

Hydrogen in the Northern Netherlands – the Groningen story

HyTrEc²

Hydrogen Transport Economy
for the North Sea Region



Interreg 
North-West Europe
HECTOR
European Regional Development Fund

Gemeente
Groningen



Gemeente
Groningen



EUROPE'S FIRST HYDROGEN VALLEY

REVIVE  

City of Groningen

- 230.000 citizens
- Capital city of province of Groningen
- Energy transition: from gas to green energy
- Part of the hydrogen valley



Goal of Groningen

- Energy neutral in 2035
- emission free inner city in 2025:
 - Equipment & vehicles are diesel driven. Action was needed



How did we start in November 2014?

- Start with most complex issue
- Start with known vehicle
- Focus on main item: engine
- Get to know the stakeholders and work together
- Analysis of effects H2
- Market research
- Final decision in February 2015



How to proceed?

Cooperation with national and European projects for sharing knowledge and finances



Examples

cars: Hyundai ix35





vans:

- Streetscooter
- Renault Kangoo

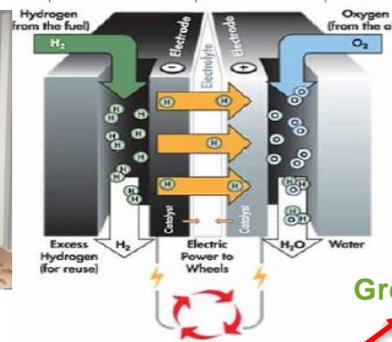
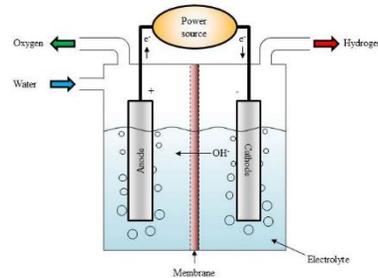


hydrogen refuse trucks

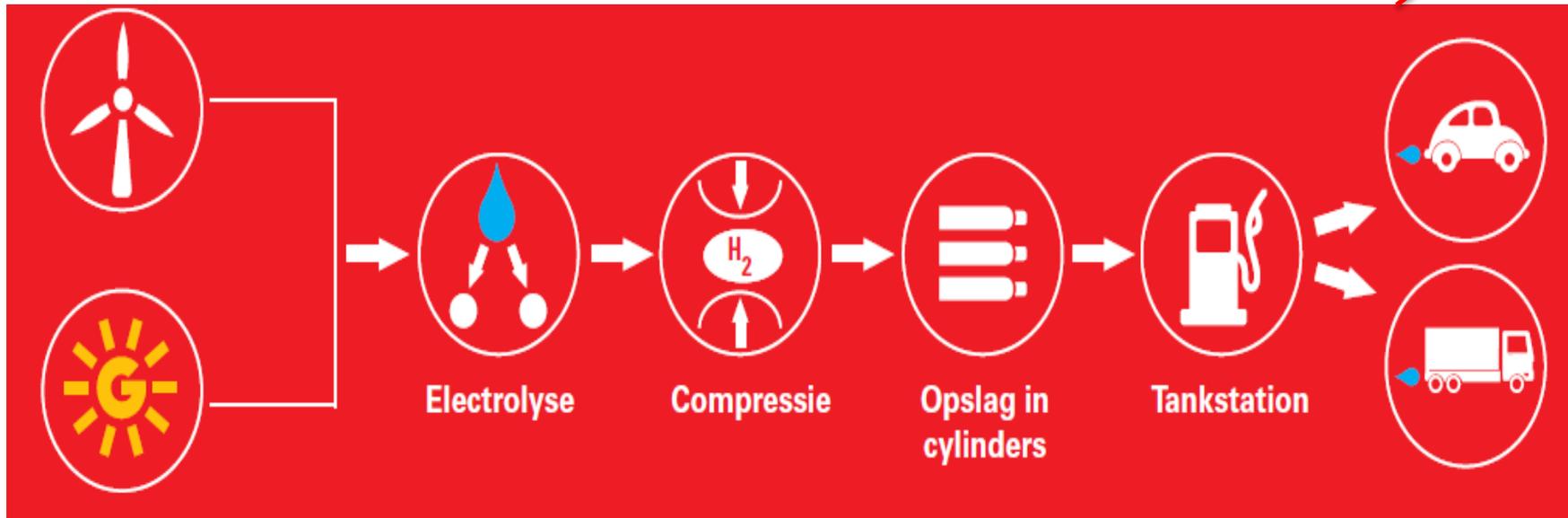


Production, storage & distribution

Green electricity



Green hydrogen



Legacy of HyTrEc2

- Groningen positioned as the hydrogen valley of Europe
- Close cooperations with partners in Europe, resulting in new consortia
- Boost for hydrogen economy in the North of the Netherlands

Status at the moment

- 64 vehicles and machines emission free
 - Electric & hydrogen
 - 250 equipment items emission free
 - Electric
 - Refilling station (public) & refilling station municipality
 - Pilot with H2 boiler
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- At the end of 2023 in total:
 - **31 vehicles on hydrogen:**
 - 12 refuse trucks
 - 12 hydrogen vans
 - 5 passenger cars
 - 1 hydrogen cargobike
 - 1 side carrier



Lessons learned

- Innovation is managing expectations
- It's a new technique: teething problems
- Acceptance of staff and citizens is needed
- Right training is needed
- Cooperate with local security services for safety + safety updates in depot/workshop
- Invest in refilling stations (chicken – egg story)

- Conclusion: hydrogen **as one of the** solutions to an emission free inner city



VERDER MET WATERST  **F**

Thank you for your attention

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