## WHAT ARE ELECTRIC VEHICLES AND CHARGING INFRASTRUCTURE?

Electric vehicles—such as two-wheel vehicles, cars, trucks, buses, trains, ships and airplanes—use electricity to power their motors. While hybrid models only partially depend on electricity, electric vehicles are fully dependent. Charging infrastructure consists of public and private systems of stations established to recharge electric vehicles.





## WHAT ARE THE BENEFITS OF THE ENERGY SAVINGS ACHIEVED?

Electric motors are efficient, require low maintenance, make little noise and ensure higher air quality by producing no local emissions. Because the primary energy used for charging is increasingly decarbonised, electric vehicles ensure an overall reduction in primary energy consumption and greenhouse gas emissions.



### WHAT ARE THE ENERGY SAVINGS OPPORTUNITIES?

Electric vehicles are more energy efficient than conventional vehicles and their dependence on electricity, rather than fossil fuels, greatly reduces greenhouse gas emissions resulting from vehicle use. In addition, electricity used to charge electric vehicles is increasingly generated from renewable resources, as opposed to fossil fuels.



## WHAT MAKES CALCULATING ENERGY SAVINGS CHALLENGING?

It is difficult to calculate savings for different types of vehicles without a uniform methodology or reliable historical data regarding energy consumption. Also, fuel switching, between electricity and fossil fuels, is not currently evaluated, and hybrid options of vehicles are not taken into account either.



**ELECTRIC VEHICLES** 

# WHAT IS NEEDED TO IMPROVE ENERGY SAVINGS CALCULATIONS?

In order to establish baselines to measure the consumption of different vehicles and the typical distance traveled, reliable data is needed. There is also a need for methodologies to evaluate savings not only associated with higher efficiency, but in the context of fuel switching in both fully electric vehicles and hybrid vehicles.



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