Impacts of Electric Vehicles – Summary Report

Report for the Directorate General Climate

Publication

Report

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Electric vehicles have the potential for significant contributions towards achieving the EU's climate protection goals in the transport sector. However, the environmental impacts of a large scale introduction of electric vehicles are still unknown. This project has developed scenarios for the increased dissemination of electric vehicles in the EU until 2050 and formulated policy recommendations from these findings. The full report of this project is available for download.

In order to reach the long-term EU climate goals, a severe reduction of greenhouse gas emissions in the transport sector will be necessary. Therefore, the Directorate-General for Climate Action (DG CLIMA) commissioned CE Delft, ICF and Ecologic Institute to carry out a study on the potential impacts of a large scale market penetration of EVs in the EU, with a focus on passenger cars and light commercial vehicles. This study includes an assessment of both the transport part (e.g. composition of vehicle fleet) and electricity production and provides estimates of the costs, impacts on well-to-wheel GHG emissions, pollutant emissions, other environmental impacts.

In this study three types of EVs are distinguished:

- Full Electric Vehicles (FEVs) that have an electric engine and batteries for energy storage, no internal combustion engine (ICE).
- Plug-in Hybrid Electric Vehicles (PHEVs) that have both an ICE and an electric engine, with a battery that can be charged on the grid.
- Electric Vehicles with a Range Extender (EREVs) that have an electric engine and an ICE that can be used to charge the battery and so extend the vehicle's range. The battery of an EREV can be charged on the grid.

The results of the study should help the European Commission with developing GHG policy for transport, in particular in the field of EV and in relation to the wider EU transport policy and EU policy for the electricity sector.

The report [pdf, 300 kB, English] is available for download.

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