

Why should the EU implement electric vehicles? Viewing the relationship between evidence and dominant policy solutions through the lens of complexity

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Abstract

Electric vehicles are a dominant policy solution in the EU. In EU policy documents, a transition to electric vehicles is justified through promises of a reduction in greenhouse gas (GHG) emissions and oil imports, as well as positive impacts on citizens (through reduced pollution) and the economy (through a boost in manufacturing and the generation of jobs). The evidence supporting such claims remains uncertain. Taking a stance that is grounded in complexity science, we introduce a hierarchical mapping of policy mechanisms, concerns and solutions – the elements making up policy narratives. Building on this mapping, we focus on questioning the solution-justification relationship for electric vehicles, by critically inspecting the material coherence between these justifications and existence evidence. A targeted review shows how, for example, positive economic impacts largely depend on the location of battery and car manufacturing; or GHG emission reductions depend on promises of decarbonisation of the electricity sector, as well as on driving behaviours. Innovations are not just material objects, and such evidence does not necessarily weaken the dominant policy solution, nor the socio-technical imaginary it is grounded in. By questioning the material coherence of EV justification narratives in the EU, this case study points to a discussion about the effects of dominant policy narratives on the generation of science, warning against policy-based evidence in the co-creation of socio-technical imaginaries.

Keywords: electric cars, narratives, complexity, evidence-based policy, science-policy interface