












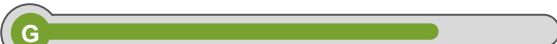





























Energy Networks Association

Network Safety and Impacts Board – network project updates

06 July 2020

 <p>Roadmap to FutureGrid</p>	<p>Pre work supporting the NGGT bid for the 2020 NIC fund. The project aims to build an offline test facility at DNV Spadeadam comprising of decommissioned NTS assets to test the impact of up to 100% hydrogen.</p>	<p>£ 662k [NIA]</p> <p>Jun 2020 until Mar 2021</p>		<p>Tx only Blend of H₂</p> <p>Lead: Lloyd Mitchell</p>	 <p>The project is currently in the contract negotiation stages although active discussions have started with the project team at NGGT and DNV GL. Initial focus is on the layout of the test facility and the master test plan.</p>
 <p>Initial H2 Supply Strategy</p>	<p>Review and report on how planning of hydrogen conversion of the distribution and transmission network will affect large scale end users. Make recommendations for any mitigation or further development of solutions required.</p>	<p>£ 9.4k [NIA]</p> <p>Apr 2020 until Jan 2021</p>		<p>Tx and Dx Blend of H₂</p> <p>Lead: Dave Hardman</p>	 <p>Project in the contract negotiation stages with the lead network – NGN, re sanction needed due to 1 GDN leaving the project.</p>
 <p>Gas Transport Transition Pathways</p>	<p>This project aims to examine the transition from CNG today towards a hydrogen future providing insight into the technical challenges and potential short-term policy asks that will enable a no regrets approach.</p>	<p>£ 25k [NIA]</p> <p>Apr 2020 until Oct 2020</p>	 <p>All GDNs supporting & GNI</p>	<p>Tx and Dx Blend of H₂</p> <p>Lead: Emily Ly</p>	 <p>The project kick off meeting has happened to bring the team together and confirm the scope.</p>
 <p>HyScale</p>	<p>A feasibility study that will examine the technical and commercial issues associated with the application of Liquid Organic Hydrogen Carriers (LOHC) to capture, store, transport and release hydrogen at bulk scale in the UK.</p>	<p>£ 42k [NIA]</p> <p>Jun 2020 until Mar 2021</p>	<p>Blue Abundance Framatome SGN, WWU & Cadent</p>	<p>Tx and Dx Blend of H₂</p> <p>Lead: Suki Ferris</p>	 <p>Project in the contract negotiation stages with the lead network – SGN.</p>
 <p>Spatial GB Clean Heat Modelling</p>	<p>Provide a coherent modelling framework for regional energy demand and supply mapping that captures competition between low carbon technologies and the impact on the national heat decarbonisation strategy.</p>	<p>£ 356k [NIA]</p> <p>Sep 2019 until Dec 2020</p>	 <p>All GDNs supporting</p>	<p>Tx and Dx Blend of H₂</p> <p>Lead: Usman Bagdu</p>	 <p>Model development activities have progressed well and are almost complete allowing model validation scenarios to be carried out, early results will be shared with the parties. A peer review is being organised of the output by Imperial College London.</p>
 <p>Zero 2050 South Wales</p>	<p>To bring together utilities, industry, academia, SME, Government, regional experts to adopt a whole system view to design a pathway to meet South Wales net-zero target which delivers the best value to consumers.</p>	<p>£ 62k [NIA]</p> <p>Nov 2019 until Aug 2020</p>	 <p>NGET, NGGT, WWU, WPD</p>	<p>Tx & Dx G & E H₂ Vision</p> <p>Lead: Suki Ferris</p>	 <p>Locations of bulk hydrogen demand, infrastructure to transport hydrogen and carbon, and evaluation of hydrogen storage needs are being reviewed and refined.</p>

