Electric vehicles for sustainable transport

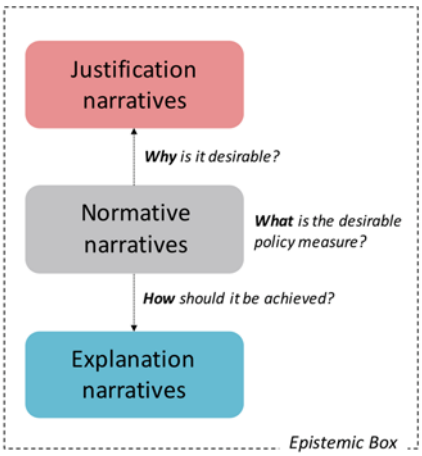
Do electric vehicles fulfil their policy promises?

Overview

Electric vehicles (EV) are central to the EU's sustainable transport policy. They promise to reduce GHG emissions, lead to economic benefits, improve security of supply and contribute to citizen wellbeing, through a reduction of air and noise pollution. We identify the main narratives attached to EVs in EU policy documents and check whether they hold up to scrutiny when confronted with the existing knowledge base.

What narratives justify EVs in EU policy?

There are three types of narratives in policy: normative narratives, identifying *what* should be done; justification narratives, addressing *why* it should be done; explanation narratives, answering *how* it should be done. These three types of narratives generate an epistemic box – defining the option space within which policy decisions taken place.



In EU policy, the normative narrative is that EVs are desirable and should replace internal combustion engine vehicles (ICEVs). The justification narratives attached to EVS is that they will lead to economic growth, generate jobs, improve the competitiveness of EU industry, improve security of supply by decreasing oil imports from politically unstable regions, reduce GHG emissions and reduce air and noise pollution, leading to overall improved citizen wellbeing. Explanations refer to mostly technical measures, e.g. the need to add more charging points and to implement financial mechanisms that boost EV demand.

CARS IN THE EU

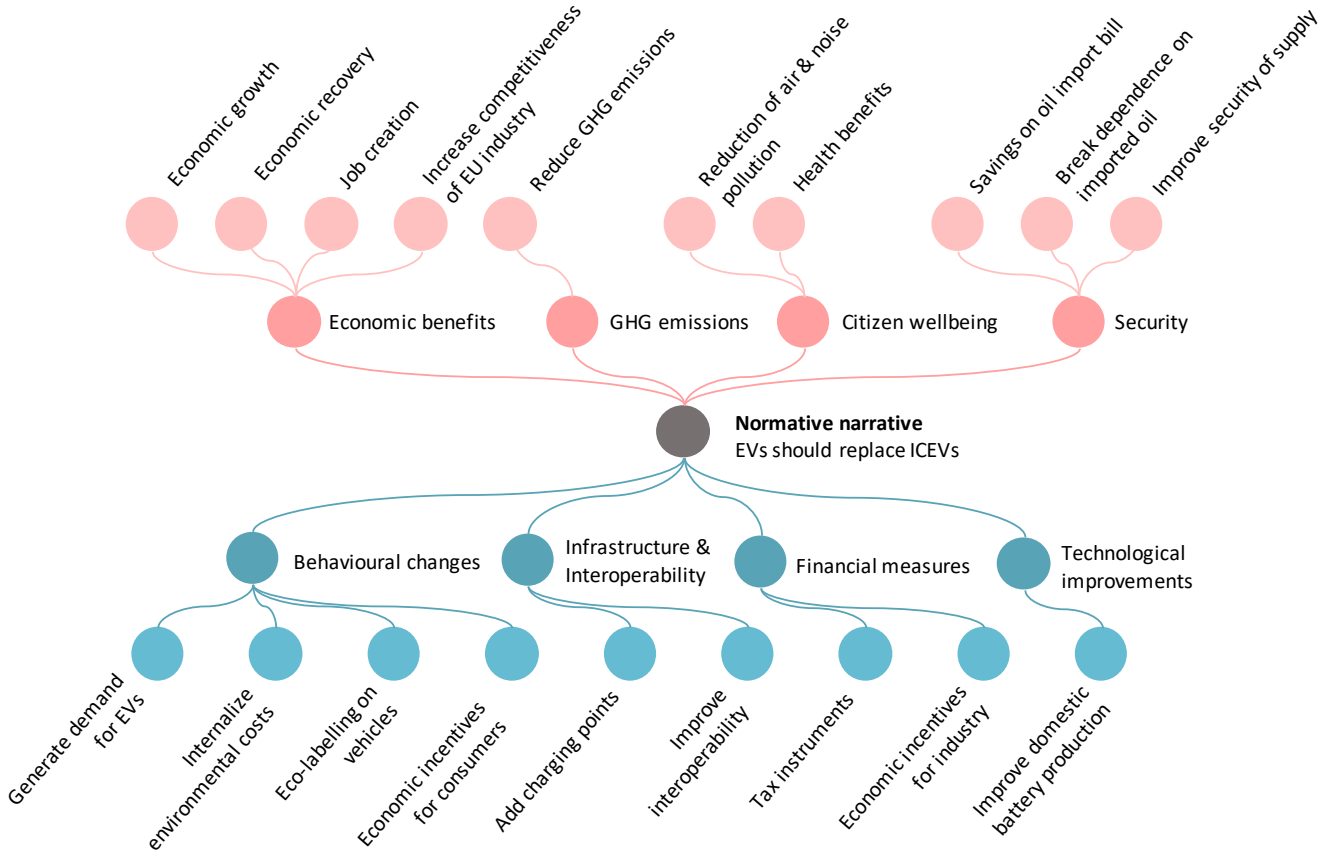
Passenger cars consume 40% of all of the EU's liquid fossil fuels [1, 2]. 90% of the fuels are generated from imported oil [2]. The transport sector as a whole accounts for a quarter of the EU's total GHG emissions [3].

EV TARGETS IN EU POLICY

The alternative fuels directive sets charging point targets for Member States. The EU aims to have no ICEVs in cities by 2050.

Do these narratives hold when checked against existing knowledge?

Checking each cluster of justification narratives against the existing knowledge base shows how there are intricate circles of uncertainties. Positive economic impacts largely depend on the location of battery and car manufacturing; GHG emission reductions depend on promises of decarbonisation of the electricity sector, as well as on driving behaviours; crude oil imports may be replaced by lithium, cobalt and or battery imports; reduced tailpipe pollutants may be counterbalanced by increased pollutants at electricity production sites.



Key messages

It is uncertain whether EVs will be able to provide the benefits that they promise. In the face of such uncertainty, it is necessary to zoom out of a technological debate and to discuss systemic, functional changes that address the unsustainability of transport, including decreased travel distances, increased use of public transport and car sharing.

References

[1] *Eurostat. Complete energy balances (nrg_bal_c). Eurostat: Luxembourg, 2018.*

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[3] *Eurostat. Greenhouse Gas Emission Statistics—Emission Inventories; Eurostat: Luxembourg, 2018.*

[4] *Di Felice, L.J.; Renner, A; Giampietro, M. Are electric vehicles the answers? How policy narratives shape the framing of complex sustainability problems. Forthcoming.*

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