



USED VEHICLES AND THE ENVIRONMENT

A Global Overview of Used Light Duty Vehicles: Flow, Scale and Regulation

Update and Progress 2024



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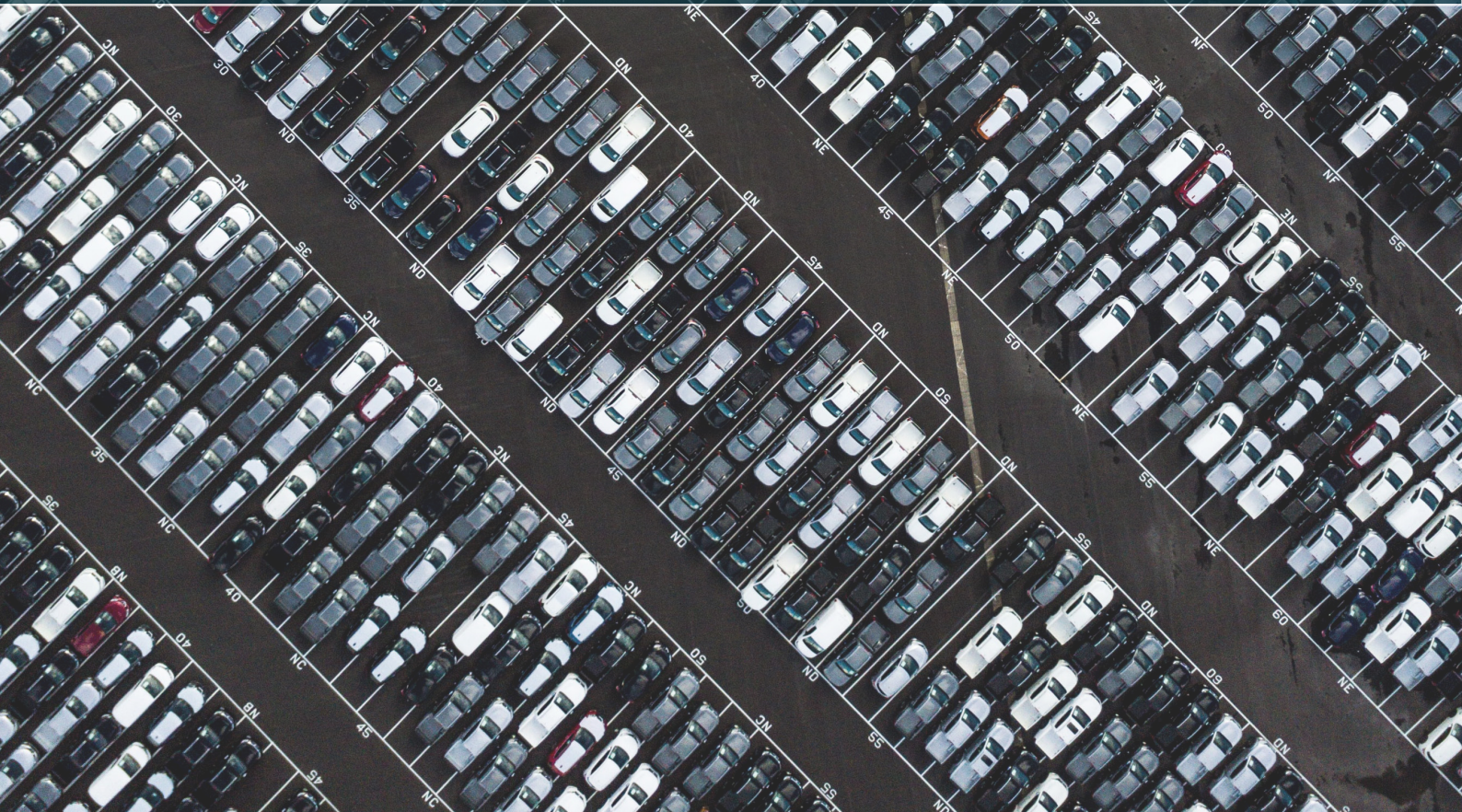
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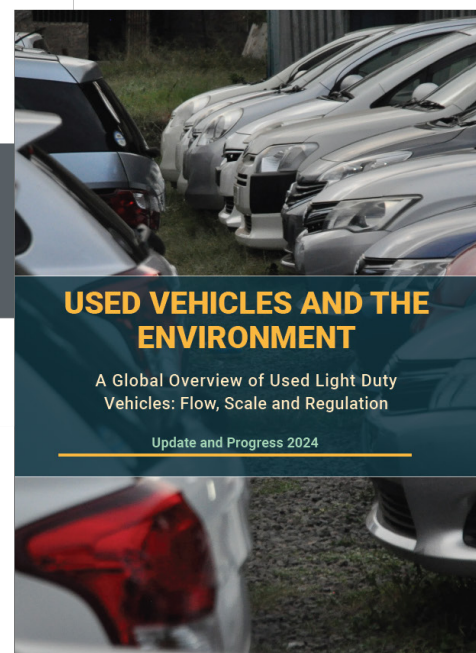
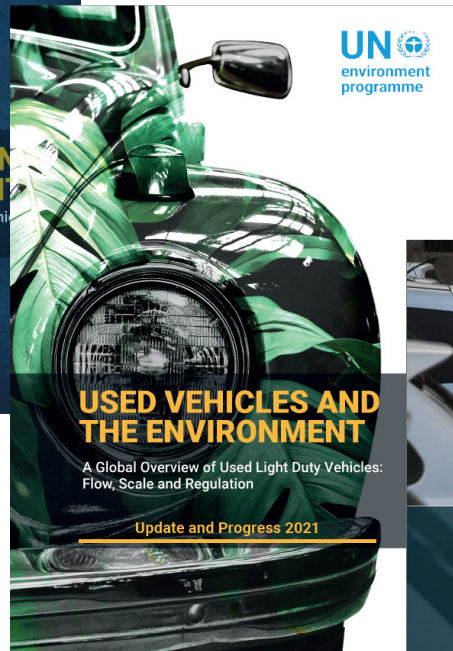
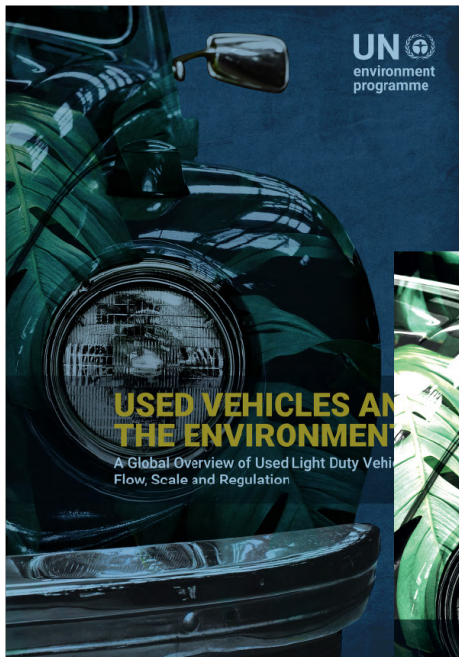
1. Introduction



This paper provides updated and new information on the export of used light-duty vehicles (LDVs) to the Global South by the four leading used vehicles exporters: European Union (EU), United States of America (USA), Japan, and Republic of Korea (ROK).

As part of UNEP's ongoing series on used vehicles, this paper builds on the 2020 report and 2021 update on "Used Vehicles and the Environment - A Global Overview on Used Light Duty Vehicles: Flows, Scale, and Regulation", and includes:

- ▶ Updated used LDVs export data for the period 2015-2022 from the EU, USA, Japan and ROK.
- ▶ An update of the regulatory environment for used LDVs import for 146 countries, 122 of which are low-and-middle income countries (LMICs).





