



# **HYDROGEN IN THE NETHERLANDS**

Ruben van Grinsven, GM Hydrogen Projects

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# Hydrogen has 2 key roles, and 3 key challenges

## Decarbonise hard-to-abate end-uses



Decarbonising **transportation** leveraging higher energy density uses



Decarbonising **industry** energy use replacing coal and other fossil fuels



Decarbonising **building** heat and power leveraging existing gas infrastructure



Decarbonising grey H<sub>2</sub> **feedstock** in fertiliser, refineries and chemical industries

## Enables renewable-based energy system



Enabling renewables-based energy system, by acting as a **buffer or storage** to overcome supply demand mis-match and increase resilience



Allows renewable energy to be **transported** from Renewables long regions to renewables short demand centers

## Global Proof points



With this, Shell is installing a 1000kW PEM fuel cell electrolyser and storage electrolyser. The target of the test is producing hydrogen at the Windward railway in Germany.

REFHYNE



Develop key **applications** of hydrogen – mobility, marine, steel



Develop hydrogen **infrastructure** to connect supply with customers



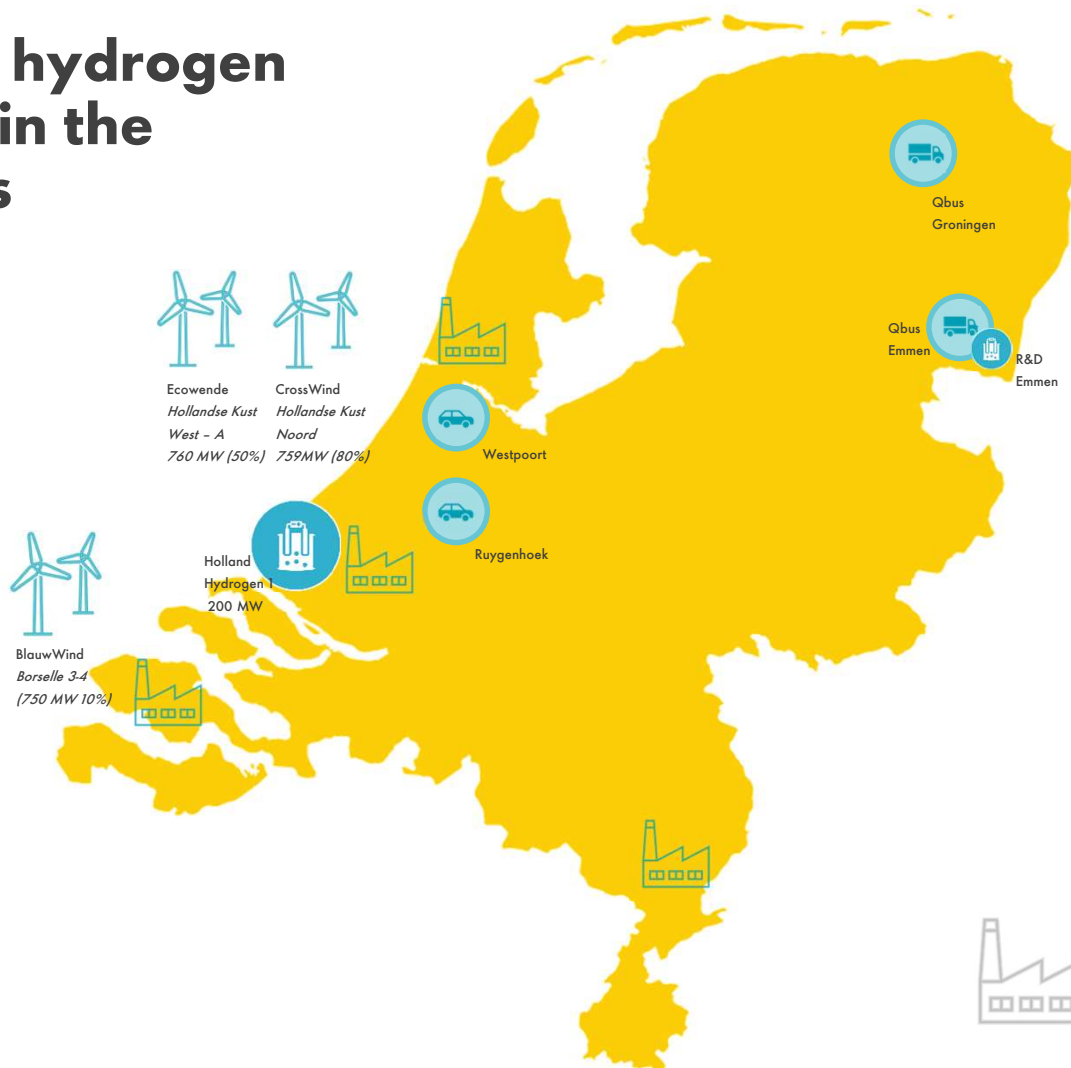
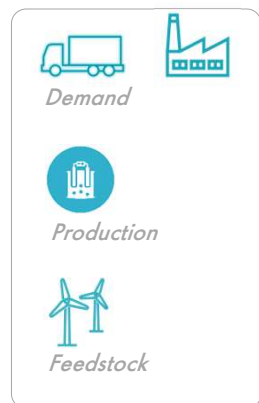
Make hydrogen **competitive** by scaling-up, technology and initial support

