

Hydrogen infrastructures in an integrated European energy system – determinants and modelling options

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Hydrogen infrastructures need to be planned as part of an integrated energy system considering the spatial and temporal evolution of demand, supply and related infrastructures for electricity and natural gas. Thereby also the demand and supply will need to be assessed for all energy carriers of a future energy system. We will show how a system planning approach will consider these elements in a holistic manner and that future energy systems need to be planned based on such a paradigm. The optimal infrastructure expansion and topology will be determined based on modern modelling techniques called “grid-based multi-energy-system-models”. We will show first results for the European energy system using such an integrated planning approach.