

Master or semester project

Are we approaching a Positive Tipping Point in the adoption of electric vehicles? Analyzing early opportunity signals for EV adoption

Description of research:

A tipping point (TP) is defined as a critical threshold at which a small perturbation can trigger large, transformative change. In ecological systems, a TP is associated with a negative effect, such as eutrophication, accelerated climate change. In social systems, however, Positive TP (STP) are associated with the accelerated adoption of more sustainable practices / behaviors. One such positive tipping point to consider is a market switch from internal combustion engine vehicles (ICEVs) to electric vehicles (EVs) in light road transport. Scholars (Boulton et al., 2025) have developed an approach, to identify early opportunity signals, i.e. the point where we might anticipate a STP.

This Master thesis / Semester thesis applies the method developed by Boulton et al (2025) to analyze the development of the Swiss EV (PV) technology adoption. It analyzed the following questions:

1. What has been the development of adoption of EVs in Switzerland? Is there a difference among cantons?
2. What has been the related price developments?
3. Can we identify early opportunity signals? How do they differ among cantons?

Methods:

The analysis is based mostly on systems thinking and statistical analysis

Requirements:

- Knowledge of R
- Interest in the energy transition

References:

Boulton, C. A., Buxton, J. E., & Lenton, T. M. (2025). Early opportunity signals of a tipping point in the UK's second-hand electric vehicle market. *Earth System Dynamics*, 16(2), 411-421.

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