VENICE

NIA 6 Monthly Project Progress Report

March 2022 – September 2022

Electricity Distribution

nationalgrid

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Executive Summary

The ‘Vulnerability and Energy Networks, Identification and Consumption Evaluation’ (VENICE) innovation project is funded through Ofgem’s Network Innovation Allowance (NIA) mechanism, and has a budget of £1,475,984. Project VENICE was registered in July 2021 and all original work packages will be complete by December 2022.

VENICE is our largest vulnerability-led project, and delves into the challenging concepts and problems surrounding consumers and their engagement in the achievement of Net Zero. Moreover, it is challenging our business to think about its relationship with our customers, and ensuring that everybody is included in the transition to a greener, fairer energy system. Key obstacles for this project have been getting access to sufficiently aggregated data and the also the effects of the supplier crisis within the United Kingdom (UK). This has challenged the project team in its thinking and approach throughout, and has resulted in the formation of new partnerships and re-scoped work packages that will allow VENICE to deliver the best outcomes for our customers, at the lowest overall cost.

VENICE remains committed to exploring the social aspects of the energy transition, and we believe that our role as a Network Operator provides us with a unique position in trying to help our communities engage with Net Zero. By utilising valuable data, we are providing important insights into this aspect of the transition. The work which we are undertaking in VENICE could help in the future towards making our, and other Distribution Network Operator’s (DNOs) Priority Service Register (PSR) as up to date as possible, and ensure that we are able to reach out to those customers who may not reach out to us first.

With an overarching focus on social sustainability, project VENICE is considering three different aspects of the low carbon transition. The first work stream considers the permanence of post pandemic behaviours of consumers of differing demographic and socio-economic groups, in order to inform our future planning approaches. The second work package is focused on identifying and predicting vulnerability at a household level by analysing energy usage profiles alongside existing known patterns for customers with vulnerabilities. The third work package is taking a local community where there are high levels of poverty and developing new business models for those customers in order to keep them engaged in Net Zero and provide benefits to the distribution network.

Following the completion of:

- Frontier Economics’ persistence analysis;

- Frazer-Nash Consultancy's literature review and proof-of-concept training dataset for model development; and

- Wadebridge Renewable Energy Network's (WREN's) High Level Future Energy Scenario's report, Socio-Economic Outcomes, and Carbon Accounting Methodology

completed in the previous reporting period, this reporting period focusses on:

- The analysis of the impact of the pandemic on our network as part of Frontier Economics work package 1b;

- The development of the prediction and identification models which is part of Frazer-Nash work package 2c; and

- Progress within the WREN work stream, including the development of carbon accounting methodologies, and the delivery of the Wadebridge and Padstow Community Network Area Net Zero 2050 report, a report reviewing published energy scenarios and associate methodologies, and a report reviewing the technical and system options for net zero communities.

Hence, this report details progress of the project, focusing on the last six months, March 2022 – September 2022.

1. Business Case

For the purposes of registration, we detailed our thinking around the potential for VENICE to create social value. This could take a number of forms, but for this project we feel that a good measure is the potential to sign up new customers to the Priority Services Register (PSR). It has been calculated by each of the networks in the past and for NGED, that this value is £2.35 per customer (based on the paper: "WPD, Consumer Vulnerability Outcomes, 2018/19, Table 3.3"). Other networks calculate a benefit of similar magnitude, ranging from £1.09 per customer to £3.70 per customer.

We estimate that the total number of vulnerable customers on all DNO networks to be around 5.7m, and the number of PSR records is approximately 3.6m. Therefore, we suggest that the total number of outstanding vulnerable customers is around 2.1m (based on NGED social indicator mapping).

To illustrate the potential benefits, if the interventions developed in VENICE to identify and predict vulnerability at a household level identify an additional 25% of missing vulnerable customers, this could create additional social value worth £1.25m to network customers. Being able to identify all of these missing vulnerable customers proactively would therefore create social value of c. £4.935m. If this was extrapolated to all DNO's, and assuming 1m missing PSR records per DNO, this could equate to £11.75m of social value.

The benefits that come from understanding more about the impact of the recent pandemic are threefold:

1. Firstly we will have a view on the demand impact of the pandemic, and the results will assist within our network planning. The results of this research will be made available to all DNO's, and therefore there will be a direct benefit in being able to apply the results to our policies and assumptions associated with network planning to WPD and all DNO's. We would expect to see benefits for customers through better planning and decision making around local networks.