 <p>NTS Hydrogen Injection</p>	<p>To identify the requirements to enable a physical trial of Hydrogen injection into the NTS, identifying the gaps in the safety case and indicating the most suitable NTS location for a live small-scale trial.</p>	<p>£ 200k [NIA]  Sep 2019 until Aug 2020</p>		<p>Tx only H₂ upto 100% Lead: Dave Hardman Lloyd Mitchell</p>	 <p>This project is now in Closure and a Final Technical Report is being reviewed by NGGT. Ultimately there were no 'perfect' locations to carry out a hydrogen injection trial on the NTS and so coupled with many outstanding questions regarding the assets we have decided to focus on building an Offline test facility (see Roadmap to FutureGrid).</p>
 <p>Hydrogen Deblending</p>	<p>To assess a variety of hydrogen recovery technologies and develop concept designs for selected options including a techno-economic review and identify the requirements for a demonstration project.</p>	<p>£ 31k [NIA]  Dec 2019 until May 2020</p>	 Cadent, NGN, SGN & WWU	<p>Tx and Dx Blend of H₂ Lead: Lloyd Mitchell</p>	 <p>This project is now in Closure and a Final Technical Report is being reviewed by NGGT. Costain have identified a number of suitable technologies to enable the de-blending of hydrogen and natural gas on the NTS/LTS. These technologies have been applied to a number of agreed case studies.</p>
 <p>Hydrogen Flow Loop</p>	<p>Offline test loop to evaluate metallurgy changes on existing NTS steel pipe and new MASIP pipe when exposed to 30% hydrogen, identifying next steps to assess the NTS' suitability to transport hydrogen.</p>	<p>£ 125k [NIA]  Apr 2019 until Mar 2020</p>		<p>Tx only Blend of H₂ Lead: Ed Timerick</p>	 <p>This project is now in Closure and a Final Technical Report is being reviewed by NGGT. The project has completed adding pressure cycles to the X52 pipe section. The final samples for analysis have been sent off to Intertek.</p>
 <p>Project Cavendish</p>	<p>A review of the potential of the Isle of Grain region to use existing infrastructure to supply hydrogen to London & the South East including generation, storage, transport and CCS.</p>	<p>£ 178k [NIA]  Feb 2019 until Feb 2020</p>	 Cadent & SGN	<p>Tx and Dx Blend of H₂ Lead: Suki Ferris</p>	 <p>This project is now in Closure and a Final Technical Report is being reviewed by NGGT. The outcomes of the Design & Modelling, Analysis, and Completion phases have been shared with all project partners ahead of discussions regarding taking this programme to the next phase.</p>
 <p>Feasibility of H₂ in the NTS</p>	<p>A feasibility study with the aim of determining the capability of the NTS to transport hydrogen. Includes a review of relevant assets, pipeline case study and draft scope for offline trials.</p>	<p>£ 205k [NIA]  Nov 2018 until Apr 2019</p>		<p>Tx only Blend of H₂ Lead: Lloyd Mitchell</p>	 <p>Confirmed transporting hydrogen in the NTS is technically feasible, a summary of the challenges which would need to be addressed was presented including hydrogen embrittlement, increased hazard zones and changes to operational practices.</p>
 <p>Aberdeen Vision</p>	<p>A feasibility study for the generation of hydrogen at St Fergus using the NTS (up to 2%) to supply the city of Aberdeen. Includes generation, injection, separation and transport.</p>	<p>£ 116k [NIA]  Dec 2018 until Sep 2019</p>	 SGN	<p>Tx and Dx Blend of H₂ Lead: Lloyd Mitchell</p>	 <p>Suggested a 200MW modular design would offer an optimised potential build and allow for cost savings through manufacture of multiple units. The analysis of the Tx and Dx networks in the area did not identify any major concerns around the injection of hydrogen.</p>

HyNTS FutureGrid

Roadmap to FutureGrid

Pre work supporting the NGGT bid for the 2020 NIC fund. The project aims to build an offline test facility at DNV Spadeadam comprising of decommissioned NTS assets to test the impact of up to 100% hydrogen.