2. Key Findings

- ▶ A minimum of 23 million used LDVs were exported between 2015-2022 from Japan, the EU, USA and ROK to the Global South, i.e. to Asia-Pacific; Eastern Europe, Caucasus, and Central Asia (EECCA); Africa; Latin America and the Caribbean (LAC); and the Middle East.
- ▶ Over the 2015-2022 period, Japan was the highest exporter of used LDVs at 34.5%, followed by the EU at 31.1%, the USA at 23.9%, and ROK at 10.5%. However, in 2021 and 2022, the EU was the highest exporter of used LDVs.
- ▶ The number of used LDVs exported increased from 2.4 million in 2015 to 3.1 million in 2022.
- ▶ There was a significant drop in used LDVs exports in 2020 to 2.7 million from 3.3 million in 2019, mainly due to the Covid 19 pandemic.
- ▶ The number of used LDVs exported has gone back to pre-Covid levels. In 2022, 3.1 million used LDVs were exported from the four major exporters, mirroring the volume recorded in 2019.
- ▶ On the receiving end, Africa imported the highest share of used LDVs at 33%, followed by the EECCA region at 24%, Asia-Pacific at 16%, the Middle East at 15%, and LAC at 12%.
- ▶ Between 2017 and 2022, the EU, Japan, and ROK exported more than 105 thousand used battery-powered electric vehicles (BEVs) to Asia-Pacific, EECCA, Africa, LAC, and the Middle East. Data was unavailable for EVs exported from the USA. The highest number of used EVs was exported to EECCA region at 38.2%, followed by LAC at 29.3%, Asia-Pacific at 24.0%, Middle East at 7.1% and Africa at 1.4%.
- ▶ Of the 146 countries studied in this and previous UNEP series to determine their used LDVs import policies, currently roughly half have introduced regulation to import better quality used vehicles. As of end of December 2023, 71 countries had adopted 'good' or 'very good' policies for used LDVs import compared to 47 countries in 2021 or roughly a third. However, countries are at various stages in the implementation and enforcement of these regulations.
- ▶ Additionally, one of the leading used vehicles exporting region is proposing stricter requirements for used vehicles exports. The European Commission is proposing a new regulation on end-of-life vehicles. If adopted, the regulation will have significant impact on the quality of used vehicles exported from the region. The regulation will prohibit the export of end-of-life vehicles; require used vehicles to have a valid roadworthiness certificate at the point of export; will help importing countries in terms of compliance to their national regulations; and establish an enforcement and information exchange system. UNEP continues to engage with the other major used vehicles exporting countries to also consider regulating the quality of used vehicles exports.

UNEP is coordinating a Used Vehicles Programme that aims at promoting minimum environmental and safety regulations in used vehicles importing countries/sub-regions. Through engaging with diverse stakeholders, UNEP is supporting countries and sub-regions in the Global South to establish minimum standards for import of cleaner, efficient, and safer used vehicles, including used electric vehicles.

The Used Vehicles Programme is a multi-donor funded programme, that is mainly funded by UNEP, FIA Foundation, the Climate and Clean Air Coalition, ClimateWorks Foundation, the European Union, and the UN Road Safety Fund. It covers both light and heavy duty used vehicles and is supported through various partnerships and initiatives including the Partnership of Clean Fuels and Vehicles (PCFV), the Global Fuel Economy Initiative (GFEI), the Climate and Clean Air Coalition (CCAC), and the UN Road Safety Fund.





3. Flows and Scale of Used Light-Duty Vehicles Exports from the Major Exporters: 2015 - 2022

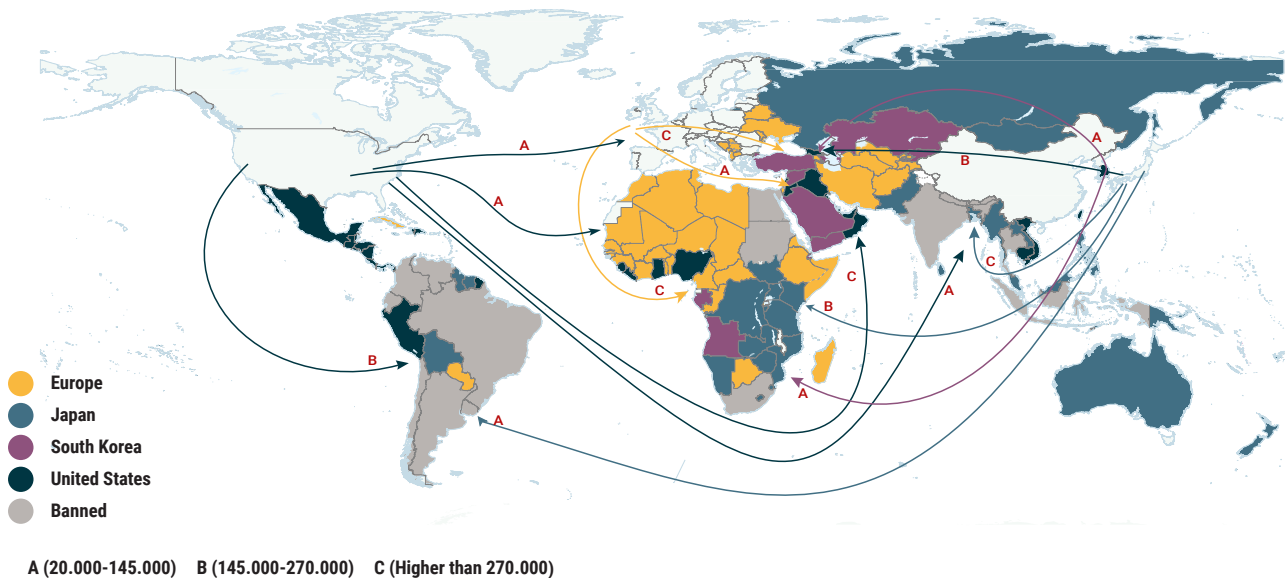


i. Introduction

This section analyzes the flows and scale of used LDVs from the four major global used vehicles exporters, namely, Japan, the EU, USA, and ROK, to the following five developing regional markets - Africa; Asia- Pacific; Eastern Europe, the Caucasus, and Central Asia (EECCA); Latin America and the Caribbean (LAC); and Middle East for the period 2015-2022.

It is important to note that some recipient countries may not be the destination for used vehicles imports, as some countries, including those that have banned imports of used vehicles for national use, act as transit countries or re-export them to other countries.

MAP 1: Used Light Duty Vehicles Quantity and Flow to Main Destination Markets from the EU, USA, Japan, ROK in 2022



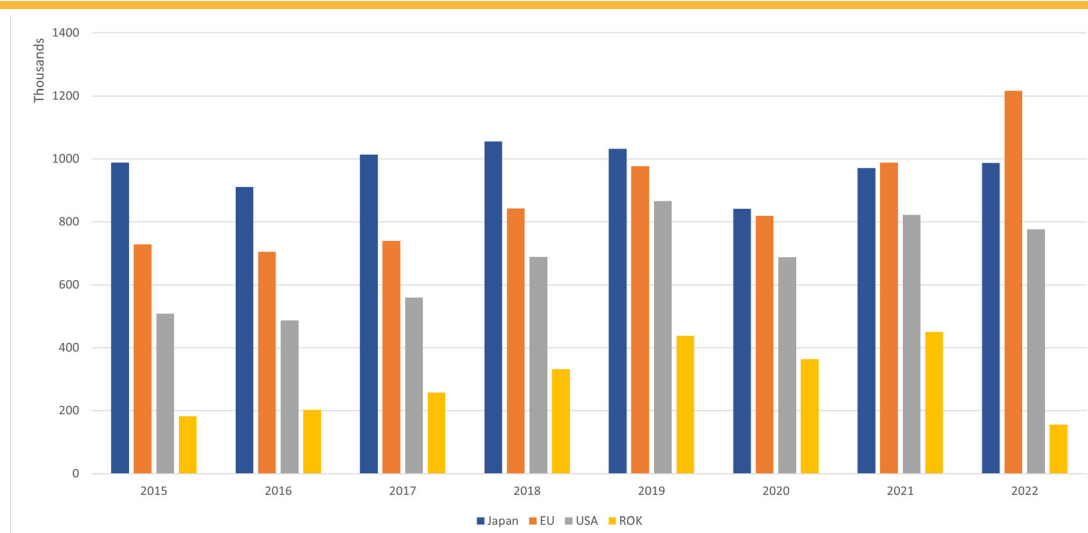
Source: UNEP 2023

From 2015 to 2022, around 22.6 million used LDVs were exported from the four main used LDVs exporters to Asia-Pacific, EECCA, Africa, LAC, and the Middle East.

ii. Overview of the Main Used LDVs Exporters

The number and share of used LDVs exported by the four leading exporters from 2015-2022 is shown in Figure 1 below.

FIGURE 1: Number of Used Light-Duty Vehicles Exported by Year (the EU, USA, Japan, and ROK; 2015-2022)



Source: UNEP, based on data from exporters globally from 2015-2022

Figure 1 shows that from 2016 used LDVs exported have been increasing steadily until 2020 when there was a decline, most likely due to the Covid-19 pandemic. In 2015, around 2.4 million used vehicles were exported, and by 2019 these had reached around 3.3 million. The used LDV market recorded an average yearly growth rate of 8.6% between 2015 and 2019. In 2020, during the first year of the covid-19 pandemic, the number of used LDVs exported reduced by over 600 thousand from 3.3 million units in the previous year to 2.7 million units. In 2021, used LDVs exports regained traction with 3.2 million units exported. 2022 saw a slight reduction in the number of used LDVs exported to 3.1 million units mainly due to a decrease in used LDVs exports from ROK.

