

**Hydrogen Transport Economy**

**in the North Sea Region2**

A blue and black car parked in a parking lot

Description automatically generated

**CASE STUDY**

**Living Lab: Hydrogen Cars in**

**Provincie Drenthe**

The Situation

HyTrEc2 (Hydrogen Transport Economy in the North Sea Region) is an Interreg North Sea Region project to promote green transport and mobility.

in the Northern Netherlands with a

The Province of Drenthe is an authority

predominantly rural population and a large

HyTrEc2 has:

number of small and medium sized towns.

Like municipalities across Europe, the Province

* Delivered and tested a range of innovative hydrogen vehicles

of Drenthe has a target to reach net zero. The

HyTrEc2 project has enabled Drenthe to trial

* Developed hydrogen production and refuelling facilities

fuel cell electric vehicles – which offer an

opportunity to decarbonise current oil-based

* Mapped the hydrogen supply chain and created training opportunities for hydrogen applications.

alternatives without sacrificing range and service delivery.

Overview

In 2020 the Province of Drenthe introduced 4 Hyundai Nexo Fuel Cell Electric Cars to the pool car fleet as part of a “Living Lab”. These vehicles have been trialled over the past 3 years with the findings from the pilot presented.

DETAILS

* Fuel type: Hydrogen fuel, 700 bar
* Number of drivers: +50
* Type of driving: 59% motorway driving, 34% rural driving, 7% urban driving
* Driving range: 413 miles/ 665 km
* Emissions: purified air and water

A group of cars parked on a brick road

Description automatically generatedFEEDBACK

**Interview with Provincie Drenthe Fleet Manager, Gerben Bernardus:**

*Question: Are the Hyundai NEXOs more prone to failure than the other cars in the County's pool?*

“Yes, especially the software”

*Question: What problems and obstacles have you encountered with the cars?*

“Hydrogen pumps are often not working which means the cars cant refuel”

“As they are refuelled once a week the vehicles have a maximum range of 100km per day”

“Price of hydrogen has risen sharply (more than other fuels)”

*Question: What areas of improvement do you need to see?*

“More hydrogen refuelling pumps and closer by”

*Question: What has been the price trend of hydrogen?*

“From €12.50 to €17.50/€19.5 with diverging prices at the different refuelling points”

*Question: How has staff demand for the NEXOs evolved since 2020?*

“Many colleagues say how much they enjoy driving the Nexos. A campaign after the COVID period proved to be very successful”

Not just use for around the Province, the cars were also demonstrated during various meetings and conferences on sustainability and hydrogen in the region, such as the side event of the **Wind Meets Gas Conference** in October 2022: [Wind meets Gas 2022 › Groningen Airport Eelde](https://www.groningenairport.nl/wind-meets-gas-2022). They have even been around Europe with their range of 414miles/ 665km making them ideal for longer distance driving too.

RESULTS

A screenshot of a computer

Description automatically generated with low confidence

**Heat Map of Car 1**

A picture containing text, map, screenshot, atlas

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COMMUNICATION

After the COVID period, in which hardly any business trips were made, the NEXO’s were promoted in several ways. Thanks to the attention given, the demand for these cars increased rapidly. The video shows the demonstration of the hydrogen NEXOs at the famous TT circuit in Assen, the hometown of the Provincie Drenthe. Both the performance of the car, its features and tips for refuelling were discussed by our communication colleague Heidi.

A person standing in front of a gas station

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A group of cars on a race track

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[TTCircuit waterstofauto's [EN] - YouTube](https://www.youtube.com/watch?v=SQN6qa3GQaw)

FUTURE

*What happens to the NEXOs now that the HyTrEc2 program has ended?*

The contracts have been extended for 3 years (despite drawbacks) with one car dedicated for governors of Provincie Drenthe and three cars for the regular car fleet of our Province.