2. The second benefit will be in the design assumptions we make for future developments if we know the likely impact on demand of more localised home working. Again, whilst intangible today, this is something that could be incredibly valuable to us and all other DNO's to have in their planning toolkits.

3. The final benefit will come from the persistence assessment – if reinforcement work were to be undertaken without some view of the likelihood of persistence of demand changes then there is a chance that works might be done unnecessarily. Having a reasoned analysis of the likelihood of the changes continuing could provide substantial benefit to customers in the longer term.

The benefits of local community engagement include ensuring that no one is left behind. Additionally, the achievement of Net Zero is Government policy, and if by testing new business models we can ensure that we have learning to provide to all communities (through tools and techniques), this could be a substantial benefit to the UK and its goals. Having the tools in place to measure and plan a local energy transition could play a substantial role for the more deprived communities in the UK. Equally, these local energy schemes could provide significant benefits to networks through the use of Low Carbon Technologies (LCTs) and engagement in flexibility markets. Flexibility markets alone are expected to benefit customers substantially in the future.

2. Project Manager's Report

2.1 Project Background

Project VENICE was registered in July 2021, and has hence been live for approximately 14 months. As detailed in the previous progress reports, the VENICE project is divided into three work streams with a number of work packages in each one. Due to various delays caused by smart meter data access and re-scoping work, there have been some changes to the high level project plan. It should be noted that this has not affected the overall project schedule. Figure 2.1 shows the current high level plan of the VENICE project work streams led by Frazer Nash, Frontier Economics and WREN respectively:

