	2015	14
Road Transport NOx Emissions per Capita (grams)-	1932.2	2015	14
Road Transport BC Emissions per Capita (grams)-	50.6	2015	14
LDV Emission Standards -	0	2019	1
Diesel Sulphur Levels (ppm) -	10000	2019	1
Gasoline Sulphur Levels (ppm) -	0	2019	1
Annual rate of economy-wide energy intensity growth	-1.2%	2000-18	16
Annual rate of transport energy consumption growth	4.9%	2000-18	16
LDV Import value (Million USD)	84	2020	3



Source : World Bank

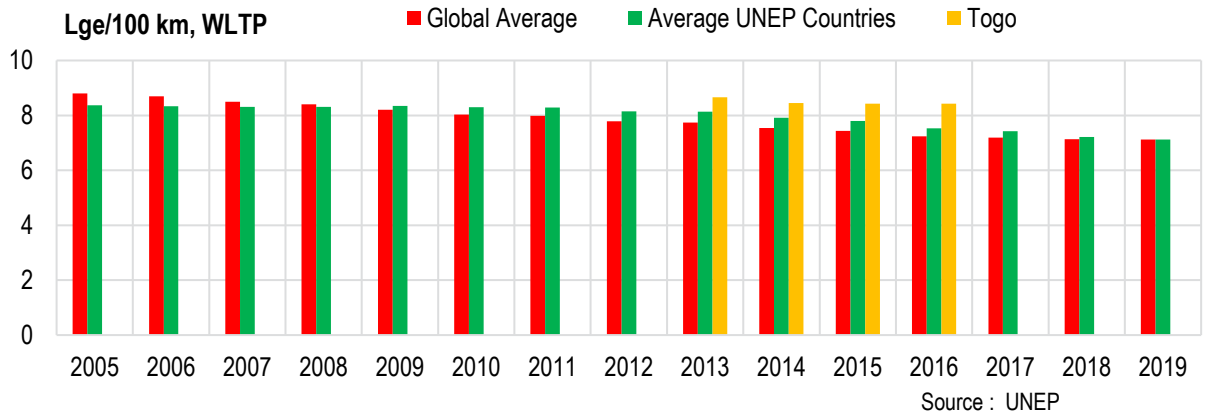


Source : IIASA

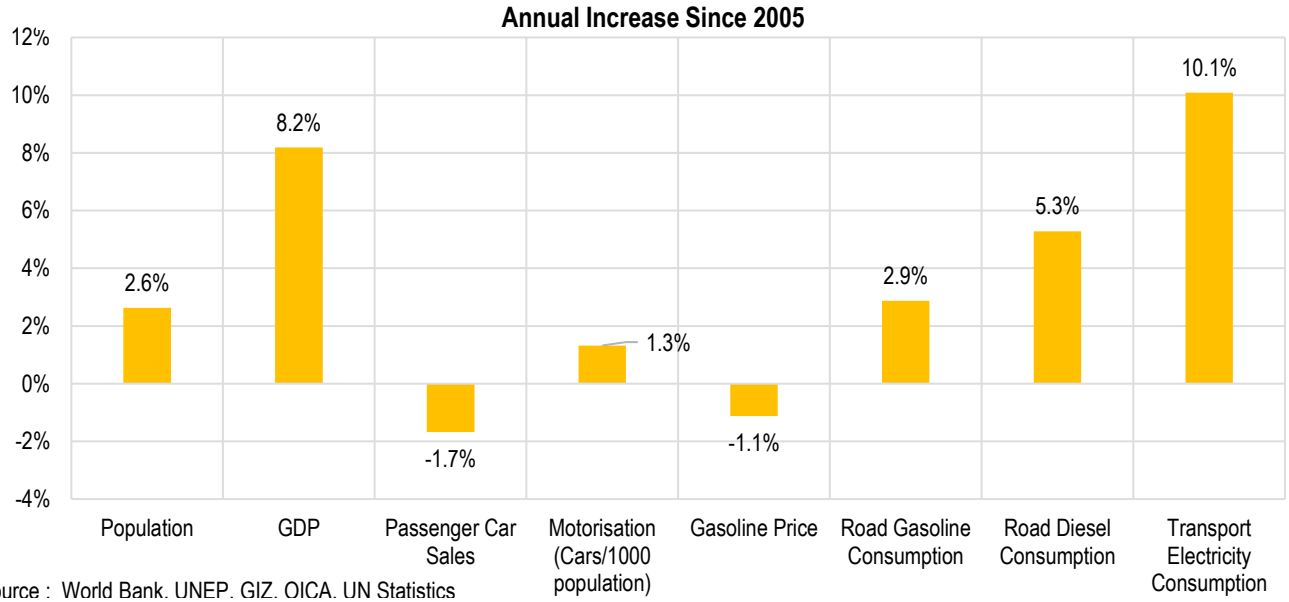
Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
7 World Bank
8 UN Statistics Division
9 SLOCAT &GIZ
10 Estimated using growth and sales data
11 Employment is for Transport; storage and communication, ILO
12 International Transport Forum
13 Koks, E.E. et al. A global multi-hazard risk analysis of road
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

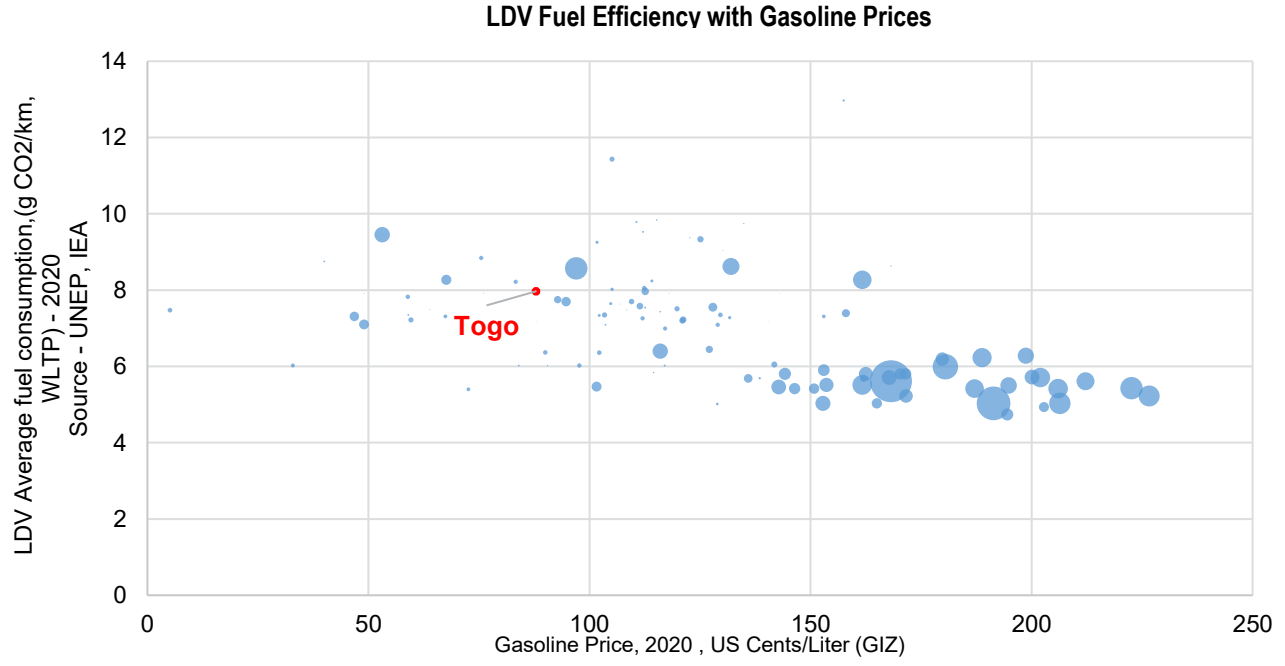
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

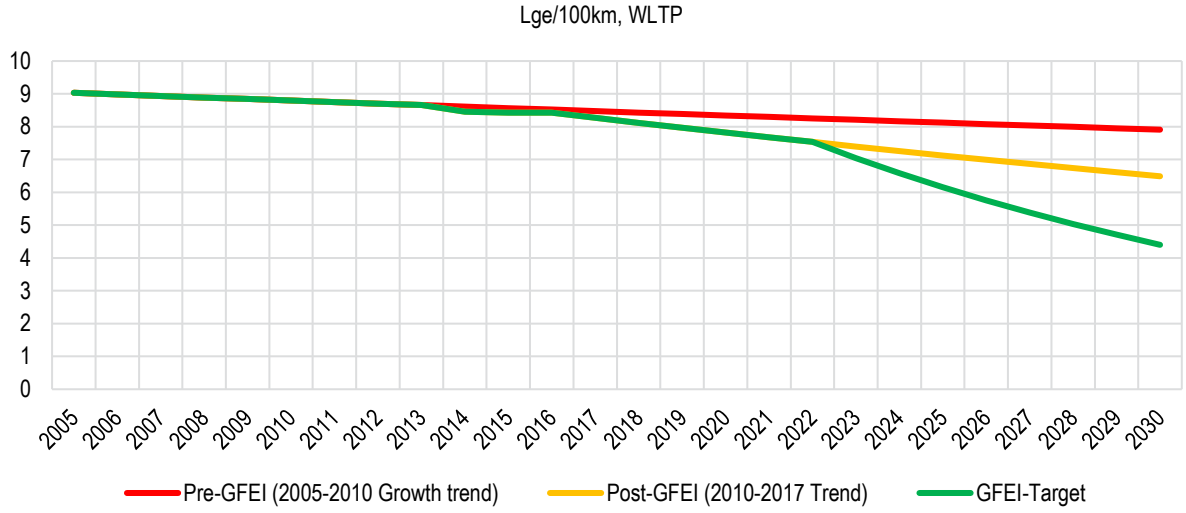
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-1.2%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-5.6%**



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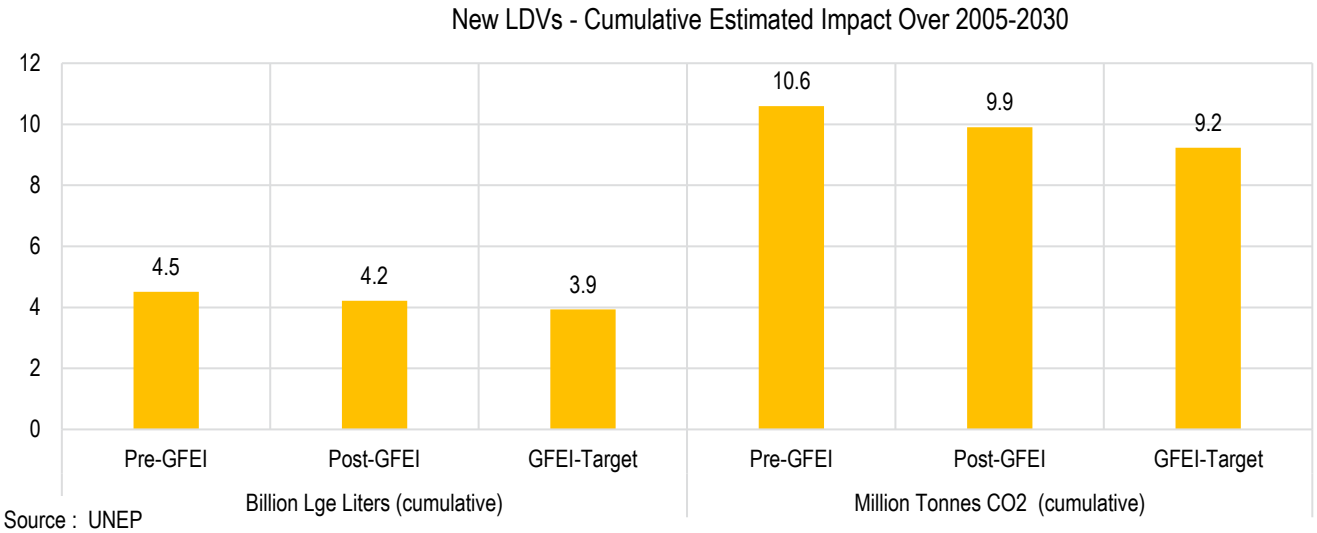


Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

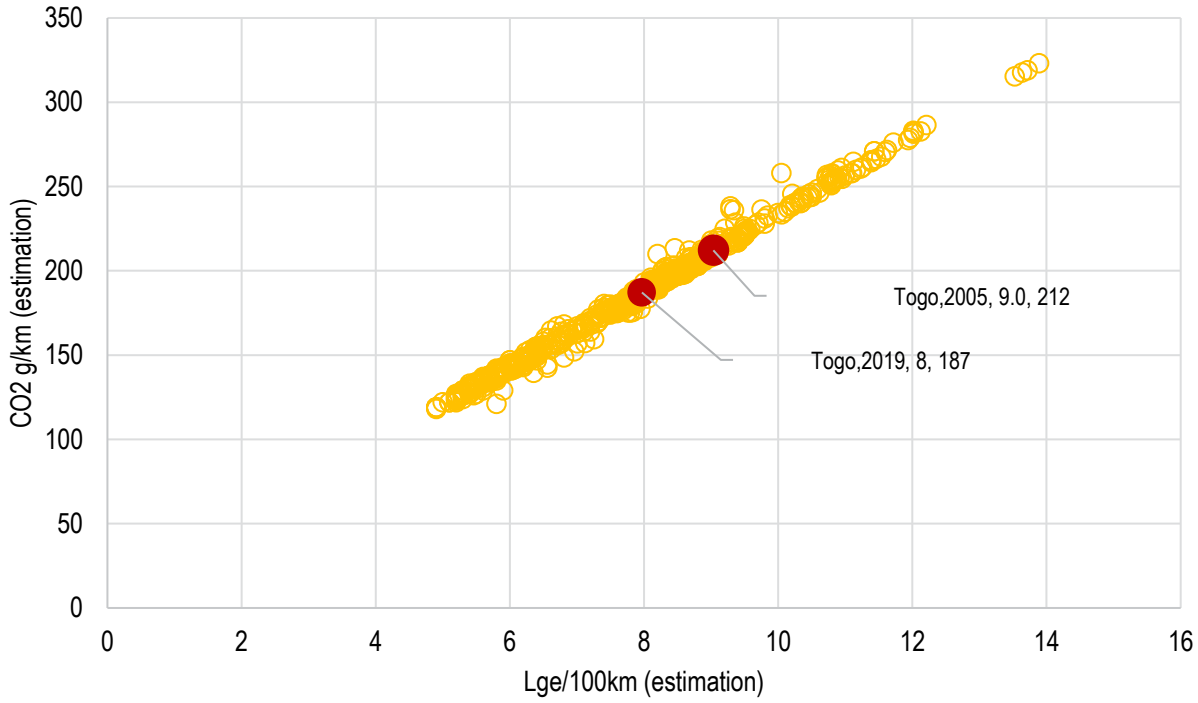
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

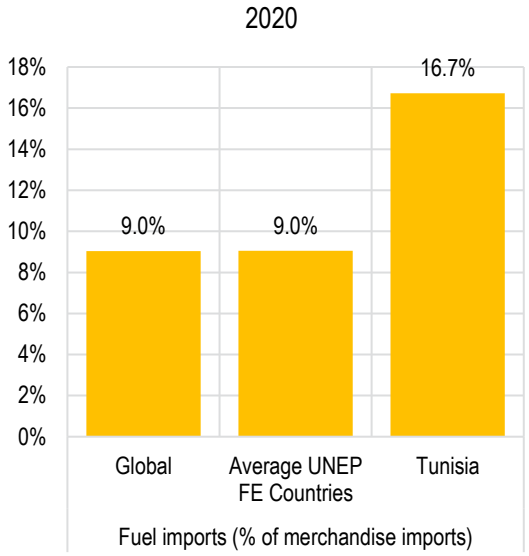
Source : UNEP

The UNEP and Ministère de l'Environnement et des Ressources Forestieres du Togo/Direction de l'Environnement (MERF) entered into an agreement with the objective of promoting effective vehicle policies in Togo on 28 November 2016. A project launch workshop was held on 31 March 2017. Since then, Togo constituted a working group and recruited consultants to carry out the vehicle inventory study. A new agreement was signed between UNEP and Ministère de l'Environnement et des Ressources Forestieres du Togo/Direction de l'Environnement (MERF) on 19 March 2019. Following the completion of the vehicle inventory and baseline setting, the new agreement will support the development of concrete fuel economy policy proposals for Togo. The purpose of this agreement was to support the evaluation of policies and fiscal measures that Togo could use to attract more efficient vehicles into the country. After the conclusion of the study, a dissemination workshop was held on 4-5 July 2019. stakeholders proposed the introduction of a CO2-based vehicle tax system that incentivises fuel-efficient vehicles which is graduated according to the age of the vehicle form date of manufacture. Togo also joined UNEP's global Electric Mobility Program.

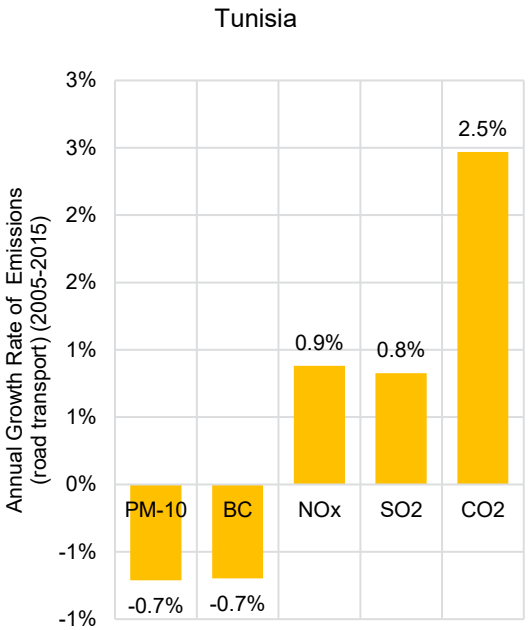
The assessment indicates that if Togo implements a fuel economy policy for first-time registered LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 507 million litres of gasoline-equivalent & 1.19 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR TUNISIA

		Year	Source
Population (million)	12	2020	7
Income Level Category	Lower middle income		7
GDP per Capita (PPP, Curent USD)	10819	2020	7
Motorisation (Cars/1000 population)	89	2020	10
Car Sales (000)	29	2020	6
Gasoline Price $/l	0.7	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	11.1	2018	13
Employment (Transport+,000)	299	2019	11
Fuel Economy (Lge/100 km, WLTP) -	6	2012	1
Average CO2 emissions/kilometre (g/km, WLTP) -	141	2012	1
Average displacement (cm3) -	1327	2012	1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -	116		1
Diesel Share in LDV (sample,%)	12%	2012	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.060	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.129	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	7.9	2019	8
Transport CO2 Emissions per Capita (tonnes) -	2.7	2019	14
Road Transport PM Emissions per Capita (grams) -	158.6	2015	14
Road Transport NOx Emissions per Capita (grams)-	3289.0	2015	14
Road Transport BC Emissions per Capita (grams)-	79.1	2015	14
LDV Emission Standards -	0	2019	1
Diesel Sulphur Levels (ppm) -	0	2019	1
Gasoline Sulphur Levels (ppm) -	0	2019	1
Annual rate of economy-wide energy intensity growth	-0.6%	2000-18	16
Annual rate of transport energy consumption growth	2.7%	2000-18	16
LDV Import value (Million USD)	472	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
7 World Bank
8 UN Statistics Division
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10 Estimated using growth and sales data
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15 Fuel imports (% of merchandise imports) data is from World Bank
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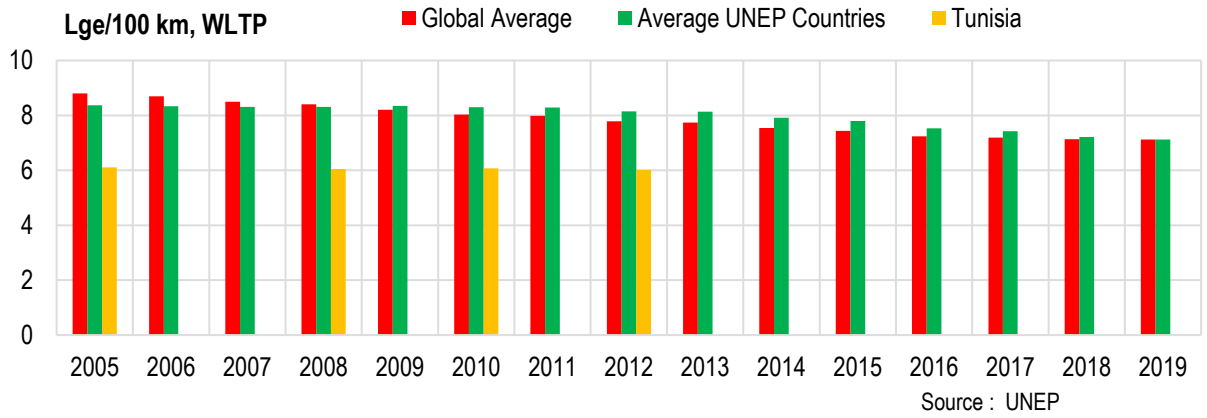
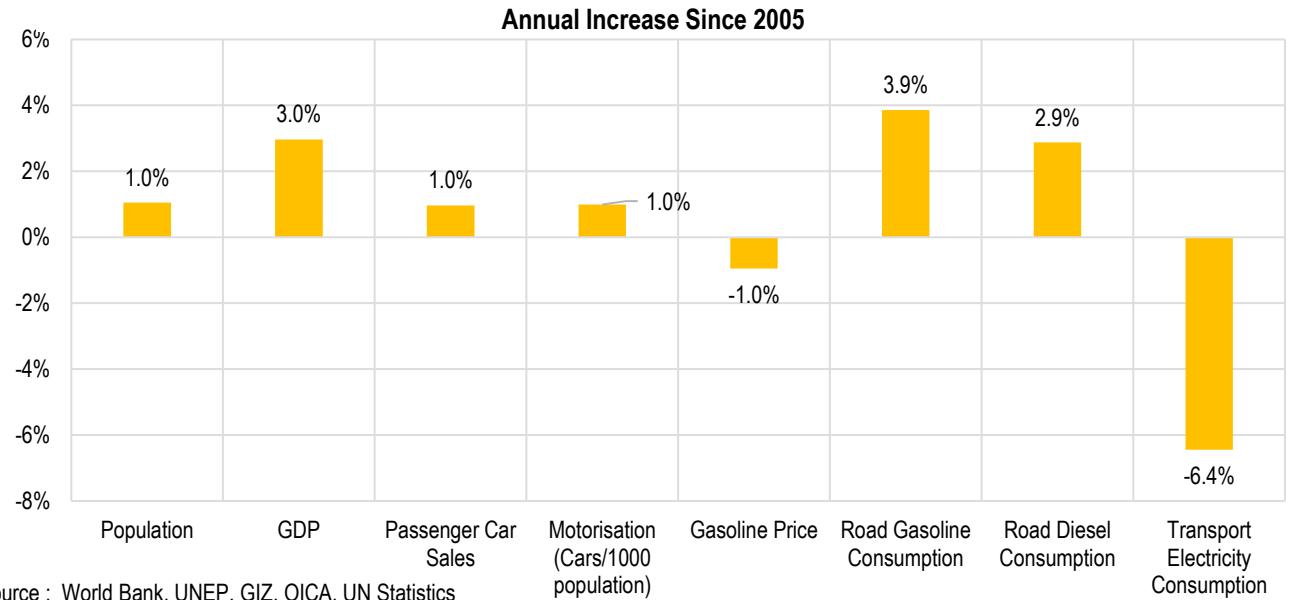
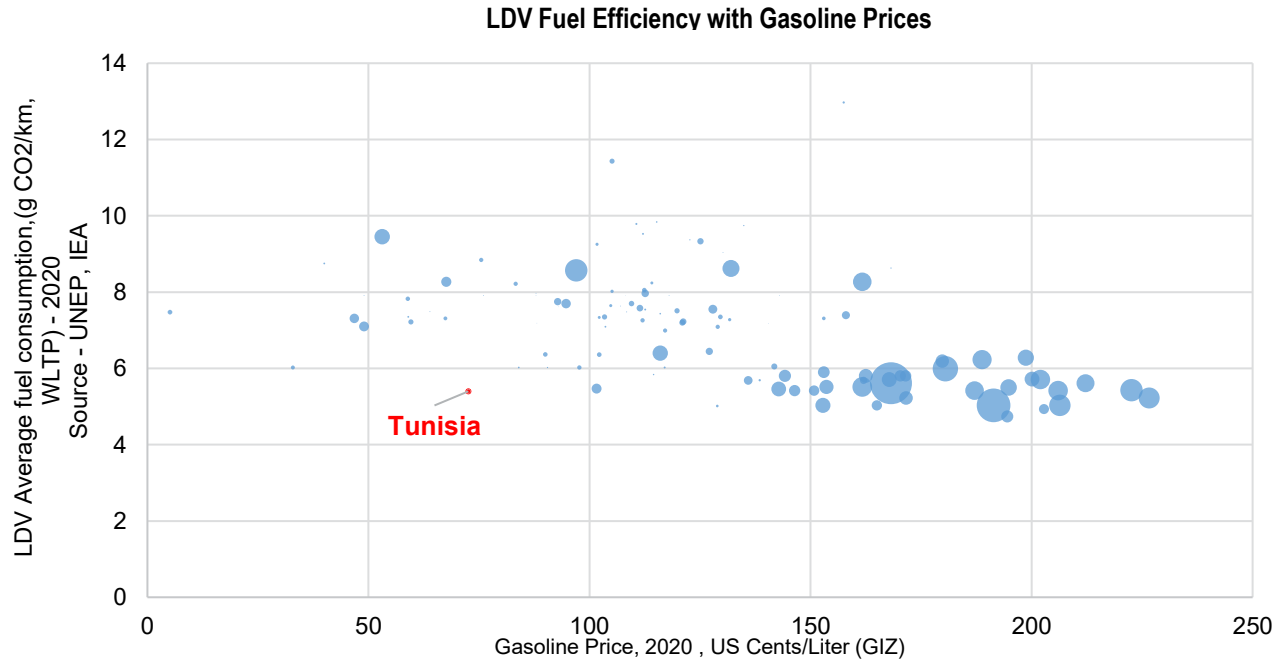
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

