UGANDA

SHIFTING TO CLEANER AND MORE FUEL-EFFICIENT VEHICLES

THE GFEI IS SUPPORTED BY:

GLOBAL FUEL ECONOMY INITIATIVE

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Background

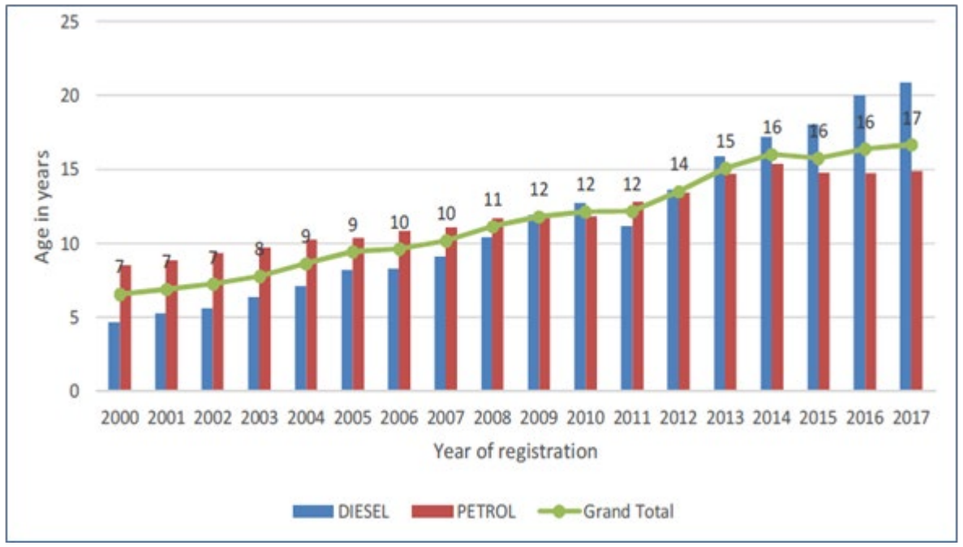
Uganda is estimated to have motorization rate of 14 vehicles per 1000 persons. However, the numbers are rising year on year. According to Table 1 the number of cars newly registered annually has on average remained the same in the period 2013-2020 but the motorcycles have significantly increased registering more than a 21% increase by 2019

Table 1: Cumulative vehicle registration and proportion of used and new LDV: 2003-2018

Category	2013	2014	2015	2016	2017	2018	2019	2020
Newly Registered Cars	45,169	45,560	43,337	33,750	42,005	43,764	38,182	42,284
Percentage change	**106.4**	**0.3**	**-4.9**	**22.1**	**24.5**	**4.2**	**-12.8**	**10.7**
Newly Registered M/Cycl	88,776	81,838	78,865	83,131	93,027	93,213	107,273	102,848
Percentage change	**33.9**	**-7.8**	**-3.6**	**5.4**	**11.9**	**0.2**	**15.1**	**-4.1**
Total Registered	133,945	127,398	122,202	16,881	135,032	136,977	145,455	145,132
Percentage change	**51.9**	**-4.9**	**-4.1**	**-4.6**	**15.5**	**1.4**	**6.2**	**-0.2**

Source: Uganda Revenue Authority

Figure 1: Average Age of Petrol and Diesel Engine Vehicles *(Source: Computations based on combined dataset (URA e-tax dataset and MoW&T dataset)*



The road transport sector in Uganda is characterized by a progressively aging vehicle fleet going by the average age of vehicles at the point of first registration in the country (figure 1). As at 2017, the average age of vehicles imported was 17 years old and only 5.6% of petrol cars and 33.6% of diesel cars were below 8 years.

Trends show a preference for petrol vehicles with over 5000cc but with a lower import age, while diesel vehicles with 3500 – 4000cc have the highest import age – at an average of over 22 years in 2014 (Table 2)

Table 2: Average Age and Engine capacity by Fuel type and year of Registration *(Source: Computations based on combined dataset (URA e-tax dataset and MoW&T dataset)*

Engine_CC	Diesel				Petrol			
	2005	2008	2011	2014	2005	2008	2011	2014
500_1200CC	14.0		6.4	16.1	13.5	11.9	14.3	16.3
1201_1500CC	12.0	8.0	5.0	14.8	10.8	12.4	13.1	15.8
1501_2000CC	8.8	13.5	17.1	18.5	10.4	11.9	13.1	15.7
2001_2500CC	9.3	6.5	3.9	8.6	7.3	8.6	11.3	13.6
2501_3000CC	5.8	9.3	11.1	16.6	9.2	9.9	12.5	14.7
3001_3500CC	4.1	5.4	6.3	15.8	4.5	9.5	11.6	13.5
3501_4000CC	14.2	17.9	20.5	22.7	11.0	8.5	7.0	11.2
4001_5000CC	7.7	8.1	8.9	16.2	4.8	7.8	10.4	12.3
>5000CC	9.6	12.8	12.0	15.9	4.0	8.8	8.6	6.3
Total ave. age	**8.1**	**10.3**	**10.6**	**16.4**	**10.4**	**11.7**	**12.8**	**15.4**

As shown in Table 3 below, the bulk of both petrol engine and diesel engine vehicles registered in 2015/16 financial year were over 10 years. However, in 2018 Uganda adopted a 15-year vehicle age limit, which may still not be effective to attract advanced cleaner and more efficient vehicle technologies, unless it is combined with fiscal measures and tighter vehicle standards.

