



Towards a Hydrogen Economy in the North of North-Holland

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Abstract:

Introduction Hydrogen (H₂) is a key element in the Dutch energy transition, considered a source of flexibility to balance the variable renewable energy sources, facilitating its integration into the energy system. But also as an energy carrier. Both the gas and electricity transmission operators (TSO) have the vision to interconnect their networks with H₂, by distributing the green H₂ produced with offshore electrolyzers into high pressure gas pipelines to provide the industrial production zones and to relief the overload electric network. The planned compressed H₂ pipelines cross the north of North-Holland region, offering a backbone (from 2030) for a H₂ economy Ongeldige bron opgegeven.. Furthermore, at regional level there are already a big number of private-public H₂ developments, among them the DuWaAlOngeldige bron opgegeven., which is a H₂ production-demand chain, consists of 1) A hydrogen wind turbine, 2) Five filling stations in the region and 3) A large fleet of trucks and other users. Because of these developments, the North-Holland region needs a better insight into the position that H₂ could fulfil in the local energy

system to contribute to the energy transition. The aim of this research is to analyse this H₂ economy, from the emergence to settled, by identifying early and potential producer-consumer, considering the future infrastructure requirements, and exploring economy-environmental impacts of different supply paths. The usage of a combined backbone and the use of compressed gas is more competitive than building a new infrastructure. In the case that the investment and maintenance costs are carrier also for external entities, the costs could decrease significantly. The early costs considered are safety checks, additionally it could be more costly to decommission the existing infrastructure when it is not used.

Biography:

Juliana Montoya Cardona is a professional and ambitious young woman. Over the last years she developed a great expertise in the renewable energy technologies. She is very engaged in energy issues such as global climate change and sustainable development, which are no doubt key crucial issues for our future. Her international experiences attest of her capacity of integration and adaptation.

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