



Electricity consumption in the road transport sector

21st APEC workshop on energy statistics: data collection on new energy products and technologies, Tokyo

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Energy consumption data in APEC



Final energy consumption by sector in APEC



- Total final energy consumption (TFEC) continued to increase in total overall from 1990 to 2019. However, it dropped to 196 thousand petajoules in 2020, a 4% decrease compared to 2019. This is attributed to the restriction of movements of people due to the COVID-19 pandemic.
- The share of the transport sector stood at around 30% from 1990 to 2020.



Final energy consumption by energy in APEC





- The largest energy consumed is petroleum products, followed by Electricity and heat in 2019. ٠
- Electricity and heat grew the fastest increasing to **more than double** from 1990 to 2020. ٠



Sources: EGEDA website

Transport energy consumption by mode



- Most of the energy in Transport sector was consumed in Roads. Domestic air transport Domestic navigation, and Rail transport had relatively small shares.
- In 2019, final energy consumption was 62.4 thousand petajoules, however, it dropped to 55.2 thousand petajoules in 2020 which is an 11.5% decrease.
- The transport sector was affected more by COVID-19 than other sectors. (-4 % in total: refer to slides 3)

Sources: EGEDA website



Transport energy consumption by energy



- Transport energy was consumed in the following order: Petroleum products, Natural gas, and electricity.
- Petroleum products (including gasoline, diesel etc.) account for almost 90 % of transport energy consumption in 2019.
- Electricity consumption grew at a compounded annual rate of 2.5% from 1990 to 2020.



Sources: EGEDA website



Energy consumption in road transport

- Petroleum products dominated the energy consumed in the road transport sector followed by Natural gas, and Electricity.
- Petroleum products (including gasoline, diesel etc.) account for over 90 % and Electricity accounts for 0.3% of road transport energy consumption.
- Although still having a small share (0.3%), electricity consumption grew the fastest at a compounded rate of 14.2% per annum.
 Sources: EGEDA website

Electricity consumption in road transport and EV stocks



- We have more than 8 million EV stocks in *9 economies (Australia, Canada, Chile, China, Japan, Korea, Mexico, New Zealand, and US) in 2020.
- EV stocks include Cars, Trucks, Vans, and Buses.
- Only the partial data on electricity consumed by EVs are reflected in the EGEDA database.

Sources: EGEDA website, IEA Global EV Data Explorer





Examples of Energy consumption in the road transport



Technologies that consume electricity in road transport



- EV (Electric Vehicle) cars, trucks, vans
- EV motorcycles
- Trolly buses in Beijing, China
- EV buses in Hong Kong, China

We define "Road transport" as road transport without rails here. (e.g. tram is excluded)

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Are the consumptions of Electric Vehicle (electric cars, motorcycles and buses) included in the database as road transport electricity consumption?

EEI templates submission(2022 November)

- Australia (Cars)
- Canada (Buses)
- New Zealand (Cars, Motorcycles, Buses)
- USA (Cars)
- Most economies introduced these electric vehicle technologies. However, we are not sure if the consumption of new electric vehicles (personal cars and motorcycles) are already accounted for in the road transport sector.
- Please share with us the updates/opinions on this matter.



Examples of Government Policies on EV

• China

- Target of EV/PHV/FCV car sales is 20% in 2025
- Tax exemption on NEV (New energy vehicle)/ Facilitate purchase of electric cars in rural areas/ Improve NEV charging infrastructure (Target year is 2030)

ENGLISH.WWW.GOC.CN (accessed 30 Aug 2023):

https://english.www.gov.cn/policies/featured/202308/12/content_WS64d6b984c6d0868f4e8de7d7.html New Energy Vehicle Industry Development Plan (2021-2035) (accessed 30 Aug 2023): https://www.gov.cn/zhengce/content/2020-11/02/content_5556716.htm

• Hong Kong, China

- No new registration of fuel-propelled private cars <u>including hybrid vehicles</u> in 2035 or earlier
- EV Roadmap in 2021 (Targets: Cars, Public transportation, Charging facilities for EVs)
- "EV-charging Easy" Mobile App was launched in 2022

Environmental Protection Department (accessed 30 Aug 2023): https://www.epd.gov.hk/epd/english/environmentinhk/air/promotion_ev/promotion_ev.html

• Japan

 Target of EV/PHV/FCV/HEV car sales is 100% in 2035

METI (accessed 30 Aug 2023):

https://www.meti.go.jp/shingikai/sankoshin/green_innovation/industrial_restructuring/pdf/014_04_00.pdf

Singapore

- All new car / taxi registrations will have to be of cleaner-energy models (including electric, hybrid or hydrogen fuel cell cars) from 2030
- They will also stop new diesel car/taxi registrations from 2025

Land Transport Authority (accessed 30 Aug 2023):

https://www.lta.gov.sg/content/ltagov/en/industry_innovations/technologies/electric_vehicles.html

US

Target of EV/PHV/FCV car sales is 50% in 2030

Fact Sheet by the White House (accessed 30 Aug 2023):

https://www.whitehouse.gov/briefing-room/statements-releases/2023/04/17/fact-sheet-biden-harrisadministration-announces-new-private-and-public-sector-investments-for-affordable-electric-vehicles/ 12



Conclusion

- According to the latest reports, **Electricity accounted for 0.3%** of road transport energy consumption in 2019. Petroleum products account for over 90 %.
- Many economies introduced new EV technologies (EV cars, buses, etc.). However, we are not sure if electricity consumption of these technologies are already included in the road transport consumption data of these economies.
- Please include the consumption of these new EV technologies in the road transport electricity consumption data reports.



Sources

You can access the data on electricity consumption in road transport from below.
EGEDA Website - https://www.egeda.ewg.apec.org/egeda/database info/annual data.html
Annual Data

Annual data collect energy data of coal, oil, natural gas, new and renewables as well as electricity and heat, which are presented in the form of energy balances.

A new format of energy balances has been introduced to separate non-energy use from total final energy consumption. In the new format, total final consumption is the sum of total final energy consumption and non-energy use.

Energy Balance

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Global EV Data Explorer - https://www.iea.org/data-and-statistics/data-tools/global-ev-data-explorer







Thank you for your kind attention.

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