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NIA Project Registration and PEA Document

Date of Submission

Jun 2023

Project Reference Number

NIA_WWU_02_38

Project Registration

Project Title

Net Zero Infrastructure Planning - Risks & Opportunities

Project Reference Number

NIA_WWU_02_38

Project Licensee(s)

Wales & West Utilities

Project Start

June 2023

Project Duration

0 years and 5 months

Nominated Project Contact(s)

Henry James

Project Budget

£220,895.50

Summary

This project will see Turley produce a Planning and Legal Delivery Strategy to support Wales and West Utilities' plans for the delivery of a hydrogen infrastructure network in both Wales and the South West of England with UK wide applicable learning.

It will involve working in partnership to understand the key development considerations and provide the national, regional and local parameters for the required hydrogen infrastructure; a known gap in current knowledge, as acknowledged in WWU's Regional Decarbonisation Pathways (RDP) report (September 2022).

This work is necessary to address the aforementioned gap in the current knowledge base regarding the appropriate planning and consenting regime for hydrogen infrastructure delivery. If we do not progress with this project, navigating the existing planning and consenting regime will be complex, onerous, risky and time consuming, which could undermine the delivery of vital infrastructure.

Preceding Projects

NIA_WWU_2_02 - Regional Decarbonisation Pathways

Third Party Collaborators

Turley

Nominated Contact Email Address(es)

innovation@wwutilities.co.uk

Problem Being Solved

WWU published its Regional Decarbonisation Pathways (RDP) (September 2022), to assess the major programme of infrastructure

change it will need to undertake to support reaching Net Zero energy systems operations. The report recognises that little work has been undertaken to understand how high level national (UK) Net Zero pathways might effectively translate to regional and sub-regional networks for planning and implementation of the gas transition.

It includes a Conceptual Plan illustrating the anticipated gas network end state and describes three credible energy system transition pathways to 2050 for Wales and the South West of England.

Each pathway scenario is subject to different levels of demand for hydrogen across the gas network. All involve the delivery of significant new hydrogen gas pipeline infrastructure on a major scale not previously delivered by WWU. Ultimately, this infrastructure delivery in the transition pathways is critical to meet both the UK's carbon budgets and Net Zero commitments.

There are multiple facets to understanding the appropriate planning, legal and consenting strategy for WWU to deliver transition. The RDP specifically recognises that the consideration of the planning and consenting regime for delivery of the proposed infrastructure required for transition is a gap in current knowledge. The report produced by Turley for this project aims to address this gap.

Method(s)

The Planning and Legal Delivery Strategy (PLDS) will use a range of methods to ensure comprehensive information gathering, professional advice and a clear strategy. This will include:

- Reviewing technical information provided by WWU and/or third-party consultants regarding the proposed hydrogen infrastructure.
- Review of technical guidance, national and local policy and strategies, and planning legislation and applying professional judgement to provide advice.
- Use of representative, secondary and robust online data available to inform our advice, including Land Registry, Office for National Statistics (ONS), National Infrastructure Commission, Council and Welsh / UK Government websites.
- Utilising GIS data as a method of information gathering, if and where appropriate.
- Use of technical professional judgement as Chartered Planners and Solicitors to identify planning and legal solutions and strategies for the hydrogen network.
- Meetings/targeted sessions to discuss information and the strategy.
- Follow-up presentation for dissemination and discussion of recommendations.

Data Quality Statement

Data gathered and produced, and the output strategy will be stored in Turley's internal document management system and assigned a job code to ensure appropriate and safe access at a future date. This is only accessible for Turley co-owners. Should Turley's internal project system be upgraded or changed, all relevant project data and archives will be safely transferred to any new system. Turley has ISO 9001 accreditation, complies with GDPR and has Cyber Essentials accreditation.

Turley has set quality assurance measures in place for all teams and services. This includes Senior Peer Review for all external material and relevant audit processes. Turley will work jointly with BDB and WWU to ensure all data and project work meets the required quality standards and data protection requirements.

Measurement Quality Statement

To ensure quality of data and reliability of the outputs, any key sources/data used in producing the strategy will be referenced as footnotes so that these can be reviewed or revisited at a future date. The Planning and Legal Delivery Strategy will be subject to internal peer review at Turley and BDB as an effective mechanism to ensure the quality and reliability of the Strategy. This will occur at draft and final Strategy stage.

