

ITRE FACTFILE

2. Committee on Industry, Research and Energy ITRE

“The question of the EU as a manufacturer of electromobile innovation”

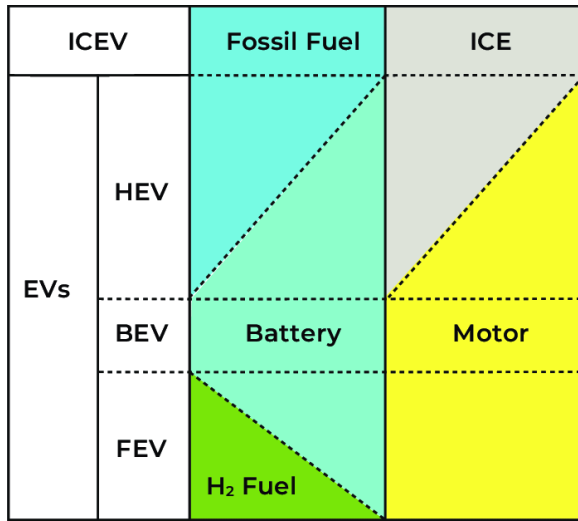
The EU has outlined an ambitious timeplan to move away from conventional combustion engine vehicles. How can the EU ensure a smooth but effective transition of factories and manufacturing methods in order to incentivize a sustainable change for Europe and prevent automobile manufacturers from moving production outside of the EU?

KEY TERMS:

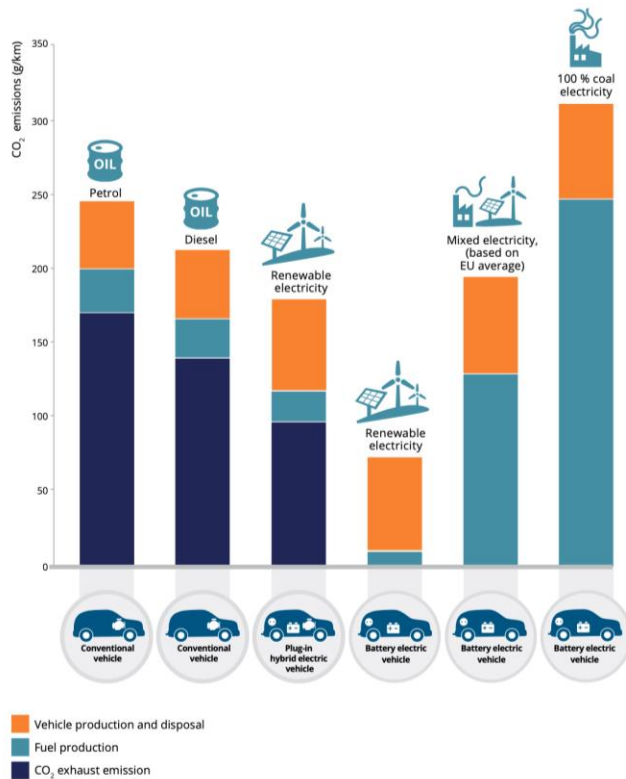
- **ELECTROMOBILITY:** the development of electric-powered drivetrains designed to shift vehicle design away from the use of fossil fuels and carbon gas emissions. It represents the concept of using electric powertrain technologies, in-vehicle information, communication technologies and connected infrastructures to enable the electric propulsion of vehicles and fleets.
- **INTERNAL COMBUSTION ENGINE VEHICLE (ICEV):** a vehicle that is powered by a regular internal combustion engine. To get power, ICEVs burn fuel, commonly fossil fuels. These include petrol, diesel, jet fuel, and compressed natural gas.
- **ELECTRIC VEHICLE (EV):** a vehicle that uses one or more electric motors for propulsion.
 - **HYBRID ELECTRIC VEHICLE (HEV):** a vehicle with a gas-powered engine and an electric motor to drive the car. All energy for the battery is gained through regenerative braking, which recoups otherwise lost power in braking to assist the gasoline engine during acceleration. In a traditional internal combustion engine vehicle, this braking energy is normally lost as heat in the brake pads and rotors.
 - **PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV):** a vehicle that has both an engine and electric motor to drive the car. Like regular hybrids, they can recharge their battery through regenerative braking. They differ from regular hybrids by having a much larger battery, and being able to plug into the grid to recharge.
 - **BATTERY ELECTRIC VEHICLE (BEV):** a fully electric vehicle with rechargeable batteries and no gasoline engine. All energy to run the vehicle comes from the battery pack which is recharged from the grid. BEVs are zero-emissions vehicles, as they do not generate any harmful tailpipe emissions or air pollution hazards caused by traditional gasoline-powered vehicles.

FACTS AND FIGURES:




1) EVs classification:



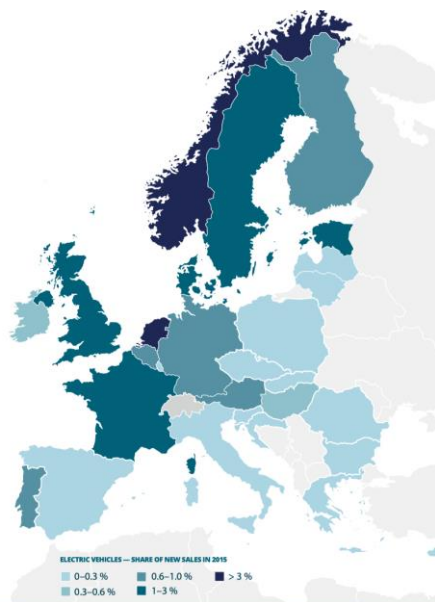
2) Range of life-cycle CO₂ emissions for different vehicle and fuel types:

