**Electrified Vehicles: How Much CO₂ Savings?**

- The Nordic countries — Denmark, Finland, Iceland, Norway and Sweden — have spurred an acceleration in demand for electrified vehicles.
- The net effect will be a reduction in CO₂ emissions emanating from the transport sector and a path to meet Paris targets.
- A recent study attempts to quantify just how much savings can be had from flipping to EVs.

Nordic countries have made significant progress in providing incentives to stimulate demand for EVs. In so doing, they have provided a demonstration of the price reductions necessary in order to see automotive buyers switch from a conventional vehicle to an EV. A recent International Energy Agency (IEA) report on the Nordic EV Market, found [here](#), provides analysis and projections of future EV demand and what it could do to reduce CO₂ emissions.

- In 2017, EVs in operation in the Nordics was 247,000 units (see top chart).
- IEA is projecting that by 2030, given market developments and policies and programs in place, that the stock of EVs will rise to 4 million units, or an average annual growth rate of 23% (see 2nd chart).
- One key fact is that the use of coal to power electricity generation is relatively small, with the exception of Denmark (see 3rd chart). Indeed, in three of the Nordic countries, there are no coal-fired plants. Additionally, note the significant reliance on renewables and relatively low shares of natural gas-fired plants. This is one of the reasons why the greenhouse gas emissions savings by switching to EVs in the Nordics is so substantial. To recap:
  - Power generation has a relatively smaller carbon footprint.
  - EVs are more energy efficient.
  - Policymakers have made a commitment to reduce further the carbon content of power generation in future years.

What would the GHG emissions savings be if there are 4 million EVs on the road in the Nordics by 2030?
- IEA estimates that the GHG emissions would be 27% below 2017 passenger vehicle levels.
- In fact, EVs already saved 260,000 tonnes of CO₂ just last year with the 247,000 EVs on the road. This is an estimated 2-3% of transport CO₂ emissions for the region.

The Nordic countries’ experience provides valuable insights regarding the scope and magnitude of policy tools which can be deployed in order to incentivize EV demand.

“Electric cars (in these Nordic countries) are two-to-four times more energy efficient than their ICE counterparts…(and) have pledged to reduce the CO₂ intensity of the electricity networks…” IEA Report, p. 77.