An external technical review of the final Strategy could also be undertaken by Net Zero Industry Wales and Department for Energy Security and Net Zero as a further layer to ensure technical and data quality.

The project is rated low in the common assessment framework detailed in the ENIP document after assessing the total project value, the progression through the TRL levels, the number of project delivery partners and the low level of data assumptions. No additional peer review is required for this project.

Scope

Stage 1: Strategy Inception and Information Gathering (Month 1-2)

- 1x Project inception meeting with all parties (Turley, BDB, WWU (including land team), engineers)
- 2x engineering meeting to support information gathering

- 1x planning and legal meeting
- Preparation of information requirement list to inform the PLDS
- Review of technical information provided by WWU and any third parties
- Preparation of a skeleton structure for the PLDS
- Review of relevant national and local policies and strategies.

Stage 2: Planning and Legal Delivery Strategy Report (Month 2-4)

- 2x planning and legal meetings
- Detailed review of relevant planning guidance and legislation in Wales and England, including consenting processes and thresholds, relevant case studies, permitted development rights and local and national policy
- Engagement and coordination of Turley services inputs, including Economics, Strategic Communications and Sustainability
- Preparation of draft PLDS
- 1x suite of amendments following draft review by WWU and peer review
- Preparation of a summary Strategy, including key next steps (4-6 pages).

Stage 3: Strategy Presentation (Month 4-5)

- Final drafting and issue of PLDS
- Drafting presentation of findings and recommendations
- 1x suite of amendments and issue of final presentation
- Hybrid meeting with WWU and BDB to present findings and recommendations and discussion of next steps.

There is a lot of ongoing work to identify the most effective route to meet net zero in the UK and this project is one of many projects to evidence the major or minor role hydrogen will have in different scenarios. Repurposing the UK gas networks with hydrogen to support the challenge of the climate change act has the potential to save £millions with minimal gas customer disruption verses alternative decarbonisation solutions.

Objective(s)

The objectives of the Planning and Legal Delivery Strategy are to:

- The current statutory planning and consenting regime and strategy.
- The scope of documentation and technical requirements and planning timeline(s) and phasing for hydrogen infrastructure delivery.
- The sustainability, socio-economic and strategic communications requirements, and criteria to promote the benefits of the proposal.
- Recommendations for a new planning and consenting pathway to expedite hydrogen infrastructure delivery.
- Recommendations for a route to legislating the new planning and consenting pathway, including engaging with Welsh Government, DESNeZ and the National Infrastructure Committee (NIC) with a view to influencing Government's approach to infrastructure policy.
- A public affairs strategy to secure the necessary support for the consenting pathway across political and industry stakeholders.
- Consideration of how hydrogen infrastructure could take advantage of proposed planning reforms to accelerate delivery.

Consumer Vulnerability Impact Assessment (RIIO-2 Projects Only)

This project has been assessed as having a neutral impact on customers in vulnerable situations.

Success Criteria

A successful project will see the production of a report summarising the necessary planning, legal, and technical requirements to support hydrogen infrastructure consenting, including a clear project timeline, and a succinct set of recommended actions and next steps.

Project Partners and External Funding

The partners for this project are Turley and the project is wholly funded via NIA.

Potential for New Learning

WWU will be able to use the Planning and Legal Delivery Strategy to drive thought leadership on hydrogen infrastructure as a critical

element of the ability to achieve Net Zero by 2050. Turley/BDB Pitmans will inform this thought leadership and work with the WWU team to share the material and strategy output where appropriate. This will contribute to the industry and Government ability to navigate the key challenges of hydrogen infrastructure delivery.

Scale of Project

The scale of the proposed Strategy is proportionate to the scale of development and associated permissions and consents that would be required to deliver significant hydrogen infrastructure. Development of this nature could be considered of national significance and there is limited existing precedent of how hydrogen infrastructure has been dealt with in Wales and/or across the UK.

Investment in planning, legal and associated specialist areas now provides the opportunity to unpick a complex legal and planning process at the feasibility stage. It seeks to prevent significant additional cost and delay further into the process. Understanding key risks, timelines and technical requirements now, is important to understanding overall delivery, including cost, viability, project timescales and early engagement with all the key stakeholders. Without this, the process can become protracted, ineffective and lead to abortive or additional work. At worst, a lack of early engagement and understanding can result in unimplementable consents.