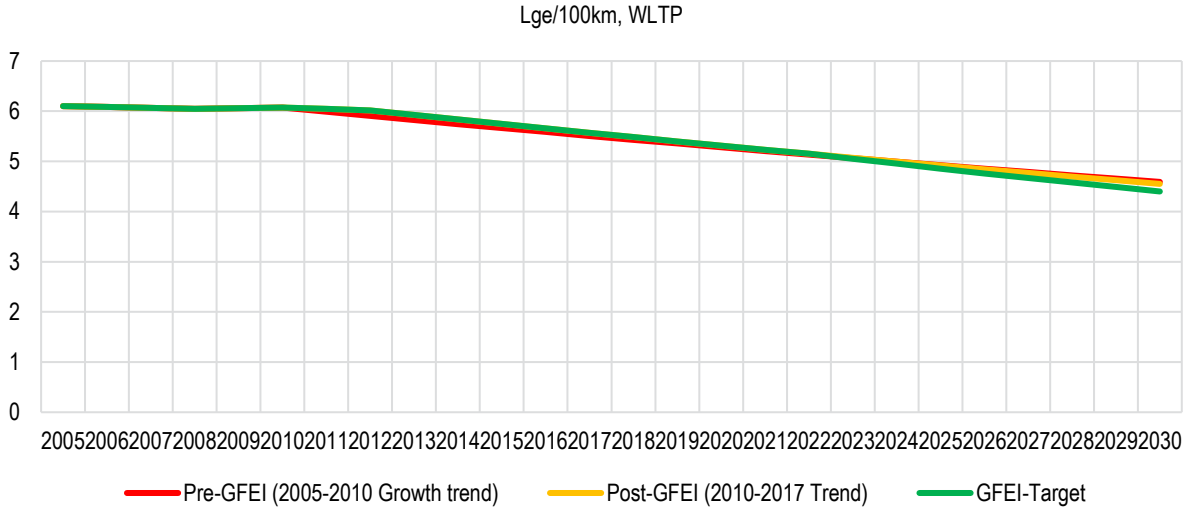
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-1.3%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-1.9%**



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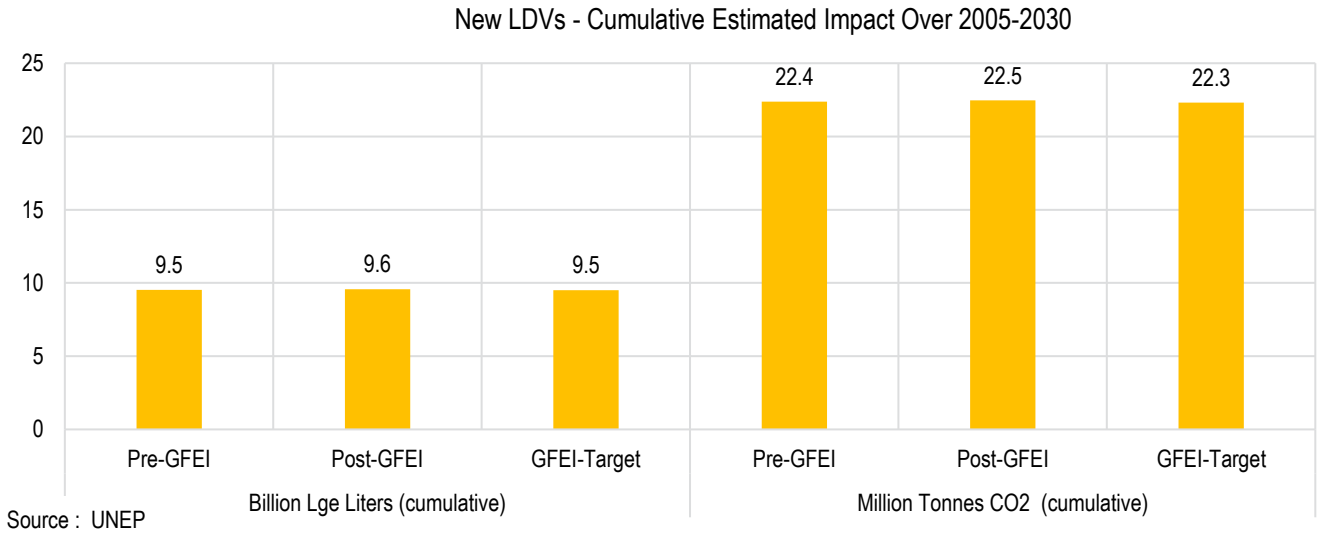


Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

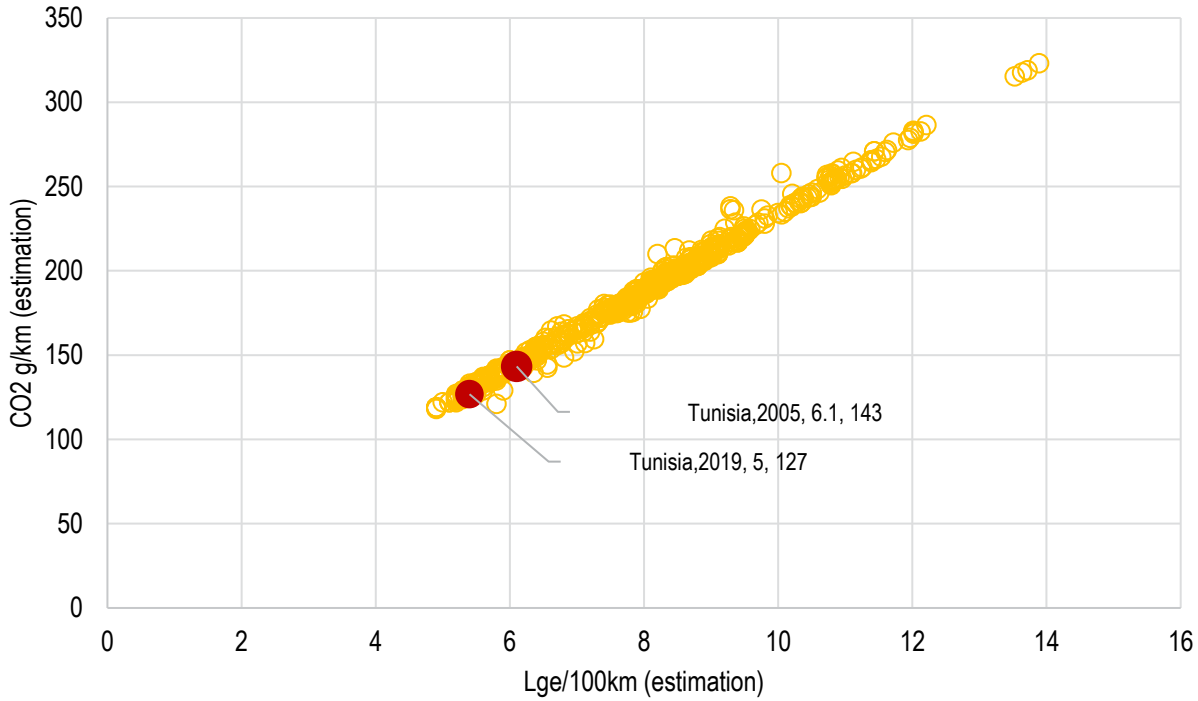
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



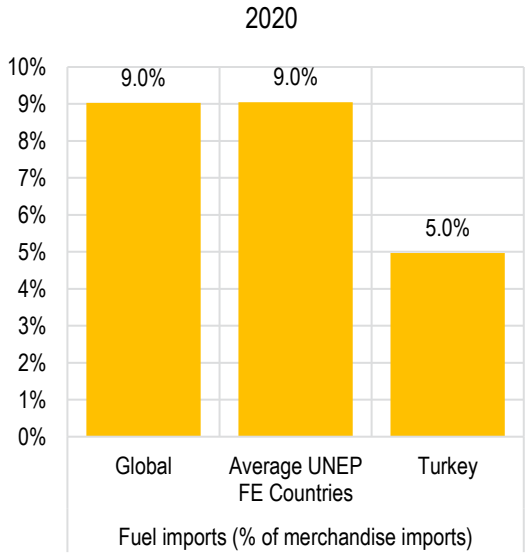
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

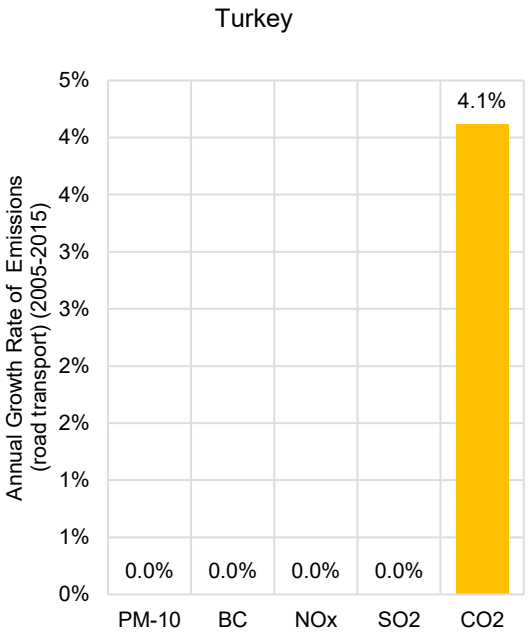
The assessment indicates that if Tunisia implements a fuel economy policy for first-time registered LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 326 million litres of gasoline-equivalent & 0.77 million tonnes of CO2 cumulative from newly registered LDVs

LDV FUEL ECONOMY COUNTRY REPORT FOR TURKEY

		Year	Source
Population (million)	84	2020	7
Income Level Category	Upper middle income		7
GDP per Capita (PPP, Curent USD)	28114	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	610	2020	6
Gasoline Price $/l	1.0	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	7.6	2018	13
Employment (Transport+,000)	1561	2019	11
Fuel Economy (Lge/100 km, WLTP) -	5	2019	1
Average CO2 emissions/kilometre (g/km, WLTP) -	131	2019	1
Average displacement (cm3) -	1520	2019	1
Average kerb weight (kg) -	1398	2019	1
Average power (kw) -	88	2019	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.028	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.236	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	18.7	2019	8
Transport CO2 Emissions per Capita (tonnes) -	5.0	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	-1.3%	2000-18	16
Annual rate of transport energy consumption growth	4.7%	2000-18	16
LDV Import value (Million USD)	7929	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

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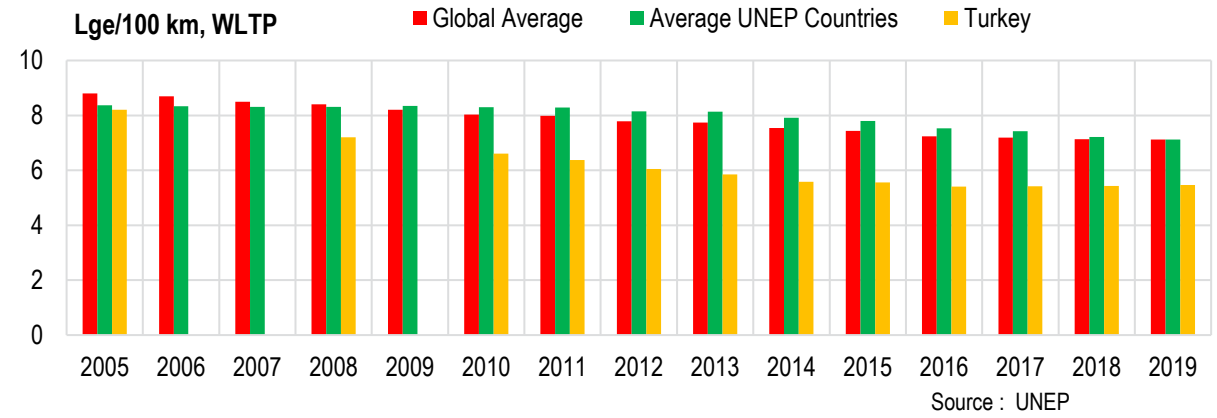
FUEL ECONOMY TRENDS



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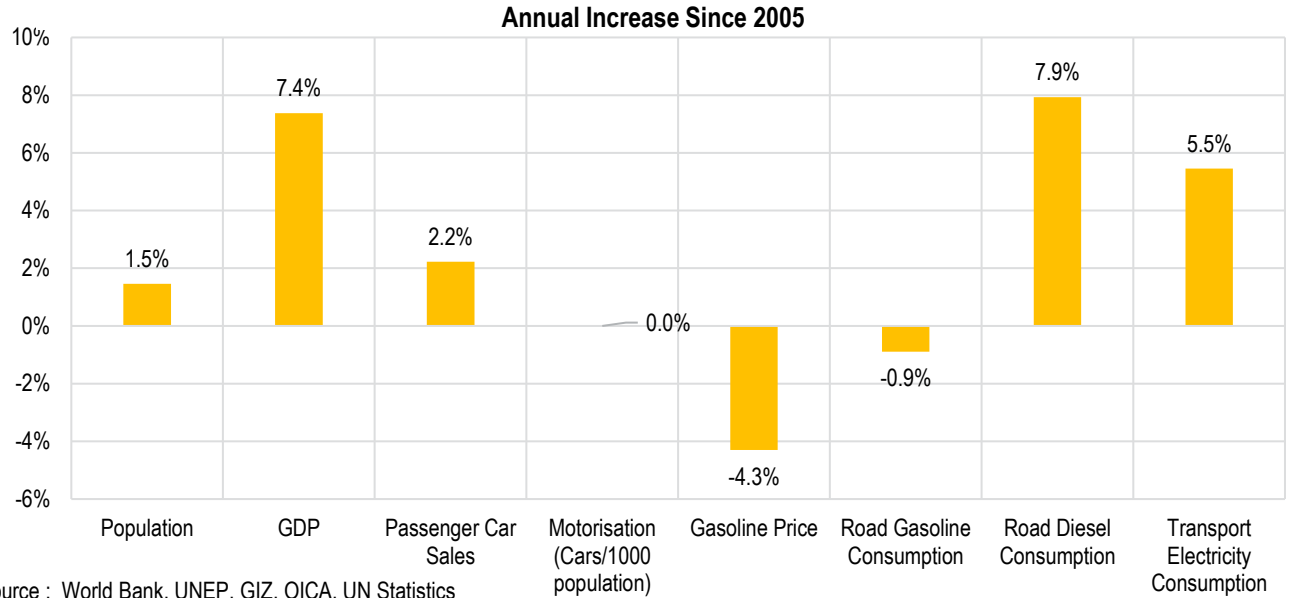
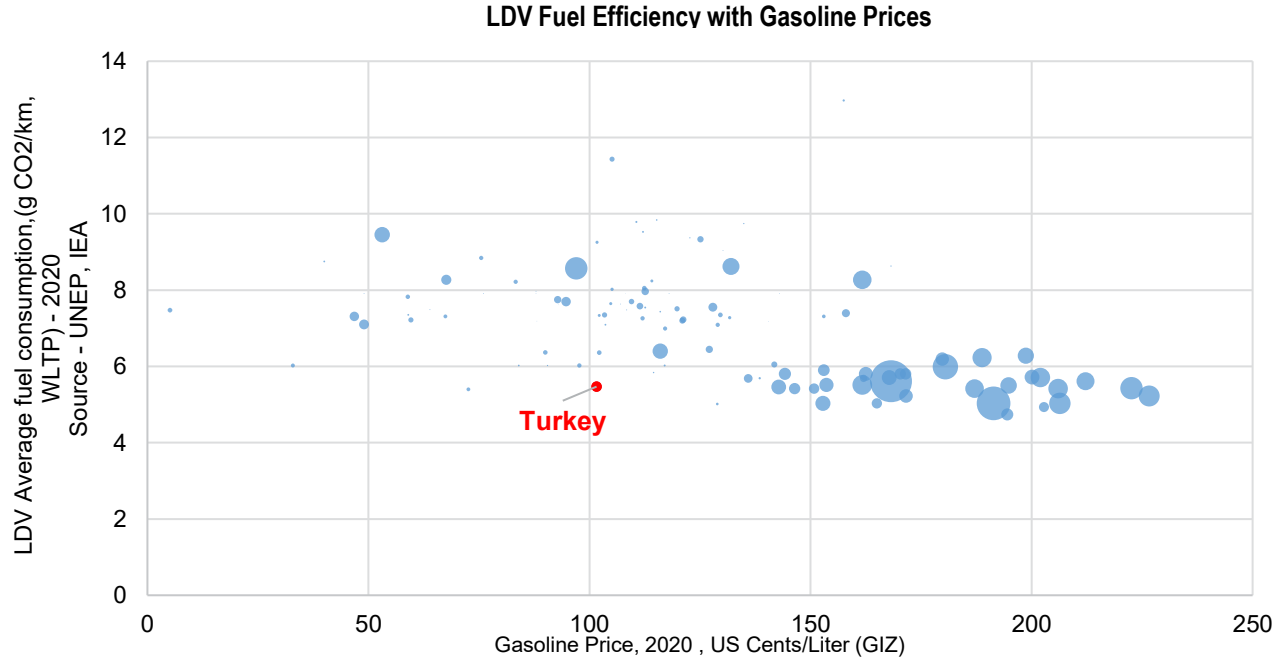


Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

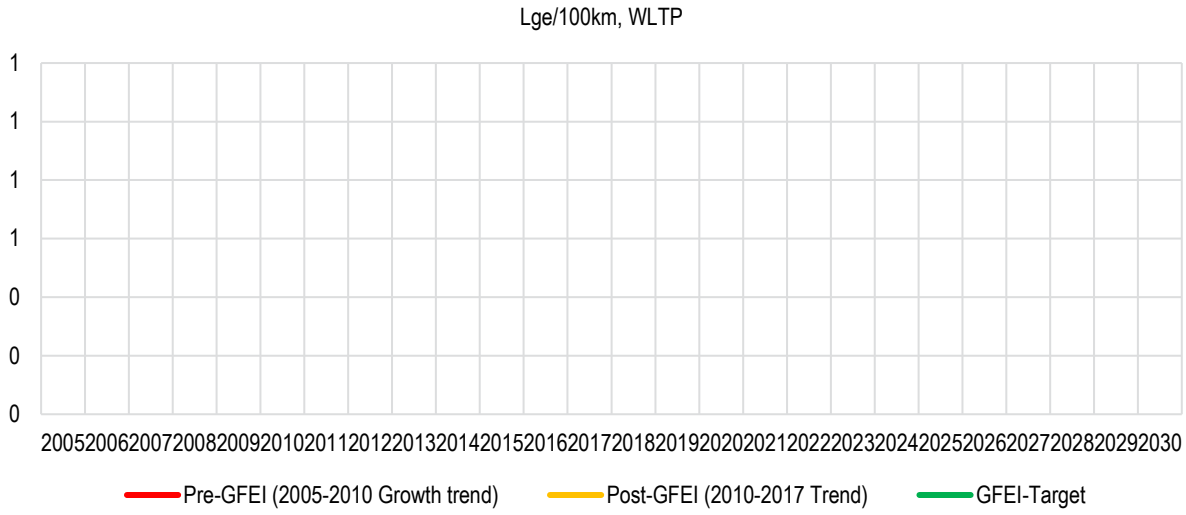
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

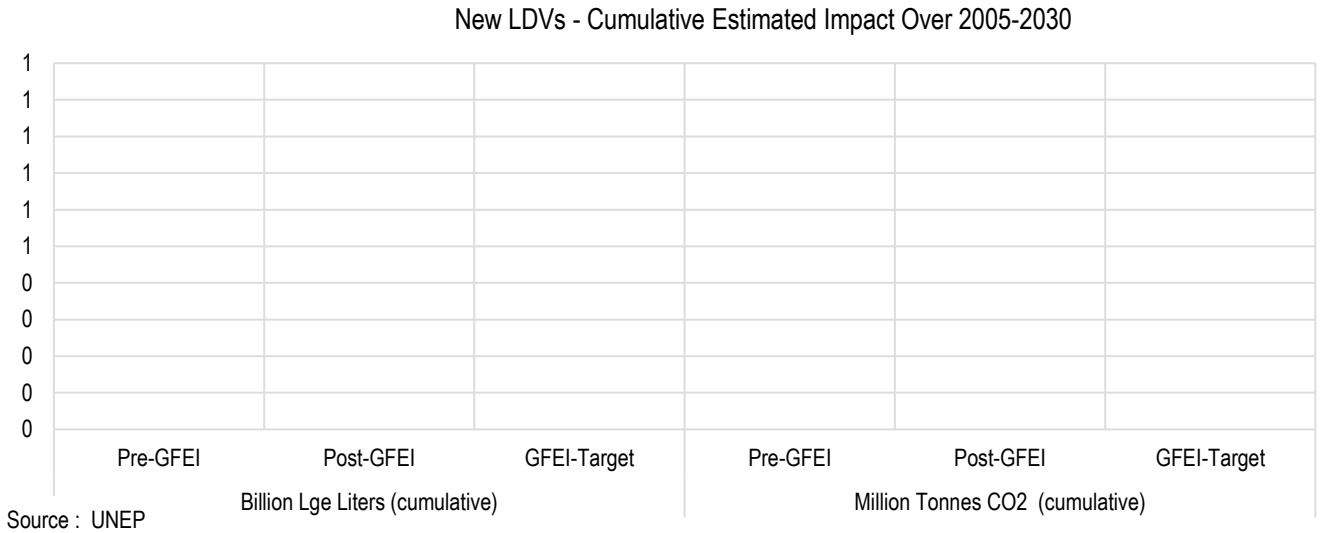
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

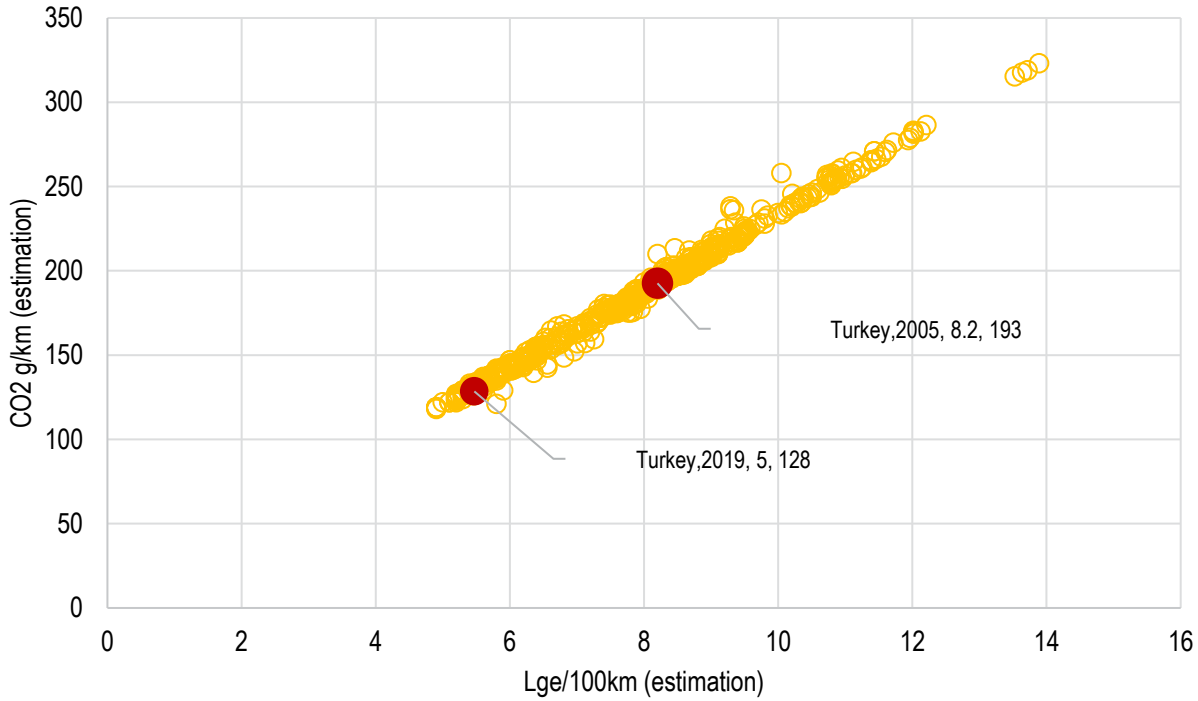
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