Key Project Dependencies

- Suitable test pipe



Tx
Blend of H₂

Lead:
Dave Hardman

£ £662k
NIA Funding

Jun 2020
until
Mar 2021

Overall Status



The project is currently in the contract negotiation stages although active discussions have started with the project team at NGGT and DNV GL. Initial focus is on the layout of the test facility and the master test plan.

Milestone	Due	Status
Milestones to be confirmed once contract is signed		

#	Top 3 Risks
1	NGGT cannot find a suitable piece of test pipe
2	
3	

Progress & Next Steps
<p>Progress this month:</p> <ul style="list-style-type: none"> Kick off meeting Locate test piece of pipe and understand logistics for transport Support final submission Sign the contract



Initial H2 Supply Strategy

Review and report on how planning of hydrogen conversion of the distribution and transmission network will affect large scale end users. Make recommendations for any mitigation or further development of solutions required.

Key Project Dependencies

- Support from WWU in the project
- Use of internal time as and when needed



NGN led project with NGGT and WWU

Tx and Dx Blend of H₂

Lead:
Dave Hardman

£ £22k
NIA Funding

Jul 2020
until
Mar 2021

Overall Status



Project in the contract negotiation stages with the lead network – NGN, re sanction needed due to 1 GDN leaving the project.

Milestone	Due	Status
Milestones to be confirmed once contract is signed		

#	Top 3 Risks
1	WWU pulls out of the project
2	
3	

Progress & Next Steps
<p>Progress this month:</p> <ul style="list-style-type: none"> ▪ Change control at GTIGG for the revised amount ▪ Contract negotiations and sign



HyScale

A feasibility study that will examine the technical and commercial issues associated with the application of Liquid Organic Hydrogen Carriers (LOHC) to capture, store, transport and release hydrogen at bulk scale in the UK.

Key Project Dependencies

- Support from the GDNs

Blue Abundance
Framatome
SGN, WWU & Cadent

Tx and Dx Blend of H₂

Lead:
Susannah Ferris

£ £42k
NIA Funding

Jul 2020
until
Mar 2021

Overall Status



Project in the contract negotiation stages with the lead network – SGN.

Milestone	Due	Status
Milestones to be confirmed once contract is signed		

#	Top 3 Risks
1	Contract negotiations take a long time and risk delivery before Mar 21
2	WWU may not be project partners as they have not provided their legal comments on the contract, SGN may swallow these costs
3	

Progress & Next Steps

Progress this month:

- Kick off meeting occurred to bring the teams together and agree scope
- Legal comments from parties received and collated by SGN



Spatial GB Clean Heat Modelling

Provide a coherent modelling framework for regional energy demand and supply mapping that captures competition between low carbon technologies and the impact on the national heat decarbonisation strategy.

Key Project Dependencies

- How we can model regional energy demand and supply

All GDNs Supporting

Tx and Dx
Blend of H₂

Lead:
Usman Bagudu

£ £356k
NIA Funding

Sep 2019
until
Dec 2020

Overall Status



Project is progressing well with regular input from all parties, data gathering has gone well and is all but completed, Model development has started.

Milestone	Due	Status
Project Inception	Oct-19	Completed
Model Framework Development	Oct-19	Completed
Data Collection	Nov-19	Completed
Component Model Development part 1	Mar-20	Completed
Component Model Development part 2	Apr-20	In Progress
Model Validation Scenarios	Apr-20	Completed
GB Heat Model Integration	Jun-20	In Progress
User acceptance and model handover	Aug-20	Not Started
Project Management	Aug-20	In Progress

#	Top 3 Risks
1	Delays with development timelines
2	Lack of available data / available data of low quality on gas network repurposing costs
3	Model does not meet intended innovation aims

Progress & Next Steps

Progress this month:

- 12-15th meeting with embedded consultants held
- Bulk of code for module 5 (integration) written for cost optimal and consumer behaviour modes. Module running end to end.
- First version of User Interface presented to NG and a second version is in development
- Modules 1-4 code is being updated to be consistent with inputs from UI and module 5, as well as based on comments raised during embedded consultant meetings
- Contract for peer review signed
- User testing contracts sent and process planned

Next Steps

- Finalise the code for the whole model to run end to end
- Finalise the user interface
- Deliver the beta version of the model as well as instruction manual and video
- Start user testing and peer review phases
- Run demo days for advisory group's user testing

ZERO 2050

Zero 2050 South Wales

To bring together utilities, industry, academia, SME, Government, regional experts to adopt a whole system view to design a pathway to meet South Wales net-zero target which delivers the best value to consumers.

Key Project Dependencies

- Integration with work packages (i.e. gaining data from all parties on future H2 demand)



NGET Lead, WWU & WPD

Tx & Dx G & E
H₂ Vision

Lead:
Suki Ferris

£ £63k
NIA Funding
Nov 2019
until
Aug 2020

Overall Status



Locations of bulk hydrogen demand, infrastructure to transport hydrogen and carbon, and evaluation of hydrogen storage needs are being reviewed and refined. Data from other work packages (transport, city, industry and power generation hydrogen demand) is feeding into hydrogen analysis. The final data will be fed into the Pathfinder model to determine the optimal pathway to decarbonise South Wales.

Milestone	Due	Status
Milestone (M) 1: Draft report on H2 demand by location	Jan-20	Completed
M 2: Draft report on sizing and siting of H2 supply infrastructure	Feb-20	Completed
M 3: Advanced H2 demand & supply infrastructure report	Mar-20	Completed
M 4: Review of H2 report	Apr-20	Completed
M 5: Update H2 report	May-20	Completed
M 6: Integration with other work packages into Pathfinder Model	Jun-20	Completed
M 7: Continue integration into Pathfinder Model	Jul-20	-
M 8: Final H2 report on supply/demand	Aug-20	-
M 9: Final report from Pathfinder, including optimization	Sep-20	-

#	Top 3 Risks
1	There is a risk to the findings launch, as the project was initially planned to be launched at COP 26 in the UK.
2	There is a risk other low carbon gases such as biomethane and green hydrogen are not as fully considered
3	There is a risk there are too many 'optimal pathways', i.e. both Progressive and Arup are developing potential solutions
Progress & Next Steps	
<p>Progress this month:</p> <ul style="list-style-type: none"> June progress report received and reviewed Monthly conference call to go through progress of all projects and to understand potential gaps in analysis. Positive to see how work packages are beginning to feed information into each other to align results. <p>Next Steps</p> <ul style="list-style-type: none"> Upcoming conference call to discuss further alignment between work packages. 	



HyDeploy 1 is exploring the viability of blending upto 20% on a private gas network.
HyDeploy 2 is then exploring the path to deployment by trialing on the public gas network.

£ 22.5m [NIC]
April 2017
until
March 2023



Cadent
and NGN

Distribution
H2 BLEND
upto 20%
Lead:
Andy Lewis



H2 Blending commenced into the Keele network on 31 Oct 19. Maximum blend rate has now been reached. The trial is likely to be extended until Sept 2020. All network related findings are inline with the HSE exemption submitted. Work has begun on the HyDeploy2 trial with trial begin brought forward to sept 2020 inline with BEIS request



The project combines Industrial fuel switching, CCUS and blending to offer decarbonisation to the Liverpool and Manchester areas.

£ 1.7M [NIA]
May 2017
until
2026



Cadent

H2 Transmission
and Distribution
H2 and BLEND
Lead:
Andy Lewis



New work packages have commenced on Fuel Switching and Hydrogen Supply as a result of being successful awarded BEIS innovation funding. BEIS CCUS innovation project is now coming to close (April 2020). Work is being done on H2 pipeline pre-feed ahead of potential IDC bid being submitted.