WWU has commissioned an engineering feasibility study for the significant hydrogen infrastructure requirement identified in its Regional Decarbonisation Pathways (September 2022) Report (NIA_WWU_2_02). The outcome of this work will be critical in identifying the build parameters and deliverability of such a project. It does not consider the planning and legal consents required, how these are obtained, and the timeline/costs associated. It is essential that the scale of required infrastructure is comprehensively assessed from an engineering, planning and legal perspective in parallel to each other at this feasibility stage.

Reducing the scale of this project would limit the potential for new learning. It would risk eliminating the second element of the Strategy, focused on identifying a new route to consent to hydrogen infrastructure and considering recommendations and next steps for this, including influencing Government and a strategy for the sustainability and economic benefits of hydrogen infrastructure. Without this, WWU and the wider network would not benefit from any understanding of how the current consenting process could be streamlined or improved to make the delivery of hydrogen infrastructure more efficient. This would impair the transferability of this project. This is critical to the overall aims of Net Zero by 2050.

Reducing the scale of the Strategy further would further inhibit Turley and BDB Pitman's ability to provide clear advice on the current consenting routes. Without this, WWU would progress through feasibility without a good working understanding of the planning and legal process and associated costs, requirements and timescales to deliver hydrogen infrastructure.

Technology Readiness at Start

TRL2 Invention and Research

Technology Readiness at End

TRL3 Proof of Concept

Geographical Area

This project is a desktop study to produce a report. The focus of the report will be the entire of the UK, with the Planning and Legal strategy producing nation-wide recommendations and next steps for hydrogen consenting.

Revenue Allowed for the RIIO Settlement

N/A

Indicative Total NIA Project Expenditure

External cost £168,466.50 Internal cost £52,429.00 total £220,895.50

Project Eligibility Assessment Part 1

There are slightly differing requirements for RIIO-1 and RIIO-2 NIA projects. This is noted in each case, with the requirement numbers listed for both where they differ (shown as RIIO-2 / RIIO-1).

Requirement 1

Facilitate the energy system transition and/or benefit consumers in vulnerable situations (Please complete sections 3.1.1 and 3.1.2 for RIIO-2 projects only)

Please answer **at least one** of the following:

How the Project has the potential to facilitate the energy system transition:

The proposed Planning and Legal Delivery Strategy will identify the statutory regimes in Wales and England to deliver the necessary consents and powers over land required to implement hydrogen infrastructure. The strategy will identify constraints with the existing regime and make recommendations for a new/bespoke regime in Wales as a base case, to help accelerate the delivery of hydrogen infrastructure. It will address an acknowledged knowledge gap within WWU (and wider sector) knowledge. The recommendations in the proposed Planning and Legal Delivery Strategy will be essential in facilitating energy system transition. The strategy will support WWU and stakeholder partners including SWIC and Welsh Government in trying to accelerate hydrogen networks to decarbonise the energy system.

How the Project has potential to benefit consumer in vulnerable situations:

n/a

Requirement 2 / 2b

Has the potential to deliver net benefits to consumers

Project must have the potential to deliver a Solution that delivers a net benefit to consumers of the Gas Transporter and/or Electricity Transmission or Electricity Distribution licensee, as the context requires. This could include delivering a Solution at a lower cost than the most efficient Method currently in use on the GB Gas Transportation System, the Gas Transporter's and/or Electricity Transmission or Electricity Distribution licensee's network, or wider benefits, such as social or environmental.

Please provide an estimate of the saving if the Problem is solved (RIIO-1 projects only)

N/A

Please provide a calculation of the expected benefits the Solution

There is a lot of ongoing work to identify the most effective route to meet net zero in the UK and this project is one of many projects to evidence the major or minor role hydrogen will have in different scenarios. Repurposing the UK gas networks with hydrogen to support the challenge of the climate change act has the potential to save £millions with minimal gas customer disruption verses alternative decarbonisation solutions.

Please provide an estimate of how replicable the Method is across GB

The report produced by the project will have planning and strategy recommendations applicable to the whole of the UK in a transition to hydrogen consenting, and so will be replicable/relevant to the whole nation and the other GDNs.

Please provide an outline of the costs of rolling out the Method across GB.

The outputs of this project will not involve roll out costs.