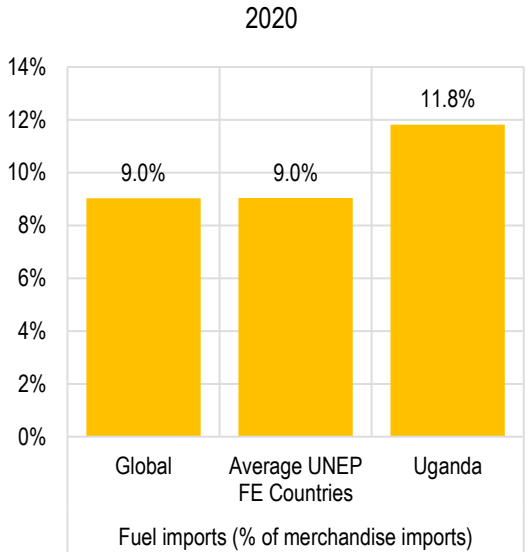
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

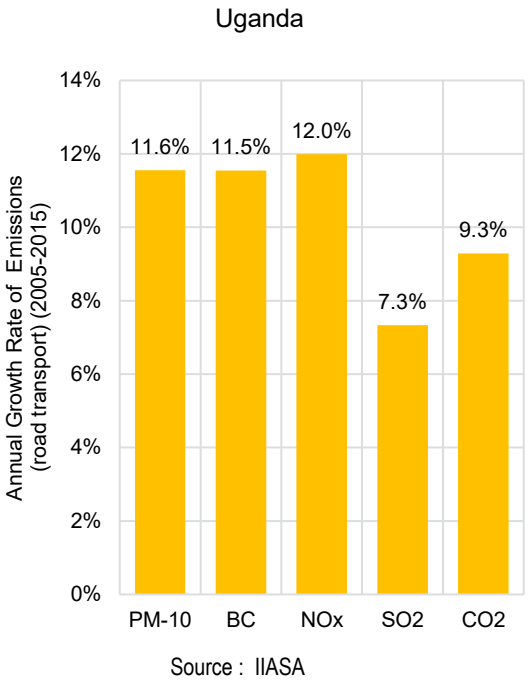
#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR UGANDA

		Year	Source
Population (million)	46	2020	7
Income Level Category	Low income		7
GDP per Capita (PPP, Curent USD)	2293	2020	7
Motorisation (Cars/1000 population)	4	2020	10
Car Sales (000)	14	2020	6
Gasoline Price $/l	1.3	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	3.9	2018	13
Employment (Transport+,000)	403	2019	11
Fuel Economy (Lge/100 km, WLTP) -	9	2017	1
Average CO2 emissions/kilometre (g/km, WLTP) -	219	2017	1
Average displacement (cm3) -	2128	2017	1
Average kerb weight (kg) -	1802	2017	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	15	2017	1
Cumulative number of LDVs (total sample size,000) -	198		1
Diesel Share in LDV (sample,%)	9%	2017	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.013	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.012	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	7.1	2019	8
Transport CO2 Emissions per Capita (tonnes) -	0.1	2019	14
Road Transport PM Emissions per Capita (grams) -	21.4	2015	14
Road Transport NOx Emissions per Capita (grams)-	427.5	2015	14
Road Transport BC Emissions per Capita (grams)-	10.3	2015	14
LDV Emission Standards -	0	2019	1
Diesel Sulphur Levels (ppm) -	50	2019	1
Gasoline Sulphur Levels (ppm) -	150	2019	1
Annual rate of economy-wide energy intensity growth	-1.6%	2000-18	16
Annual rate of transport energy consumption growth	7.7%	2000-18	16
LDV Import value (Million USD)	179	2020	3



Source : World Bank

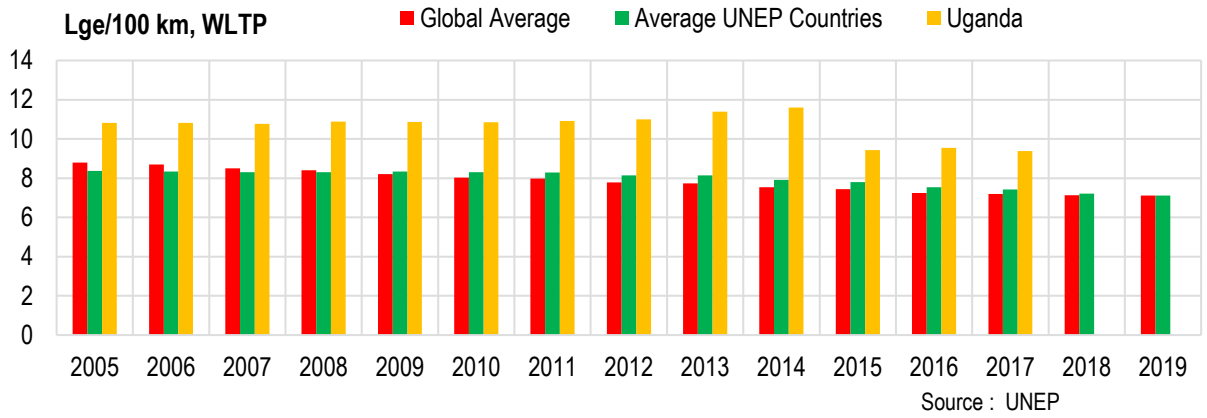


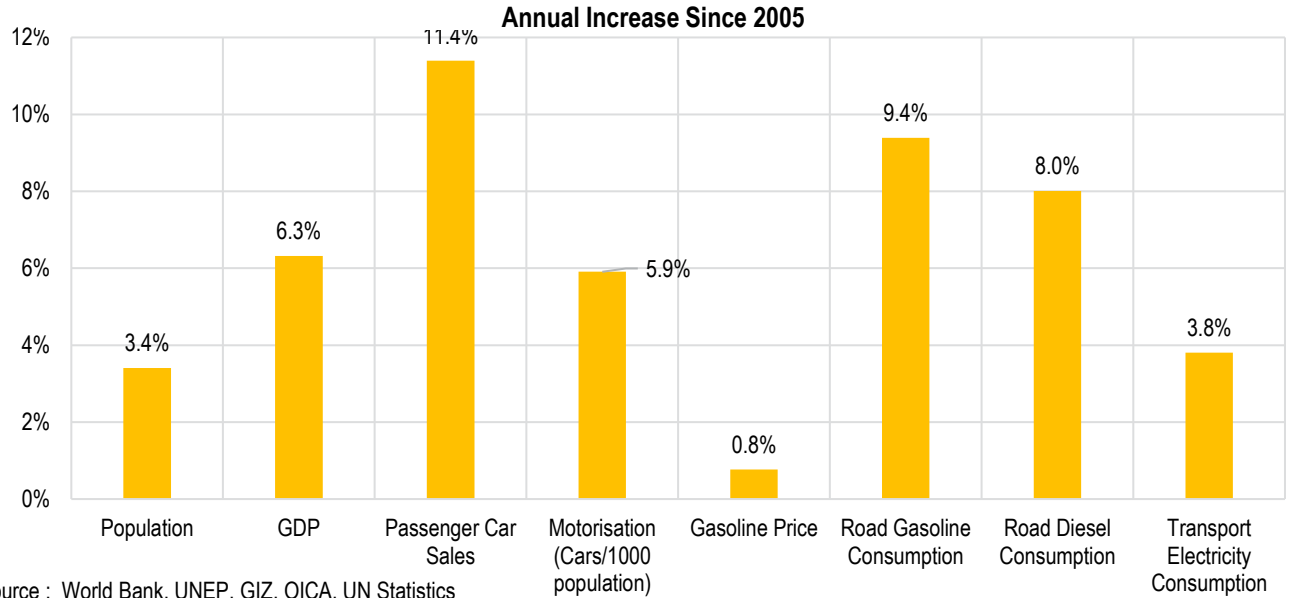
Source : IIASA

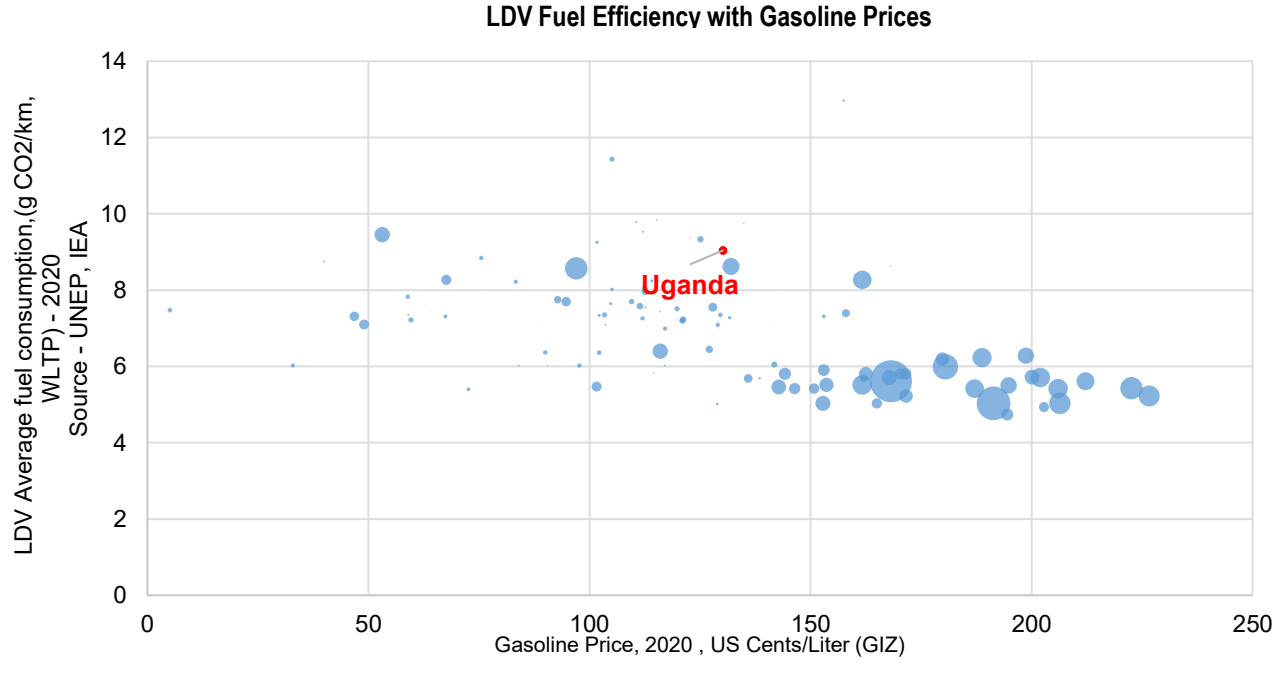
Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
7 World Bank
8 UN Statistics Division
9 SLOCAT &GIZ
10 Estimated using growth and sales data
11 Employment is for Transport; storage and communication, ILO
12 International Transport Forum
13 Koks, E.E. et al. A global multi-hazard risk analysis of road
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

FUEL ECONOMY TRENDS







Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

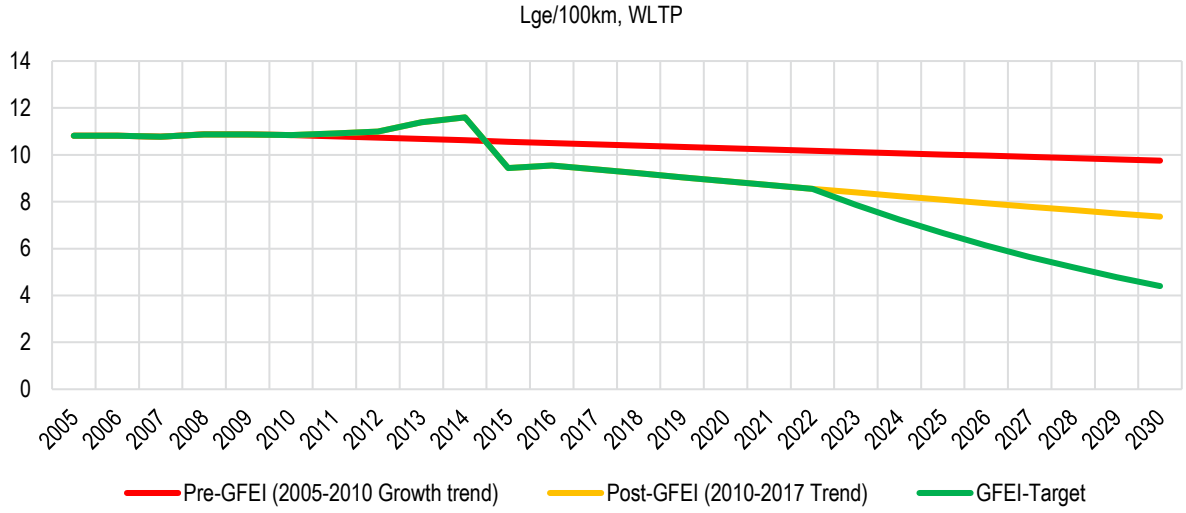
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

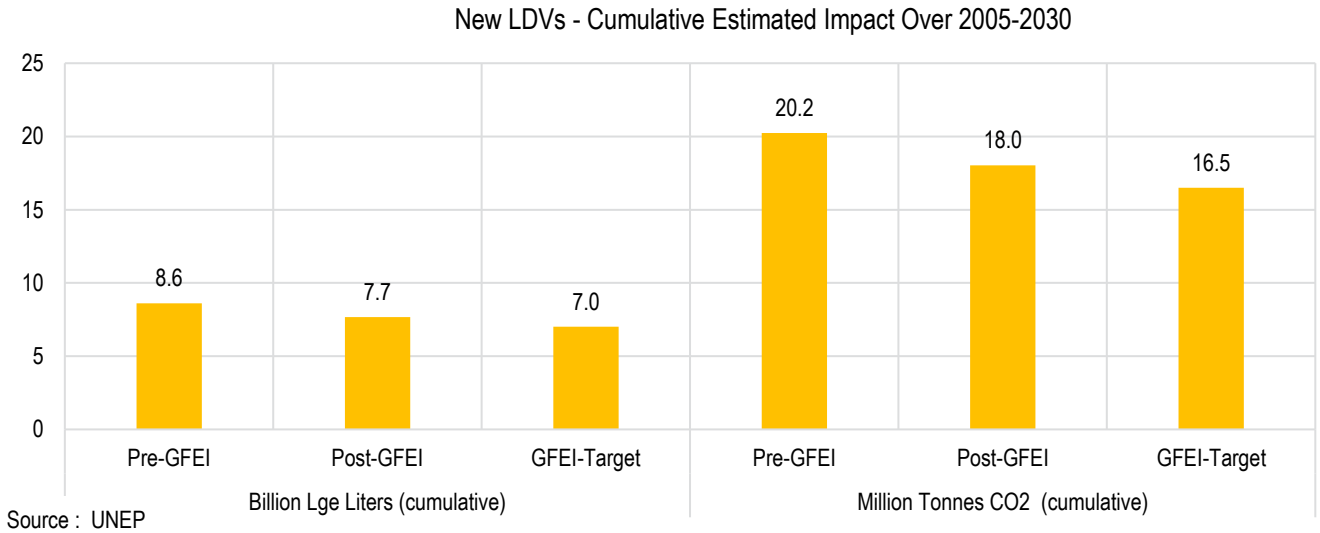
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-2.0%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-6.8%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

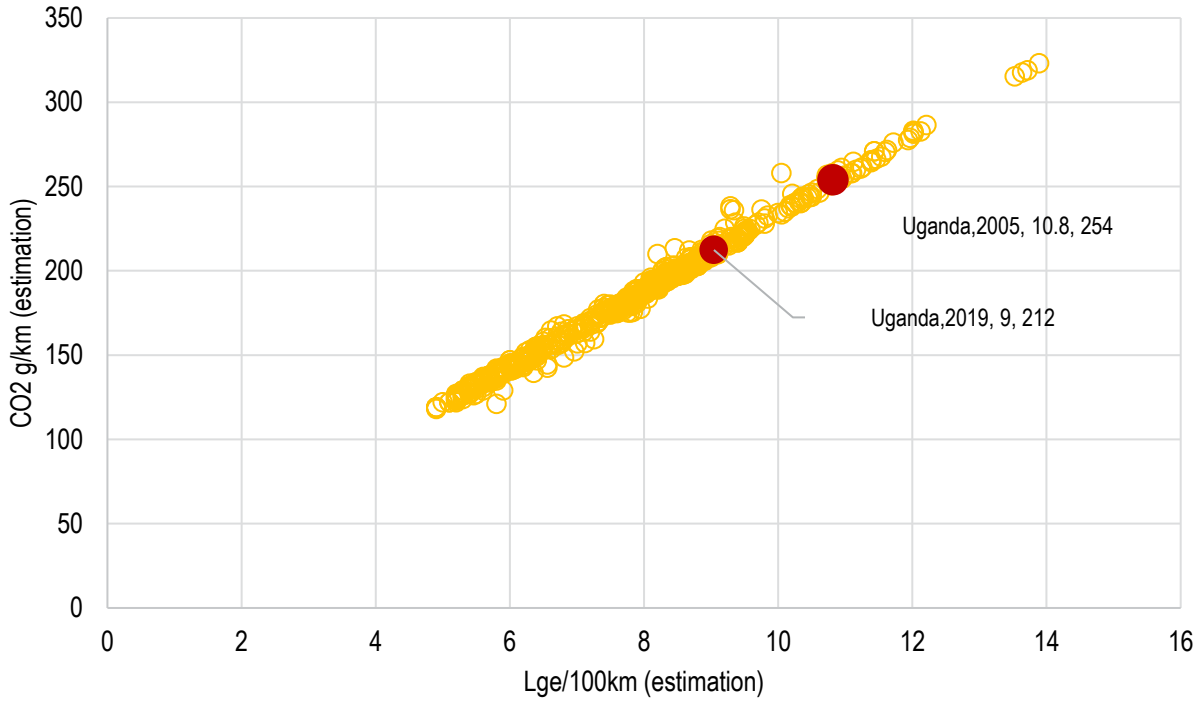
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

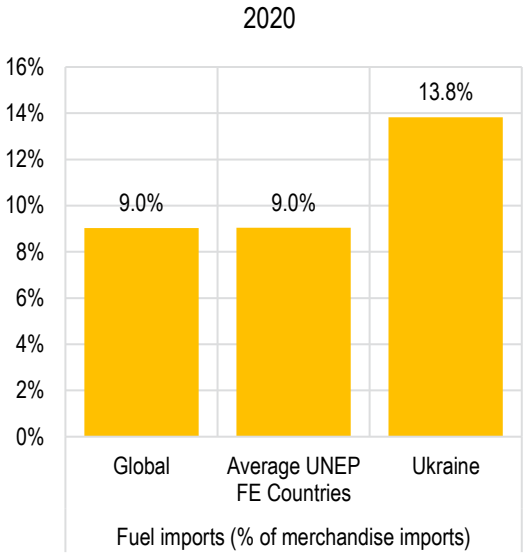
The UNEP signed agreements with the Ministry of Energy and Mineral Development (MEMD) on 9 March 2017 to support the Automotive Fuel Efficiency Policy Review and Dissemination in Uganda and with Makerere University College of Business and Management Sciences (MUK) on 25 April 2017 to develop Automotive Fuel Efficiency Policies in Uganda. On 17 August 2017, the two institutions jointly held a working group meeting to discuss the vehicle data capture tool, the update of the vehicle inventory and the fuel economy policy proposals. Makerere University presented the feebate design that was proposed for Uganda. In 2018, a study recommended that the government ministries specifically Ministry of Works and Transport, Ministry of Energy and Mineral Development, and Departments such as Uganda National Bureau of Statistics and Uganda Revenue Authority should take a joint lead and work in partnership for instance in data collection and sharing on parameters of imported vehicles, developing a website, providing information and training to the vehicle dealers and buyers, on issues of fuel efficiency and carbon emission. Some of the specific recommendations include - replace environmental levy with an emission tax as implemented in South Africa, so that the impact is environmentally responsive, draft policies that support environment improvement programmes and extend the feebate system to other weights such as heavy-duty vehicles and motorcycles.

Uganda's NAMA has suggested implementation of following transport measures - Comprehensive measures that cover policy measures, fuel standards and public awareness, in addition to hardware (vehicle inspection, labelling, assembly and recycling) components.

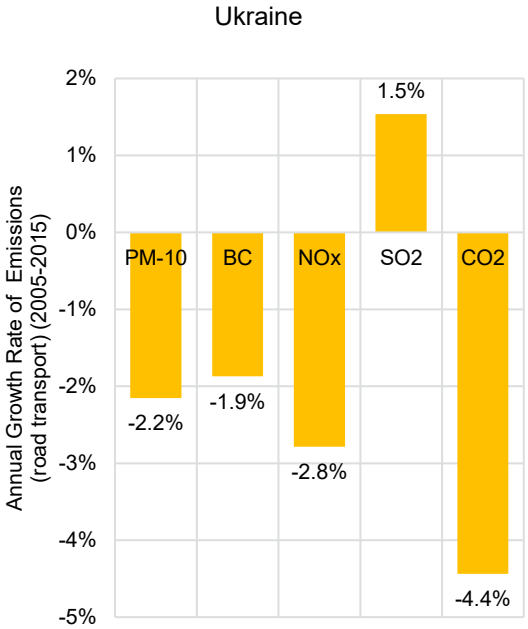
The assessment indicates that if Uganda implements a fuel economy policy for first-time registered LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 1.2 billion litres of gasoline-equivalent & 2.88 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR UKRAINE

		Year	Source
Population (million)	44	2020	7
Income Level Category	Lower middle income		7
GDP per Capita (PPP, Curent USD)	12343	2020	7
Motorisation (Cars/1000 population)	164	2020	10
Car Sales (000)	85	2020	6
Gasoline Price $/l	1.1	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	12.2	2018	13
Employment (Transport+,000)	1509	2019	11
Fuel Economy (Lge/100 km, WLTP) -	7	2019	1
Average CO2 emissions/kilometre (g/km, WLTP) -	157	2018	1
Average displacement (cm3) -	1892	2019	1
Average kerb weight (kg) -	1548	2019	1
Average power (kw) -	115	2019	1
Average Age of newly registered cars (years) -	3	2018	1
Cumulative number of LDVs (total sample size,000) -	1888		1
Diesel Share in LDV (sample,%)	55%	2018	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.039	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.090	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	149.6	2019	8
Transport CO2 Emissions per Capita (tonnes) -	4.4	2019	14
Road Transport PM Emissions per Capita (grams) -	50.8	2015	14
Road Transport NOx Emissions per Capita (grams)-	3378.9	2015	14
Road Transport BC Emissions per Capita (grams)-	29.2	2015	14
LDV Emission Standards -	Euro 6	2019	1
Diesel Sulphur Levels (ppm) -	10	2019	1
Gasoline Sulphur Levels (ppm) -	10	2019	1
Annual rate of economy-wide energy intensity growth	-4.0%	2000-18	16
Annual rate of transport energy consumption growth	0.0%	2000-18	16
LDV Import value (Million USD)	3505	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

