



Master Thesis

Network effects and the market ramp-up of hydrogen: The case of Netherlands

Hydrogen is widely recognized as a candidate to play an integral role in decarbonization strategies, among other for industrial production processes. However, market penetration might still be hampered through a “Chicken-or-Egg”-problem, where supply-side expansion requires secure demand and vice versa. Additionally, there is a necessity for up-front infrastructure investment into a pipeline base.

Network effects, potentially characterizing the hydrogen market, might play an integral role in addressing this issue. In the context of a standard two-sided platform market setting, one can interpret the pipeline infrastructure as a platform, where supply- and demand can trade and benefit from increasing numbers of agents on both sides.

The Netherlands builds the national hydrogen policy on this idea, trying to address the “Henn-or-Egg”-problem by publicly investing into a comprehensive pipeline network which can attract supply- and demand-side agents. The goal of this thesis is to review the theoretical and empirical literature on network effects in market ramp-up, study how this model is suitable to describe the hydrogen market and assess the current policy in the Netherlands in this context.

Key tasks and objectives of the thesis

- Detailed familiarization with the hydrogen Strategy of the Netherlands
- Review of the theoretical and empirical literature on network effects in market ramp-up
- Evaluate the “Hydrogen-Backbone”-Strategy, employed in the Netherlands, in the context of a two-sided platform market with network effects

Your profile

- Student of economics, best with focus on energy or microeconomics
- Interest in Hydrogen topics
- First knowledge of network effects and two-sided markets could be helpful

Literature

- Katz, M. L., & Shapiro. C. (1985). „Network Externalities, Competition, and Compatibility “. *The American Economic Review* 75(3): 424–40.
- Springel, K. (forthcoming). „Network Externality and Subsidy Structure in Two-Sided Markets: Evidence from Electric Vehicle Incentives “. *American Economic Journal: Economic Policy*
- Gillingham, K. & Ovaere, M. (2020) “Network Effect Benefits from Electricity Grid Connections”. *Yale School of the Environment: Policy Brief*

Contact



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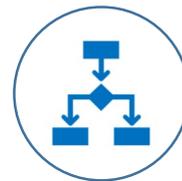
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Topics



- Hydrogen market ramp-up
- Two-sided markets
- Network effects

Methods



- Literature review
 - Systematic policy evaluation
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