HyDeploy 1 & 2

HyDeploy 1 is exploring the viability of blending upto 20% on a private gas network.

HyDeploy 2 is then exploring the path to deployment by trialing on the public gas network.

Key Project Dependencies

- HyDeploy2 Winlaton exemption being awarded
- Build for H2 production and GEU being on time for start of project
- Successful completion of trial at Keele University



Cadent and NGN

Distribution
H2 BLEND upto 20%

Lead:
Andy Lewis

£ 22.5m
NIC
April 2017
until
March 2023]

Overall Status



HyDeploy 1 currently in trial . HyDeploy2 first trial gathering data ready to submit the exemption.

Milestone	Due	Status
HyDeploy 1 – trial underway	December 2019	In progress
HyDeploy 2 – initial trial site chosen	November 2019	Completed
HyDeploy 2 – evidence for exemption for initial trial area	May 2020	In progress
HyDeploy 2 – submission of the exemption for initial trial area	May 2020	In progress
HyDeploy 1 – closure report	Mar 2021	In progress
HyDeploy 2 – trial commences in Winlaton	September 2020	In progress
HyDeploy 2 – area 2 trial evidence collection	Begins September 2020	In progress
HyDeploy 2 – area 2 exemption submission	TBC	In progress
HyDeploy 2 – trial area 2 begins blending	TBC	In progress

#	Top 3 Risks
1	HyDeploy2 Trial accelerated upon request of BEIS putting pressure on project timelines
2	New GEU and method of H2 production needs to be available for HyDeploy2
3	Public acceptance continues at Keele University

Progress & Next Steps

Progress this month:

- Trial continues at Keele University although it was ceased for C.2mths due to C19 lockdown
- HyDeploy2 Winlaton trial has been brought forward due to request from BEIS surrounding COP26.
- HyDeploy2 exemption pack submitted
- Agreement of billing regime with Ofgem/Xoserve – paper submitted to Ofgem for approval Feb 2020.
- HyDeploy at Keele is likely to be extended
- Partner with BEIS IFS programme

Next Steps

- Extending Keele site
- Oct 2020 Winlaton site is commissioned
- Sept 2020 Keele site is decommissioned
- 3rd Network is identified and safety case is submitted




The project combines Industrial fuel switching, CCUS and blending to offer decarbonisation to the North West of England

Key Project Dependencies

- HyDeploy 1&2 being completed
- Exemption for the whole of the North West Network agreed.
- Sufficient H2 and CCUS policy being in place.



Cadent

H2 Transmission and Distribution
H2 and BLEND

Lead:
Andy Lewis

£ 1.7M
NIA

May 2017
until
2026

Overall Status



Members of the Consortium have been awarded £7.5M of Government funding to undertake a 'FEED' for hydrogen production. £5.3M of Government funding to undertake detailed design and practical demonstration of conversion of three sites from natural gas to hydrogen. Hydrogen transmission pipeline FEED is being funded via NIA

Milestone	Due	Status
Completion of CCUS Innovation Funding	April 2020	In progress
Initiation of Fuel Switching Programme	March 2020	In progress
Initiation of Hydrogen Supply Programme	March 2020	In progress
Completion of Hydrogen Distribution Optimisation NIA	July 2020	In progress
IDC bid to UKRI	Oct 2020	In progress
IDC bid determination	Dec 2020	In progress
FEED Study for H2 pipeline and CCUS components of HyNET	To follow on	TFO

#	Top 3 Risks
1	IDC is delayed which means that FEED is subsequently delayed
2	Slow progress from government on delivery of H2 policy mechanism
3	Outcome of RIIODG2 decision on supporting decarbonisation projects













Progress & Next Steps

Progress this month:

- Work continues on preparing for FEED and DCO for HyNet pipeline
- UKRI have announced the deadlines for the IDC funding
- Work continues on formulating consortium partners.
- Early formulation work on HyNet Homes
- KO of HyTechnical – Risk Assessment on TD/1 and TD/13