Requirement 3 / 1

Involve Research, Development or Demonstration

A RIIO-1 NIA Project must have the potential to have a Direct Impact on a Network Licensee's network or the operations of the System Operator and involve the Research, Development, or Demonstration of at least one of the following (please tick which applies):

A specific piece of new (i.e. unproven in GB, or where a method has been trialled outside GB the Network Licensee must justify

repeating it as part of a project) equipment (including control and communications system software).

- A specific novel arrangement or application of existing licensee equipment (including control and/or communications systems and/or software)
- A specific novel operational practice directly related to the operation of the Network Licensees system
- A specific novel commercial arrangement

RIIO-2 Projects

- A specific piece of new equipment (including monitoring, control and communications systems and software)
- A specific piece of new technology (including analysis and modelling systems or software), in relation to which the Method is unproven
- A new methodology (including the identification of specific new procedures or techniques used to identify, select, process, and analyse information)
- A specific novel arrangement or application of existing gas transportation, electricity transmission or electricity distribution equipment, technology or methodology
- A specific novel operational practice directly related to the operation of the GB Gas Transportation System, electricity transmission or electricity distribution
- A specific novel commercial arrangement

Specific Requirements 4 / 2a

Please explain how the learning that will be generated could be used by the relevant Network Licensees

The Planning and Legal Delivery Strategy will allow for future evolution of pipeline infrastructure to connect to wider industries and/or new hydrogen towns/villages. It will consider national, regional and local aspirations for hydrogen transition. The Strategy will form a fundamental cornerstone for the very long-term project of hydrogen transition. This transition will benefit customers in helping to meet Net Zero commitments to 2050.

Any potential new, relaxed and/or streamlined infrastructure consenting route could expedite delivery of hydrogen transportation in Wales and England. The learnings and recommendations from the Strategy could be applied elsewhere to increase the speed of delivery of this essential infrastructure across the UK.

Or, please describe what specific challenge identified in the Network Licensee's innovation strategy that is being addressed by the project (RIIO-1 only)

n/a

Is the default IPR position being applied?

- Yes

Project Eligibility Assessment Part 2

Not lead to unnecessary duplication

A Project must not lead to unnecessary duplication of any other Project, including but not limited to IFI, LCNF, NIA, NIC or SIF projects already registered, being carried out or completed.

Please demonstrate below that no unnecessary duplication will occur as a result of the Project.

All networks have been made aware of this project and no concerns of duplication have been raised.

If applicable, justify why you are undertaking a Project similar to those being carried out by any other Network Licensees.

N/A

Additional Governance And Document Upload

Please identify why the project is innovative and has not been tried before

Although the industry has undertaken many projects to look at the potential implications from a switch to hydrogen to the gas

infrastructure, the proposed Planning and Legal Delivery Strategy will identify the statutory regimes in Wales and England to deliver the necessary consents and powers over land required to implement hydrogen infrastructure. It will address an acknowledged knowledge gap within WWU (and wider sector) knowledge.

Relevant Foreground IPR

The project report will form the relevant Foreground IPR.

Data Access Details

Data for this project and all other projects funded under the Network Innovation Allowance (NIA), Network Innovation Competition (NIC) or the new Strategic Innovation Fund (SIF) can be found or requested in a number of ways:

- A request for information via the Smarter Networks Portal at <https://smarter.energynetworks.org>, to contact select a project and click 'Contact Lead Network'. WWU already publishes much of the data arising from our innovation projects here so you may wish to check this website before making an application.
- Via our Innovation website [here](#)
- Via our managed mailbox innovation@wwutilities.co.uk
- Details on the terms on which such data will be made available by Wales & West Utilities can be found in our publicly available "Data sharing policy relating to NIC/NIA projects" [here](#)

Please identify why the Network Licensees will not fund the project as apart of it's business and usual activities

Ofgem published its final determinations which included a variety of provisions to enable necessary development work on Net Zero projects but also to ensure vulnerable customers are thought about in any decision making. This project has the potential to facilitate the energy system transition, and is therefore eligible to use the NIA funding mechanism.

Please identify why the project can only be undertaken with the support of the NIA, including reference to the specific risks(e.g. commercial, technical, operational or regulatory) associated with the project

The project would only be undertaken with support from NIA funding, it is in the interests of gas customers, the regulator and the UK government and the realisation of any benefits are outside the control of the gas networks. There is no allowance in BAU business plans for this type of work and there is a risk that if hydrogen is not accepted as a means to heat homes in 2050 that this work is no longer valid.

This project has been approved by a senior member of staff

Yes