Table 1 below gives the total number and share of export of used LDVs by exporter. Over the eight-year period analysed, Japan exported the highest number of used LDVs at 34.5%, followed by the EU at 31.1%, USA at 23.9% and ROK at 10.5%. However, looking at yearly exports, in 2021 and 2022, the EU was the leading exporter of used LDVs.

TABLE 1: Share of Used Light Duty Vehicles Exports by Exporter

Exports of Used LDVs by Exporter to the 5 Importing Regions (2015 to 2022)		
Japan	7,799,906	34.5%
EU	7,015,667	31.1%
USA	5,394,728	23.9%
ROK	2,382,852	10.5%
Total	22,593,153	100.0%

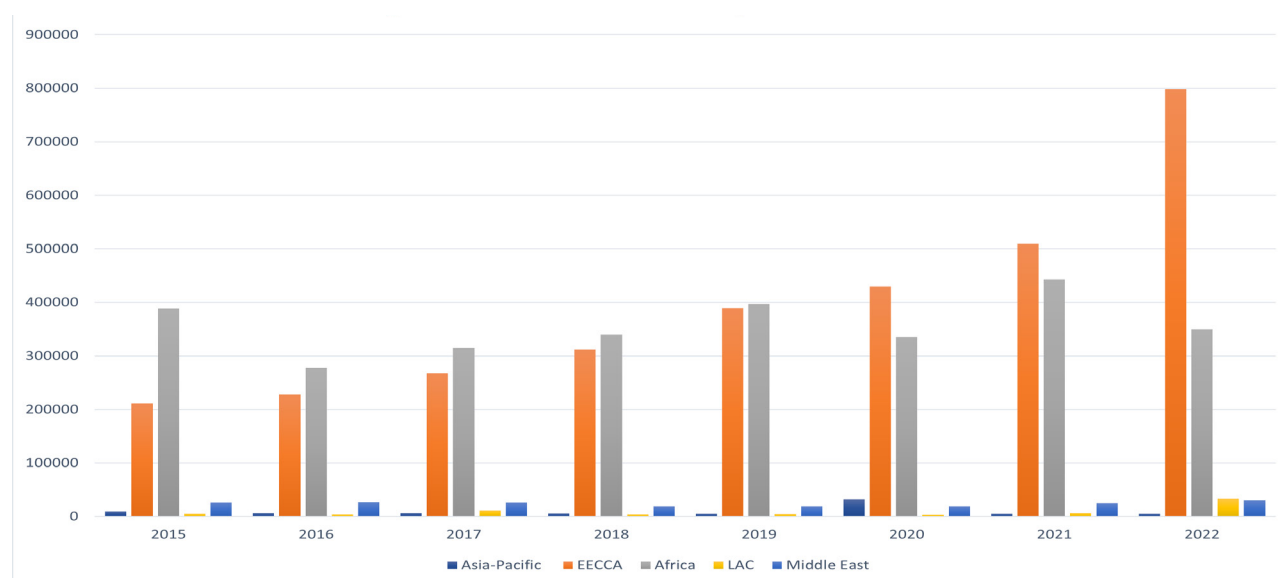
Source: UNEP, based on data from exporters globally from 2015-2022

A more detailed analysis of each of the four used LDVs exporters is provided below.

• European Union (EU)

The EU became the highest exporter of used LDVs in 2021 and 2022 to Asia-Pacific, EECCA, Africa, LAC, and Middle East. The EU exports are mainly to EECCA and Africa as shown in Figure 2 below.

FIGURE 2: EU Used Vehicles Exports 2015-2022



The top ten importers of used LDVs from the EU between 2015 and 2022 are given in Table 2 below.

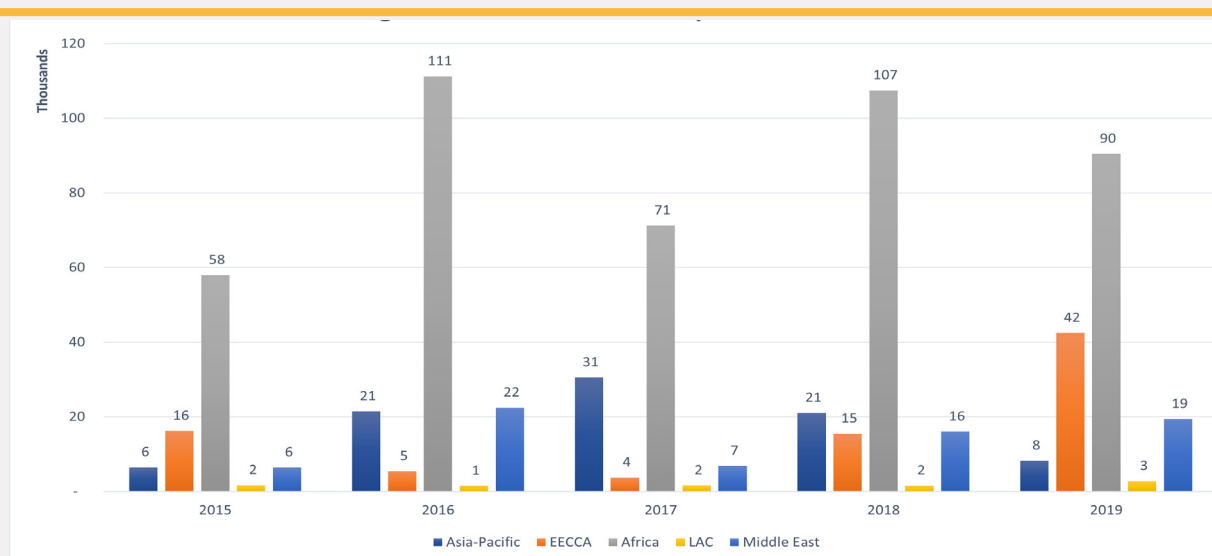
TABLE 2: Top Ten Importers of Used LDVs from the EU

Top Ten Used LDVs Importing Countries from the EU (2015-2022)	
Country	Imports
Ukraine	979,448
Serbia	867,342
Nigeria	479,915
Libya	451,279
Bosnia and Herzegovina	402,181
Benin	335,851
Guinea	274,693
Georgia	228,438
Cameroon	209,884
Senegal	192,244

Country Spotlight: United Kingdom (UK)

This section highlights used LDVs exports from the UK. The export data was only available between 2015 and 2019, prior to UK's withdrawal from the EU. It will be noted that used LDVs exports by the UK have been included in the EU analysis for the period 2015-2019. The aim of the spotlight is to show the significance of UK as a used vehicles exporter. One of the recommendations of this paper is to engage with key used vehicles exporters, namely the UK and China, to access used vehicles export data. Africa has traditionally been the highest importer of used LDVs from the UK followed by the EECCA region as shown in Figure 3 below.

FIGURE 3: UK Used Vehicle Exports 2015-2019



Below are the top 10 importers of used LDVs in Asia-Pacific, EECCA, Africa, LAC, and Middle East from the UK from 2015 to 2019.