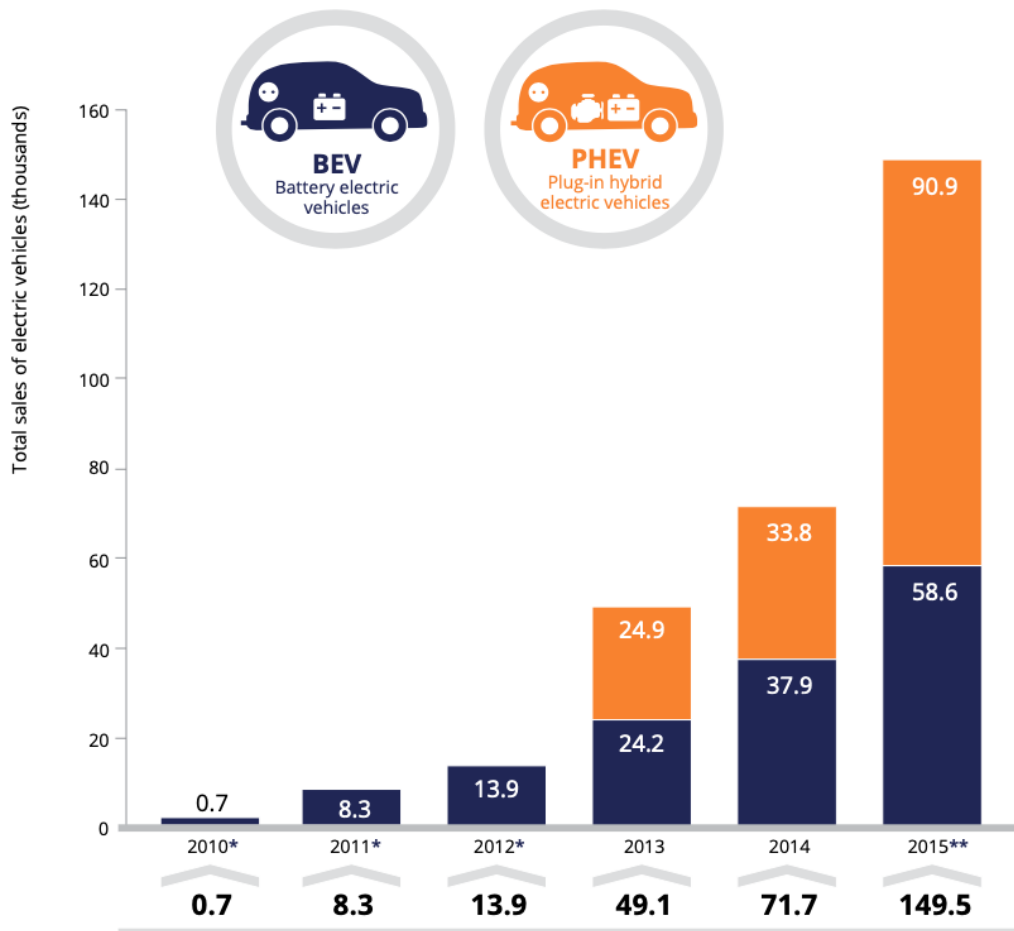


3) SWOT analysis of electromobility in Europe:

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> Established carmakers and supplier base with strong brand value, technological and financial capacities Large and integrated continental consumption market Clear and coherent long-term policy framework at the European level Highly qualified labor force, leading ecosystem of R&D and training institutions 	<ul style="list-style-type: none"> High dependence on established firms, with no relevant newcomers amongst carmakers Relatively high dependence on plug-in hybrids and weaker performance in fully electric vehicles sales and innovation Unequal infrastructure development between Member States as well as regions and cities Low penetration in the Chinese BEV market 
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> Established presence in international markets, including the high-growth Chinese market Ambitious sustainability goals and regulations by the EC and member-states, Strong incentives for market growth coming from the EU and lead member-states High engagement and priority to the sector in the European industrial strategy 	<ul style="list-style-type: none"> Unestablished battery supply base, strong presence, and tradition of Asian firms in battery production Dependence on foreign supply of raw materials for battery cell production Technological competition from US and Asian OEMs and newcomers Regional inequality in terms of production, infrastructure and EV uptake Possible mismatch between skills being offered to the established markets and demand from the upcoming electric car sector 

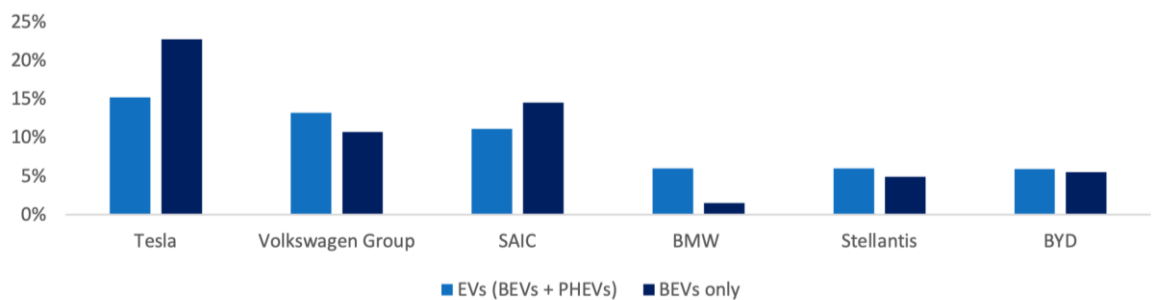
4) Electric vehicles - share of new sales in 2015





5) Total sales of EVs in the EU

6) World market-shares of top 6 OEM groups in EV sales in 2021 until June



Source: Cleantechnica, 2021.⁵⁸

7) Europe's electric car sales stall as China pulls ahead

Europe's electric car sales stall as China pulls ahead