Next Steps

- Continued work on the Hydrogen Distribution Optimisation and HyNet Extension (NIA)
- Preparation of the IDC submission paper and subsequent submission
- Continued interaction with the CCUS Advisory Group on H2 business models

 <p>H21 NIC Phase 1</p>	<p>H21 NIC Phase 1 will provide critical safety evidence on leakage and consequences of leakages within a 100% hydrogen.</p>	<p>£ 10.3m ^[NIC]</p> <p>Jan 2018 until Aug 2020</p>	 <p>NGN, Cadent, SGN & WWU</p>	<p>Dx 100% H₂</p> <p>Lead: Mark Danter</p>	 <p>A report detailing the Leakage Tests has been issued to DNV GL for peer review and comment. Final QA checks on Consequence Tests are being undertaken by experts from HSE and DNV GL. Results will continue to be fed into the 100% H₂ Quantitative Risk Assessment. Final report detailing all results is due to be released in August 2020.</p>
 <p>H21 NIC Phase 2</p>	<p>The project continues the work to build the safety evidence started in Phase 1. In this phase testing on Network Operations and an Unoccupied Trials site will be undertaken to ensure that the network can be maintained safely.</p>	<p>£ 7.5M ^[NIC]</p> <p>Jan 2020 until Dec 2021</p>	 <p>NGN, Cadent, SGN, WWU & NGGT</p>	<p>Dx 100% H₂</p> <p>Lead: Mark Danter</p>	 <p>Contracts with project partners have been issued. Contract for the build of the Phase 2a rig is being finalised. HSE are continuing workshops on each of the key topic areas. The second phase of the social sciences research has commenced with workshops being held online.</p>
 <p>H21 Strategic Modelling</p>	<p>The project seeks to extend the principle of hydrogen conversion as established in the H21 Leeds City Gate report, across key UK urban centres.</p>	<p>£ 444k ^[NIA]</p> <p>Apr 2017 until Mar 2020</p>	 <p>NGN, Cadent, SGN & WWU</p>	<p>Dx 100% H₂</p> <p>Lead: Mark Danter</p>	 <p>The report is being finalised and will be issued to the various GDN stakeholders for comment. After comments have been received and incorporated into the report it will be issued.</p>
 <p>H21 Field Trials</p>	<p>The Field Trials project is acting as an enabler to the H21 NIC Phase 2 project. During this project a detailed design of the Phase 2a test rig and Mater Test Plan will be produced and a location for Unoccupied Trials will be secured.</p>	<p>£ 585k ^[NIA]</p> <p>June 2018 until July 2020</p>	 <p>NGN</p>	<p>Dx 100% H₂</p> <p>Lead: Mark Danter</p>	 <p>Redcar and Cleveland Borough Council approved the lease of the site identified for Phase 2b Unoccupied Trials. The lease is now being finalised and planning permission sought for a change of use on the site.</p>



Phase 1

H21 NIC Phase 1 will provide critical safety evidence on leakage and consequences of leakages within a 100% hydrogen.

Key Project Dependencies

None



NGN, Cadent,
SGN & WWU

DX 100% H₂

Lead: Mark Danter

£ 10.3m
NIC Funding

🕒 Jan 2018
until
Aug 2020

Overall Status



A report detailing the Leakage Tests has been issued to DNV GL for peer review and comment. Final QA checks on Consequence Tests are being undertaken by experts from HSE and DNV GL. Results will continue to be fed into the 100% H₂ Quantitative Risk Assessment. Final report detailing all results is due to be released in August 2020.