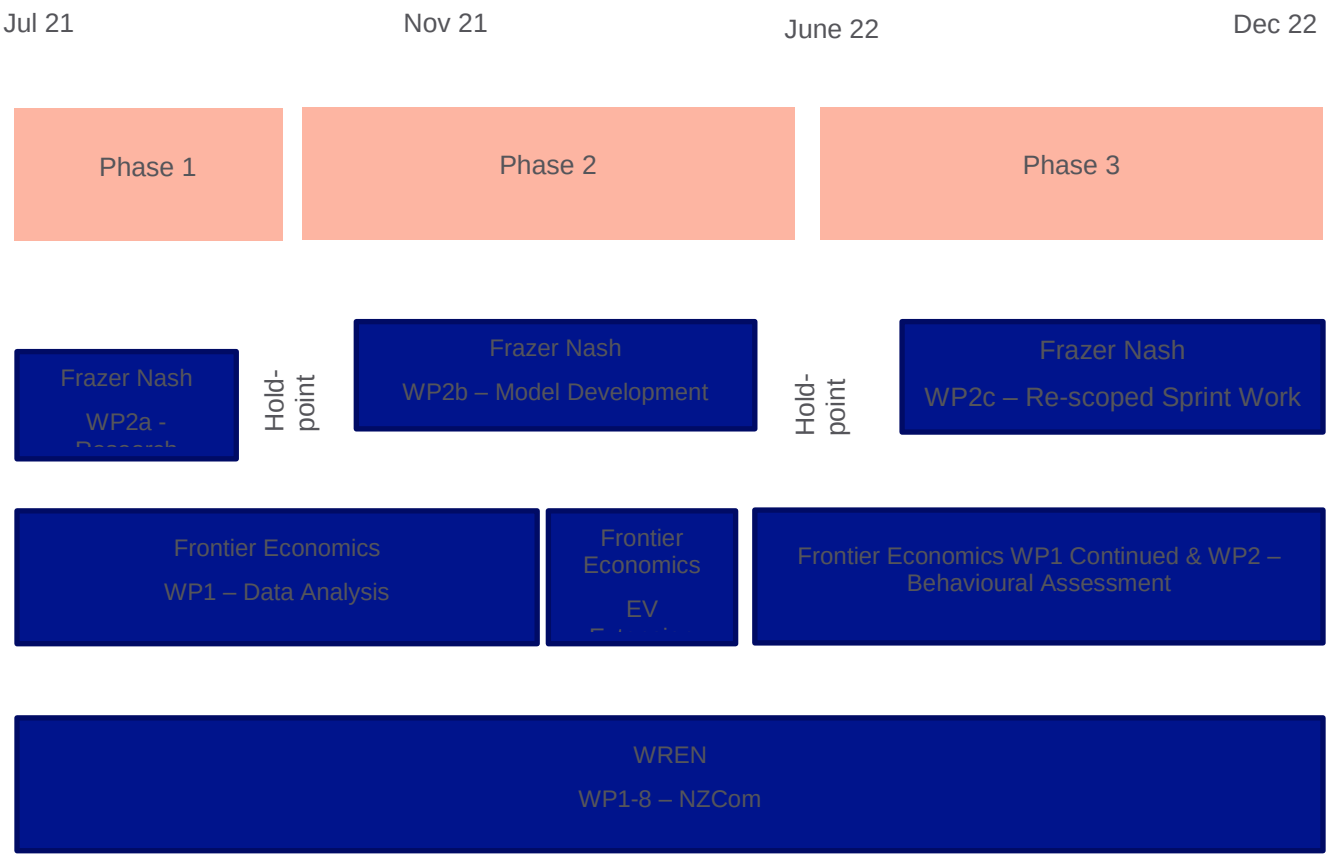

Fig 2-1: High level plan

Through the use of Artificial Intelligence (AI) and Machine Learning (ML), the Frazer-Nash Consultancy work stream is assessing whether it is feasible to predict vulnerability types using smart metering data. It is doing this by developing models that input data and predict changes in consumption patterns that might be an indication of a change in circumstances. There are two hold points within the Frazer-Nash work stream. This is because the model development is wholly predicated on the successful provision of smart meter data, which presents a current regulatory risk.

The Frontier Economics work stream is, in part, a desktop research exercise exploring the effects of the global pandemic on the NGED network as well as exploring how persistent changes in behaviour may impact the network longer term (e.g. home working and our planning assumptions).

The WREN work stream considers how a community could engage its fuel poor and vulnerable consumers to achieve Net Zero through a community energy scheme. It is exploring business models and “nudges” to see what can work in the context of Net Zero and make these models/insights available to all communities. The work, particularly the community engagement piece, is largely being outsourced to a series of local experts and agencies to deliver, with a number of local charities supporting WREN.

2.2 Project Delivery Structure

2.2.1 Project Review Group

The VENICE Project Review Group (PRG) meets on a bi-annual basis. The role of the PRG is to:

- Ensure the project is aligned with organisational strategy;
- Ensure the project makes good use of assets;
- Assist with resolving strategic level issues and risks;
- Approve or reject changes to the project with a high impact on timelines and budget;
- Assess project progress and report on project to senior management and higher authorities;
- Provide advice and guidance on business issues facing the project;
- Use influence and authority to assist the project in achieving its outcomes;
- Review and approve final project deliverables; and
- Perform reviews at agreed stage boundaries.

The PRG for VENICE met in June 2022. Innovation Engineer Stuart Fowler and Graduate Engineer Marnie Ellis presented the current status of the VENICE project to the project sponsor,

Jonathan Berry, in the presence of the innovation manager, Yiango Mavrocostanti, and Richard Allcock, Stakeholder Engagement Manager. Feedback was well-received by the Innovation Engineers, and a number of actions relating to project management activities were completed as a result.

The next VENICE PRG is due in December 2022, but may be held earlier to accommodate staffing changes with NGED.

2.2.2 Project Resource

Resourcing is delivered via three project partners:

Partner	Resourcing
Frontier Economics	Frontier Economics are the lead project partner for one of the work streams, and manage the delivery of their part of the project. Over the last few months, Frontier Economics have taken on managing a third party (UCL) for the smart meter analysis work. Additionally, Maxine Frerk was subcontracted by Frontier Economics in her capacity as an associate of Sustainability First. She is providing expert advice and quality assurance for this project.
Frazer Nash Consultancy	Frazer-Nash Consultancy are leading one of the work streams in VENICE. Frazer-Nash is a leading systems, engineering and technology company. They are using their skills and talents to delve into the use of Smart Meter data for the purposes of identifying vulnerability. They have a wide breath of experience undertaking research projects, and their diverse set of expertise uniquely place them to undertake the laboratory and technical research required for this project.

Wadebridge Renewable Energy Network (WREN)	WREN is a registered society engaged in increasing the take up and sharing the benefits of renewable energy in the Wadebridge and Padstow Network Area. It is led by volunteers on the Board of Directors and has over 1,100 members. WREN was founded in 2011 to advance education and raise awareness of energy resource scarcity and low carbon living. Promoting individual, community and organisational commitment to reduce carbon emissions, whilst providing a sustainable means of achieving economic development and regeneration. WREN are responsible for delivering work stream 3 and each work package within is being delivered by a series of sub-contractors/partners which include: University of Exeter, Planet A Energy (Planet A), Community Energy Plus (CEP) and Your Coop Energy (YCP).