Table 3: Age of registered vehicles by year and fuel type: 2015/16

Age	DIESEL		PETROL		Total
<5yrs	1,738	87%	62	13%	2,000
S-10	662	38%	1,063	62%	1,725
>10	6,961	42%	9,609	58%	16,570
Total	9,361	46%	10,934	54%	20,295
	9,361	**100%**	**10,934**	**100%**	**20,295**

In 2014, UNEP engaged the Ministry of Energy and Minerals Development and Makerere University College of Business and Management Sciences to support Uganda to carry out fuel economy studies. Follow up studies to review the country's fuel economy policies and to develop a data capturing tool were later supported. Some of the key outcomes of the studies that will be expounded in this summary include the fact that the country has the worst fuel economy in the region, despite having a penalty for importation of older vehicles, and the need to have a system that captures key fuel economy information at the time of vehicle import registration.

While there is no vehicle age restriction, from 2008 the government introduced an environmental tax - in addition to the other vehicle import duties and levels. This is at 35% on vehicles that are 5-10 years old at the time of importation and 50% tax on vehicles older than 10 years. It has been observed that the age of imported vehicles increased over the years. At the same time, vehicle import data for this analysis was found to be domiciled in three different agencies; namely: Uganda Revenue Authority (URA (for privately-owned automobiles), and Ministry of Works and Transport (MoW&T for state owned automobiles) and Ministry of Defense (armored vehicles). The dispersion of data makes it hard to effectively monitor the quality and vehicles being registered. The study looked at vehicle import data for the years 2005, 2008, 2011 & 2014.

Key Fuel Economy Findings

As a result of the high vehicle import age, Uganda imports vehicles that are highly inefficient in terms of fuel consumption as summarized in Table 4 and figure 2 below. For example, the EU average fuel consumption in 2014 was 5.5 L/100 km compared to Uganda at 9.5 L/100km. This means that vehicles imported into Uganda that year were consuming on average about double the fuel amount compared to the EU. This high fuel consumption costs the countries and consumers more in terms of fuel bill.

Table 4: Harmonic average annual fuel economy

Year of Registration	Petrol Fleet	Diesel Fleet	Overall
2000	85	12-5	10_2
2001	8_6	12-3	10-3
2002	8_6	12-5	10_5
2003	86	12_6	10_6
2004	85	12-3	10_2
2005	8_6	12_9	10_2
2006	8_6	12_9	10-3
2007	8_6	12-5	10_)
2008	86	12-3	10_1
200,	87	13_0	10_2
2010	8_6	12_9	9_9
2011	8_6	12_7	9_9
2012	8_5	12_9	9_7
2013	85	12_3	9_6
2014	8-4	12_2	9_5