Milestone	Due	Status
Contractual agreements signed	28/02/18	Complete
Phase 1A contract award of Phase 1A site build (Buxton)	02/04/18	Complete
Phase 1A/B Completion of Master Testing plan	01/06/18	Complete
Phase 1A Completion of build works	01/09/18	Complete
Phase 1B Completion of testing WBS 1 to 4	20/05/18	Complete
QRA and modelling completion	20/12/20	Due 30/06/20
Report and Results	01/06/20	Due 01/09/20

#	Top 3 Risks
1	Further delay to the project due to COVID 19 restrictions and possibility of staff illness
2	Knock-on effect of delayed testing is the delay to review the results to input to the QRA
3	
Progress & Next Steps	
<p>Progress this month:</p> <p>Phase 1a Buxton: A report detailing the findings has been produced by the HSE. This is now being peer reviewed and commented upon by DNV GL, it is due to be formally released in line with the end of project report.</p> <p>Phase 1b Spadeadam: WBS 5 testing has commenced. WBS 1-4 tests are now being QA checked and detailed in reports, which are being issued to the HSE for peer review and comment.</p> <p>QRA: The team are currently reviewing the test results from Spadeadam and comparing them to their various models.</p> <p>Social Sciences: Launch event for the closeout report was held via a webinar in June and the report is now publicly available via the H21 website</p> <p>Next Steps:</p> <p>Phase 1a Buxton: Handover of the site to HSE is due to take place early July.</p> <p>Phase 1b: Spadeadam QA of results and writing of closeout reports to continue.</p> <p>QRA: continue to review the results and update their models.</p>	



Field Trials NIA

The Field Trials project is acting as an enabler to the H21 NIC Phase 2 project. During this project a detailed design of the Phase 2a test rig and Master Test Plan will be produced and a location for Unoccupied Trials will be secured.

Key Project Dependencies

Liaison with Local Authority



NGN

DX 100% H₂

Lead: Mark Danter

£ 585k
NIA Funding

June 2018
until
July 2020

Overall Status



Redcar and Cleveland Borough Council approved the lease of the site identified for Phase 2b Unoccupied Trials. The lease is now being finalised and planning permission sought for a change of use on the site

Milestone	Due	Status
Final design of the micro-grid for Spadeadam	06/04/20	Completed
Finalise negotiations with local authority for the use of land for unoccupied trials	30/06/20	On-going
Report on the review of the NGN procedures	31/03/20	Completed

#	Top 3 Risks
1	Delays on securing planning permission for change of use of the site due to a backlog of planning applications post-covid 19
2	Local community raising issues/blockers for the unoccupied trail site
3	
Progress & Next Steps	
<p>Progress this month:</p> <ul style="list-style-type: none"> HSE work on Phase 2a is now continuing and completed the Master Test Plan work commenced under this project. Design of the micro-grid now continuing under Phase 2a. Design issued to DNV GL for completion and due to be issued. Lease of the use of the site approved at the Redcar and Cleveland Borough Council Cabinet Meeting. <p>Next Steps</p> <ul style="list-style-type: none"> Lease of the land to be formalised and approved by both parties. Planning permission for a change of use of the site to be applied for. Liaison with the local community to commence to ensure that they are fully aware and up to date on the project and what is happening in their area. 	



Modelling NIA

The project seeks to extend the principle of hydrogen conversion as established in the H21 Leeds City Gate report, across key UK urban centres.

Key Project Dependencies

None



NGN, Cadent,
SGN & WWU

DX 100% H₂

Lead: Mark Danter

£ 444k
NIA Funding

Apr 2017
until
Mar 2020

Overall Status



The report is being finalised and will be issued to the various GDN stakeholders for comment. After comments have been received and incorporated into the report it will be issued.

Milestone	Due	Status
Network wide training		Complete
Each of the Networks model 2 urban areas		Complete
Network wide close out meeting	25/02/20	Complete
Close-out Report	31/03/20	On-going

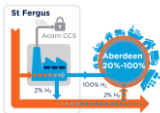
#	Top 3 Risks
1	Available time to complete and review the final report
2	
3	

Progress & Next Steps

Progress this month:
Closeout report being finalized, this will be issued out to all GDNs for comment.