2.2.3 Procurement

No procurement activity has been undertaken during this period.

2.2.4 Project Risks

A proactive role in ensuring effective risk management for VENICE is taken. This ensures that processes have been put in place to review whether risks still exist, whether new risks have arisen, whether the likelihood and impact of risks have changed, reporting of significant changes that will affect risk priorities and deliver assurance of the effectiveness of control.

Contained within Section 7 of this report are the current top risks associated with successfully delivering VENICE as captured in our Project Risk register.

2.2.5 Project Learning and Dissemination

Project lessons learned and what worked well are captured throughout the project lifecycle. These are captured through a series of on-going reviews with stakeholders and project team members, and will be shared in lessons learned workshops at the end of the project. Learning is captured in two distinct categories: the learning that we want to achieve as part of the project and that which is captured along the way. These are reported in Section 5 of this report.

2.3 Project Progress

Frontier Economics – Work stream 1

This work stream is divided into two work packages and dissemination:

- Work Package 1a involves the analysis of data to determine:
    - How have patterns of consumption changed as a result of COVID-19?
- Work Package 1b will use behavioural economic tools to consider:
    - the consumer behaviour that may underlie these changes; and
    - To what extent these changes may persist.
- Work Package 1c - Dissemination

The final dissemination event will not occur until early 2023, approximately a year after WP2 finishes. Work package 1c will cover reporting and dissemination required at this point.

Progress Summary:

Work stream 1, data analysis;

> In the last progress report, Frontier Economics' Data Analysis work had been paused, and the use of a third party to gain access to a database with smart meter data was discussed so that Frontier Economics could complete their work stream. Since the last progress report, the analyses conducted by Frontier Economics has resumed, and Frontier

Economics are sub-contracting University College London (UCL), giving the VENICE team access to data within the Smart Energy Research Lab (SERL) database hosted by UCL. As a result, the data analysis is well-under way, and Frontier Economics have provided an interim update of their work, detailing some of their initial findings relating to the impact of covid-19 on our network. Following this, Frontier will link in their data analysis with their behavioural work and show the impact on network and bills. Although delivery of the final report detailing the impact of the pandemic on electricity consumption is delayed compared to its original timescales, it is due to be delivered by the end of December 2022.

Work stream 2, persistence assessment;

The persistence assessment work had been completed during the previous progress period. An additional piece of analysis around the impact of the pandemic, working from home, and the likely change that might occur to electric vehicle charging was completed whist Frontier Economics waited for contractual negotiations to finalise with UCL for the data analysis work. The results of this work provide a real insight into how valuable this persistence assessment is and how it can be reused for additional purposes and benefits.

Frazer Nash Consultancy – Work stream 2

Frazer-Nash Consultancy (Frazer-Nash) have three work packages in VENICE: 2a, 2b and 2c. There is a hold point between each of these work packages to confirm that there is sufficient knowledge and suitable results to continue to the next. In the last six months, Frazer-Nash have finished WP2b. Hence, since the last progress report, the second hold point meeting has been held, and our suspicion that a re-work of WP2c would be required has come true. However, instead of de-scoping the work package, we have re-scoped the deliverables to ensure the maximum value for money and benefits for our customers.

The main challenge impacting the model development was that there was limited access to smart meter data, and so obtaining suitable testing, validation, and end-use smart meter data to validate the models was not possible. The lack of validation and long-term source of data also meant that Frazer-Nash would be unable to deploy a full model into NGED's business as usual. The original scope for completion of Frazer-Nash's work stream in the NIA Collaboration Agreement relied on this validation and long-term data access, and therefore Frazer-Nash proposed a change in scope to account for the emergent results of the previous work packages, utilising a sprint project management method. As a result, Frazer-Nash Consultancy are partnering with Hildebrand Technology Limited, who will provide access to smart meter data that is required to further develop

the models previously produced. Alongside the proposed analysis, Frazer-Nash are calculating and reporting the quantified monetary benefits to NGED and society, from NGED having access to smart meter data and the enhanced support to customers that this will enable. Frazer-Nash are producing a social benefits analysis based on current, industry standard SROI (Social Return on Investment) models produced and used by NGED. Frazer-Nash are also producing a dashboard to showcase the model outputs to stakeholders, and have delivered videos for the NGED Innovation event #28toZero, held in June 2022.

