

Aberdeen Hydrogen Bus Project (also UK Renewable Hydrogen Hub (UKRHH), Impact of Electrolysers on the Network (IEN))

Dedicated website – No

Organisation webpage – Broken Link

Centralised portal - No

Objectives/Success Criteria - Yes

Closedown/final report – Yes (InnovateUK UKRHH report, SSE IEN report)

Open-source data – No

Peer-reviewed academic output (Primary Subject / Referenced) - 1 / 10

Brochures/Case Studies/Videos - Yes

On-line major conference/event presentations - 2

Dissemination Event(s) / Output available – 1 : 1 (Aberdeen - March 2017)

Follow-on project – Yes (EU project JIVE2)

Consumer Engagement

Consumer Participation – No

Consumer Feedback – No

Output Summary

Progress reports – No

Detailed and objective final report – Yes (x2) (InnovateUK UKRHH report, SSE IEN report)

Project method detailed – Yes

Performance to objectives detailed – Yes

Lessons learned identified – Yes

Policy/Regulation implications reviewed – No

Limited directly related academic output but widely referenced.

Lack of single easily identified project name and dedicated central web depository. Reports and output spread across several funding organisations and multiple project names.

Outcomes vs. Objectives/Targets

Performance to objectives – mostly achieved

The UKRHH report clearly states the initial performance targets for the system operation in terms of metrics related to fuelling, bus, and electrolyser operation. These were converted to monthly targets and compared to monthly performance data. The performance data was only available for 19 months rather than the two years planned. Start-up problems meant targets were not achieved during initial operation but were meant in the final months. Overall the project was considered a success and led to follow-on projects and interest from other locations.

The IEN project application document states three high level objectives. The closedown report identifies that the three objectives were met with a significant number of trials performed to understand the grid performance impact and potential for electrolyser operation.

Key Findings

- After initial issues, the H2-fuel buses achieved acceptable reliability and fuelling time.
- The H2 supply system met demand and achieved >99% uptime.
- The electrolyser could be operated at short notice to be used for grid balancing services.
- Costs, particularly for the buses, needed to be reduced by c.33% for the technology to be competitive based on the costs at project completion.
- Minor grid reinforcement is potentially required for the addition of electrolysers to manage power quality but the impact was generally manageable.
- Flexible electrolyser operation, making use of lower cost/higher availability periods for electricity was found to be more cost effective than more consistent operating profiles.