Advanced Process Control Hydrohub

Publieke samenvatting / Public summary

Aanleiding

Hydrohub MegaWatt Test Centre, an experimental facility, is being developed for experimentation with full-scale small industrial PEM and Alkaline units of 250 kW each. These facilities are under construction at Energy Research Center EnTranCe of Hanzehogeschool at the Zernike campus. The initial goal of the current project phase is aimed at running a series of studies to test basic operations, identify the window-of-operation and explore limitations in stress-tests to understand the optimal operation window and limitations of equipment. Another aim is to develop an open-innovation ecosystem in which the MW test centre supports further advanced technology development for electrolysis.

Doelstelling

This project plan proposes a first addition to the original project of the development of HydroHub MegaWatt Test Centre which extends with this correlated project on advanced process control. Production of hydrogen from renewable power sources requires dynamic operation of electrolysers. A dedicated research project is proposed to modelling and research the impact of variable operation on electrolyser performance and the electricity grid. In addition optimal control strategies will be developed with the goal to improve overall operational efficiency.

Korte omschrijving

Advanced Process Control has been implemented in other industries successfully to improve efficiency and optimize multiple parameters simultaneously by

Projectinformatie / Project information

Projectnummer / Project number
TKITOETKI2019_APC
Subsidiebedrag / Grant amount
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Algemene informatie / General information

Penvoerder / Secretariat
ISPT

Publicaties en materialen / Publications and attachments

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considering the interaction, process dynamics and buffering and release of mass and energy in reactions. In this case of the flexible production of the green hydrogen, this is a totally new way of process control for electrolysers.

Resultaat

It is expected that by applying advanced control strategies 2 to 3 % operational efficiency gain can be achieved.

De data in deze applicatie is afkomstig van de Rijksdienst voor Ondernemend Nederland (RVO) en wordt in samenwerking met de Topsector Energie ontsloten.
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