Progress Summary:

As previously mentioned, Frazer-Nash have completed their work packages 2a and 2b, and have started working on the re-scoped work package 2c. So far, Frazer-Nash have conducted a successful 'Sprint 1 Planning' meeting and 'Sprint 1 Review and Sprint 2 Planning' meeting, and are well underway with their work to further develop the models previously produced. The next sprint meeting is due to be held in two weeks, and the overall work package will conclude by December.

In addition to the sprint work aimed at developing the models previously developed, Frazer-Nash have produced a social benefits analysis based on current, industry standard SROI (Social Return on Investment) models produced and used by NGED. The report for this is currently under validation and review, and will be delivered in under two weeks' time. Frazer-Nash are also producing a dashboard to showcase the model outputs to stakeholders, and have already delivered videos for the NGED Innovation Showcase, #28toZero, held in June 2022.

Wadebridge Renewable Energy Network – Work stream 3

The 18 month feasibility study carried out by WREN is spread across 8 work packages, allowing the project team to deliver this work streams' 6 main objectives:

- Develop future likely net zero carbon scenarios to 2050 based on Wadebridge to help Network Operators to frame the likelihood of impact to vulnerable customers.

- Develop a carbon accounting methodology to qualitatively compare impacts and interventions.

- Identify technologies, systems, and approaches to reach Net Zero Carbon in Wadebridge by 2050 that positively support vulnerable customers and inform approaches and policy levers that may be needed from a Networks perspective.

- Develop community-led business models that have the potential to deliver socioeconomic benefits and are supported by the local community and how this will intersect with Network Operators.

- Working with an Energy Supplier, develop a methodology to provide the carbon content of energy supplied in customer billing & settlement to drive better consumer choices in reducing carbon and measure how this will impact the distribution network and it's CO2 reduction strategy. This will include learning from the Carbon Tracer NIA project previously undertaken by WPD

- Develop & share methodologies & learnings for other communities to define their own 2050 Net Zero Community (NZC) scenarios and models.

Progress Summary:

In the last progress update, WREN had completed their High Level Future Energy Scenarios and Socio-Economic Outcomes reports, and had developed a Carbon Accounting methodology. Since the last progress update, WREN have finalised their "Wadebridge and Padstow Community Network Area Net Zero 2050 Report". They have also delivered a report reviewing published energy scenarios and associate methodologies, in addition to a report reviewing the technical and system options for net zero communities.

In the last project progress report, it was noted that in February 2022 the Energy Supplier, Your Coop Energy (YCE), supporting the WREN work stream withdrew due to the ongoing issues in the supply market. This was initially frustrating, and engaging another suppler proved unfeasible given the impending supplier crisis. However, this issue has now been resolved and this part of the work stream has been replaced with a sandbox trial led by 'Planet A Solutions CIC' focussed on developing a methodology to sub meter, and time of use control, heat pump electricity supply cables, in addition to discussing and promoting vulnerability reduction options. Hence, incentivising the uptake of heat pumps, and delivering the lowest running cost outcome for vulnerable customers.

Some of the smaller WREN deliverables have been delayed due to resourcing in the midst of the current energy supplier crisis and cost of living crisis. However, these delays do not affect the overall programme and are not concerning.

4. Progress against Budget

The project budget is continuing to get back on track after delays due to the smart metering issues, the withdrawal of YCE, and the re-scoping of some work packages. Table 3-1 shows the 'Progress against Budget' as of 27/09/2022.

Table 3-1: Progress against Budget

Spend Area	Budget(£k)	Expected Spend to Date	Actual Spend to Date	Variance to expected	Variance to expected %
Project Management	£95,273	£34,219.43	£35,028.60	+£809.17	+ 2.4
Contractors	£1,196,530	£995,590	£ 613,242.66	-£382,347.34	-38.4
AI/ML Consultancy Support	£100,000	-	-	-	-
Smart Meter Data	£50,000	-	-	-	-
WPDIR Costs	£50,000	-	-	-	-
Contingency	£134,180	-	-	-	-
	£1,625,983	£1,029,809	£648,271.30	-£383,156.51	-37%

In the previous progress report, the total variance of actual spend to expected was calculated to be -64%, and hence the new figure of -37% shows that the project budget is being used as work packages are delivered with new data sources.