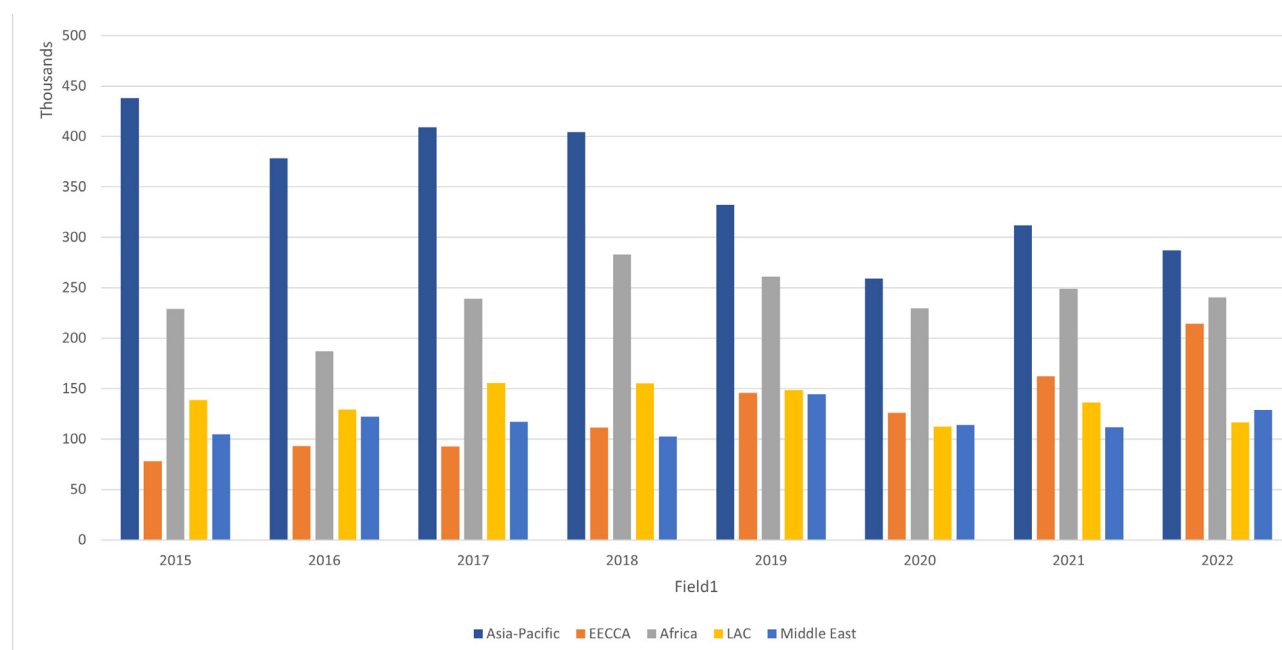
TABLE 3: Top Ten Importers of Used LDVs from the UK in 2015 – 2019

UK 2015 – 2019	
Country	Imports
Nigeria	129,703
Zimbabwe	68,607
Turkey	58,660
Tanzania	46,272
United Araba Emirates	39,890
South Africa	21,445
Somalia	20,062
Zambia	19,349
Cameroon	17,664
Qatar	17,218

• Japan

Over the 2015-2022 period, Japan was the leading exporter of used LDVs. Traditionally the Asia-Pacific region has been the main importer of used LDVs from Japan but in recent years, there seems to be an equal regional distribution of the imports, noting however that imports by the Middle East are mainly for re-export.

FIGURE 4: Japan Used Vehicle Exports 2015-2022



The top ten importer of used LDVs from Japan are given below.

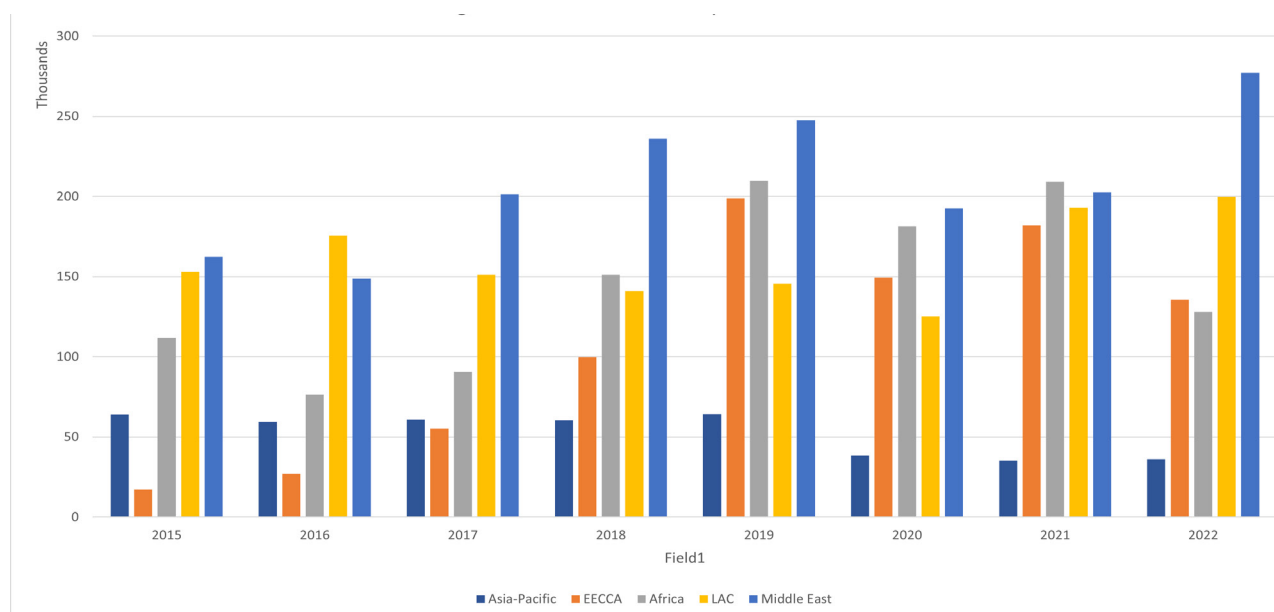
TABLE 4: Top Ten Importers of Used LDVs from Japan

JAPAN 2015-2022	
Country	Imports
United Arab Emirates	932,745
New Zealand	829,830
Russian Federation	828,690
Chile	558,318
Kenya	491,135
South Africa	380,141
Mongolia	360,645
United Republic of Tanzania	348,939
Myanmar	330,876
Pakistan	292,219

• United States of America (USA)

The USA exports the least number of used LDVs to the Asia-Pacific region. In recent years, used LDVs exports to the EECCA have gone up, with exports traditionally going to the LAC, and Middle East.

FIGURE 5 USA Used Vehicle Exports 2015-2022



Below are the top ten importers of used LDVs from the USA in the period 2015-2022.

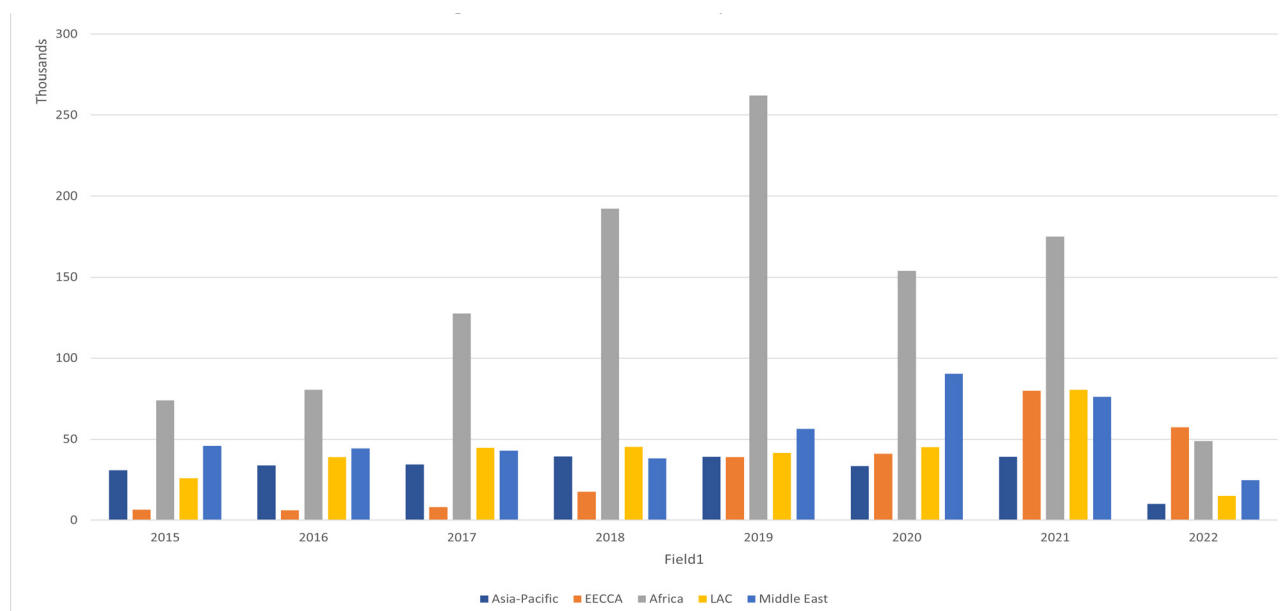
TABLE 5: Top Ten Importers of Used LDVs from USA

USA 2015-2022	
Country	Imports
United Arab Emirates	923,451
Nigeria	554,805
Mexico	515,098
Georgia	475,275
Ukraine	349,077
Jordan	279,291
Dominican Republic	244,929
Cambodia	225,310
Guatemala	179,011
Oman	172,559

• Republic of Korea (ROK)

There was a significant drop in the number of used LDVs exported by ROK in 2022. Traditionally Africa has been the highest importer of used LDVs from ROK as shown below.

