

# Case Study

## Levenmouth Community Energy Project

Logan Energy were contracted to replace their obsolete hydrogen system and install on-site hydrogen refuelling stations. We designed, built, installed, commissioned, and maintained the upgraded hydrogen generation, storage, refuelling and distribution system.

### PROJECT INFORMATION

In partnership with Bright Green Hydrogen, Toshiba, Fife Council, and Hydrogenics, the facility at the Levenmouth Community Energy Project in Fife, Scotland, was constructed in order to demonstrate green hydrogen as a viable medium for energy storage, grid balancing, electricity generation and transport fuel.



“It was fantastic to showcase how the **real-life application of hydrogen has been so well-established, received and successful** at the Levenmouth Community Energy Project.” - *Bill Ireland, CEO at Logan Energy*



## Deliverables

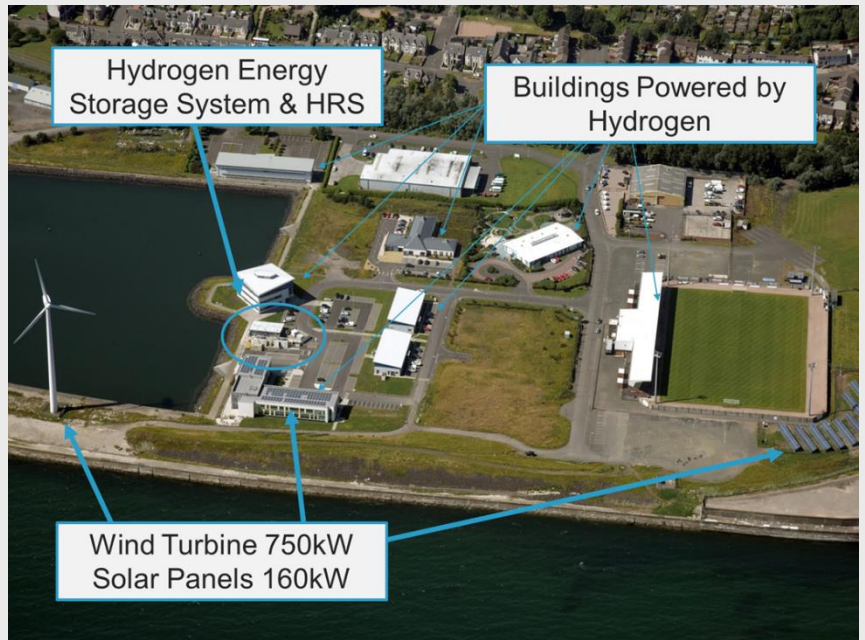
- > H<sub>2</sub> energy storage
- > H<sub>2</sub> compression
- > Fuel Cells for energy balancing
- > Hydrogen Refuelling Stations

## Achievements

- > PEM electrolyser operation at cold temperatures
- > Safe and efficient interaction of components and subsystems

## Benefits

- > Micro-grid demand covered by renewable sources and H<sub>2</sub>.
- > H<sub>2</sub> used as a fuel for a local fleet.
- > Zero carbon micro-grid



“Collaboration is key as we increase the role of hydrogen in the clean energy revolution. What we have achieved during the first six months at Levenmouth further demonstrates the huge potential of hydrogen as a standalone multisector energy resource that also supports existing energy networks.” - *Bill Ireland, CEO*

## WHOLE SYSTEM DESIGN

- > A 250 kW PEM electrolyser to convert excess renewable energy to hydrogen up to 100kg per day
- > A 60 kW PEM electrolyser integrated in to a containerized refueler, 25kg/day
- > A 60 kW Alkaline electrolyser integrated in to a containerized refueler, 25kg/day
- > Hydrogen storage tanks at 450bar holding 30kg of hydrogen in each refueler
- > Two high pressure hydrogen compressors (450bar), one in each refueler
- > A 100kW PEM fuel cell to power the micro-grid