Furthermore, we expect some significant invoices over the coming months, as partners submit deliverables, some of which are overdue.

5. Deliverables

The project has made the following progress towards its Success Criteria for each of the work packages:

5.1 Work stream 1 – Frontier Economics

Success Criteria	Status
A model of counterfactual demand is built	Frontier have provided an interim update, showing their counterfactual analyses. **Status:** Completed
Calculate the impact of COVID on each Feeder	Frontier are currently completing this work. **Status:** In progress
Able to describe and visualise the results	Frontier have provided an interim update, but this will be completed once the analysis is completed. **Status:** In progress
Able to assess which factors are associated with different responses to COVID	Frontier are currently completing this work. **Status:** In progress
Able to determine which behaviours will "stick" post pandemic	The framework of persistence has been completed along with the associated hypotheses. **Status:** Completed
Determine the impact on the network for those behaviours that are deemed to be likely to stick	Frontier are currently completing this work. **Status:** In progress

4.2 Work Stream 2 – Frazer-Nash Consultancy

Success Criteria	Status
The proposed training dataset generation is appropriate	*Frazer-Nash have successfully trained three models that they have developed.* ***Status**: Completed*
A validation dataset will be obtainable	Access to a validation dataset has been sources, and this work is ongoing. **Status**: In progress
The deployed platform architecture and long-term customer data access is known.	The third work package has been re-scoped to develop the models further, as described throughout the report. Hence, the models will not be deployed. **Status:** Postponed indefinitely
The model can recognise short and long term patterns in the synthetic household profiles	A selection of household appliances have been selected, and the models developed show these appliances against a standard profile. **Status:** Completed
Frazer-Nash and NGED agree that a deployed platform is beneficial given the achieved model accuracy.	To be started once project is completed and testing undertaken. **Status:** Not started

4.3 Work stream 3 – Wadebridge Renewable Energy Network

Success Criteria	Status
Able to produce a methodology for community approaches to Net Zero	*Top 6 Solutions have been agreed as part of the Planet A work, during this next phase the next level of detail will be determined. A review of published energy scenarios and associated methodologies has been completed.* ***Status**: Completed*

Able to produce a methodology for carbon accounting	Literature review is complete, and an excel carbon accounting tool is being finalised. **Status**: In progress
Able to produce an approach for engaging communities in Net Zero	The Community Engagement plan has been produced and agreed by partners, and is being progressed. **Status:** In progress

6. Learning Outcomes

There has been no new learning documented in this period, as work has involved a significant amount of re-scoping and awaiting contractual negotiations. However, additional learning will be discussed and added during the next VENICE in-person meeting, which has been scheduled for Monday 7th November 2022. During this meeting, learning from the past 6 months will be deliberated and captured.

Learning points from the previous progress report are captured below:

ID and Work stream Lead	Learning Point	Learning Point Type	Commentary
LD- FE-005 **FE (and FNC)**	The issues over smart metering, access to data, GDPR, and progressing this work continue to frustrate the work.	Captured	The project has continued to struggle to access data but we do seem to have worked around most issues.
LD-FN-006 **FNC**	Number of ways to generate household “finger prints” from smart meter data, which can be conceptually linked to vulnerabilities	Captured	This is a good learning point as it has proven that the concepts work.
LD-FE-006 **FE**	Contractual issues raised by third party were significant and we had to move to FE subcontracting.	Captured	When trying to contract with a third party directly NGED found that there were so many issues with the contract that it proved simpler to subcontract with FE

			than with NGED. This feedback is being used in the review of the NGED terms and conditions under way.
LD-WREN-021 **WREN**	WP6-Use more creative engagement methods – use of stronger imagery; video, artwork, photograph competition.	Captured	Consumer engagement feedback is vital in projects like this.
LD-WREN-022 **WREN**	WP7-Delve deeper into how we can build trust with members.	Captured	Consumer engagement feedback is vital in projects like this.
LD-WREN-023 **WREN**	WP7- Test the assumption that co-op's have more trust than an average organisation.	Captured	Consumer engagement feedback is vital in projects like this.
LD-WREN-027 **WREN**	WP8 - Lack of knowledge and the difficulty in identifying sources of reliable information. What to do, which technologies are best going forward and the appropriate action to take now. More heating options can become confusing.	Captured	Consumer engagement feedback is vital in projects like this.