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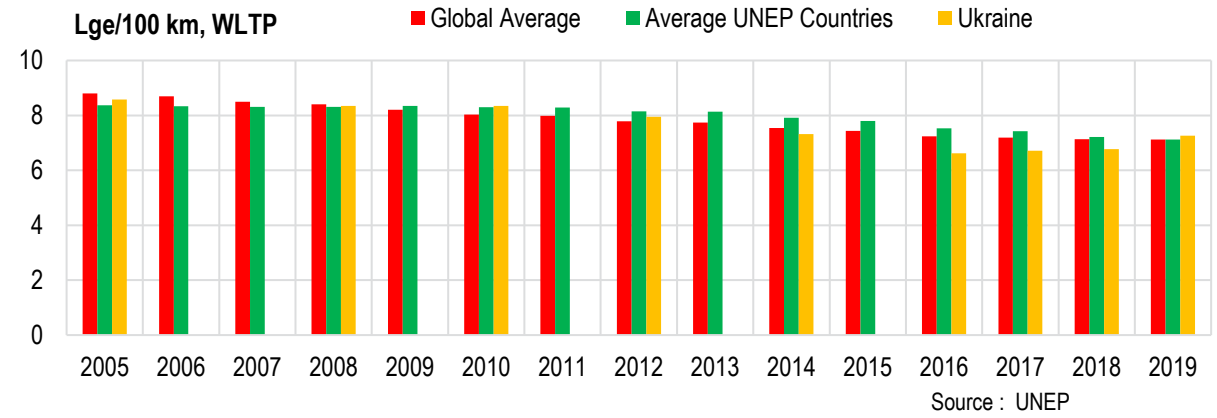
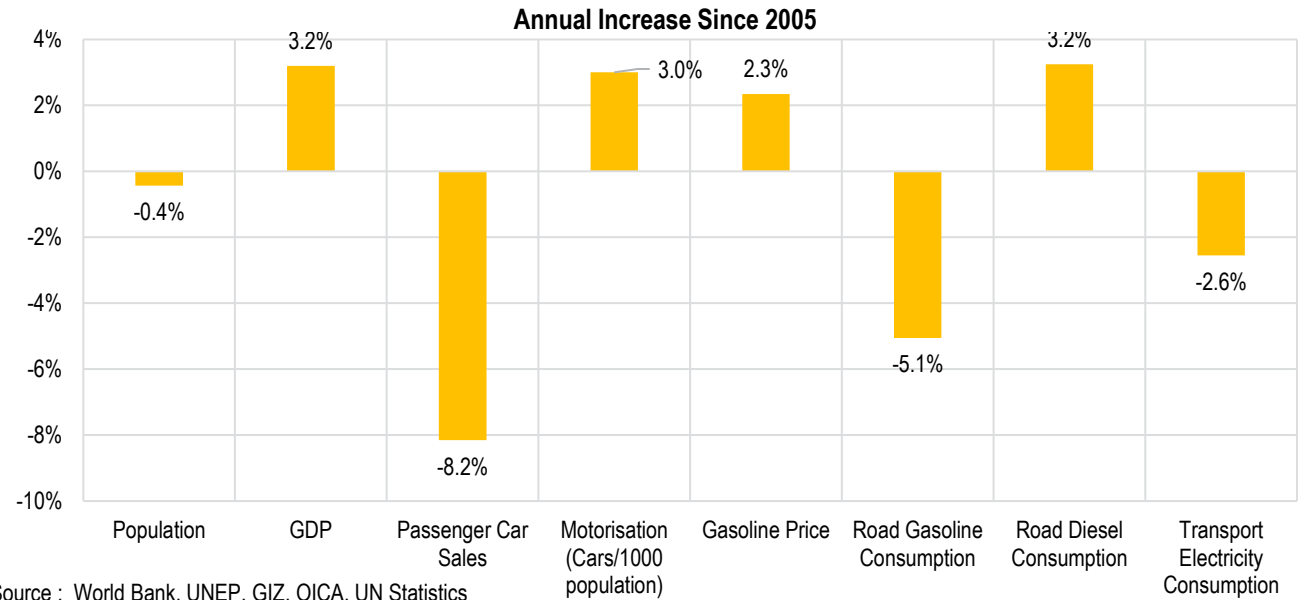
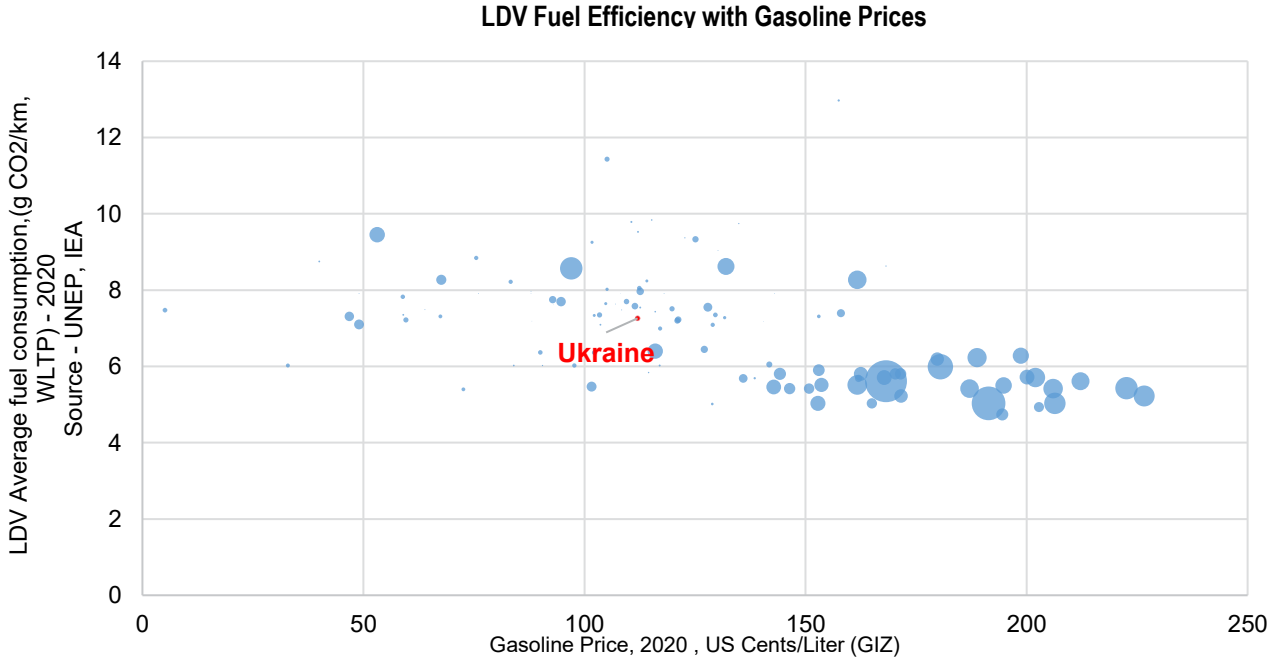
FUEL ECONOMY TRENDS





Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

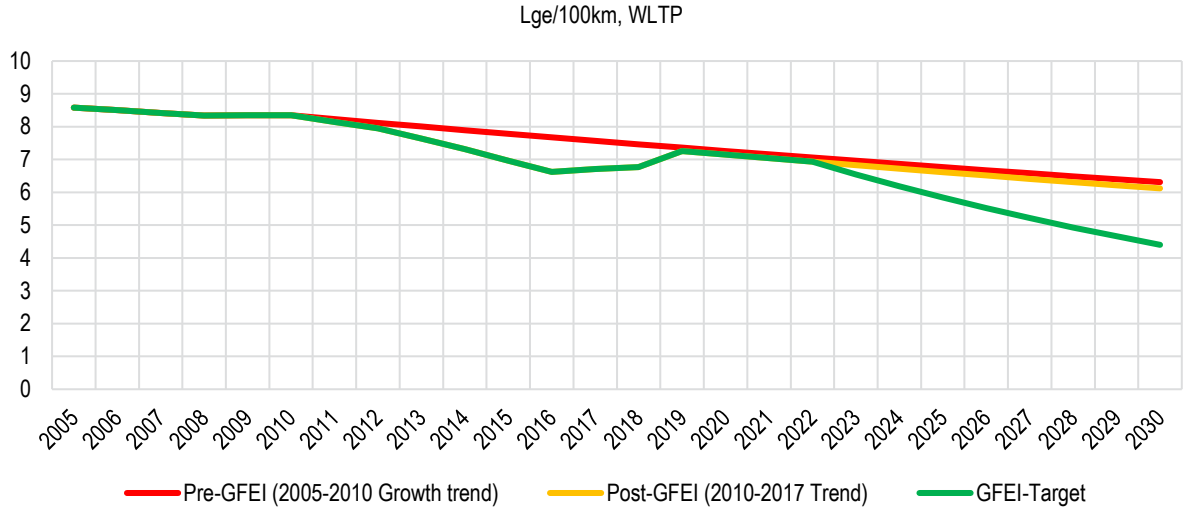
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

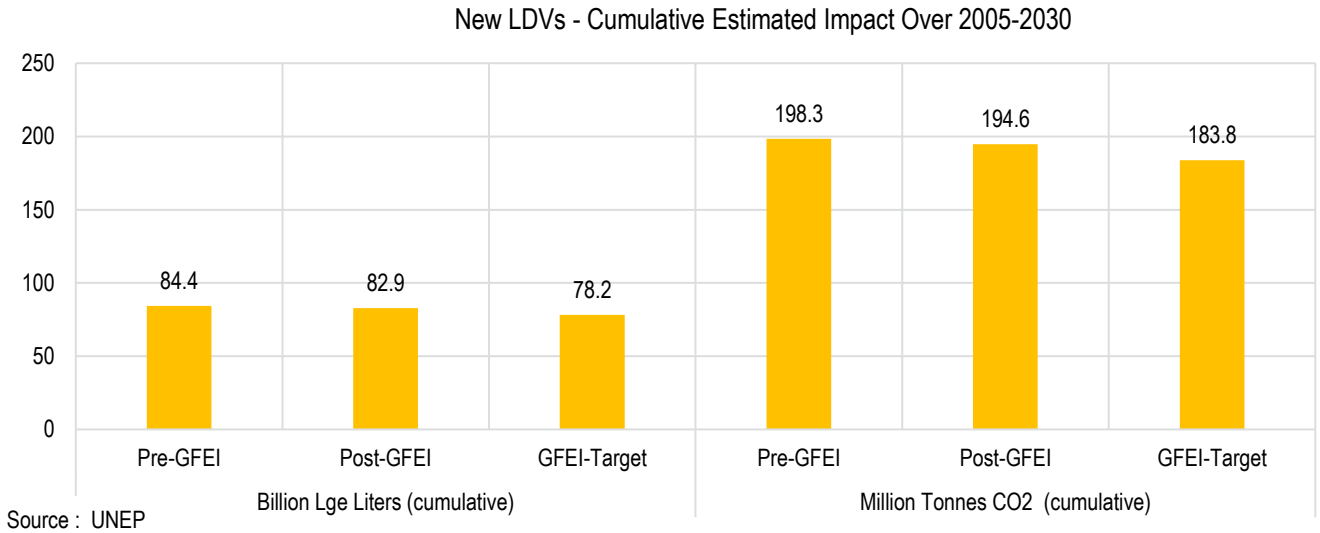
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-1.5%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-4.7%**



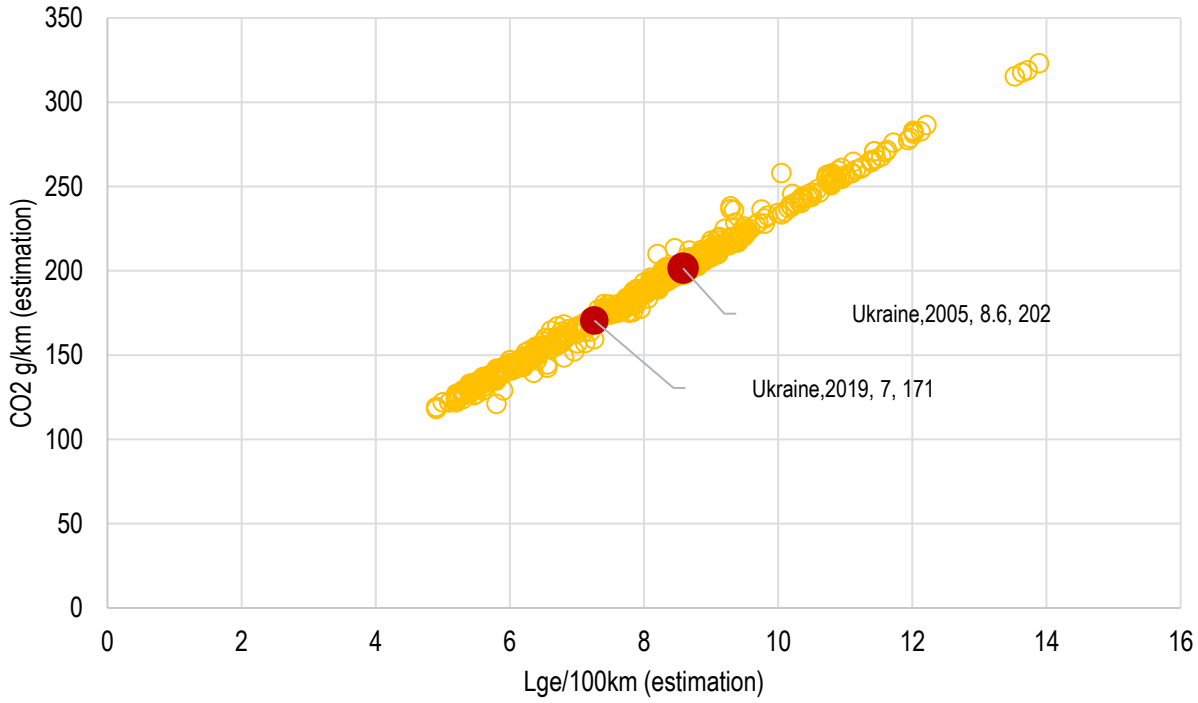
Source : UNEP



Source : UNEP

Notes:
1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions
2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth
3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend
4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030
5) The Impact assessment assumes
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km
b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/
c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge
d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

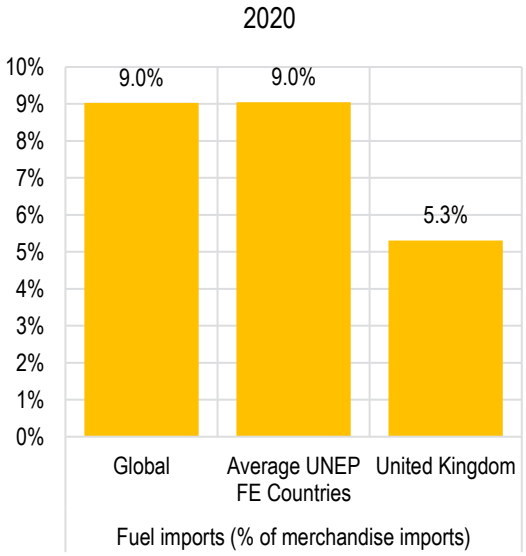
Source : UNEP

The GFEI national project was signed in November 2015 with the International Standardization Academy in Ukraine. The local implementing partner worked closely with the Ministry of Interior of Ukraine's Main Service Center to gather vehicle fleet data to establish the fuel economy baseline. Following the vehicle fleet data collection and analysis, there was a formal government launch at a meeting in Kiev on 12 October 2017. The meeting discussed the draft findings of baseline vehicle data from 2005-2016, and potential policies to improve fuel economy and promote electric mobility. Following the October 2017 launch of the GFEI in Ukraine, the Ukrainian Parliament (Verkhovna Rada) has adopted a provisional VAT and excise tax exemption for all EV's for 2018. The regulation was extended through 2022. More comprehensive control is being developed to create a sustainable environment for further development of electric mobility in Ukraine, as well as favourable conditions for investment opportunities in this market. The GFEI has actively supported the EV legislative act through its national partners the International Standardization Academy and the Ministry of Infrastructure. Ukraine has experienced steady and reliable growth in EV vehicles sales and has one of the most robust electrification rates in the world, with sales tripling in 2017 alone. Based on the outcomes of the auto fuel economy baseline analysis, an additional project has been approved for Ukraine to support the EU fuel label Directive transposition, an online fuel economy database for consumers and electric mobility policy. UNEP and Ukraine have also secured additional GEF funding of $1.8 million for continuing support for Ukraine's electric vehicle policies and fleet electrification.

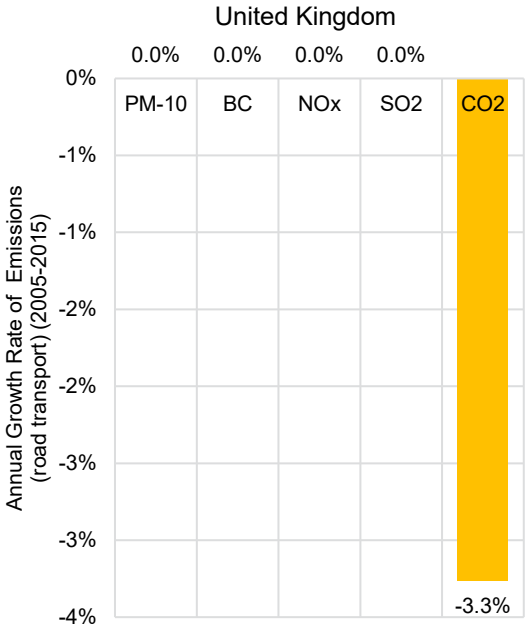
The assessment indicates that if Ukraine implements a fuel economy policy for first-time registered LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save about 5.1 billion litres of gasoline-equivalent (cumulative) & about 12 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR UNITED KINGDOM

		Year	Source
Population (million)	67	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	45853	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	1631	2020	6
Gasoline Price $/l	2.0	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	9.0	2018	13
Employment (Transport+,000)	3142	2019	11
Fuel Economy (Lge/100 km, WLTP) -	6	2019	1
Average CO2 emissions/kilometre (g/km, WLTP) -	146	2019	1
Average displacement (cm3) -	1630	2019	1
Average kerb weight (kg) -	1518	2019	1
Average power (kw) -	110	2019	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.183	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.397	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	81.2	2019	8
Transport CO2 Emissions per Capita (tonnes) -	5.5	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	#N/A	2000-18	16
Annual rate of transport energy consumption growth	0.0%	2000-18	16
LDV Import value (Million USD)	34729	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

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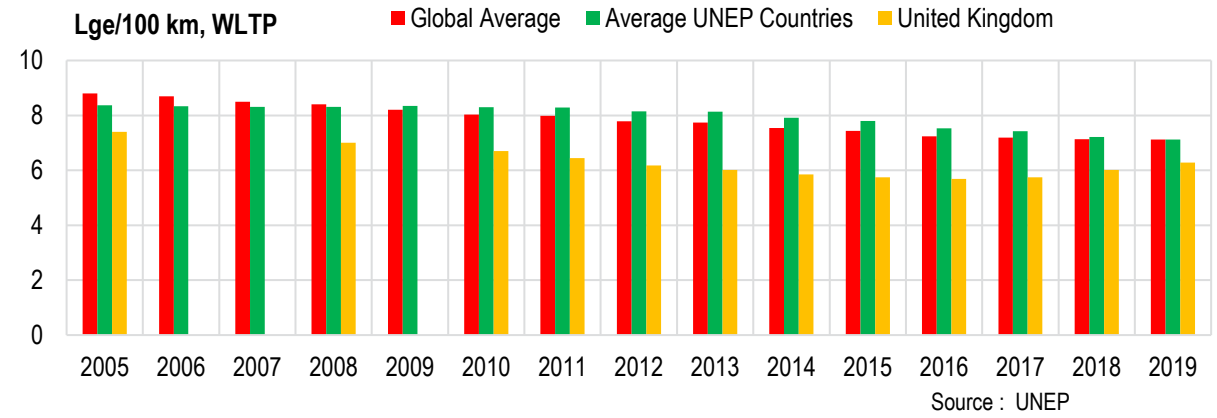
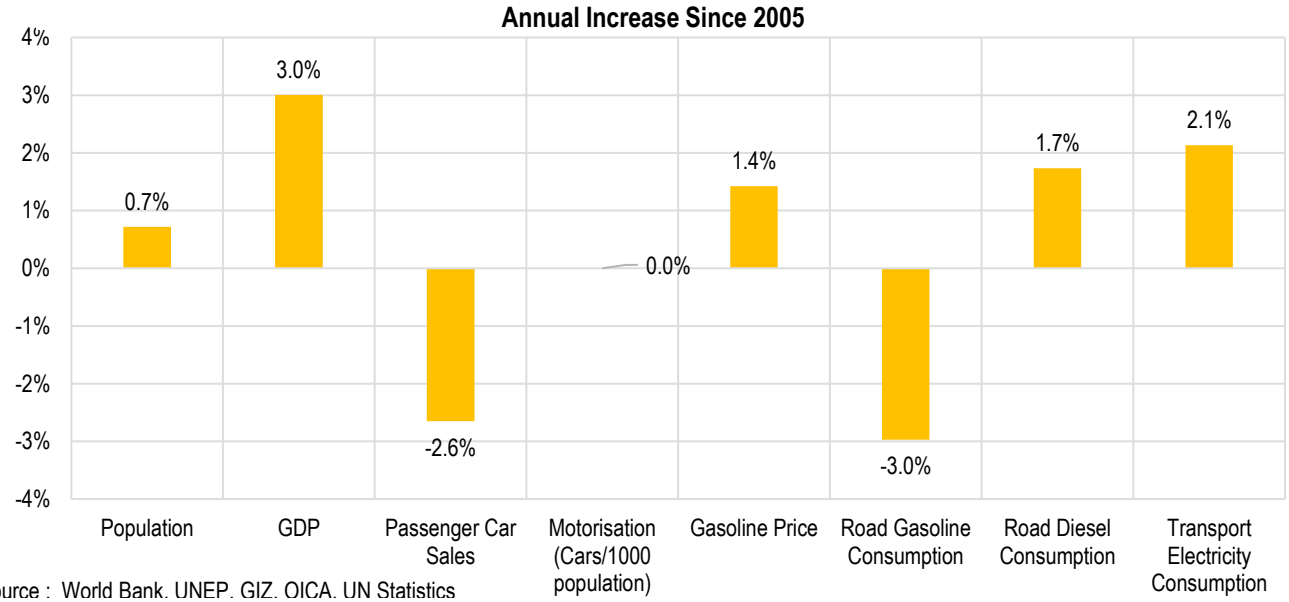
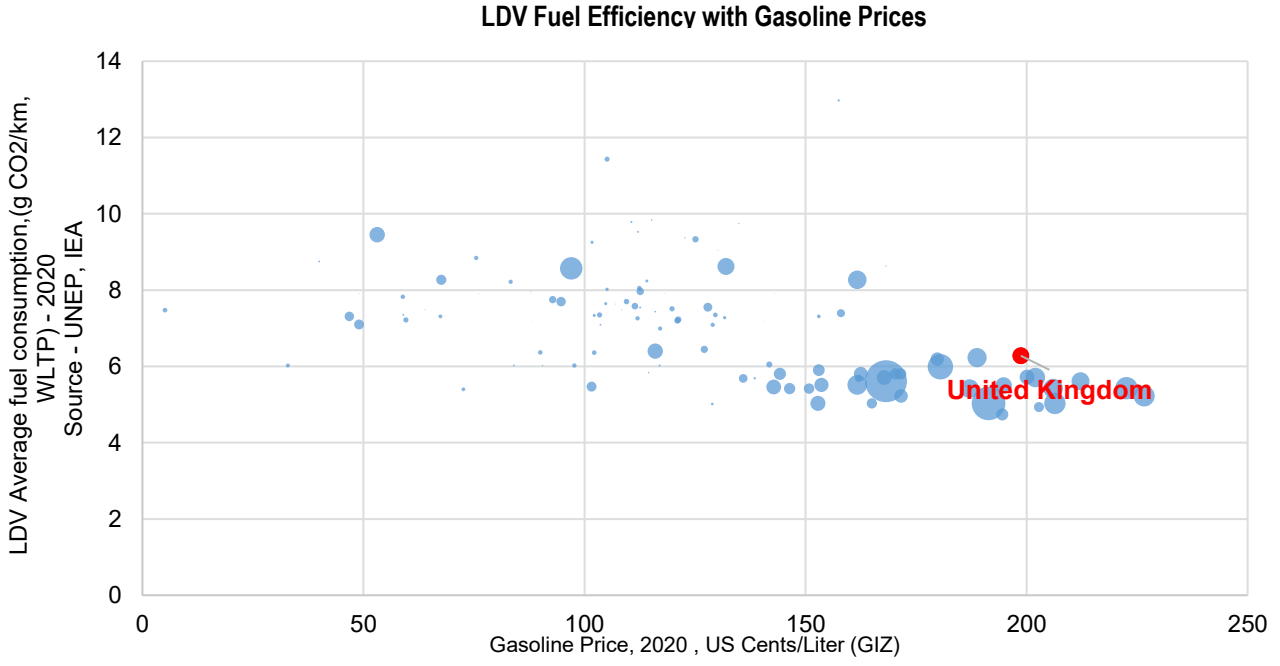
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

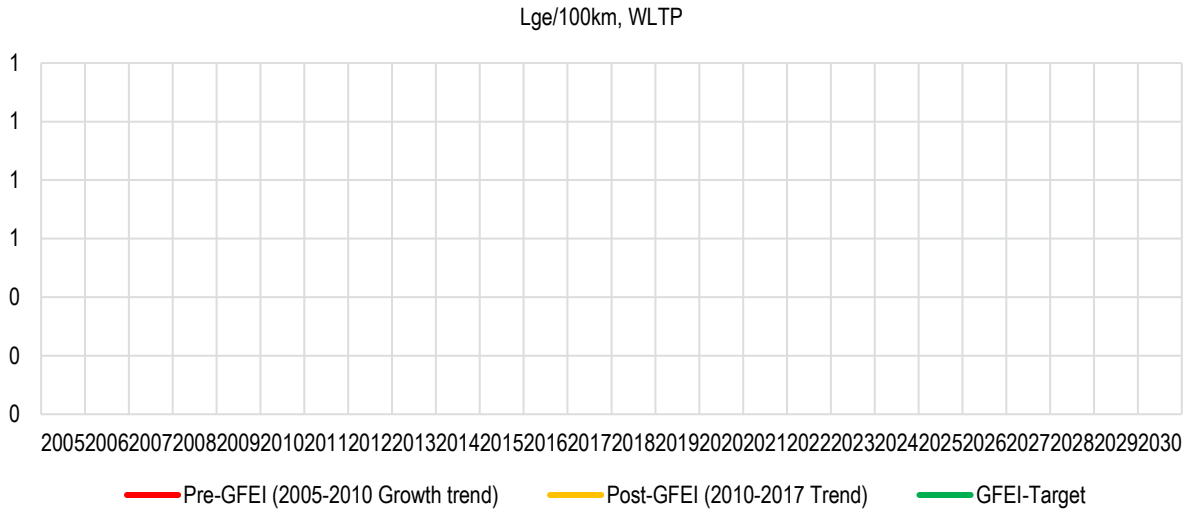
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