FIGURE 6: ROK Used Vehicles Exports 2015-2022



The top 10 importer of used LDVs from ROK are shown below.

TABLE 6: Top Ten Importers of Used LDVs from ROK

ROK 2015-2022	
Country	Imports
Libya	784,143
Jordan	192,021
Yemen	124,446
Chile	124,007
Dominican Republic	119,981
Egypt	114,484
Ghana	108,933
Cambodia	95,180
Mongolia	82,722
Kyrgyzstan	54,345

iii. Regional Distribution of Used LDVs Imports

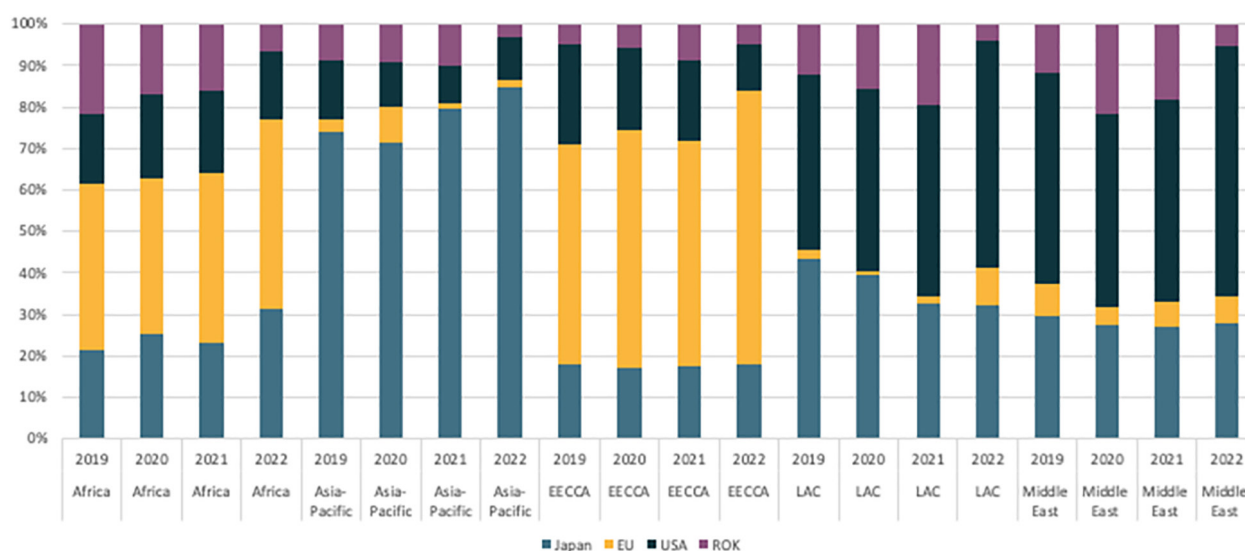
Table 7 below give the total number and share of used LDVs imports by region. From 2015 to 2022, Africa imported the highest number of used LDVs - about 7.5 million units (33%), followed by the EECCA region with approximately 5.4 million units (24%), Asia -Pacific around 3.7 million units (16%), the Middle East around 3.3 million (15%), and LAC around 2.8 million (12%).

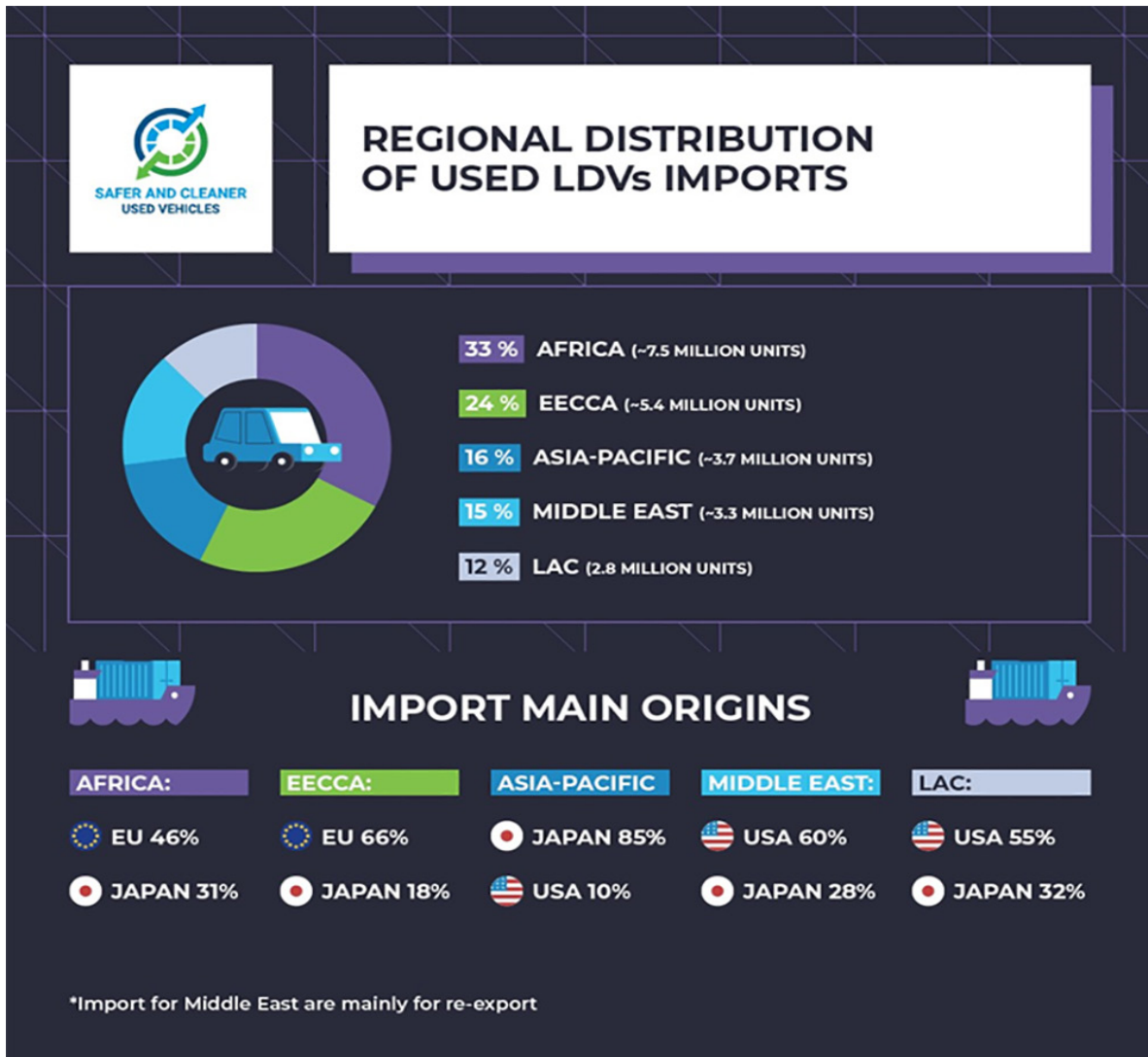
TABLE 7: Share of Used Light Duty Vehicles Imports by Region

Imports of Used Light Duty Vehicles from 2015 to 2022 by Region		
LAC	2,792,998	12%
Middle East	3,293,688	15%
Asia-Pacific	3,661,259	16%
EECCA	5,371,408	24%
Africa	7,473,800	33%
Total	22,593,153	100%

The regional distribution of used LDVs exported from the EU, USA, Japan, and ROK in the period under review is shown below in Figure 7.

FIGURE 7: Share of Used Light-Duty Vehicle Exports by Region and Exporter





Zooming in on the year 2022:

- ▶ Africa imported 46% (349,852 units) of its used LDVs from the EU and 31% (240,492 units) from Japan. Africa historically imports used vehicles mainly from these two exporters.

AFRICA Used LDVs Imports in 2022		
EXPORTING COUNTRIES	NUMBER OF UNITS	PERCENTAGE DISTRIBUTION
EU	349,852	46%
JAPAN	240,492	31%
USA	128,057	17%
ROK	48,906	6%
Total	767,307	100%

- ▶ The Asia – Pacific region imports used vehicles primarily from Japan, and USA. In 2022, the region imported 85% (287,247 units) of its used LDVs from Japan, 10% (36,070 units) from the USA, 3% (9,943) from ROK, and 2% (5,240) from the EU.