LD_WREN-028 **WREN**	WP8 - Lack of confidence in how technology works. No one solution fits all and what happens if it doesn't work? Potentially large expenditure on items, (eg heat pumps and E.V.) that may or may not work.	Captured	Consumer engagement feedback is vital in projects like this.
LD-WREN-029 **WREN**	WP8 - Future uncertainty, tariff increases, fuel supply availability and cost.	Captured	Consumer engagement feedback is vital in projects like this.

8. Intellectual Property Rights

A complete list of all background Intellectual Property Rights (IPR) from all project partners has been compiled. The IPR register is reviewed on a quarterly basis. No new foreground IPR has been generated by VENICE during this period.

9. Risk Management

Our risk management objectives are to:

- Ensure that risk management is clearly and consistently integrated into the project management activities and evidenced through the project documentation;
- Comply with NGEDs risk management processes and any governance requirements as specified by Ofgem; and
- Anticipate and respond to changing project requirements.

These objectives will be achieved by:

- ✓ Defining the roles, responsibilities and reporting lines within the Project Delivery Team for risk management;
- ✓ Including risk management issues when writing reports and considering decisions;
- ✓ Maintaining a risk register;
- ✓ Communicating risks and ensuring suitable training and supervision is provided;
- ✓ Preparing mitigation action plans;
- ✓ Preparing contingency action plans; and
- ✓ Monitoring and updating of risks and the risk controls.

9.1 Current Risks

The VENICE risk register is a live document and is updated regularly. There are currently 34 live project related risks and one documented live issue. Mitigation action plans are identified when raising a risk and the appropriate steps then taken to ensure risks do not become issues wherever possible. In Table 7-1 below, we give details of our top five current risks by category. For each of these risks, a mitigation action plan has been identified and the progress of these are tracked and reported.

Table 7-1: Top five current risks (by rating)

Details of the Risk	Risk Rating	Mitigation Action Plan	Progress
Community engagement strategies employed do not attract representation from all sectors of the community	Major	Employing lessons learnt from successful community engagement into planning	So far, community engagement has been successful, and WREN are achieving a good representation of the community.
Errors in data analysis (e.g. bugs in the source code used to reshape the data) cause spurious results.	Moderate	A quality management register is to be kept for all analysis, specifying the checks to be carried out (e.g. review of source code, sense-checks of output). All edits to source code to be logged (in Git)	So far, the data analysis that Frontier Economics has completed has been of a high quality, with limited errors.
Delays to project delivery due to resourcing issues.	Moderate	Recruitment and tactical attendance of project sessions.	Due to the supplier crisis, and cost of living crisis, WREN are facing delayed deliverables due to re-prioritisation of some of the sub-contractors. However, this is being closely monitored by the WREN PM, and there is no cause for concern currently.
Data is insufficiently granular to ascertain the impact of different customer types on consumption changes	Moderate	We are front-loading the data analysis. If required, we could move from HV to a sample of LV level feeders to ensure a greater granularity of data	Frontier are currently completing this piece of work, and issues, if any, will become apparent in the near future.
Difficulties in recruiting & retaining suitable members for the community advisory group & community focus groups.	Major	Early engagement, partnering with appropriate community organisations & enticing invitation	The advisory group has retained members who are enthusiastic and contribute. However, there is a risk that the current cost of living crisis, and re-prioritisation, could affect this trajectory.

Table 7-2 provides a snapshot of the risk register, detailed graphically, to provide an on-going understanding of the projects' risks:

Table 7-2: Graphical view of risk register

Likelihood = Probability x Proximity						
	Certain/Imminent (21-25)	0	0	0	0	0
	More likely to occur than not/Likely to be near future (16-20)	0	0	0	0	0
	50/50 chance of occuring/ Mid to short term (11-15)	0	0	1	0	0
	Less likely to occur/Mid to long term (6-10)	0	0	7	2	0
	Very unlikely to occur/Far in the future (1-5)	0	2	3	7	12
		1. Insignificant changes, re-planning may be required	2. Small Delay, small increased cost but absorbable	3. Delay, increased cost in excess of tolerance	4. Substantial Delay, key deliverables not met, significant increase in time/cost	5. Inability to deliver, business case/objective not viable
		Impact				

Figure 7-1 provides an overview of the risks by category, minor, moderate, major and severe. This information is used to understand the complete risk level of the project:

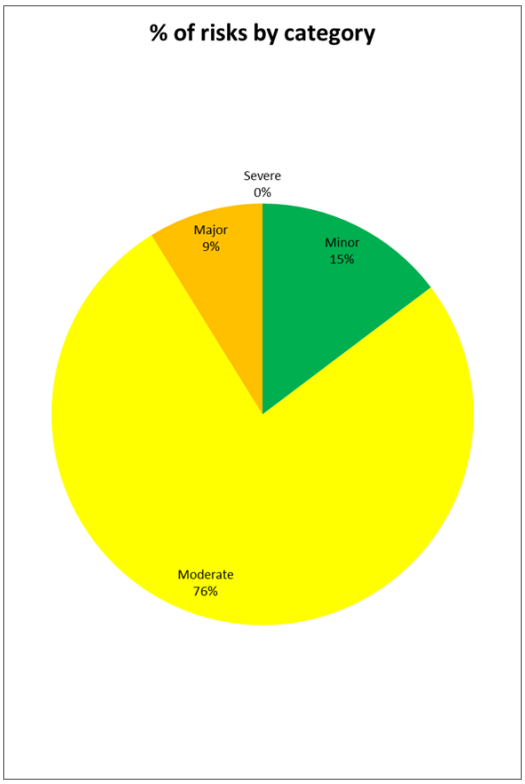

Figure 7-1: Percentage of risk by category

9.2 Update for risks previously identified

The status of the significant risks identified in the previous progress report are summarised below:

Details of the Risk	Risk Rating	Mitigation Action Plan	Progress
The smart meter data needed to undertake the predictive analytics for the FE and FNC work is proven to be unusable, or of poorer quality than envisaged	Major	Extensive investigation into alternatives and socialisation of the requirements.	Closed as both FNC and FE now have good sources of data to use for their work streams.
It is not possible to get the relevant permissions in place to provide the data needed in order to undertake large parts of the work in the WPs	Major	Investigate all sources of data and continue to plan accordingly.	Closed as both FNC and FE now have good sources of data to use for their work streams, and work is ongoing.

Engagement during pandemic - significantly more challenging due to changing government guidelines, nervousness of face to face contact/ groups etc., people do not have the capacity, or are unable to prioritise engagement due to more pressing matters. Particular higher risk with engaging vulnerable customers, less so with wider stakeholder engagement.	Major	Variety of community engagement techniques used, using existing social networks and socio-support groups	Closed, as the effects of the pandemic have become less noticeable in this regard.
Publically available supporting data is of insufficient quality to deliver against milestones and outputs	Major	Explore as many alternatives initially and down select as appropriate	Closed as both FNC and FE now have good sources of data to use for their work streams
Vulnerability outreach is unsuccessful/ poor	Major	Recruitment of influential organisations on community advisory board to broker good relationships	Closed as outreach has been largely successful.

9.3 Current Issues

One documented project issue is being proactively managed:

Details of the Issue	Mitigation Action Plan	Progress
WREN require data from NGED that is proving labour intensive to obtain, causing delays.	Continue liaising with the D&D team to source data, and speak further with Jennifer Woodruff with regard to utilising data sets within iHost. Continue ongoing efforts.	Marnie Ellis and Stuart Fowler now have access to iHost, and data sourcing will commence.

10. Consistency with Project Direction

The scale, cost and timeframe of the project has remained consistent with the registration document, a copy of which can be found here:

National Grid - Vulnerability and Energy Networks, Identification and Consumption Evaluation (VENICE)

11. Accuracy Assurance Statement

This report has been prepared by the VENICE Graduate Project Manager Marnie Ellis, and reviewed by Stuart Fowler, Project Manager and Innovation Engineer. Additionally, the report has been approved by the Innovation Manager, Yiango Mavrocostanti.

All efforts have been made to ensure that the information contained within this report is accurate. NGED confirms that this report has been produced, reviewed and approved following our quality assurance process for external documents and reports.

Glossary

Abbreviation	Term
CEP	Community Energy Plus
DCC	Data Communications Company
IPR	Intellectual Property Rights
LCT	Low Carbon Technology
NIA	Network Innovation Allowance
NZCom	Net Zero Community
PRG	Project Review Group
PSR	Priority Services Register
VENICE	Vulnerability and Energy Networks, Identification and Consumption Evaluation
WP	Work Package
NGED	National Grid Electricity Distribution (formerly Western Power Distribution)
WREN	Wadebridge Renewable Energy Network
WS	Work stream
YCE	Your Coop Energy
DNO	Distribution Network Operator
UK	United Kingdom

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