Figure 2: Harmonic average annual fuel economy

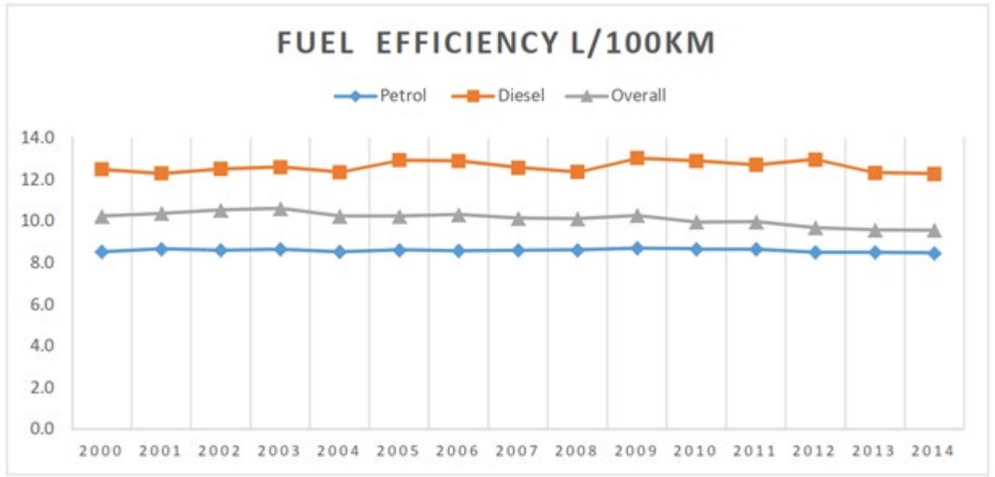


Figure 3: Uganda's Average Fuel Economy Compared to Global Average

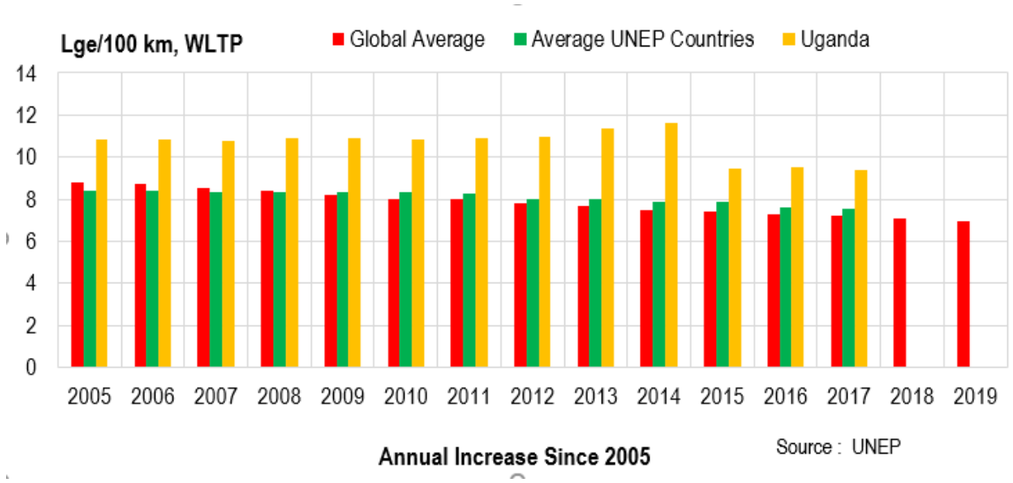


Figure 3 compares Uganda's average fuel economy against the global average and that of the developing and transitional countries analyzed through the GFEI. For the country to reach the GFEI target of 4L/100 km in 2050 for the entire fleet, an annual fuel efficiency improvement of 6.7% is required. However, only a 2.1% annual improvement has been realized since 2010. Consumer buy-in to procure fuel efficient vehicles coupled with government incentives and taxation to limit import of old and inefficient vehicles will play a critical role in promoting cleaner efficient vehicle into Uganda.

Electric Vehicles

Uganda has the highest number and growth in 2-wheeler/motorcycles in Africa. It is estimated that the average annual vehicle growth rate from 2002/3 has been 15%, with the fastest growth rate registered in the motorcycles category estimated at 17%. This presents an opportunity for the country to incentivize a shift to electric modes. The government has shown its commitment to the transition by among other things supporting the prototyping of the electric Kayoola bus Kiira motors and having fuel efficiency improvement as part of the national mitigation actions. The city of Kampala is also planning mass transport systems and has already introduced electric buses. An electric mobility roadshow was organized late 2021, which showed consumer interest in electric mobility.

Proposed policies to improve fuel economy/ electric mobility

Table 5 below summarizes the vehicle taxes at the time of first registration in Uganda.

Table 2: Tanzania's Graduated vehicle age-based taxation

Tax	Percentages
Import Duty	25% of CIF vafoe
VAT	18% of the sum of Imort duty and Customs value
WithholdingTax	6% of Customs value
EmiromnentalLevy	35% of CIF value for vehicles 5 to 10 years old 50% of CIF value for vehicles 10 years old above*
Domestic VAT	15% of the customs value
Infrastrncture]evy*	1.5 of custom's value*

This taxation includes the environment levy which has not been effective in encouraging the purchase of cleaner and more efficient vehicles.

From the GFEI study, the following policy interventions were proposed for consideration:

- a differential tax rates/fees based on age of the vehicle In line with the polluter pay principle i.e. a higher tax rate is imposed on older vehicles fuel inefficient vehicles than on newer efficient ones.
- Consumer awareness strategies
  - » a data entry tool which when implemented will help stakeholders to monitor and track vehicle fuel efficiency and carbon emissions in the country. Figure 4 below shows the kind of information that would be accessible from the tool.

Figure 4: Sample report from the data capture tool

- » A mandatory fuel economy label to be affixed on vehicles indicating how pollutive the vehicle is made to be. This measure provides information for consumers to purchase more fuel-efficient vehicles.
- » Other consumer centric fuel efficiency including smart driving, Check the status of the tyres for adequate pressure and replacement where necessary, use of efficient fuels and refueling wisely, car pooling etc.

- Development of additional policies to promote low carbon transportation including:
  - » periodic inspection of all automobiles,
  - » vehicle inspections before importation should include carbon emission levels,
  - » Encouraging public transportation by providing parking spaces at different entry points into the city for private automobiles.
  - » Provision of safe walking and cycling infrastructure
  - » Encouraging the use of public transport by providing parking spaces at different entry points into the city for private vehicles.

Conclusion

A key priority for the government to promote cleaner and more fuel economy vehicles could start with incentives to shift to electric 2&3 wheeler motorcycles. These technologies are already widely available and cost-effective, and when linked to renewable energies and battery swapping schemes, could be widely adopted. Another segment would be to promote low carbon public transportation. The private sector is also taking the initiative to provide and use cleaner and more fuel-efficient vehicles in their operations. Government policy, additional incentives, consumer outreach and investment in requisite infrastructure will shift consumer choices towards cleaner and more efficient vehicles, including electric vehicles. Finally, for in-use vehicles, mandating regular inspection and maintenance will address increasing vehicle emissions as well as improve road safety.

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