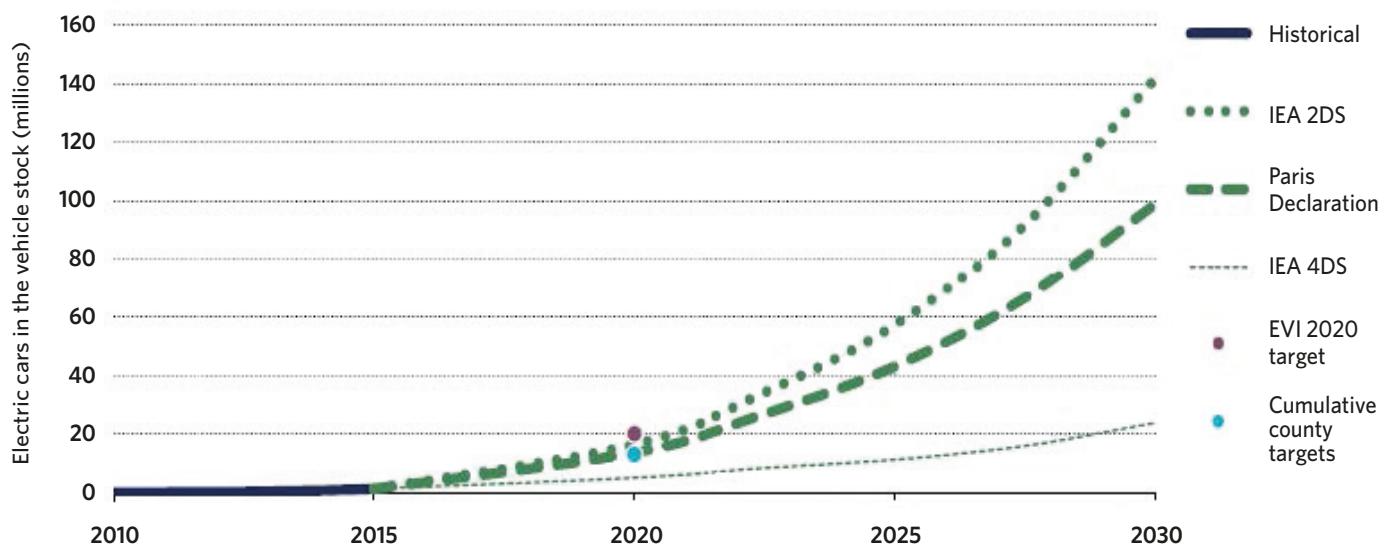


GFEI Working Paper 13: Can we achieve 100 million plug-in cars worldwide by 2030?

GFEI Working Paper 13 explores recent trends in the market penetration of plug-in electric vehicles (PEVs) in selected countries around the world, and the implications for reaching 100 million electric passenger light-duty vehicles by 2030 – the ambition set by the Paris Declaration on electro-mobility at COP21 in Paris.

PEV targets for 2020 and 2030

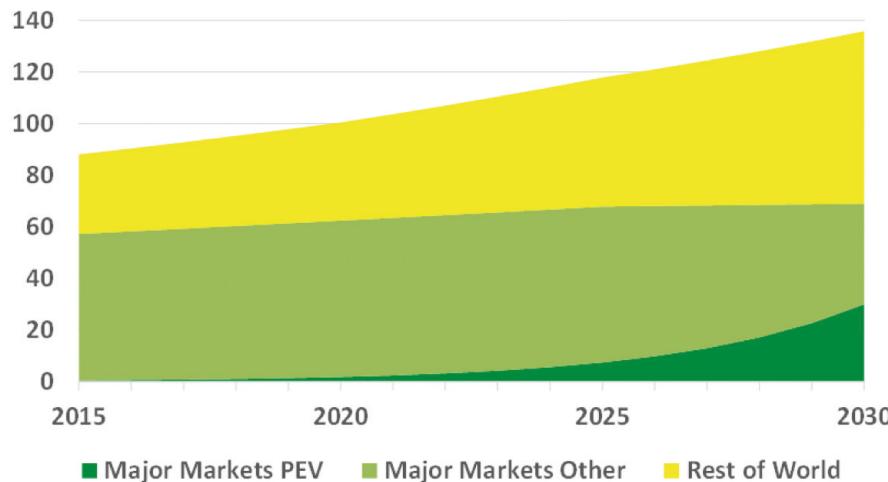


The Key findings of current trends include:

- PEV sales across the top 8 world markets (US, Japan, China, and 5 European countries) have increased steadily with growth rates over 50% in all years across these markets. The number of PEV models available across most of these countries also increased steadily and across different light-duty vehicle market classes (i.e. small, medium and large/luxury cars as well as SUV models). By far the weakest PLDV segments for models and sales were vans and pickup trucks.
- Trends have been quite uneven across the 8 countries and in 2015 there was still a lack of wide PEV model selection in key market segments in most countries. Although the paper tracks close to 100 PEV models worldwide, very few were sold in more than a few countries. It also showed that average sales per model for PEVs were quite low relative to non-PEVs. On the other hand, BEVs tend to dominate smaller vehicle classes and more PHEVs are now appearing in larger car segments (such as SUVs)
- An examination of PEV prices across compact and mid-size car market segments in the U.S. shows that the PEVs sold tend to be quite expensive for these market classes, even with national price incentives. Given the tendency for high price sensitivity of consumers in these market classes, it is not surprising to see that some of the more successful PEV models are in premium market classes.
- The benefit of price incentives, in terms of making PEVs more price competitive, rises rapidly for PEVs that are competing in lower price categories, especially once it puts their sales price into a zone where large numbers of conventional vehicles are sold. Current US national incentives do not appear to help current compact and mid-size PEV models reach these price points.

One possible trajectory to reach a global stock of 100 million PEVs by 2030 is for sales to reach around 30 million sales per year by 2030 through an average growth rate of about 35% per year for 15 years. A 30 million sales target represents around 22% of projected global sales in 2030. This target can be thought of in terms of 200 models with 150,000 unit sales. If these sales occurred completely in the current "Major Markets", it would represent nearly half of the projected 4-wheel passenger light-duty vehicles (PLDV) sales in those countries in that year. It will be easier to meet this challenge if a significant number are also sold in non-OECD countries, where nearly all overall PLDV sales growth is expected to occur.

Source: PLDV sales projections from IEA 4 degree scenario (4DS)



The next phase of the study will undertake a deeper policy analysis, including a competitiveness analysis taking into account a full range of vehicle attributes such as vehicle range and recharge time, and the effects of various policies on PEV competitiveness by country and market segment.

