



CARES CASE STUDY

HUNTLY HYDROGEN

- Project owner: Huntly and District Development Trust
- Location: Huntly, Aberdeenshire
- Technology: Hydrogen generation and refuelling station
- Date installed: In progress - aiming for late 2020

OVERVIEW

Huntly and District Development Trust (HDDT) aims to make Huntly and District a better place to live, work and visit. One of the Trust's key projects is ownership and development of Greenmyres Farm, a community asset. HDDT was keen to explore renewable energy and has already commissioned a 500kW wind turbine on the site.

The current business case for the Greenmyres turbine has all generation being exported, but HDDT considers that this energy would be better used to develop a more resilient local energy economy. Previously HDDT has examined the development of an 'energy hub' at the farm to provide low cost electricity to local businesses willing to relocate to the farm.

Given Huntly's key position on the A96 between the two major cities in the North of Scotland, Aberdeen and Inverness, the potential to produce hydrogen with energy from Greenmyres and develop a low carbon local transport economy was considered as an option in this project. The use of hydrogen to provide heat and power to two community buildings was also considered.

BACKGROUND

Formed in 2009, Huntly & District Development Trust (HDDT) works to support the community of Huntly and the surrounding district (defined by postcode AB54). Huntly is the main centre of the largely agricultural area, which has a population of over 11,000. The Trust now has 472 members and employs four full-time and one part-time staff, whose work is supported by 30 volunteers.

In March 2014, HDDT purchased Greenmyres farm, a site around 5km to the south east of the town of Huntly. This upland farm holds 63 acres of rough grazing, a farmhouse and a range of derelict outbuildings. A number of opportunities were identified to develop the farm and meet the goals of the Trust. The initial development works focused on the development of the land for renewable energy as a way to generate income.

In December 2016, after 2 years of planning and development work, HDDT successfully commissioned a 500kW wind turbine at Greenmyres farm. The wind turbine is owned by Greenmyres Renewable Energy (GRE), a wholly owned subsidiary of HDDT.

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The wind turbine exports renewable electricity onto the local electricity network via a Low Voltage (LV) connection and currently receives export revenue (in addition to Feed in Tariff payments) through a 12-month Power Purchase Agreement (PPA) with EDF. The project will continue to export through PPA contracts for the duration of its operational life.

PROJECT AIMS

The Huntly Hydrogen project aims to fully consider and support the development of a medium scale hydrogen supply system at Greenmyres farm and the associated hydrogen supply chain. The hydrogen supply system could use renewable generation from the Greenmyres turbine and neighbouring Dummies windfarm sites, as well as potentially use renewable generation from a new ground mounted solar array. The use of renewable electricity at source would allow the hydrogen to be produced at a lower cost than those relying on imported grid electricity. The renewable hydrogen would then be transported to Huntly (and other locations in the area with demand). This would primarily be used as a transport fuel but secondary uses could include providing electricity or heat to larger energy consumers in Huntly.

This project is split in to three stages:

- Stage One: Technical, legal and financial feasibility of the Huntly Hydrogen project
- Stage Two: Develop a strong business case and business plan including the development of equipment specification and contracts
- Stage Three: Securing relevant planning consents and grid connections for the electrolyser and refuelling station

This case study was completed after Stage One.

KEY ACHIEVEMENTS

Initial feasibility and modelling has shown that a hydrogen supply project is viable at the Greenmyres site, as long as a suitable scale of demand can be achieved. A strong relationship was developed with a key stakeholder and although it was considered that there was not enough demand in the Huntly area itself, a significant opportunity has been identified close by.

LESSONS LEARNED

Stakeholder engagement is key:

- Engage with a large number of potential stakeholders, not all of them will be interested
- Involve key stakeholders in project decisions and discuss the risks of each option
- Receive feedback and adjust accordingly.

Developing a hydrogen project is complex with generation and demand needing to be developed in tandem, and in an external environment where regulation and incentives are changing fast. Potential producers and off-takers are both exposed to risk and highly dependent on each other. The emerging nature of hydrogen as a transport fuel means that a new supply or demand is not yet abundantly available. However, in a context where significant decarbonisation of our transport and heat sectors is necessary, hydrogen is well placed to play a key role, especially in a rural context.

Website: www.huntlydevelopmenttrust.org

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