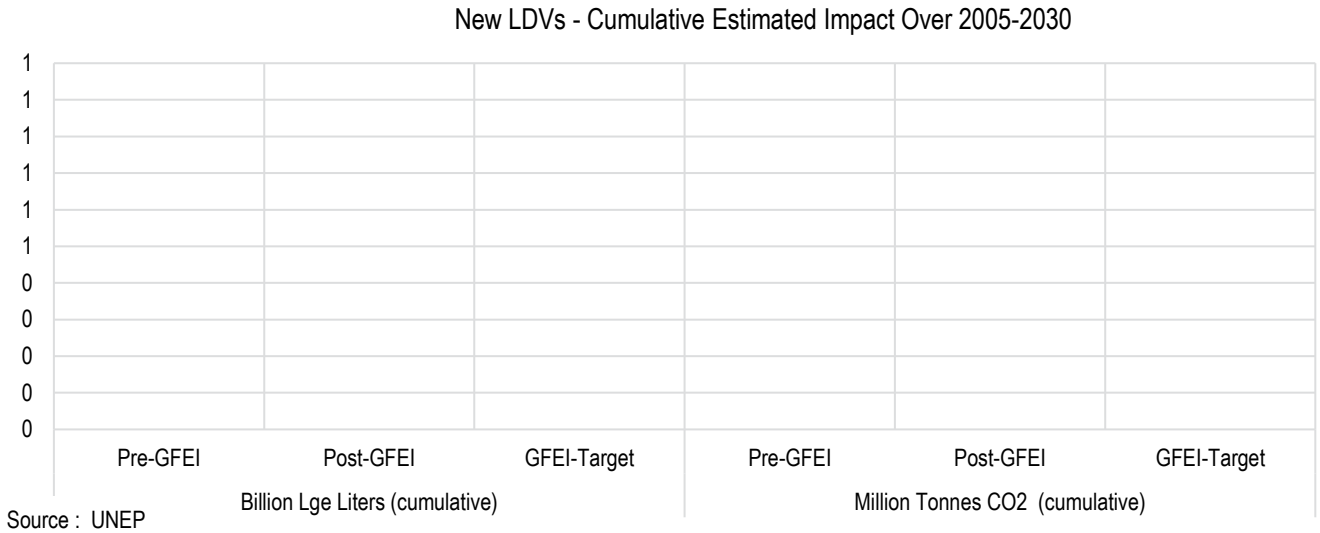
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

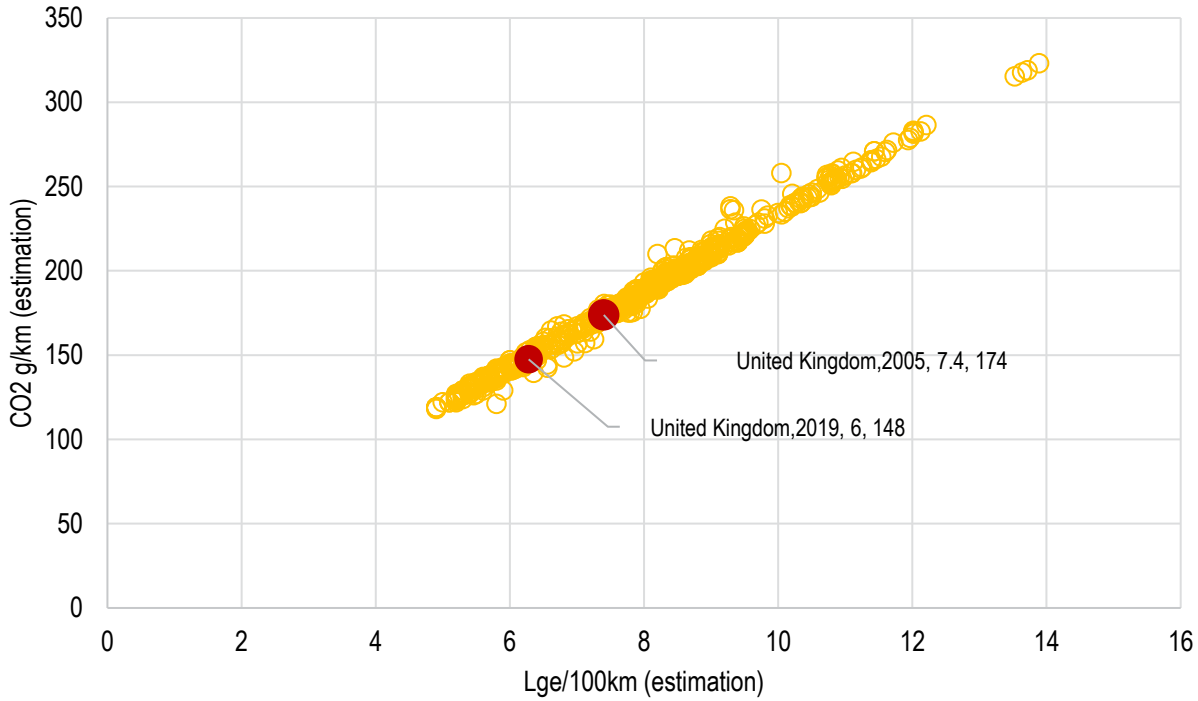
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



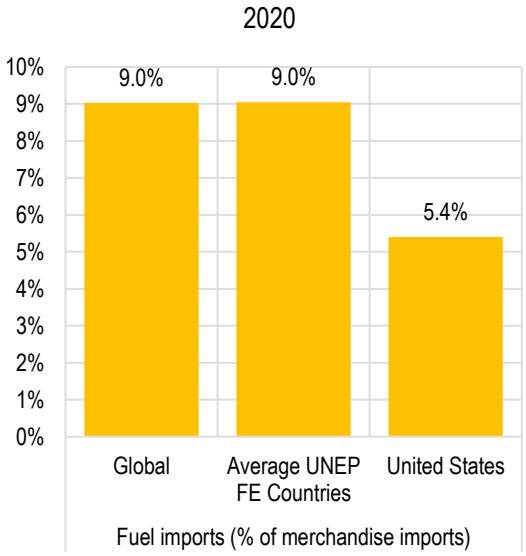
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

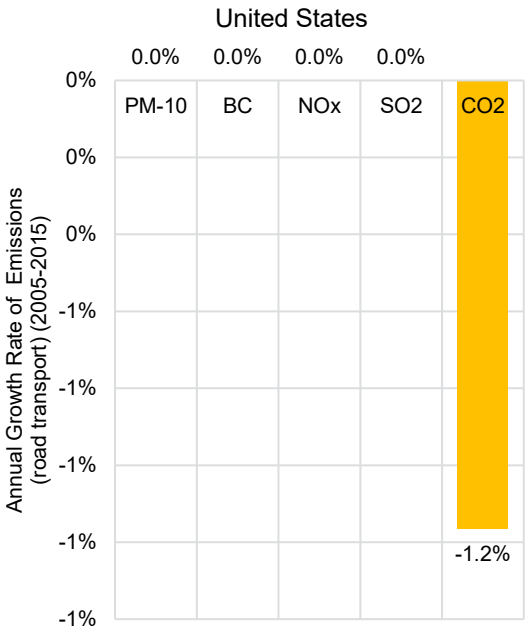
#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR UNITED STATES

		Year	Source
Population (million)	329	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	63414	2020	7
Motorisation (Cars/1000 population)	NA	2020	10
Car Sales (000)	3402	2020	6
Gasoline Price $/l	1.0	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	30.5	2018	13
Employment (Transport+,000)	16271	2019	11
Fuel Economy (Lge/100 km, WLTP) -	9	2017	1
Average CO2 emissions/kilometre (g/km, WLTP) -	198	2019	1
Average displacement (cm3) -	2790	2019	1
Average kerb weight (kg) -	1768	2019	1
Average power (kw) -	179	2018	1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -			1
Diesel Share in LDV (sample,%)	#N/A	#N/A	1
Is Fuel Economy included in NDC?	#N/A	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	#N/A	2021	9
Transport Gasoline Consumption Tonnes/Capita -	1.193	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.431	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	42.0	2019	8
Transport CO2 Emissions per Capita (tonnes) -	15.6	2019	14
Road Transport PM Emissions per Capita (grams) -	0.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	0.0	2015	14
Road Transport BC Emissions per Capita (grams)-	0.0	2015	14
LDV Emission Standards -	#N/A	2019	1
Diesel Sulphur Levels (ppm) -	#N/A	2019	1
Gasoline Sulphur Levels (ppm) -	#N/A	2019	1
Annual rate of economy-wide energy intensity growth	#N/A	2000-18	16
Annual rate of transport energy consumption growth	0.5%	2000-18	16
LDV Import value (Million USD)	145743	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
7 World Bank
8 UN Statistics Division
9 SLOCAT &GIZ
10 Estimated using growth and sales data
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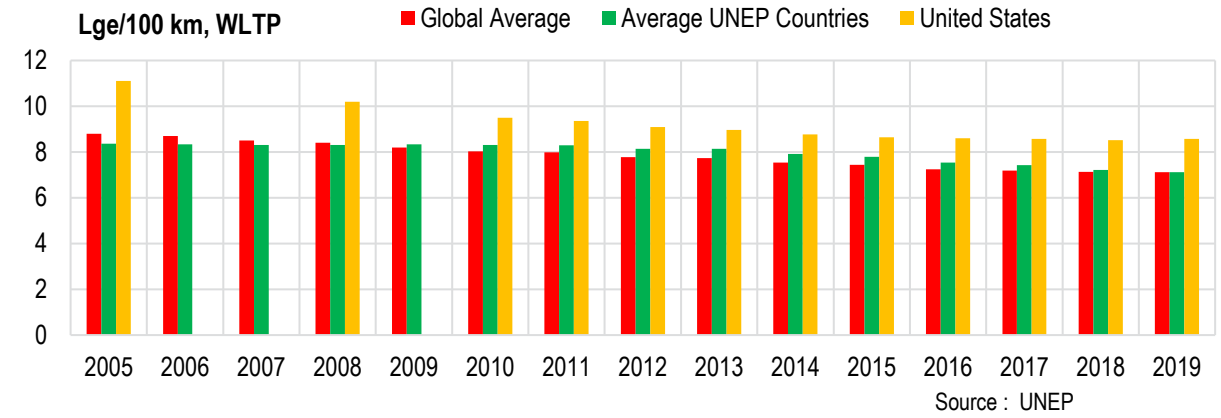
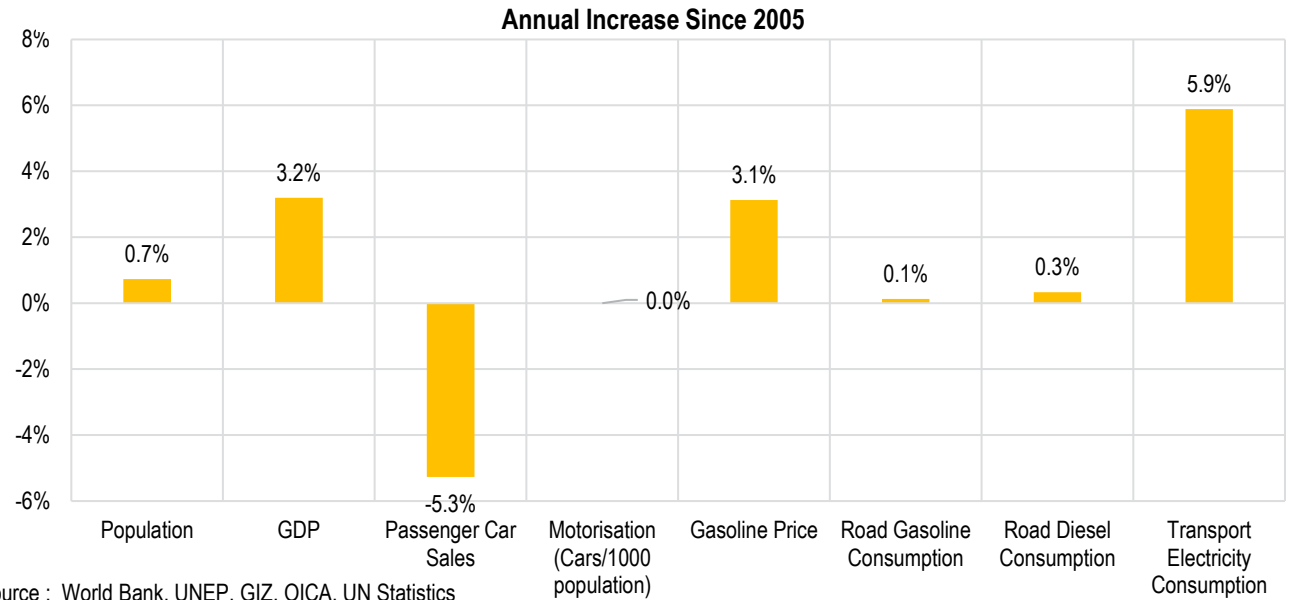
13 Koks, E.E. et al. A global multi-hazard risk analysis of road
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

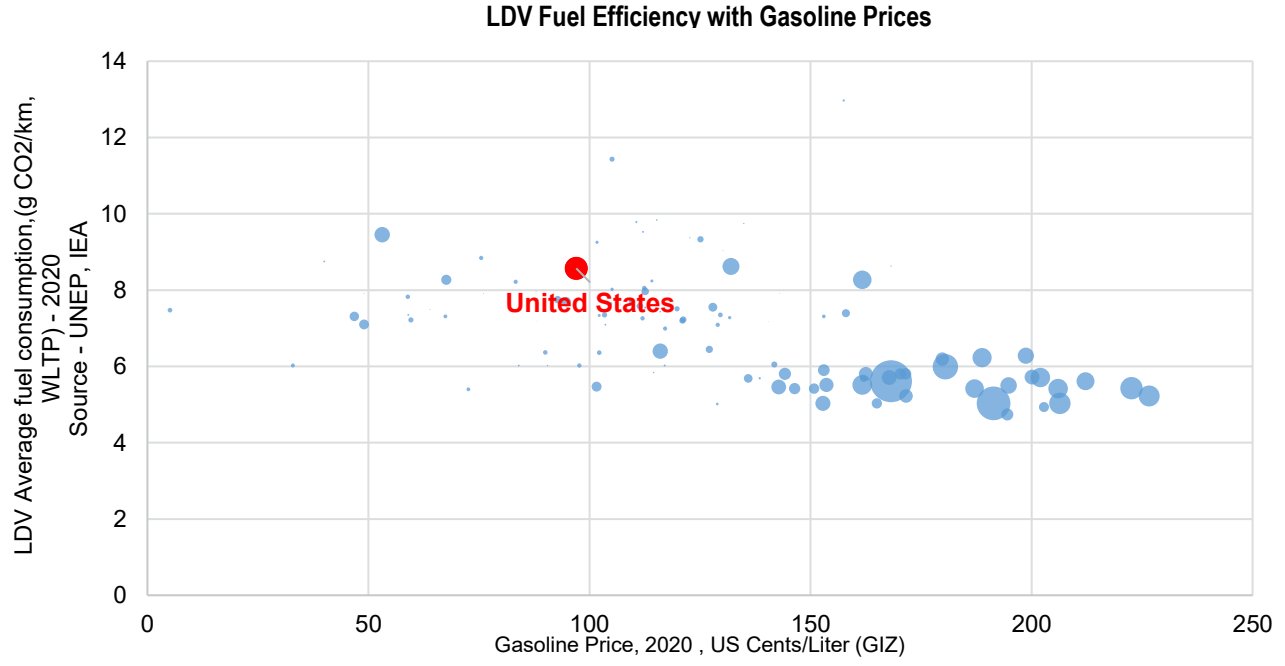
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

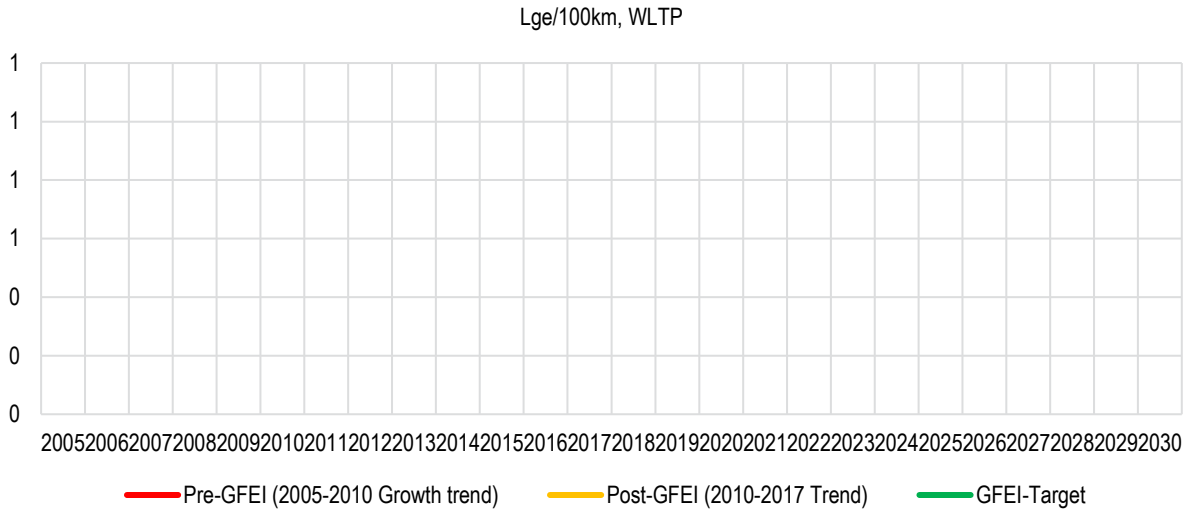
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

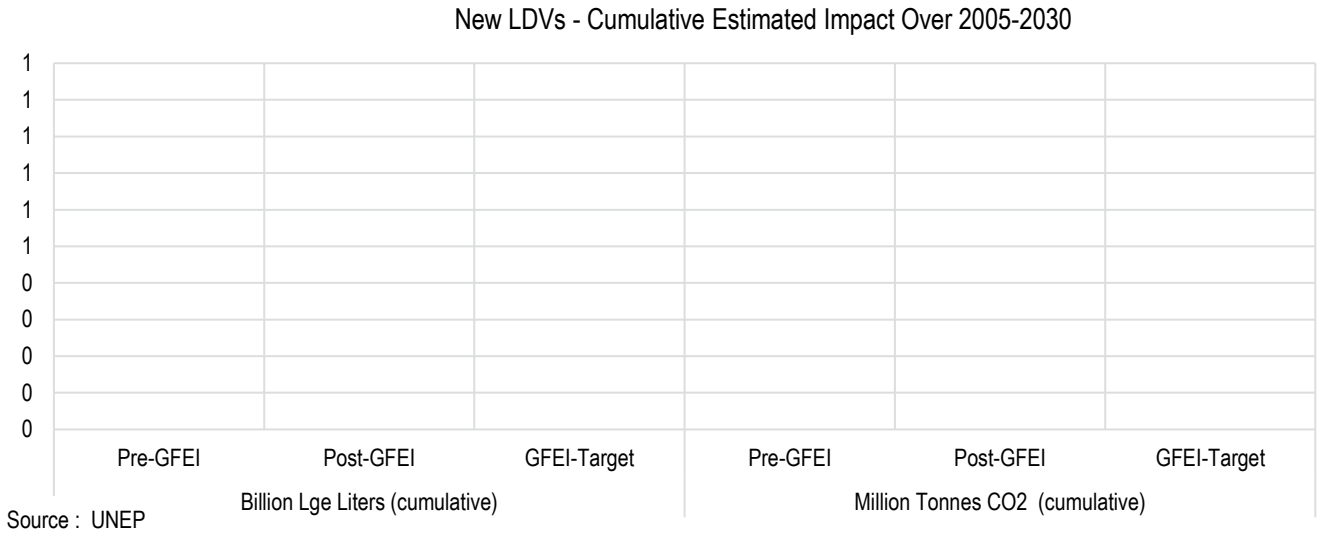
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) #N/A

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target #N/A



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

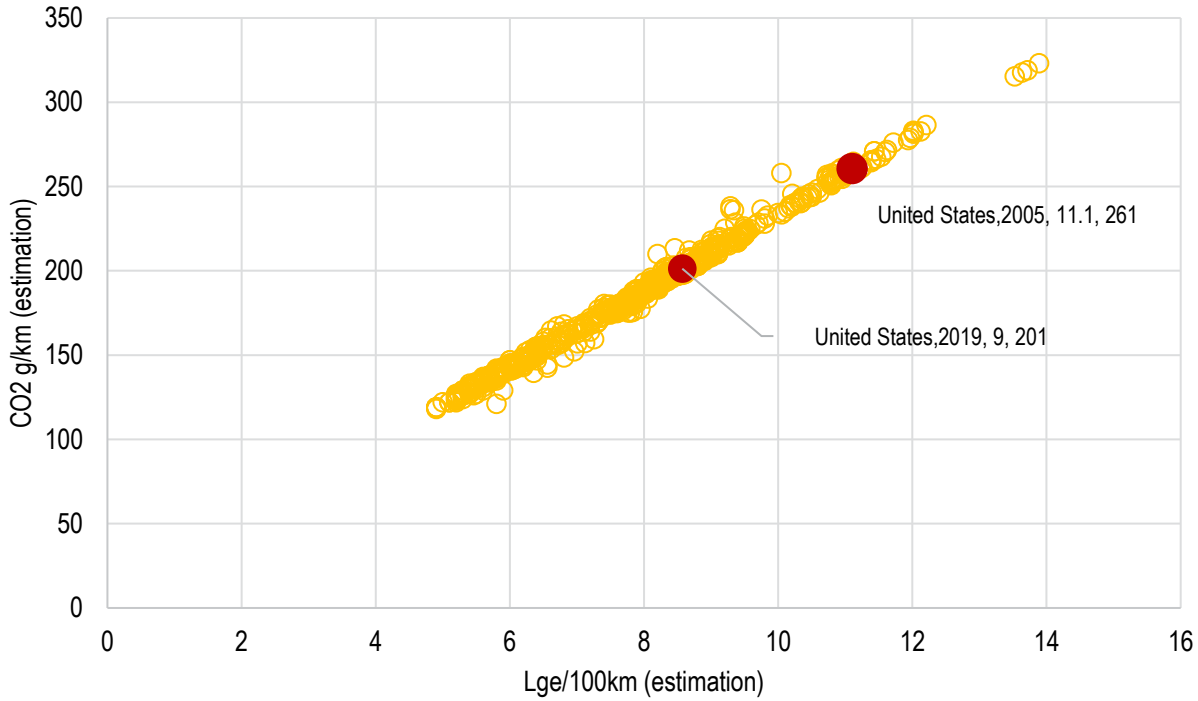
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



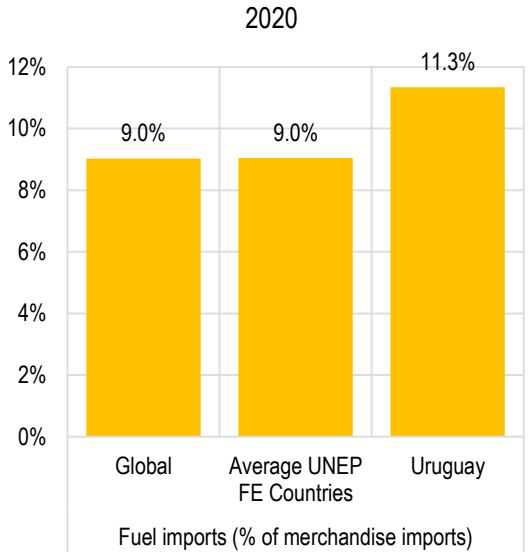
Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