Next Steps:

Complete the close out report and release via the H21 website.



Aberdeen Vision

To assess the feasibility of blending and injecting 2% hydrogen into the National Transmission System at St Fergus entry point

£

135k NIA



Nov2018
until
Feb 2020

SGN & National
Grid

H2 2% BLEND

Lead:
Phil Bradwell



The initial draft of the final report shows there are no critical obstacles that would prevent the injection of 2% hydrogen into the NTS at St Fergus and its distribution through the system into the gas distribution network.



The Future of LTS

To assess the feasibility and safety of the Local Transmission System (LTS) for storage and transport of pure and blended hydrogen and CO2.

£

205k NIA



Jan 2019
until
Feb 2020

SGN & HSE

NETWORK &
H2 BLEND

Lead:
Nancy Thomson



The first phase of this project was to assess the scientific and regulatory feasibility of repurposing the LTS. This has included a feasibility study to establish if an existing decommissioned 30km LTS pipeline from Granton, in Edinburgh, to Grangemouth could be revalidated in the context of a decarbonised gas grid.



Real Time Networks

Develop the world's first real-time gas demand model capable of energy modelling, will enable the modelling of a wider variety of gases in the network

£

7,998K NIA



April 2016
until
April 2020

SGN & DNV GL

NETWORK
& H2 BLEND

Lead:
Alexander
Webb-Brown



All sensor sites and weather stations have been installed and commissioned. Our customer data collection period has recently completed which was used to train the demand model. Full training of the demand model will be completed by end of Summer 2020 with results and findings disseminated soon afterwards



Hydrogen Excess Flow Valves

Develop an excess flow valve and new specification suitable for low pressure hydrogen networks

£

130k (NIA)



Sept 2019
until
Aug 2020

SGN, HSE, IGEN,
AV-UK

100% Hydrogen

Lead:
Mark Wheeldon



A review of the current Gas Industry Standard has been completed and a gap analysis has been done. This was used as the basis for a new IGEN standard for a 32mm low pressure Hydrogen EFV that is currently going through the final stages of approval. The project partner is currently producing prototypes for independent testing by the HSE



Hydrogen Gas Detection

Develop a gas detection instrument that can be used to detect hydrogen gas in levels ranging from ppm to 100% gas in air

£

158k NIA



Oct 2019
until
Dec 2020

SGN & WWU

100% Hydrogen

Lead:
Mark Wheeldon



Testing and selection of the sensor technology is now complete, development of the user interface is underway and the first prototypes are currently being built for testing and certification

£





H100

Feasibility & FEED study to assess a suitable site location for a hydrogen production and distribution network

Key Project Dependencies

- NIC bid to construct the hydrogen production and distribution network
- Hy4Heat developing hydrogen appliances in time for H100 demonstration
- Hy4Heat QRA and Safety case

KIWA, ERM, HSL, NPL, Arup, Wood, Costain, Providence Policy, University of Edinburgh, DNV GL

100% Hydrogen Injection

Lead:
Mark Wheelodon

£ 3.6m NIA
2017 until 2021

Overall Status



H100 NIA coming to completion & progressing with H100 Fife – NIC bid for construction of the hydrogen production facility, demonstration facilities and network

Milestone	Due	Status
Feasibility & FEED Studies	30/03/20	Complete
Review & approve H100 NIA technical evidentiary reports	30/06/20	In progress
ISP Submission	06/04/20	complete
NIB bid submission	31/07/20	In progress

#	Top 3 Risks
1	Lack of funding to progress with Pre-Construction & construction activities
2	Long lead items delaying construction and hence operational phase of the project
3	License exemptions & derogations not granted by Ofgem

Progress & Next Steps

Progress this month:

- Drafting H100 Fife NIC submission

Next Steps

- Submit NIC application to Ofgem for 2021 NIC funding
- Develop site specific QRA
- Progress with H100 Safety Management Framework
- Draft H100 NIA Final Report