ASIA-PACIFIC Used LDVs Imports in 2022		
EXPORTING COUNTRIES	NUMBER OF UNITS	PERCENTAGE DISTRIBUTION
JAPAN	287,247	85%
USA	36,070	10%
ROK	9,943	3%
EU	5,240	2%
Total	338,500	100%

- ▶ The EECCA region imported most used vehicles from the EU at 66% (798,195 units), followed by Japan at 18% (214,574 units), USA at 11% (135,655 units) and ROK at 5% (57,319 units).

EECCA Used LDVs Imports in 2022		
EXPORTING COUNTRIES	NUMBER OF UNITS	PERCENTAGE DISTRIBUTION
EU	798,195	66%
JAPAN	214,574	18%
USA	135,655	11%
ROK	57,319	5%
Total	1,205,743	100%

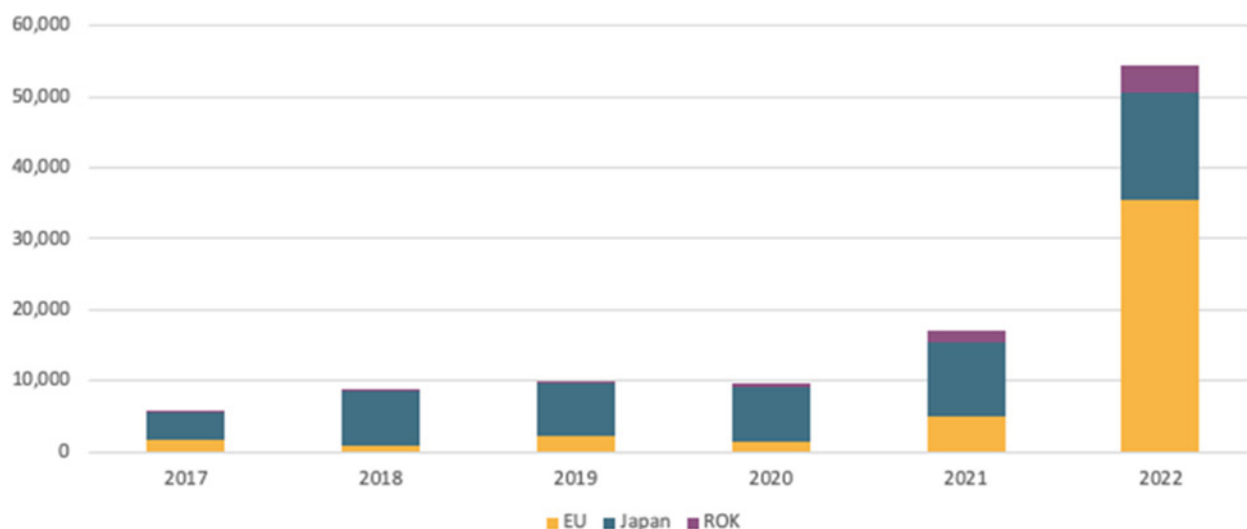
- ▶ LAC historically imports mainly from USA and Japan. In 2022, the region imported 55% (199,698 units) of its used LDVs from the USA, 32% (116,564 units) from Japan, 9% from the EU (33,375 units) and 4% (14,944 units) from ROK.
- ▶ The Middle East imports mainly from the USA and Japan. In 2022, 60% (277,010 units) of used LDVs were imported from the USA, 28% (128,845 units) from Japan, 7% (30,304 units) from the EU, and 5% (24,754 units) from ROK.

MIDDLE EAST Used LDVs Imports in 2022		
EXPORTING COUNTRIES	NUMBER OF UNITS	PERCENTAGE DISTRIBUTION
USA	277,010	60%
JAPAN	128,845	28%
EU	30,304	7%
ROK	24,754	5%
Total	460,913	100%

iv. Used Light-Duty Battery-powered Electric Vehicles

Between 2017 and 2022, the EU, Japan, and ROK exported over 105 thousand used light-duty BEVs globally, as shown in Figure 8 below.

FIGURE 8: Used light duty BEVs exported by the EU, Japan, and ROK between 2017 and 2022



Source: UNEP 2023

Opportunities exist for electric vehicle technology transfer in the Global South through import of used electric vehicles. Thus, assisting countries to leapfrog to cleaner technologies faster.

The regional distribution of exports of used BEVs from the three exporters is provided in Table 8 below. Most of these vehicles went to the EECCA, LAC and Asia-Pacific.

TABLE 8: Share of Used Light Duty BEV Imports by region

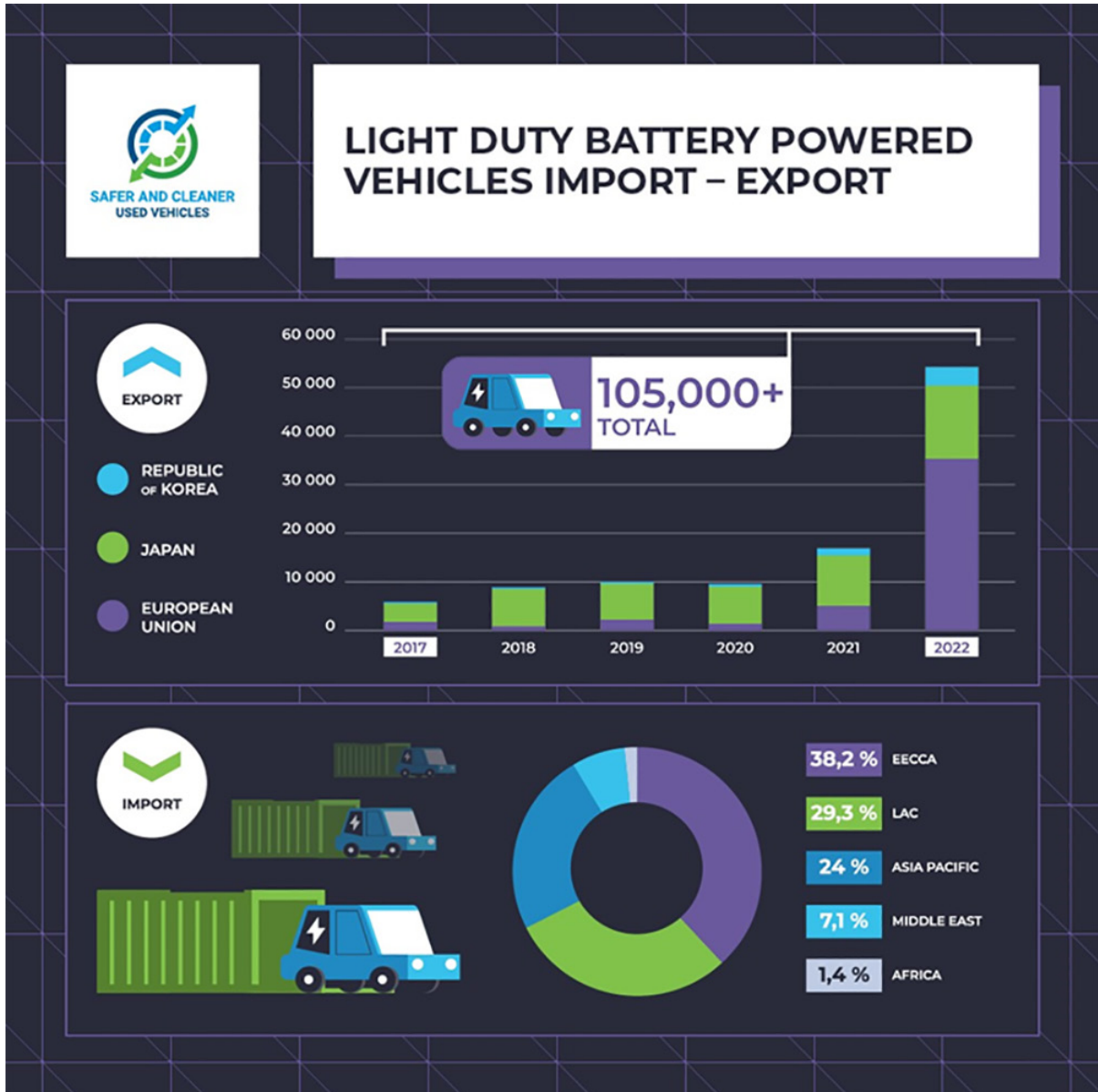
Region	Total Used Light Duty BEV Exports from EU, Japan, and the ROK 2017 – 2022	% by region
EECCA	40,250	38%
LAC	30,826	29%
Asia-Pacific	25,299	24%
Middle East	7,466	7%
Africa	1,432	1%
Total	105,273	100%

Shifting the focus to the exporters of used light duty BEVs between 2017 - 2022:

- ▶ The EU exported 46,525 units of used light duty BEVs to the five regions. With LAC receiving the most at 64% (29,566 units), the EECCA at 28% (13,097 units), the Middle

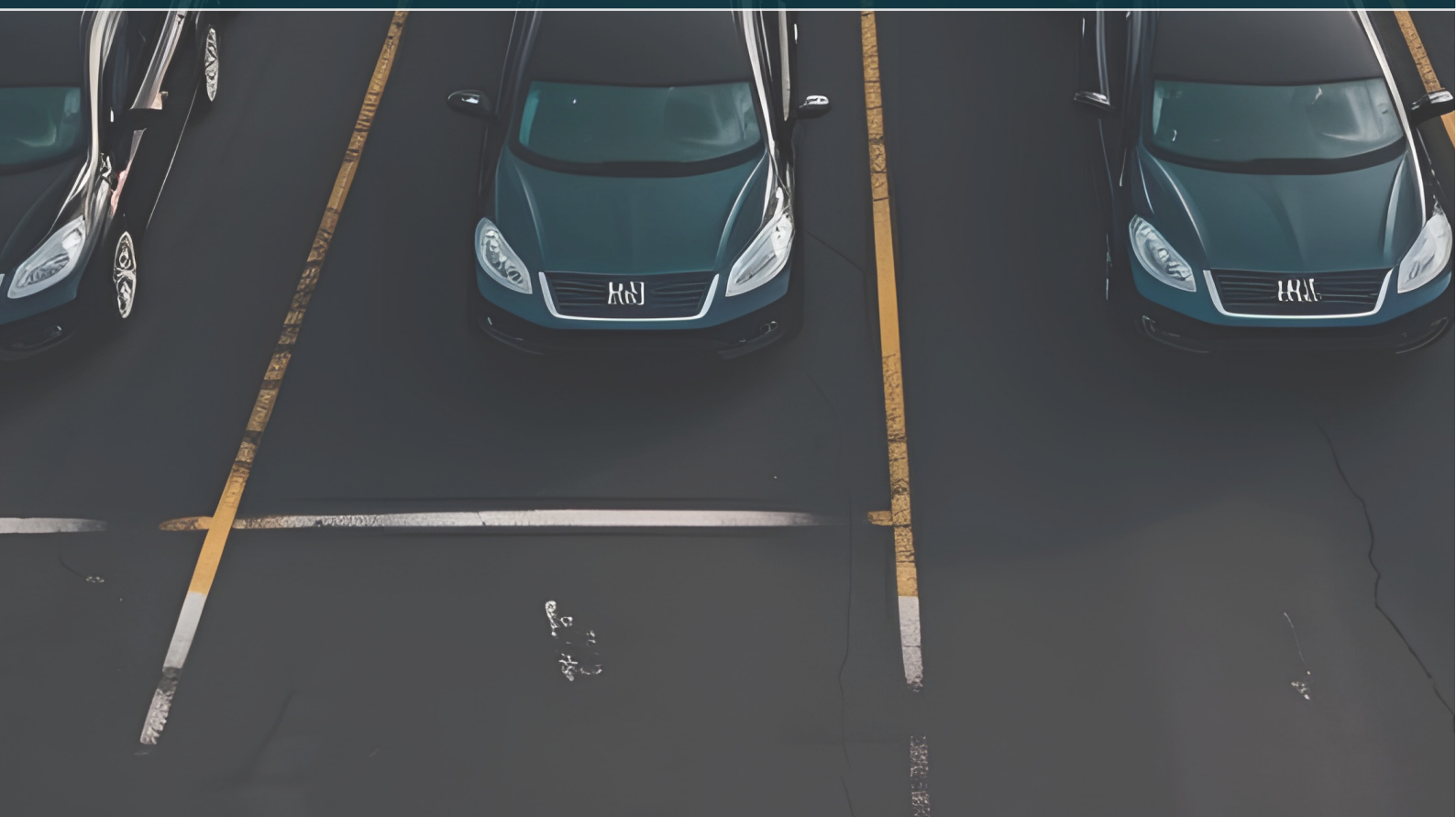
East at 0.4% (2,057 units), Asia-Pacific at 0.3% (1,378 units), and Africa at 0.1% (427 units).

- ▶ Japan exported 53,366 units of used light duty BEVs between 2017 and 2022. The main destinations of these vehicles were EECCA at 50% (26,252 units), and Asia-Pacific at 45% (23,731 units).
- ▶ ROK exported 6,382 units of used light duty BEVs between 2017 and 2022. Middle East received 80% (5,082 units) of these vehicles, while EECCA received 14% (901 units)











4. Regulatory Environment for Used Light Duty Vehicles



a) Importing Countries

National regulatory environments that seek to incentivize import of cleaner and more efficient used LDVs have been analysed by UNEP based on the criteria below.

TABLE 9. Regulatory Environment Assessment Criteria

	Very Good - a used LDV Euro 5 or more emissions standard adopted and/or age limit of 3 years or below
	Good - a used LDV Euro 4 emissions standard adopted and/or age limit of 4 or 5 years
	Weak – a used LDV Euro 3 emissions standard adopted and/or age limit of between 6- 8 years
	Very weak - No used LDV Euro emissions standard adopted and/or age limit of 9 years plus or no age limit
	Banned - represents a complete restriction on used vehicle imports
	Countries not included in the analysis

Since the last update of UNEP’s used light-duty vehicles paper of October 2021, there has been some progress made by countries to develop and adopt regulatory measures to incentivize the import of better quality used LDVs. This paper provides an update of the 146 used LDVs importing countries - previously reviewed - that have adopted regulatory measures as of December 2023.

In 2020 when the first used LDVs report was published by UNEP, 81 countries had weak or very weak measures to regulate the quality of used LDVs import, and only 47 countries had good or very good regulatory measures. Since then, there has been a notable improvement in the number of countries shifting to better used vehicles regulations. By December 2023, only 57 countries had weak or very weak measures for used vehicles regulation with 71 countries having good or very good regulatory measures. This is shown in Table 10 and Table 11 below.

TABLE 10: Number of Countries with Very Weak/Weak Measures and Very Good/Good Measure between 2020-2023

	Very Weak / Weak	Very Good / Good
2020	81	47
2021	66	62
2023	57	71

Source: UNEP (2023)

- ▶ **Asia-Pacific** - in 2021 Cambodia started the implementation of Euro 4/IV vehicle emission standards and is now developing a roadmap to Euro 6/VI. In 2023, Mongolia adopted Euro 5 standards, still to be implemented. In Brunei Darussalam, imported

used vehicles for private usage must not be more than 3 years old from the original registration date and not more than four years from the year of manufacture.

- ▶ **Africa** - in 2022, the East Africa Community (EAC) adopted Euro 4/IV vehicle emission standards. Traditionally the EAC comprised 5 countries (Kenya, Uganda, Tanzania, Rwanda, and Burundi). Hence the adopted standards have been/ are being implemented at national level in 5 member states. In more recent years, South Sudan, the Democratic Republic of Congo and Somalia have also joined the EAC hence will all be required to also implement all agreed standards over time. Uganda which has a 15-year age limit, has also tightened its imported conditions for vehicle aged 9 years and above, by introducing more punitive tax rates for such vehicles. The United Republic of Tanzania has also set a maximum LDV age limit of 10 years. Additionally, in 2023, Morocco adopted Euro 6/VI vehicle emission standards.

- ▶ **Eastern Europe, Caucasus, and Central Asia (EECCA)** - Georgia adopted Euro 5 standards for implementation from 1st January 2024. In 2022, Uzbekistan adopted Euro 4 standards, and Bosnia and Herzegovina are at Euro 5. The member states of the Eurasian Economic Union (EAEU), the Russian Federation, Armenia, Belarus, Kazakhstan, and Kyrgyzstan all implement the same Euro 5 vehicle emission standards. The technical regulations of these countries are adopted by the Eurasian Economic Commission (EEC).