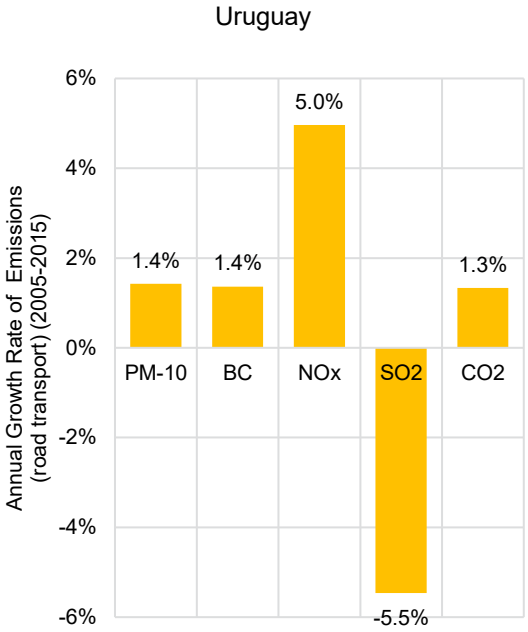
#N/A

LDV FUEL ECONOMY COUNTRY REPORT FOR URUGUAY

		Year	Source
Population (million)	3	2020	7
Income Level Category	High income		7
GDP per Capita (PPP, Curent USD)	22785	2020	7
Motorisation (Cars/1000 population)	246	2020	10
Car Sales (000)	34	2020	6
Gasoline Price $/l	1.6	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	14.6	2018	13
Employment (Transport+,000)	120	2019	11
Fuel Economy (Lge/100 km, WLTP) -	8	2016	1
Average CO2 emissions/kilometre (g/km, WLTP) -	181	2016	1
Average displacement (cm3) -	1504	2016	1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -	196		1
Diesel Share in LDV (sample,%)	5%	2016	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.166	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.178	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	0.4	2019	8
Transport CO2 Emissions per Capita (tonnes) -	1.9	2019	14
Road Transport PM Emissions per Capita (grams) -	316.0	2015	14
Road Transport NOx Emissions per Capita (grams)-	8331.9	2015	14
Road Transport BC Emissions per Capita (grams)-	156.3	2015	14
LDV Emission Standards -	Euro 3	2019	1
Diesel Sulphur Levels (ppm) -	50	2019	1
Gasoline Sulphur Levels (ppm) -	30	2019	1
Annual rate of economy-wide energy intensity growth	0.1%	2000-18	16
Annual rate of transport energy consumption growth	2.4%	2000-18	16
LDV Import value (Million USD)	248	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
7 World Bank
8 UN Statistics Division
9 SLOCAT &GIZ
10 Estimated using growth and sales data
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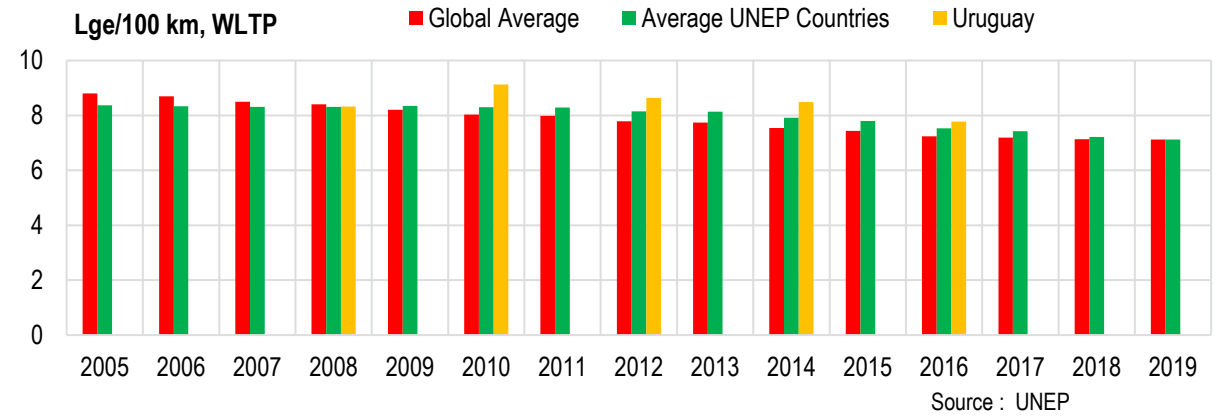
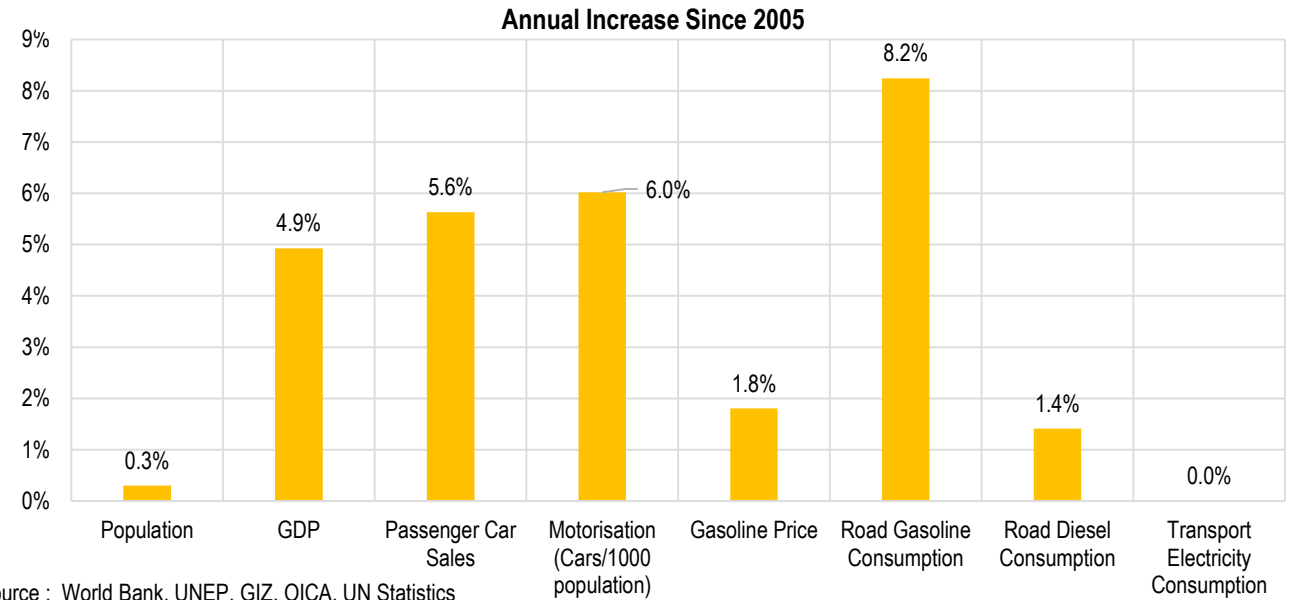
13 Koks, E.E. et al. A global multi-hazard risk analysis of road
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

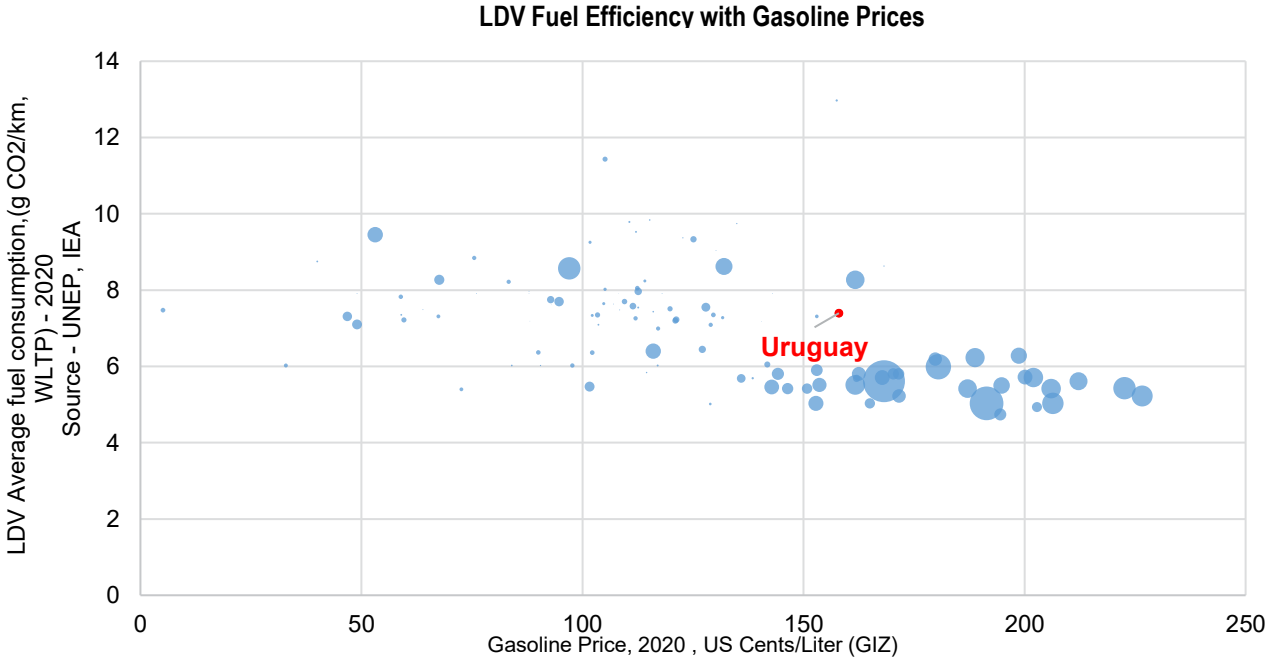
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

page 2/4

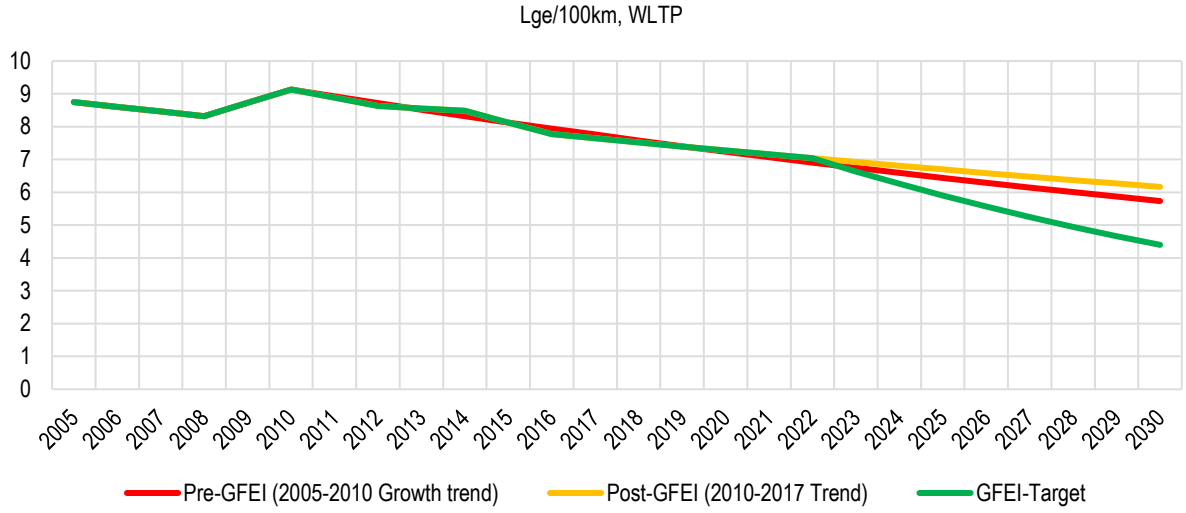
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

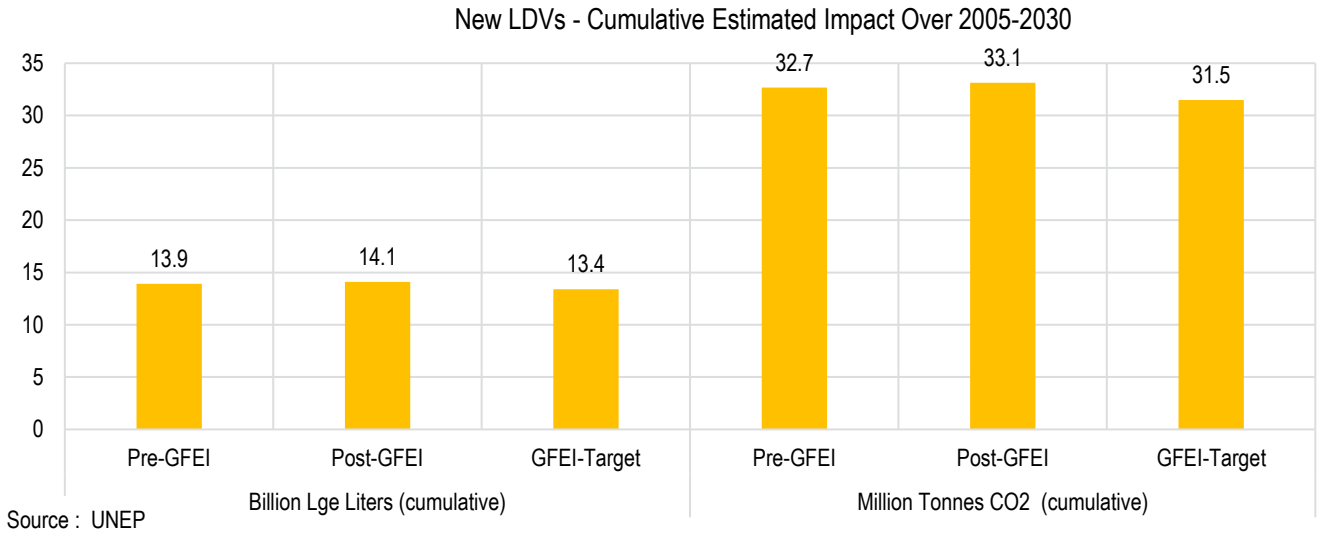
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-2.2%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-4.9%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

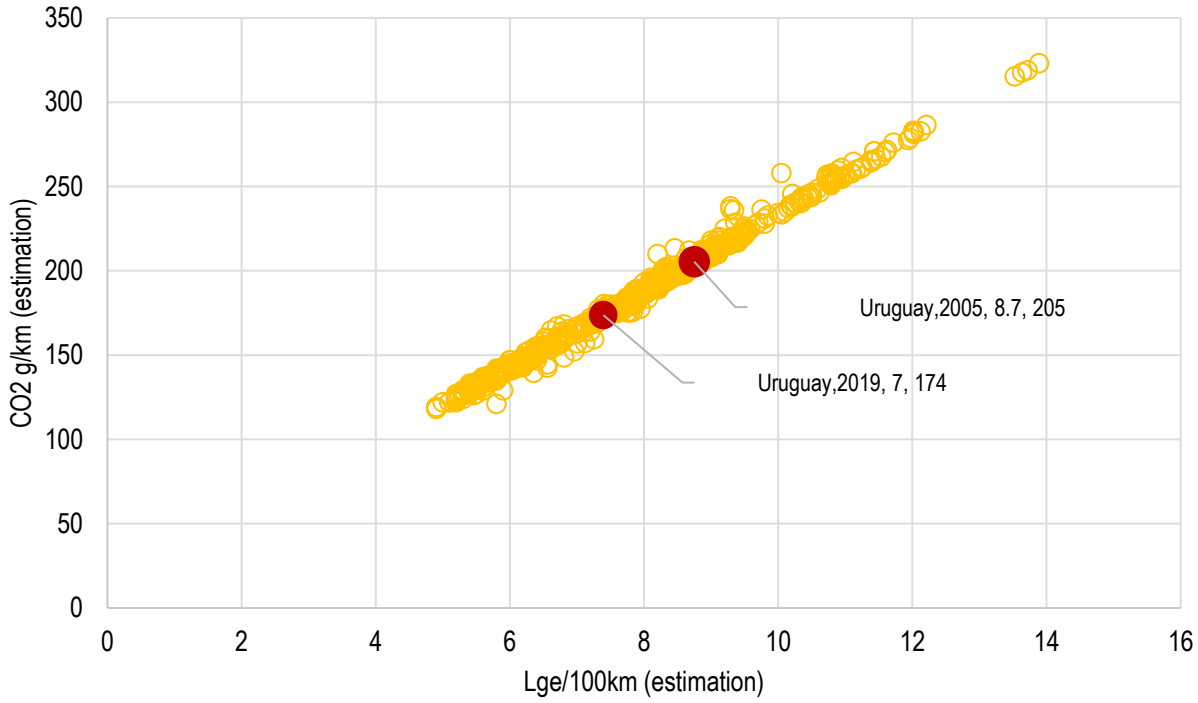
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

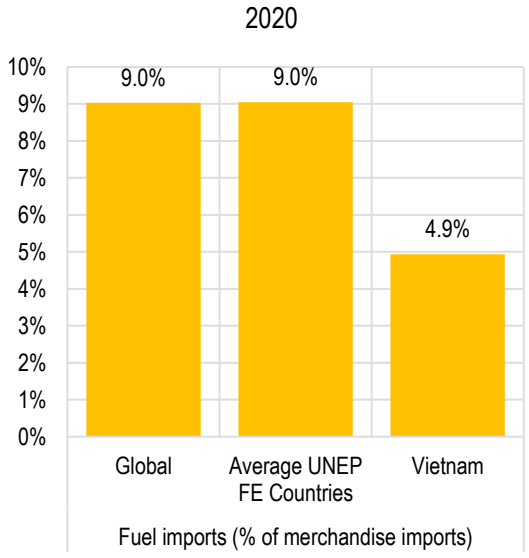
GFEI started supporting Uruguay in 2013 to develop cleaner and efficient fuels and vehicles policies. A fuel economy baseline was subsequently established. Phase II activities to update the existing fuel economy baseline and to promote fuel economy policies for Uruguay were part of the agreement signed with CMMCh on 28 June 2017. The launch workshop for the GFEI Phase II project in Uruguay took place in June 2019. This was organised with the Ministry of Environment and the Ministry of Industry, Energy and Mines. The baseline for Uruguay has been updated, and the results presented. Activities will focus on a new proposal for fuel economy labelling and an LDV type approval.
Additionally, the government and UNEP have been working on developing more stringent vehicle emission standards. The road map for Euro 5 / V and Euro 6 / VI were presented at the event. These will come into effect in 2020 and 2021 respectively, with the availability of 10 ppm gasoline/diesel nationwide. A labelling standard has been developed through the GFEI project in the country, together with MIEM and with the working group convened by the Uruguayan Institute of Technical Standards. The proposal is primarily based on the Chilean experience but with some essential modifications. It is in consultation until 20 April 2020 after which we will continue to support the development of the regulations for its implementation.

The Interinstitutional Transport Energy Efficiency Group (ITEEG) was formed in 2014 with the leadership of the Ministry of Industry, Energy and Mining and has the participation of seven public institutions: the Ministry of Industry, Energy and Mining (MIEM), the Ministry of Housing, Land-Use Planning and Environment (MVOTMA), the Ministry of Economy and Finance (MEF), the Ministry of Transport and Public Works (MTOP), the Uruguayan state electric utility (UTE), the Montevideo Intendance (IM) and the National Administration of Fuels, Alcohol, and Portland (ANCAP).

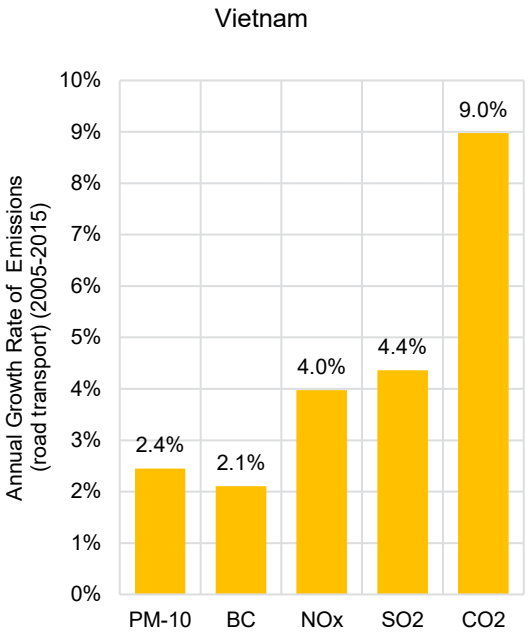
The assessment indicates that if Uruguay implements a fuel economy policy for first-time registered LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 3.3 billion litres of gasoline-equivalent & about 8 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR VIETNAM

		Year	Source
Population (million)	97	2020	7
Income Level Category	Lower middle income		7
GDP per Capita (PPP, Curent USD)	8647	2020	7
Motorisation (Cars/1000 population)	22	2020	10
Car Sales (000)	216	2020	6
Gasoline Price $/l	1.0	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	2.1	2018	13
Employment (Transport+,000)	2321	2019	11
Fuel Economy (Lge/100 km, WLTP) -	8	2017	1
Average CO2 emissions/kilometre (g/km, WLTP) -	183	2017	1
Average displacement (cm3) -	1818	2017	1
Average kerb weight (kg) -	1320	2017	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -	872		1
Diesel Share in LDV (sample,%)	0%	#N/A	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.065	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.051	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	#VALUE!	2019	8
Transport CO2 Emissions per Capita (tonnes) -	3.2	2019	14
Road Transport PM Emissions per Capita (grams) -	216.8	2015	14
Road Transport NOx Emissions per Capita (grams)-	2524.7	2015	14
Road Transport BC Emissions per Capita (grams)-	97.1	2015	14
LDV Emission Standards -	Euro 2	2019	1
Diesel Sulphur Levels (ppm) -	50	2019	1
Gasoline Sulphur Levels (ppm) -	500	2019	1
Annual rate of economy-wide energy intensity growth	#N/A	2000-18	16
Annual rate of transport energy consumption growth	7.0%	2000-18	16
LDV Import value (Million USD)	1440	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

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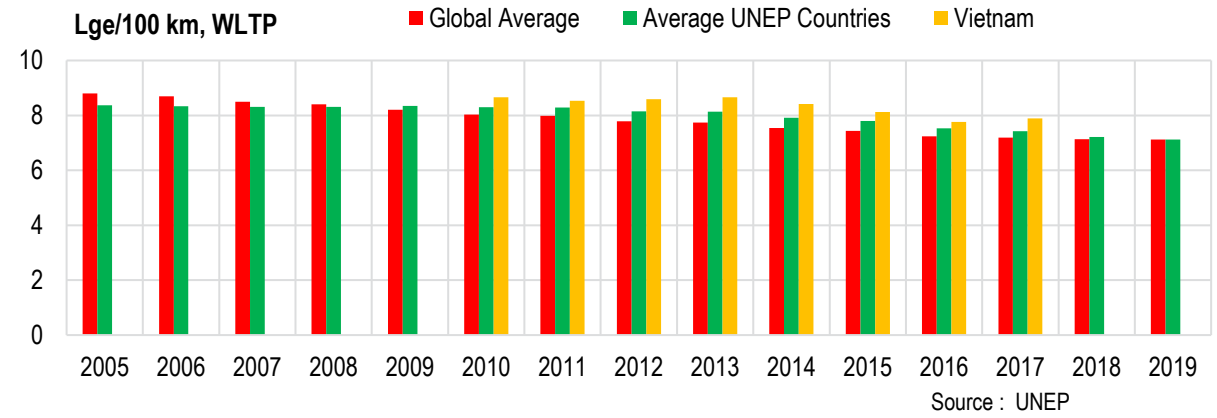
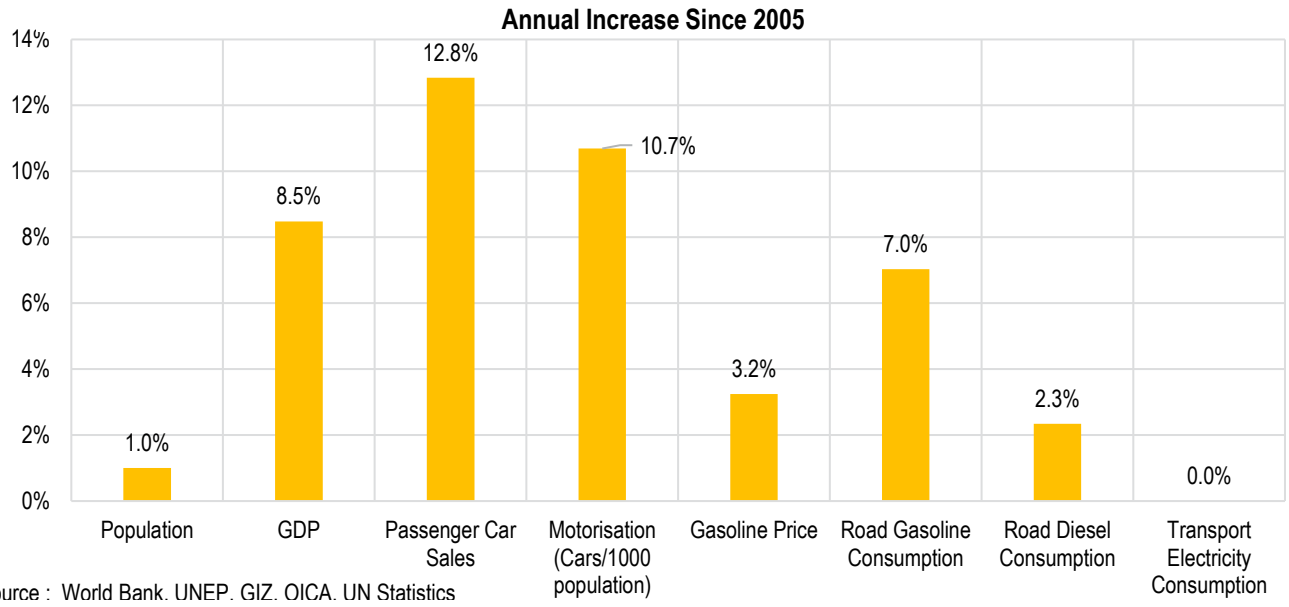
FUEL ECONOMY TRENDS





