H100 Fife

A world-first green hydrogen-to-homes heating network on the Fife coast

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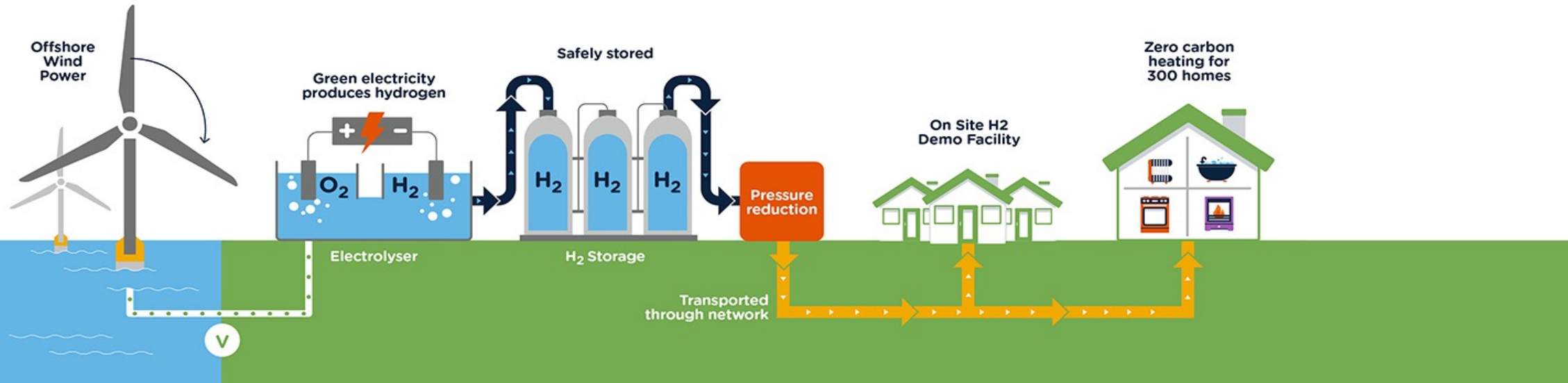
Project Overview

H100 Fife is a world-first hydrogen network in Levenmouth in Fife, Scotland, that will bring renewable hydrogen into homes in 2023, providing zero-carbon fuel for heating and cooking.

In a move to decarbonising the gas networks, in line with government net zero targets, hydrogen offers a credible and achievable route to securing the asset of the gas networks in the future of energy. In the project's first phase, the end-to-end system (illustrated below) will heat up to 300 local homes using clean gas produced by a dedicated electrolysis plant, powered by a nearby offshore wind turbine. The hydrogen network will be laid in parallel to the existing gas network allowing customers the choice to opt-in to receive a hydrogen supply.

Project Components of the H100 Fife end-to-end system:

- A 7MW offshore wind turbine to directly supply electrolyser units for hydrogen production.
- Six above ground storage tanks, operating at 30bar with additional connectivity.
- Pressure reduction unit.
- Flow metering.
- Hydrogen gas quality and odorization.
- Control system.
- A hydrogen demonstration facility.
- A polyethylene pipe distribution network passing 1000 homes.
- Target of 300 domestic customers and associated service pipes
- and meters.
- Like for like domestic appliances including boilers, fires, cookers
- and hobs.
- Various sensing technologies for network validation.
- A manned site for maintenance and emergency service provision.
- Bespoke billing arrangements supported by commodity balancing.
- Local operating procedures and training.



Project Outcomes

- Prioritised learning to inform hydrogen system transformation.
- Validation of 80% of 280000km network materials, components, construction and operation on a live network.
- Quantifying and qualifying customer and social acceptance of hydrogen for heat in real-world trial.
- End to end system interfaces management and learning across the whole system.
- Statistically significant and scalable.
- Future demand forecasting through heat profile data.
- Informs heat policy decisions and future regulation.
- Shared learning & knowledge transfer to facilitate hydrogen projects & roll out.
- Market creation.

H100 Fife site at Levenmouth

SGN H100 Fife

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