

Electricity demand and carbon emission in power generation under high penetration of electric vehicles. An EU perspective.

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ABSTRACT

The European Union has set goals to combat energy problems, but also to reduce greenhouse gases as the main cause of environmental pollution. The transport sector is particularly exacerbating the above problems. Focusing on their fight, European authorities have invested and continue to invest in electric propulsion. In the European Union, electric mobility has grown tremendously in the last decade. Specifically, more and more automobile industries are turning their interest in electric technology to replace conventional cars which they use internal combustion engine.

This study contains three different key elements. First, the penetration of electric vehicles into the Union, then the electricity that is exploited by every European country and finally the emission of carbon dioxide gases based on official data. With proper use of the above elements will investigate the case to whether future electrification in transportation can help to improve the atmosphere air in parallel with the reduction or the increase of demand of electric power by consumers.

Keywords:

Carbon dioxide (CO₂), Electric Vehicle (EV), GreenHouse Gas (GHG), Battery Electric Vehicle (BEV), electricity demand, Renewable Energy Sources (RES)