MAP 2: Used Light Duty Vehicle Regulatory Environment (UNEP, December 2023)

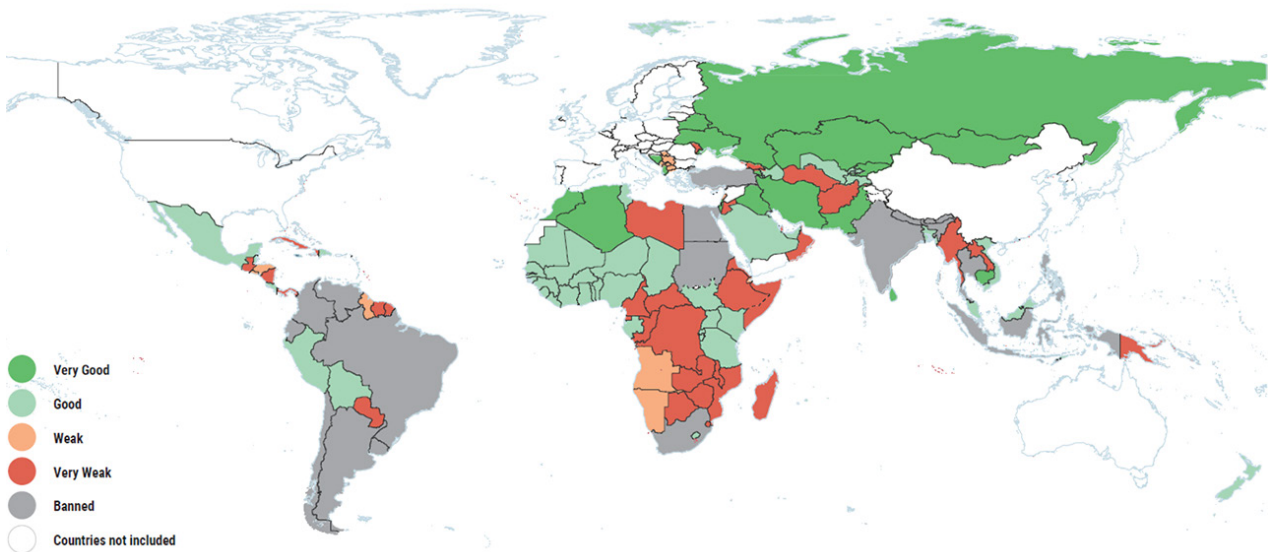


TABLE 11. Used Light Duty Vehicle Regulatory Environment Assessment by Country (December 2023)

Regulatory Environment Assessment (UNEP)	Countries	Region
Very Good	Algeria, Mauritius, Morocco, Brunei Darussalam, Pakistan, Singapore, Sri-Lanka, Armenia, Albania, Belarus, Bosnia Herzegovina, Kazakhstan, Kyrgyzstan, Russian Federation, Ukraine, Iran (Islamic Republic of), Iraq, Israel, United Arab Emirates	Total:19 Africa (3) Asia-Pacific (4) EECCA (8) LAC (0) ME (4)
Good	Benin, Burkina Faso, Burundi, Cape Verde, Chad, Côte d'Ivoire, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Mali, Mauritania, Niger, Nigeria, Rwanda, Senegal, Sierra Leone, United Republic of Tanzania, Togo, Tunisia, Uganda, Bangladesh, Cambodia, Fiji, Malaysia, Maldives, New Zealand, Papua New Guinea, Timor-Leste, Viet Nam, Azerbaijan, Tajikistan, Uzbekistan, Antigua & Barbuda, Barbados, Bahamas, Bermuda, Bolivia (Plurinational State of), Costa Rica, Dominican Republic, Jamaica, Mexico, Peru, Trinidad & Tobago, Bahrain, Kuwait, Qatar, Saudi Arabia	Total:52 Africa (25) Asia-Pacific (9) EECCA (3) LAC (11) ME (4)
Weak	Angola, Djibouti, Namibia, Samoa, Serbia, North Macedonia, El Salvador, Guyana, Honduras, Suriname, Lebanon	Total:11 Africa (3) Asia-Pacific (1) EECCA (2) LAC (4) ME (1)
Very Weak	Botswana, Cameroon, Central African Republic, Comoros, Congo, Democratic Republic of Congo, Equatorial Guinea, Eritrea, Eswatini, Ethiopia, Libya, Madagascar, Malawi, Mozambique, Sao Tome and Principe, Somalia, South Sudan, Zambia, Zimbabwe, Afghanistan, Lao People's Democratic Republic, Mongolia, Myanmar, Nauru, Palau, Georgia, Moldova, Montenegro, Turkmenistan, Aruba, Belize, Cuba, Dominica, French Guiana, Grenada, Guatemala, Haiti, Nicaragua, Panama, Paraguay, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and Grenadines, Turks and Caicos, Jordan, Oman	Total:46 Africa (19) Asia-Pacific (6) EECCA (4) LAC (15) ME (2)
Banned	Egypt, South Africa, Seychelles, Sudan, Bhutan, India, Indonesia, Nepal, Philippines, Thailand, Türkiye, Argentina, Brazil, Chile, Colombia, Ecuador, Uruguay, Venezuela	Total:18 Africa (4) Asia-Pacific (6) EECCA (1) LAC (7)
		Total: 146
*Mongolia adopted Euro 5 vehicle emission standards in 2023, however, implementation is still to begin, similarly, Georgia adopted Euro 5 and implementation is to begin in January 2024, Peru adopted Euro 6/VI in October 2021 with an implementation date of October 2024 concurrently with 10 ppm fuels, Philippines has a partial ban – as they allow HDV used vehicle imports; the new EAC members (Democratic Republic of Congo, South Sudan and Somalia) are still to adopt the standards.		NOTES

b) Exporting countries

One of the leading used LDVs exporter, the EU, is also considering regulating the quality of used vehicles exports. This will be crucial in setting minimum requirements for the export of quality used vehicles.

On July 13, 2023, the European Commission issued a proposal for the new End-of-Life Vehicles (ELVs) Regulation, with the aim of ensuring sustainable management of ELVs and of maximizing the reuse or recycling of most ELVs parts and materials. Section V of the proposed directive includes Used Vehicles and their Export. End of Life Vehicles are to be considered waste and cannot be exported (owner to show) (article 38); and only vehicles with a valid roadworthiness inspection certificate are allowed to be exported (article 38). Another requirement is export compliance inspection by EU customs to verify import standards are met, for example, age, road safety or vehicle emission standards. Third countries must first officially communicate to the EC of their import requirements.

According to the EC, "The proposed actions are expected to generate €1.8 billion net revenue by 2035, with additional jobs created and enhanced revenue streams for the waste management and recycling industry. Moreover, they will contribute to better road safety in third countries by preventing the export of non-roadworthy vehicles and reducing harmful pollution and health risks in countries importing used vehicles from the EU." The proposal is however yet to be discussed and endorsed by the Member States and the European Parliament.



Recommendations



This paper analyses the flow, scale, and regulatory environment of used light duty vehicles (LDVs) from 2015 to 2022, from the four main exporters to the Global South. It shows that more and more countries are acting on the issue of used vehicles, for better air quality, reduced climate emissions, better road safety and reduced costs. Going forward, a multitude of actions can be further pursued to minimize the negative safety and environment impacts of used LDVs, including:

- ▶ **Exporting countries and importing countries have a shared responsibility** on the issue of used vehicles, and should work together to improve and regulated the quality of used LDVs.
- ▶ **For exporting countries**, efforts could be made to (i) ensure no wrecks are being exported; (ii) ensure used vehicles exported have a valid roadworthiness certificate; (iii) support compliance with the standards set up by importing countries.
- ▶ **For importing countries**, efforts could be made to (i) put in place a set of minimum standards on safety and environment for used vehicles; (ii) promote sub-regional/ regional harmonized standards where appropriate; (iii) implement fully existing standards; and (iv) put in place systems for monitoring compliance and enforcement mechanisms.
- ▶ **More data and research are needed.** (i) This paper relies on publicly available information and databases, which are often constrained by limited sources, discrepancies, and the absence of disaggregated data (such as used ICE vehicles vs. used EVs). Hence, there is a need for enhanced data segregation, collection, and accessibility; (ii) There is a need to detail further the impacts of the flow of used LDVs on the environment, economy, and road safety. Such research could target cost-benefit analyses of regulations, thus supporting further improvements on the quality of used LDVs imports; (iii) This paper does not include the quality of used LDVs exported or imported by the countries but only the regulatory environment in the importing countries. There is therefore need for further research onto the quality of the used vehicles, like the study conducted by the Human Environment and Transport Inspectorate (ILT) of the Netherlands in 2020. (iii) For a more comprehensive analysis of the global flows of used LDVs, there is need to include data from other used LDVs exporters, such as China and UK. China is growing in importance with used vehicles exports permitted from May 2019. Although the scale of exports from China remains modest compared to the EU and Japan, the country, as the world's largest producer and consumer of vehicles, including BEVs, is well positioned to tap into the potential with ample supply of used vehicles. UK data, as a used LDVs exporter, remains unknown after its withdrawal from the EU.



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