



Visualization Tool For **Electric Vehicle** **Charge And Range Analysis**

LITERATURE SURVEY

A literature survey is a method of researching existing literature and studies related to a specific topic. In the context of analyzing the performance and efficiency of electric vehicles, a literature survey would involve reviewing studies and articles that have been published on the topic of hotel performance and efficiency, as well as studies specific to electric vehicles. The literature survey would include sources such as academic journals, industry reports, and online articles. It would aim to identify key performance indicators (KPIs) and metrics that are commonly used to measure hotel performance and efficiency, as well as any best practices or strategies that have been identified for improving performance. The literature survey would also explore any existing research on electric vehicles specifically, and would aim to identify any unique challenges or opportunities that the electric vehicles faces in terms of performance and efficiency.

A council jointly established by the Ministry of Economy, Trade and Industry and the Ministry of Land, Infrastructure, Transport and Tourism, from March 2018, announced new fuel efficiency standards based on the Act on the Rational Use of Energy (Act No. 49 of 1979) (Energy Conservation Act). We have been deliberating, and at today's meeting, new target years and standard values were presented.

The Ministry of Economy, Trade and Industry and the Ministry of Land, Infrastructure, Transport and Tourism will make necessary revisions to laws and regulations based on the report of the council, which will be compiled in about a week.

Tackling emissions from road transport is a key building block of the EU's efforts to achieve its target to reduce greenhouse gas emissions by at least 40% by 2030 compared to 1990 levels.

Commissioner for Climate Action and Energy Miguel Arias Cañete said: "With the first-ever EU emission standards for trucks agreed, we are completing the legal framework to reach the European target of cutting greenhouse gas emissions by at least 40% by 2030.

The European Parliament and the Council today reached provisional agreement on a Regulation setting, for the first time in the EU, strict CO₂ emission standards for trucks.

Today's deal follows the agreement reached in December on new CO2 emission standards for cars and light vans in the EU for the period after 2020. As part of the sets of legislative proposals on clean mobility introduced by the Juncker Commission, it is a further stepping stone for modernising the European mobility sector and preparing it for climate neutrality in the second half of the century. Under today's agreement, emissions from new trucks will have to be 30% lower in 2030 compared to the 2019 emissions.

The new regulations require manufacturers who sell vehicles in Japan to achieve the fuel efficiency targets as an average of their total sales. According to the Ministry of Economy, Trade, and Industry, in 2017 the EV ratio was 0.41% and plug-in hybrid ratio was 0.82%. That is still a long way off the goal of 20-30% by 2030. By tightening fuel efficiency regulations, the government hopes to promote the development of vehicles with higher environmental performance. Manufacturers will find themselves compelled to re-evaluate their strategies, which currently center on gasoline vehicles.

With the fuel efficiency regulations proposed in early June 2019 on new vehicle sales, the government has set a goal of average fuel consumption to be 25.4 kilometers per liter by 2030. This means a 32.4% improvement on results attained in 2016. The current regulations call for 20.3 kilometers per liter by 2020 (a 24.1% increase from 2009); however, the new proposal aims to further speed up fuel efficiency improvements.

Reference :

- 1) (Energy Conservation Center Japan) (2011), Final Report of joint meeting between the Automotive evaluation standards subcommittee, energy efficiency standards Subcommittee of the advisory committee for natural resources and energy and the Automobile fuel efficiency standards subcommittee,
www.eccj.or.jp/top_runner/pdf/tr_passenger_vehicles_dec2011.pdf
- 2) Electrive (2019), Korea aims for 33% of new vehicles electrified by a. 2030,
b. <https://www.electrive.com/2019/10/15/south-korea-aims-for-33ofvehicles-electrified-by-2030/>
- 3) Electromovility Platform (2020), Chile, Regulations and Legislations,
<https://em.consumovehicular.cl/orientaciones-de-politicas-publicas>

- 4) **European Commission (2019a), Assessment of the draft National Energy and Climate Plan of Spain,**
https://ec.europa.eu/energy/sites/ener/files/documents/es_swd_en_a.pdf
- 5) **European Commission (2019b), Clean mobility: Putting an end to polluting trucks. Commission welcomes first-ever EU standards to reduce pollution from trucks, Press Release database,**
http://europa.eu/rapid/pressrelease_IP-19-1071_en.htm, accessed 12 March 2019.
- 6) **European Green Deal (2019),**
 - a. https://ec.europa.eu/info/sites/info/files/europeangreendealCommunication_en.pdf
- 7) **European Parliament (2019), Legislative Train Schedule: Resilient energy union with a climate Change policy,**
www.europarl.europa.eu/legislativetrain/theme-resilient-energyunion-With-a-climate-change-policy/file-jd-clean-vehiclesdirectivereview
- 8) **European Union (2019a), Reducing CO2 emissions from passenger cars,**
https://ec.europa.eu/clima/policies/transport/vehicles/cars_en
- 9) **European Union (2019b), CO2 emission standards for cars and vans: Council confirms Agreement on stricter limits,**
www.consilium.europa.eu/en/press/press-Releases/2019/01/16/co2emissionstandards-for-cars-and-vanscouncilconfirms-Agreementon-stricter-limits/
- 10) **European Union (2019c), Promoting clean vehicles: provisional deal with Parliament,**
www.consilium.europa.eu/en/press/pressreleases/2019/02/12/promotingclean-vehiclesprovisional-deal-with-parliament/

- 11) **Government of Canada (2019), Zero-emission vehicles,**
<https://www.tc.gc.ca/en/services/road/innovativetechnologies/zeroemission-vehicles.html>
- 12) **Government of Canada (2018), Heavy-duty Vehicle and Engine Greenhouse Gas Emission Regulations Guidance,**
www.canada.ca/en/environment-climate-change/services/canadianenvironmentalprotectionactregistry/publications/vehicle-Emissionregulationsguidancedocument.html
 - a. [Change/services/canadianenvironmentalprotectionactregistry/publications/vehicle-Emissionregulationsguidancedocument.html](http://www.canada.ca/en/environment-climate-change/services/canadianenvironmentalprotectionactregistry/publications/vehicle-Emissionregulationsguidancedocument.html)
- 13) **Government of Canada (2012), Amending the Passenger Automobile and Light Truck Greenhouse Gas Emission Regulations,**
www.gazette.gc.ca/rp/pr/p1/2012/2012-12-08/html/reg1-eng.html
- 14) **Government of Chile (2018), Estrategia Nacional de Electromovilidad (National Strategy of Electromobility), Ministry of Energy,**
www.minenergia.cl/archivos_bajar/2018/electromovilidad/estrategia_electromovilidad-27dic.pdf
- 15) **Government of China (2019), Publicly solicited opinions on the mandatory national standards Living Vehicle Fuel Consumption Limits and Pedestrian Vehicle Fuel Consumption Evaluation Methods and Indicators Draft for Comment, Ministry of Industry and Information Technology,**
www.miit.gov.cn/n1146295/n1652858/n1653100/n3767755/c6616494/content.html