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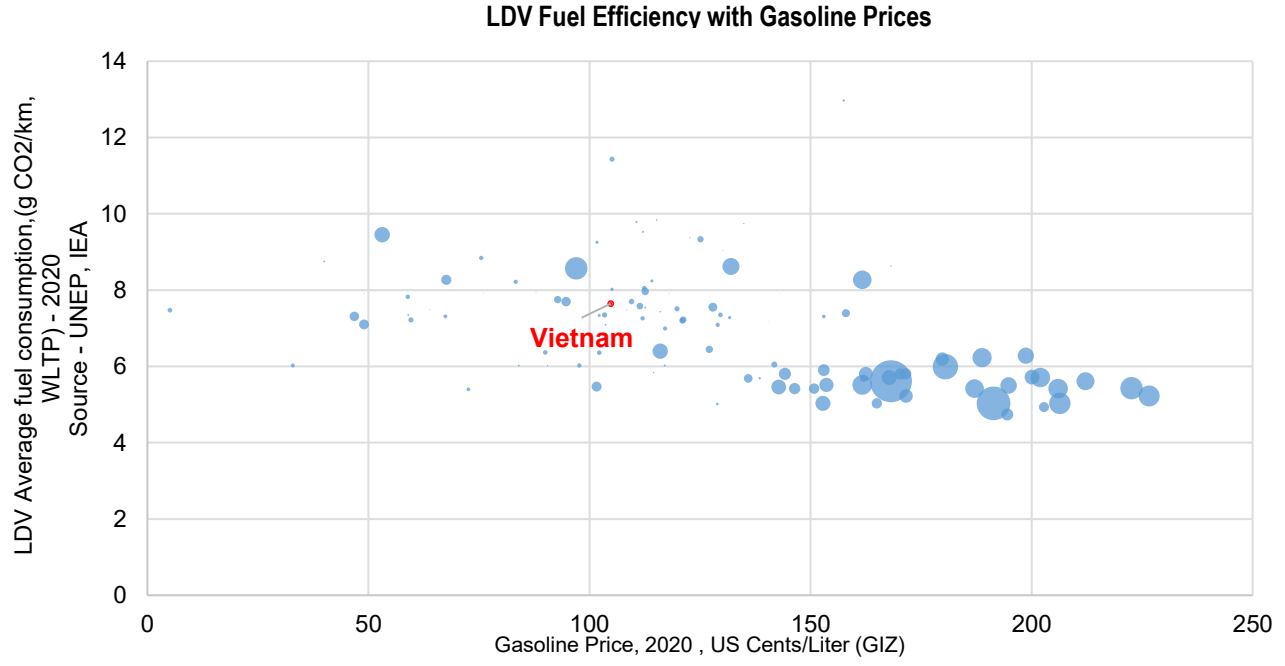


Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

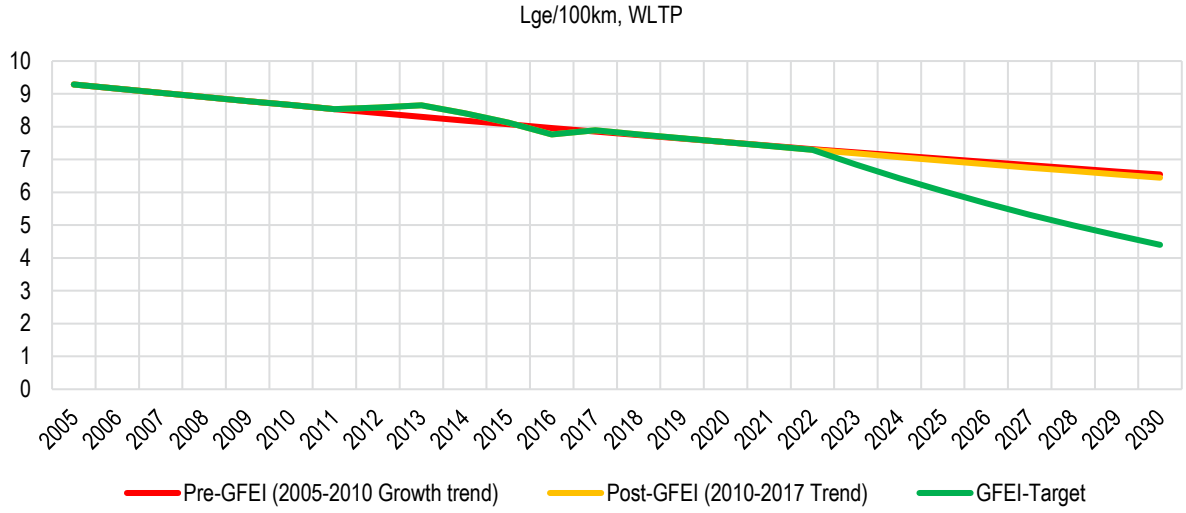
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

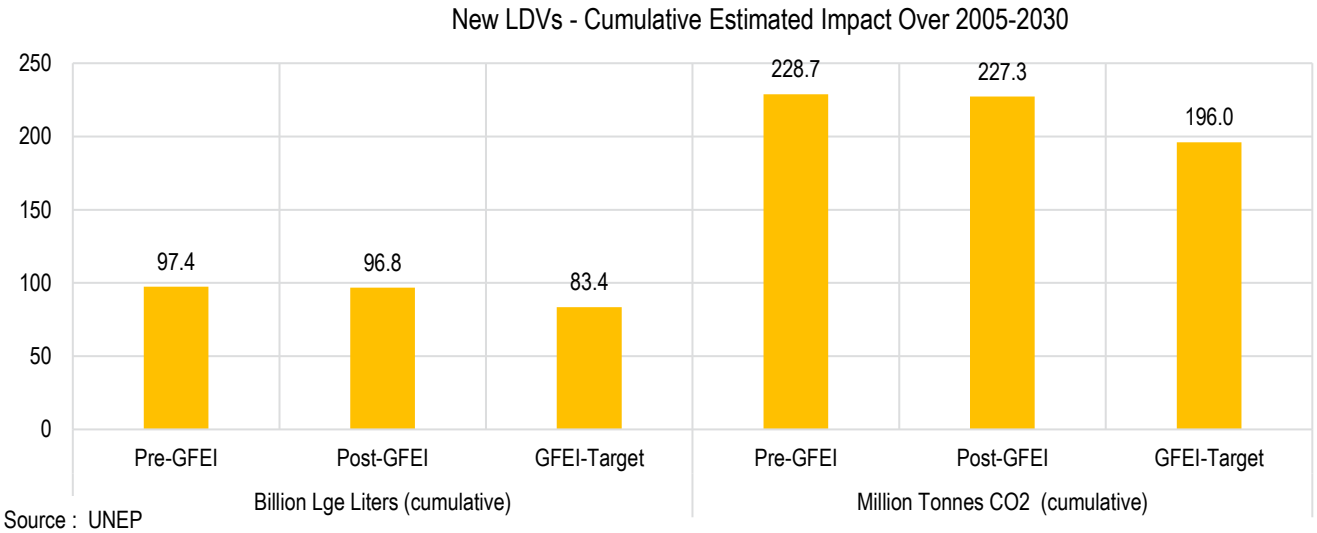
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-1.4%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-5.2%**



Source : UNEP



Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

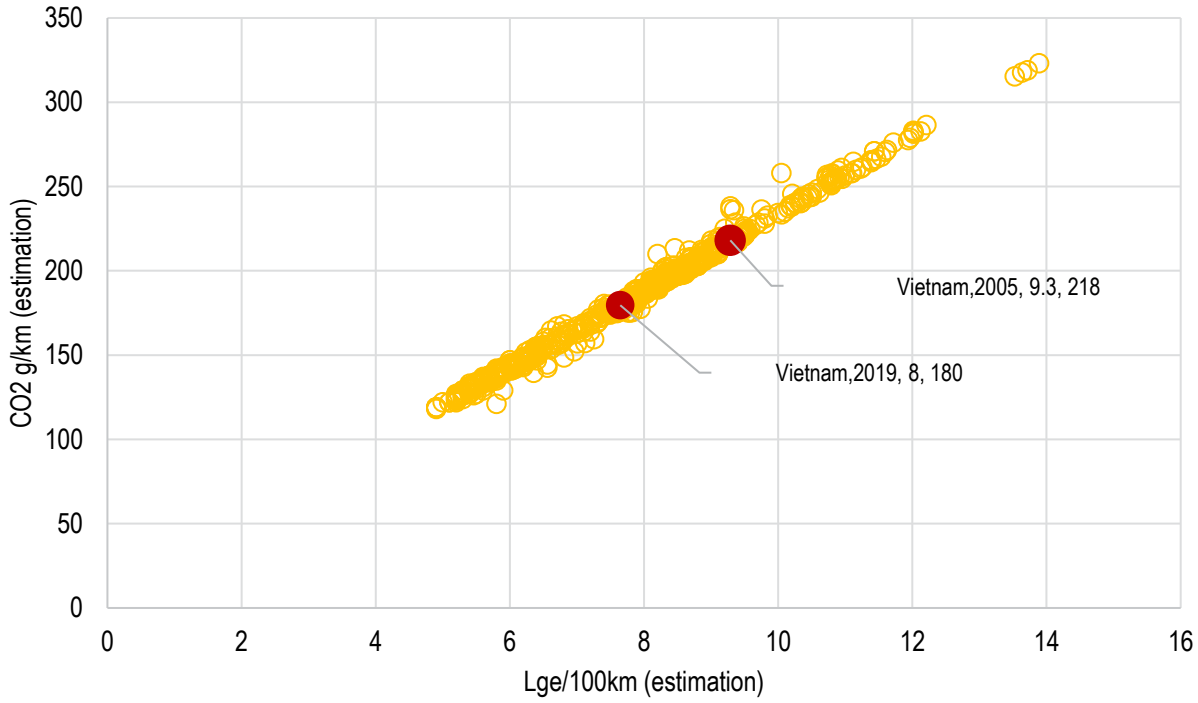
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

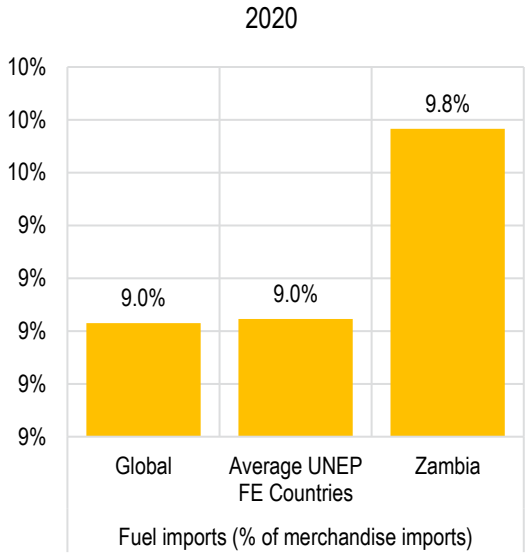
Source : UNEP

Viet Nam has endorsed the ASEAN Fuel Economy Roadmap for Transport Sector 2018 – 2025: with Focus on Light-Duty Vehicles. The roadmap sets six aspirational goals for ASEAN. The headline goal is an aspirational target to reduce the average fuel consumption of new light-duty vehicles sold in ASEAN by 26% between 2015 and 2025, which leads to an improvement in average fuel economy to around 5.3 LGe/100km by 2025, from an estimated 7.2 LGe/100km in 2015. This improvement leads to about 17% reduction in annual LDVs CO2 emissions by 2030.

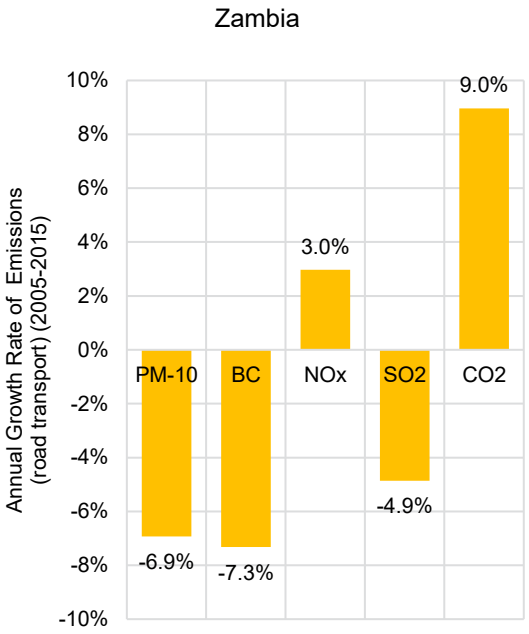
The assessment indicates that if Viet Nam implements a fuel economy policy for LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 16 billion litres of gasoline-equivalent & 38 million tonnes of CO2 cumulative from newly registered LDVs.

LDV FUEL ECONOMY COUNTRY REPORT FOR ZAMBIA

		Year	Source
Population (million)	18	2020	7
Income Level Category	Lower middle income		7
GDP per Capita (PPP, Curent USD)	3456	2020	7
Motorisation (Cars/1000 population)	16	2020	10
Car Sales (000)	1	2020	6
Gasoline Price $/l	1.2	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	6.0	2018	13
Employment (Transport+,000)	282	2019	11
Fuel Economy (Lge/100 km, WLTP) -	10	2017	1
Average CO2 emissions/kilometre (g/km, WLTP) -	227	2017	1
Average displacement (cm3) -			1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	NA	NA	1
Cumulative number of LDVs (total sample size,000) -	257		1
Diesel Share in LDV (sample,%)	24%	2017	1
Is Fuel Economy included in NDC?	No	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.016	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.016	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	1.7	2019	8
Transport CO2 Emissions per Capita (tonnes) -	0.4	2019	14
Road Transport PM Emissions per Capita (grams) -	10.7	2015	14
Road Transport NOx Emissions per Capita (grams)-	810.2	2015	14
Road Transport BC Emissions per Capita (grams)-	5.1	2015	14
LDV Emission Standards -	0	2019	1
Diesel Sulphur Levels (ppm) -	5000	2019	1
Gasoline Sulphur Levels (ppm) -	1000	2019	1
Annual rate of economy-wide energy intensity growth	-2.1%	2000-18	16
Annual rate of transport energy consumption growth	0.0%	2000-18	16
LDV Import value (Million USD)	87	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

1 UNEP
2 GIZ
3 UNCOMTRADE & ITC
4 International Energy Agency
5 International Transport Forum
6 OICA
7 World Bank
8 UN Statistics Division
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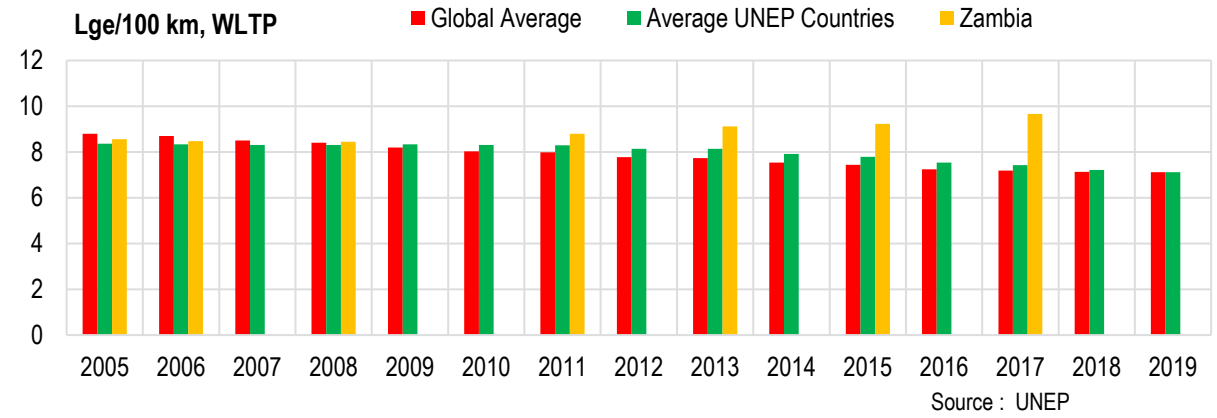
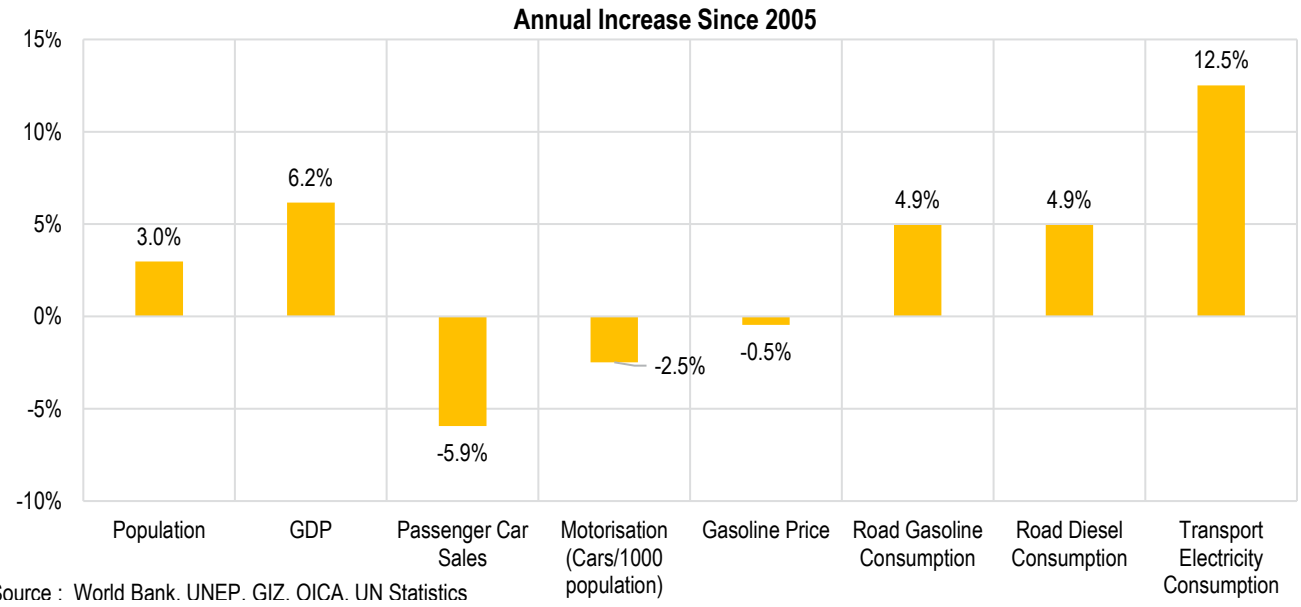
14 IIASA- Edgar. CO2 is fossil fuel emissions
15 Fuel imports (% of merchandise imports) data is from World Bank
16 Tracking SDG7: The Energy Progress Report

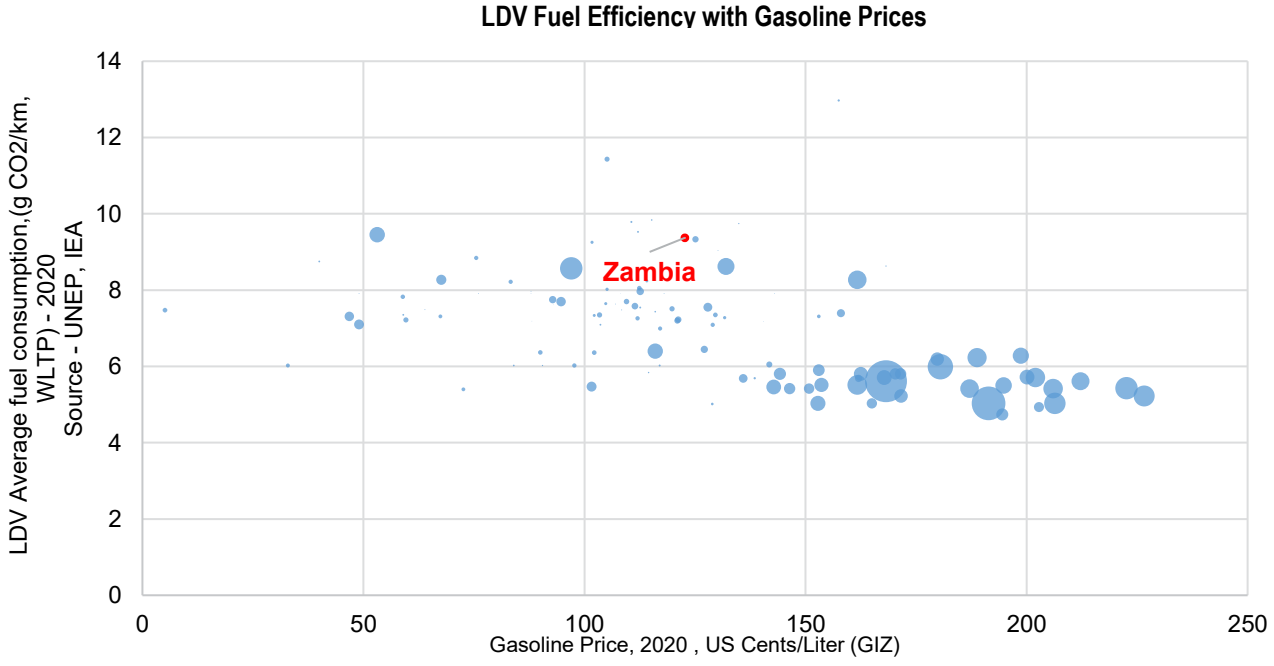
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

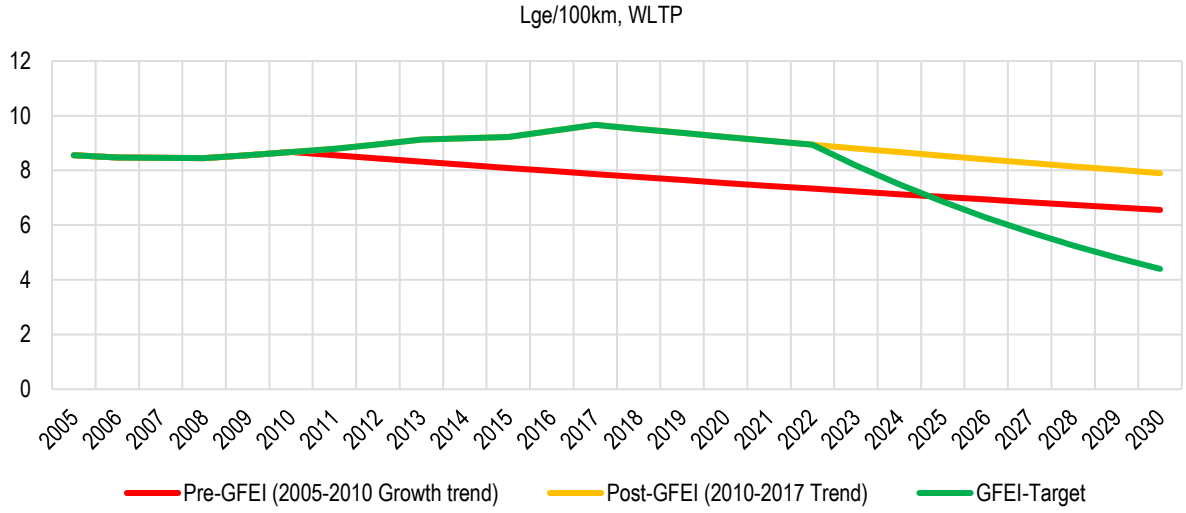
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **0.6%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-7.1%**



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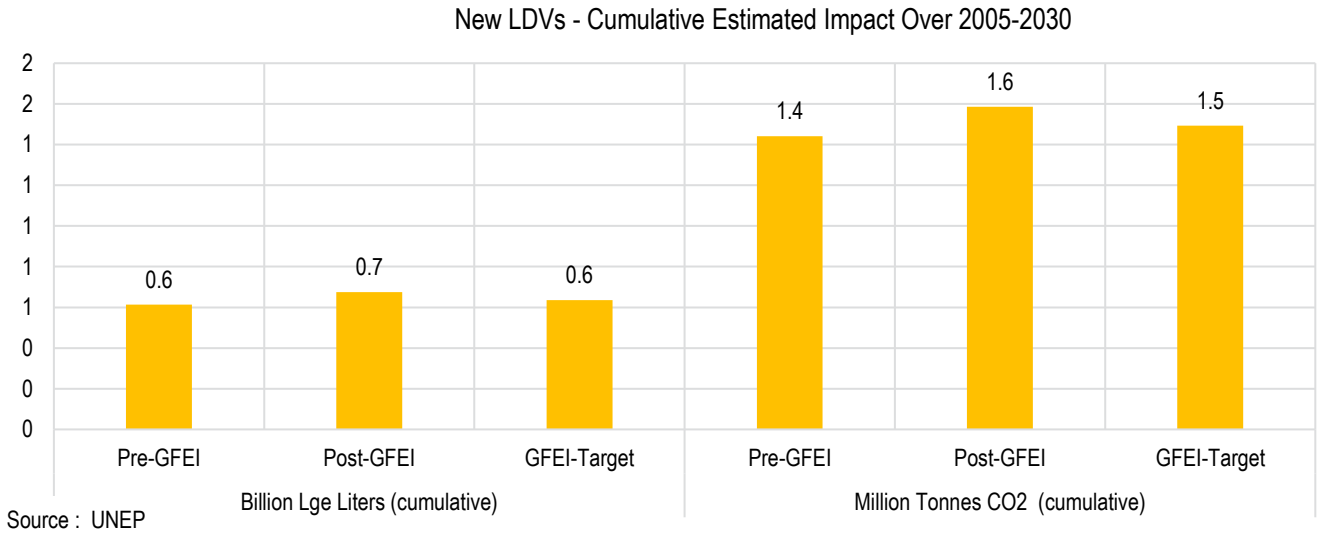


Source : UNEP

Notes: 1) The Fuel economy values between 2005-20122 are interpolated based on available data and assumptions

2) The Pre-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2005-2010 growth

3) The Post-GFEI scenario considers fuel economy baseline for the first time registered LDVs based on 2010-2022 trend

4) The GFEI-Target scenario considers 2022-2030 trend based on fuel economy target of 4.4 Lge/100km by 2030