# Holland Hydrogen I

First scale-up of green hydrogen in an integrated value chain



# Building the hydrogen value chain in the Netherlands

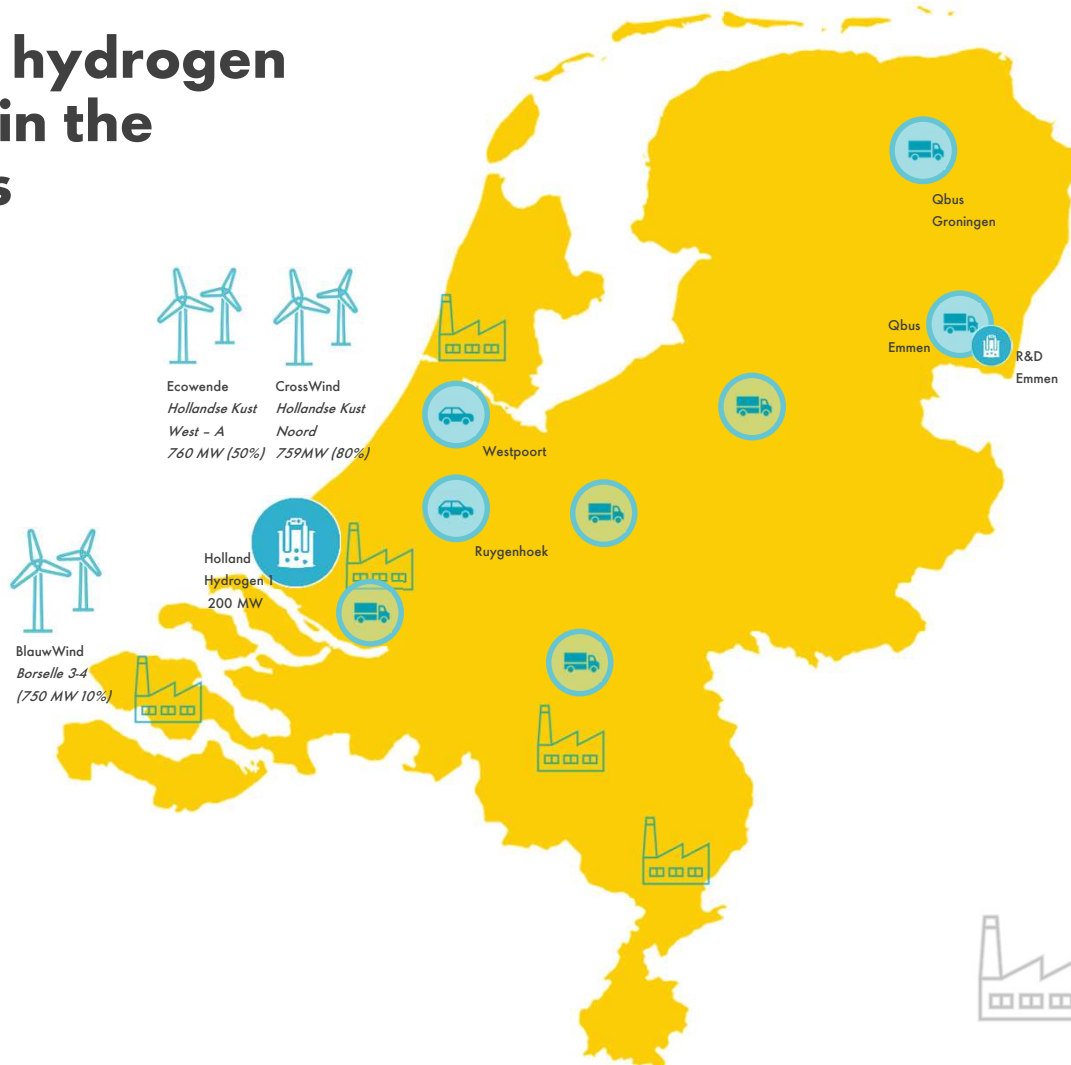
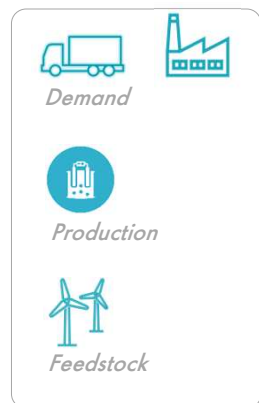