5) The Impact assessment assumes

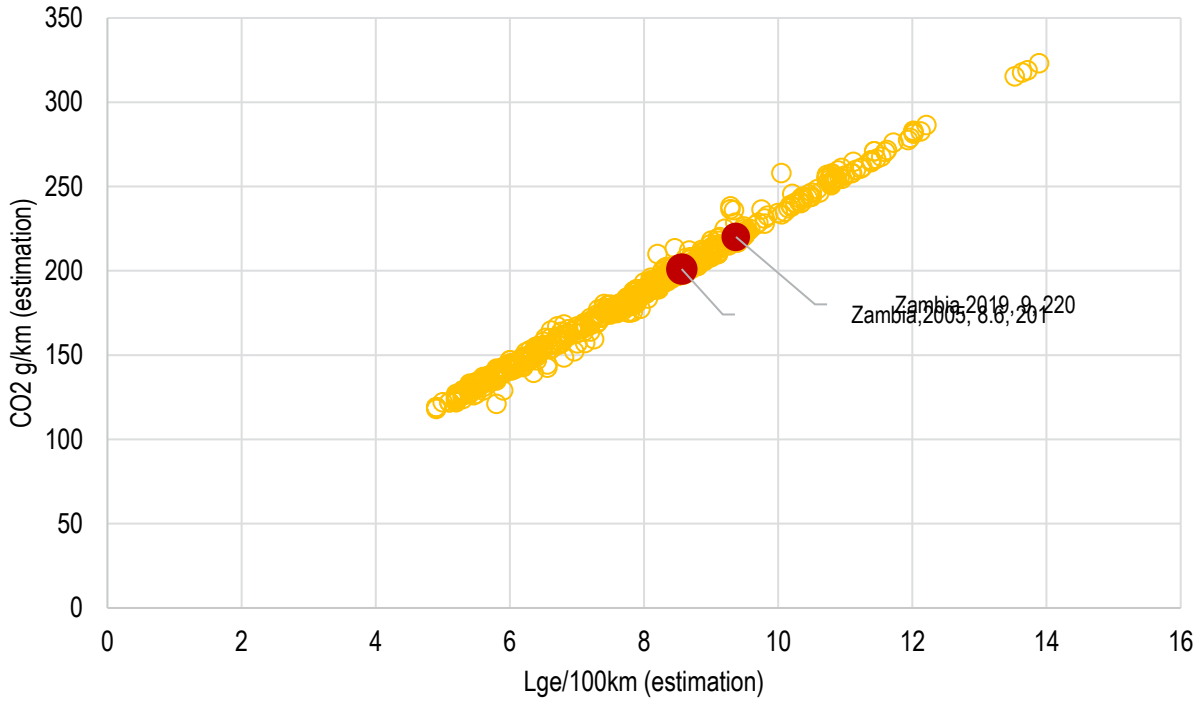
a) average life of first-time registered LDV to be 12 years and average annual travel of 15000km

b) The LDV sales data is sourced from OICA, National statistics, typology regression analysis and https://carsalesbase.com/

c) The Lge is converted to CO_2 based on gasoline & diesel share of 82% & 18% i.e. 2.35 CO_2/lge

d) LDV sales projections are based on elasticity values as considered in UNEP eMob calculator

FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

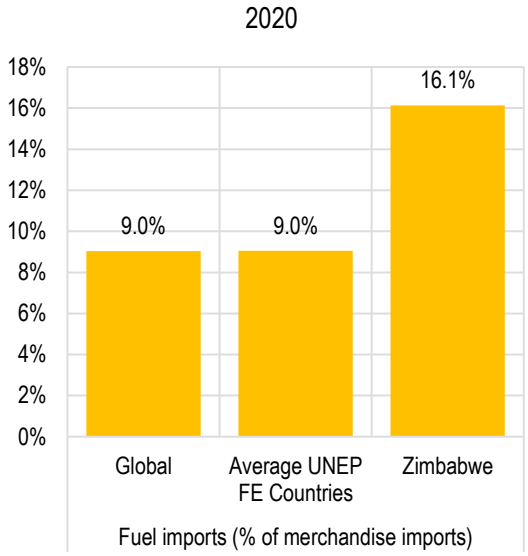
On 14 March 2017, Zambia Environmental Management Agency and UNEP agreed to promote automotive fuel economy in Zambia. ZEMA organised the launch workshop for the fuel economy project on 24 August 2017 in Lusaka, Zambia. On 30 November 2018, transport stakeholders met in a national seminar to discuss the key findings of a fuel economy inventory study for Zambia. Transport stakeholders in Zambia recommended modification of the country's vehicle taxation system to a feebate-type structure. The main recommendation was for the implementation of eco-labelling and enhanced public awareness to support a shift to cleaner vehicles, including electric vehicles. From the inventory study, it was noted that the average age of imported cars was 12.5 years at their first registration in Zambia. The Zambian government has already introduced two-vehicle taxation schemes. However, the fuel economy study showed that the two taxation systems are not effective in promoting a shift to cleaner vehicles. Vehicles more than five years are required to pay a one-off flat tax called the Motor Vehicle Surtax. This tax is added to import duty. Besides, an annual charge on emissions, called the Carbon Emissions Surcharge, is applied on all vehicles based on their engine displacement. The cost is, however, not punitive enough to disincentivise the purchase of more significant engines. A revision of both taxes was proposed to encourage the import of cleaner, more fuel-efficient vehicles.

The National Environmental Policy 2005 and The National Energy Policy 2006 promote biofuels i.e. gasoline blended with ethanol in the transport market and introduction of high import duty on vehicle with high engine capacity, introduction of carbon tax, surcharge recently introduced for vehicle imports older than 5 years.

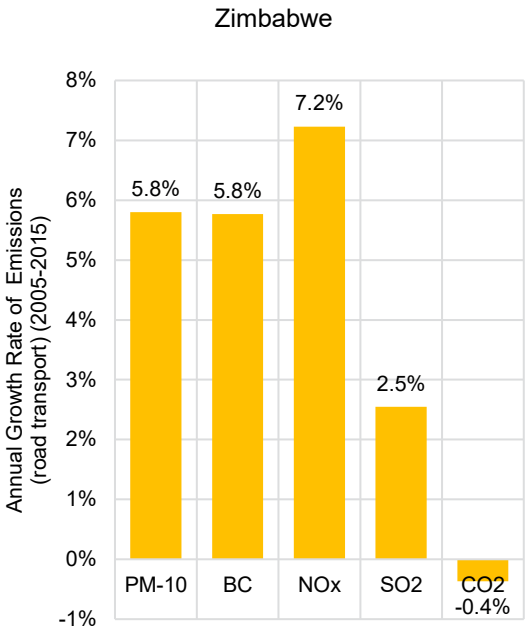
The assessment indicates that if Zambia implements a fuel economy policy for first-time registered LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 35 million litres of gasoline-equivalent & 0.08 million tonnes of CO2 cumulative from newly registered LDVs. Zambia Environmental Management Agency has estimated that in the absence of fuel economy policies, Zambia's LDV fuel demand will be at least 5 times higher in 2050 when compared to 2015.

LDV FUEL ECONOMY COUNTRY REPORT FOR ZIMBABWE

		Year	Source
Population (million)	15	2020	7
Income Level Category	Lower middle income		7
GDP per Capita (PPP, Curent USD)	3536	2020	7
Motorisation (Cars/1000 population)	60	2020	10
Car Sales (000)	27	2020	6
Gasoline Price $/l	1.7	2020	2
Fossil Fuel Subsidy (Million $) 2019	0	2019	4
Road Infrastructure Length/Capita (meters)	8.0	2018	13
Employment (Transport+,000)	174	2019	11
Fuel Economy (Lge/100 km, WLTP) -	9	2016	1
Average CO2 emissions/kilometre (g/km, WLTP) -	214	2016	1
Average displacement (cm3) -	2139	2016	1
Average kerb weight (kg) -	NA	NA	1
Average power (kw) -			1
Average Age of newly registered cars (years) -	14	2016	1
Cumulative number of LDVs (total sample size,000) -	210		1
Diesel Share in LDV (sample,%)	8%	2016	1
Is Fuel Economy included in NDC?	Yes	2021	9
Is E-Mobility or Alternative Fuels included in NDC?	Yes	2021	9
Transport Gasoline Consumption Tonnes/Capita -	0.021	2019	8
Transport Diesel Consumption Tonnes/Capita -	0.021	2019	8
Transport Electricity Consumption(Kilowatt-hr)/Capita-	#VALUE!	2019	8
Transport CO2 Emissions per Capita (tonnes) -	0.7	2019	14
Road Transport PM Emissions per Capita (grams) -	80.1	2015	14
Road Transport NOx Emissions per Capita (grams)-	1862.5	2015	14
Road Transport BC Emissions per Capita (grams)-	39.4	2015	14
LDV Emission Standards -	0	2019	1
Diesel Sulphur Levels (ppm) -	50	2019	1
Gasoline Sulphur Levels (ppm) -	1000	2019	1
Annual rate of economy-wide energy intensity growth	0.5%	2000-18	16
Annual rate of transport energy consumption growth	1.1%	2000-18	16
LDV Import value (Million USD)	4	2020	3



Source : World Bank



Source : IIASA

Sources & Notes

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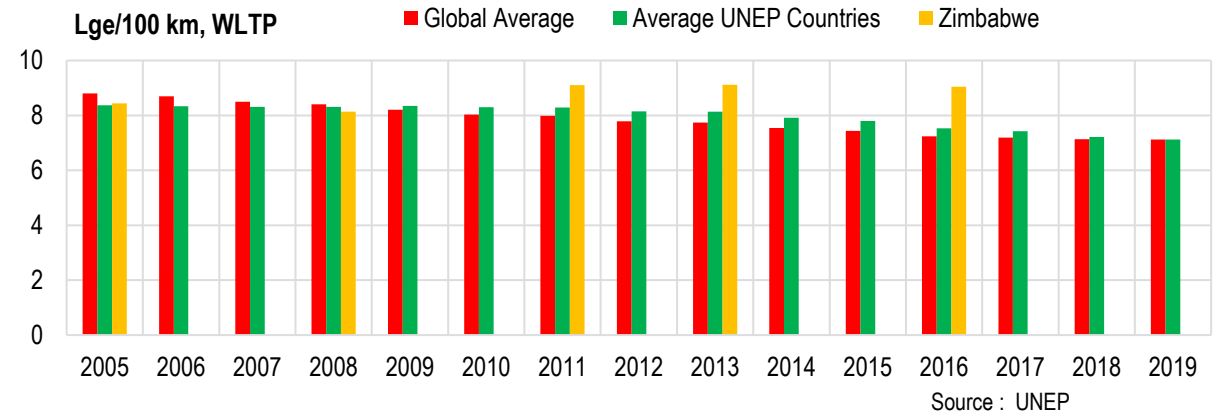
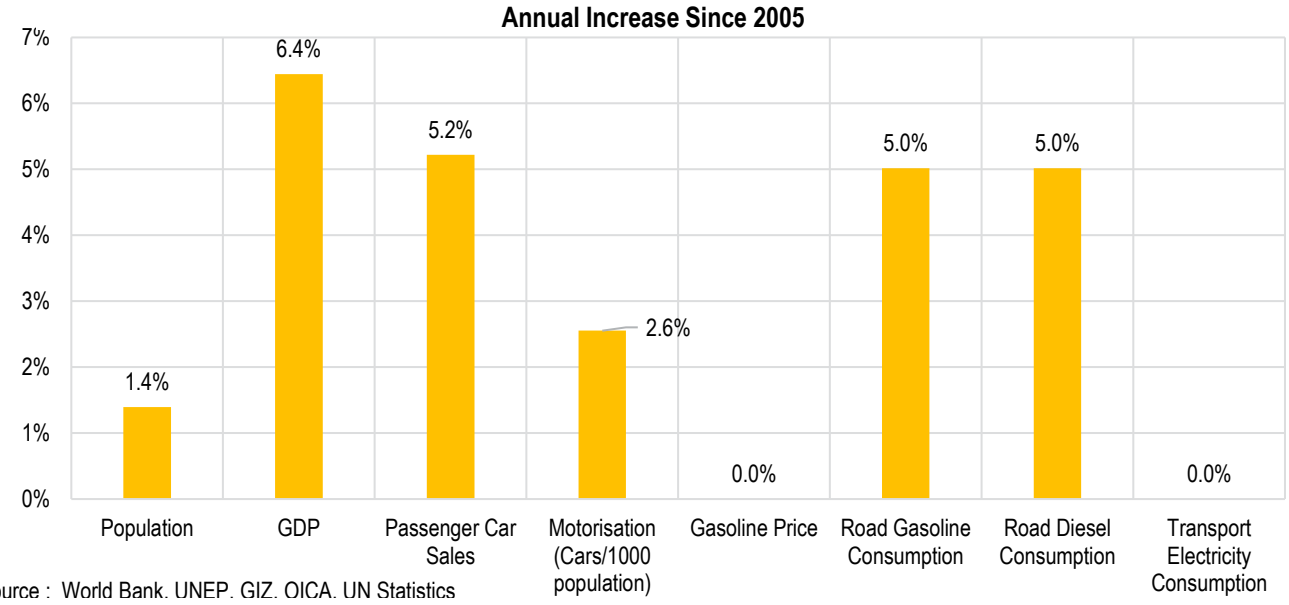
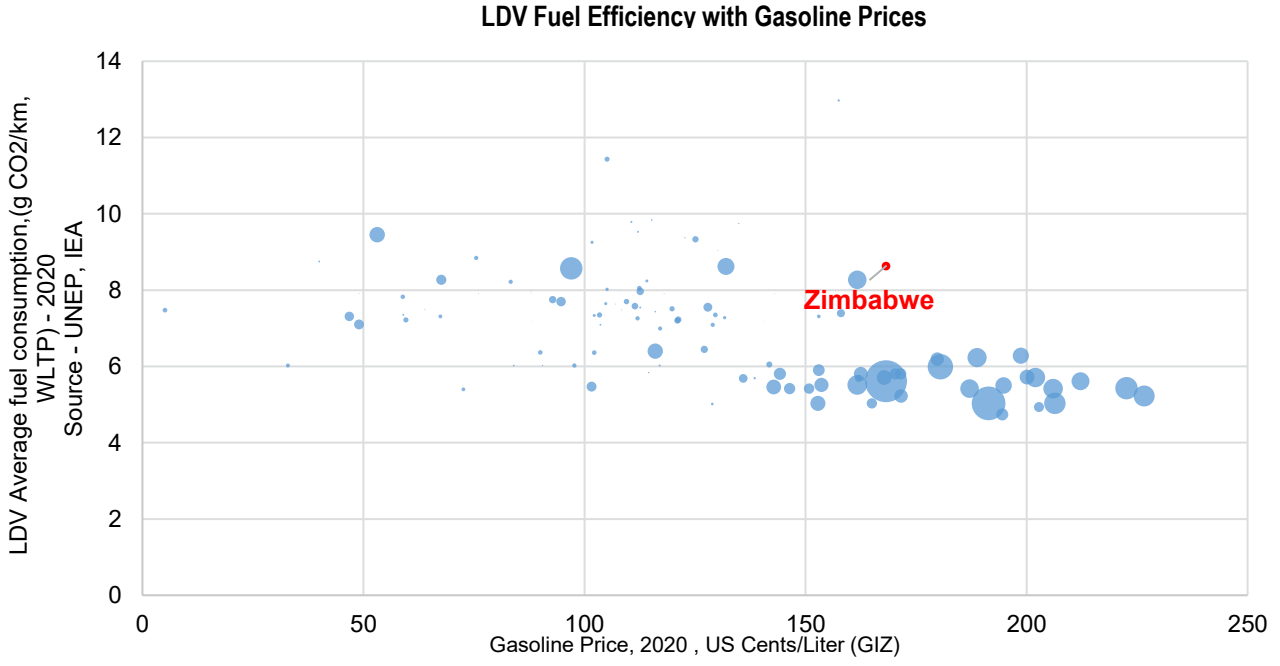
FUEL ECONOMY TRENDS



Source : UNEP



Source : World Bank, UNEP, GIZ, OICA, UN Statistics



Source : GIZ, UNEP, IEA

Note : size of the circle is proportional to the GDP per capita

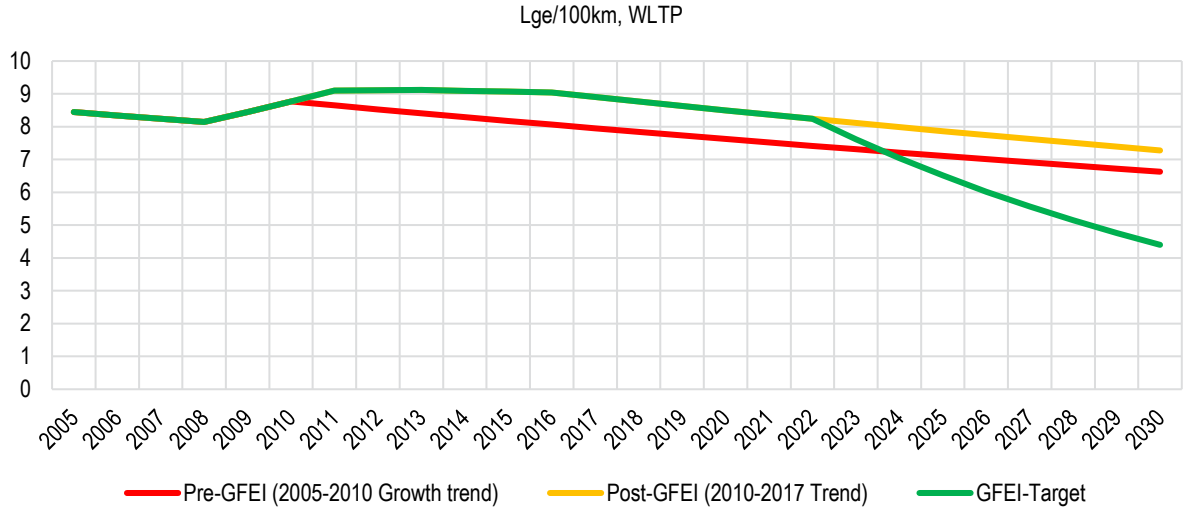
FUEL ECONOMY STATUS & IMPACT

Project development	Project start meeting	Baseline developed	National workshop/s	Policy assessment	Policy developed	Policy submitted for	Policy adopted

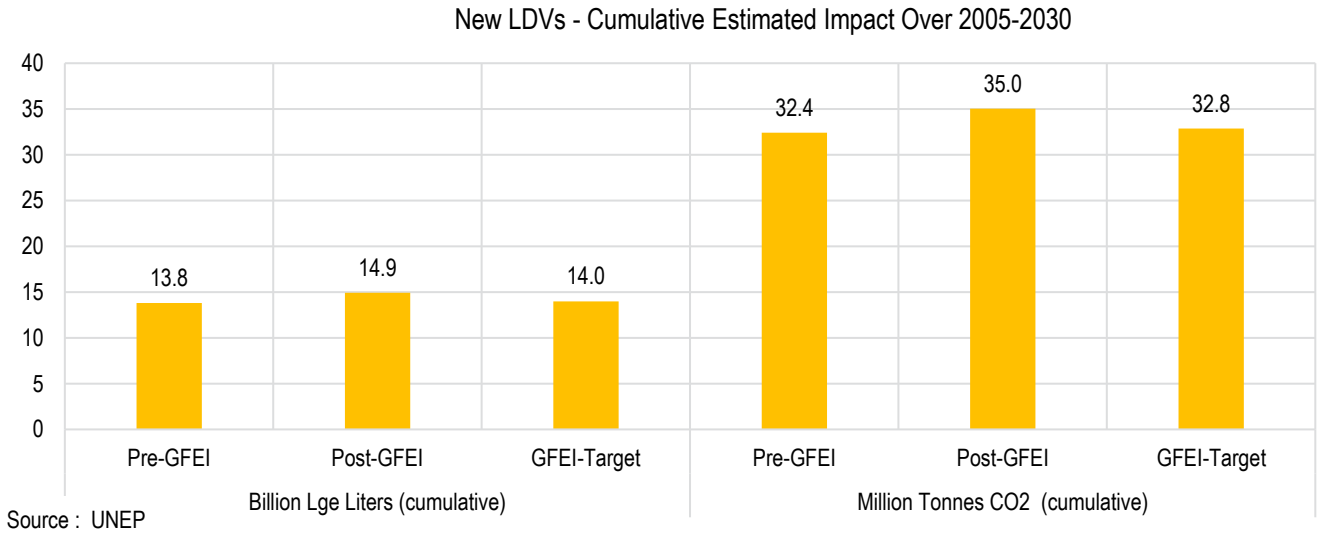
100%

Annual rate of new LDV Lge/100km improvement since start of GFEI (2010-2022) **-0.3%**

From 2022 , required annual rate of new LDV Lge/100km improvement for reaching GFEI target **-6.4%**



Source : UNEP



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Notes:
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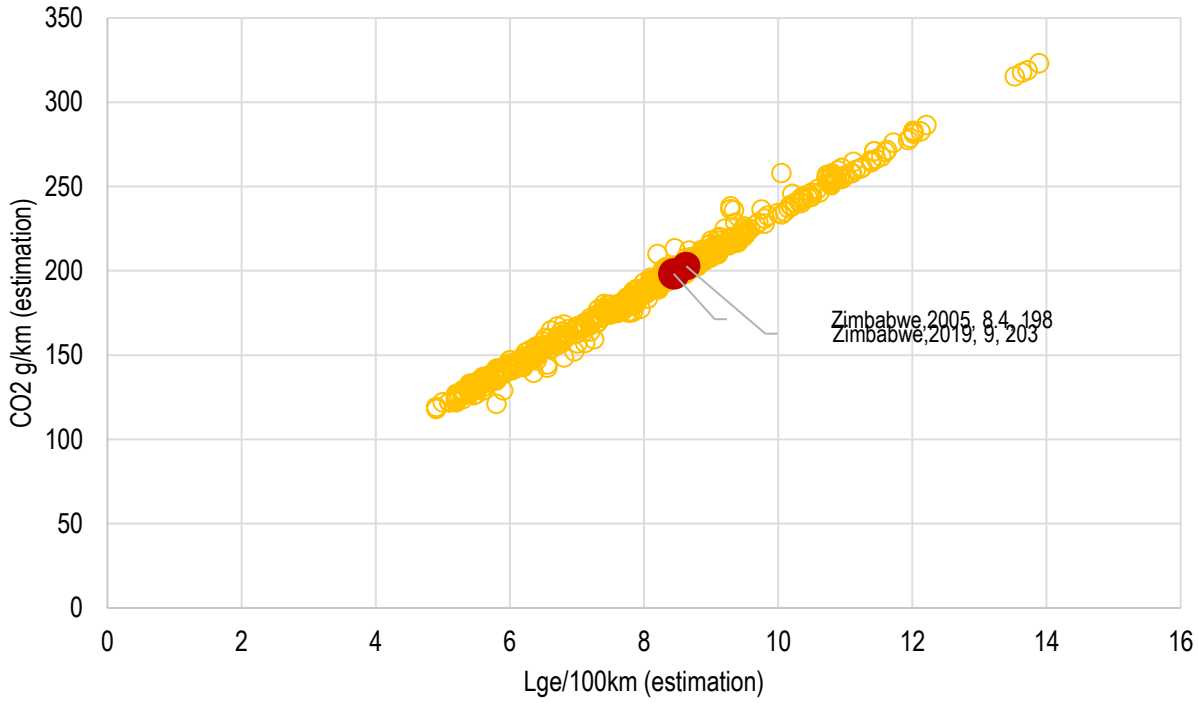
FUEL ECONOMY DESCRIPTION



Note : The small dots in orange indicate LDV fuel efficiency performance in other countries

Source : UNEP

An agreement with the Zimbabwe Energy Regulatory Authority (ZERA) was made on 27 October 2016 to support the implementation of clean fuels and promote fuel-efficient vehicles in Zimbabwe. On 13 December 2017, ZERA organised a workshop to validate the vehicle inventory study for the country. The workshop was attended by 53 participants drawn from various stakeholders in the transport sector in Zimbabwe. The vehicle inventory data indicated that the mean age of vehicles at registration in 2005 was 8.9 years while in 2016, it was 11.4 years resulting in deterioration of fuel economy levels. It was noted at the workshop that the Zimbabwe Revenue Authority (ZIMRA) currently charges a surtax of 35% for imported vehicles above five years. This has however not served as a deterrent as Zimbabweans buy old cheap cars making the surcharge insignificant. Participants called for the need to establish mechanisms to develop and/or revise the tax options including tax rebate systems concerning CO2 emissions and fuel efficiency levels for better fuel consumption derived from the country's vehicle fleet.

Zimbabwe's energy policy promotes energy-efficiency awareness and conservation and encourages the use of energy-efficient vehicles. It proposes harmonisation and implementation of the various national policies and use of alternative fuels such as biodiesel and ethanol blending.

The assessment indicates that if Zimbabwe implements a fuel economy policy for first-time registered LDVs with a 2030 GFEI target of 4.4 lge/100km, it could save 1 billion litres of gasoline-equivalent & 2.5 million tonnes of CO2 cumulative from newly registered LDVs.