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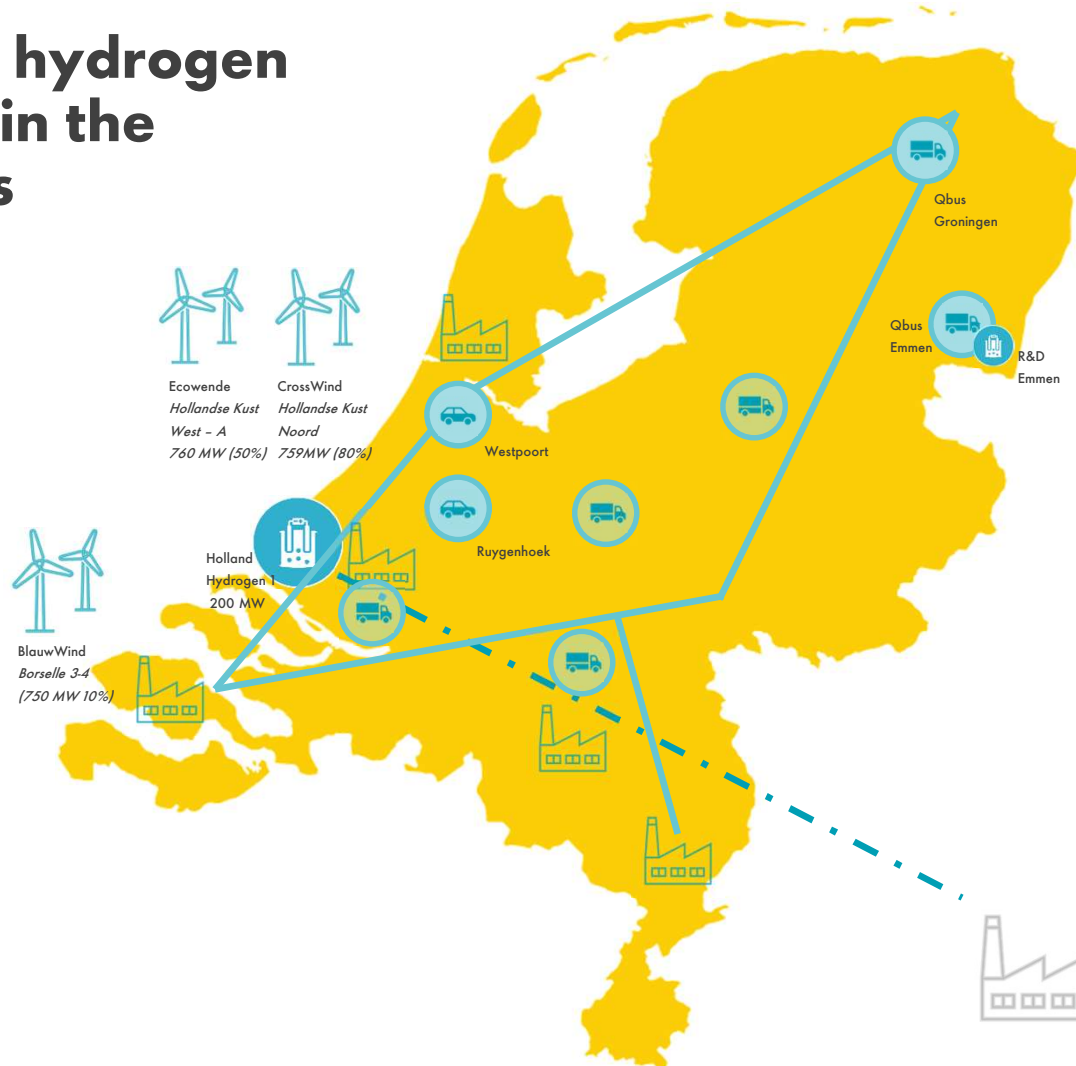




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