Notes on Completion: Please refer to the appropriate NIA Governance Document to assist in the completion of this form. The full completed submission should not exceed 6 pages in total.

NIA Project Registration and PEA Document

Date of Submission

Oct 2022

Project Reference Number

NIA_UKPN0087

Project Registration

Project Title

Our View

Project Reference Number

NIA_UKPN0087

Project Licensee(s)

UK Power Networks

Project Start

October 2022

Project Duration

2 years and 5 months

Nominated Project Contact(s)

innovation@ukpowernetworks.co.uk

Project Budget

£442,836.00

Summary

To deliver outstanding customer service, UK Power Networks constantly innovates, coming up with new ideas to support customers. This project will investigate the benefits of using video-aided technologies to enhance customer service delivery and the safety of field staff. This will allow customers to initiate video calls with our agents when reporting problems allowing the potential for faster resolution and improving customer satisfaction. It will also allow our task force to benefit from technologies such as artificial intelligence when completing risk assessments which improve the overall process and ensures their safety. Once successful, the solution can be integrated into existing workflows to optimise processes and maximise the benefits to both our customers and the task force.

Third Party Collaborators

Vyntelligence

Nominated Contact Email Address(es)

innovation@ukpowernetworks.co.uk

Problem Being Solved

To deliver outstanding customer service, UK Power Networks constantly innovates, coming up with new ideas to support customers. The means through which this support is provided directly impacts the quality of such service, as well as overall customer satisfaction. This project aims to improve two areas where it is believed that new innovation can achieve a notable effect: safety and customer service.

· **Customer Services:**

Often customers who call UK Power Networks, due to a problem with their electricity supply, do not have the knowledge or skills to provide the relevant information for us to determine the nature of the issue. Simple visual assessments can help determine whether the

issue is with the electricity network or its installation. When customers cannot provide this information, UK Power Networks' agents find themselves unable to help as they cannot fully understand what the problem is.

In addition, customers also call through to report overhead lines that are down, sagging or hanging very low due to environmental impacts. The information provided by them is not usually sufficient to identify if the incident is impacting assets belonging to UK Power Networks.

Once these requests are logged, an engineer (and in some instances a team) is dispatched to the site for further investigations. On occasion, these requests end up not relating to UK Power Networks' assets. For example, they were related to customers' meter issues or internal wiring or telecoms lines that have come down. Under those circumstances, all associated operational costs and customer disruptions have gone to waste and our workforce could have been dispatched to other confirmed tasks and the customers would have had their power restored quicker if they have referred to the appropriate party at the start.

· **Safety:**

The safety of UK Power Networks' customers and employees is of the utmost importance. As part of UK Power Networks' vision to be an Employer of Choice, we keep our employees safe at work by continuously assessing all site hazards before and while the work is carried out.

Currently, all field staff responsible for putting people to work carry out pre-site assessments and all field employees carry out a point-of-work assessment at the start of each day or shift change for all works done on-site. This process documents the working conditions on-site and if any conditions were to change e.g., weather conditions or additional people on site. Therefore, the point of work assessment is reviewed accordingly to ensure no further significant hazards have been introduced due to such changes. Both processes are followed by completing pre-work and point-of-work assessments. Those are either paper-based or made through the electronic Toughpad.

In light of the current technological development, the existing processes have some limitations, especially since visual record-keeping can be limited and challenging to implement. Having a visual representation of the site throughout the job life cycle would be of great benefit to our teams. This will aid in the determination of changes and potential issues which may rise over time. Additionally, safety audits can gain a large insight by accessing assessments that are visually aided as they would add a real-life discussion point for any topic. These assessments would also capture any behavioural changes and procedural drifts which reduces the overall risk to our task force.

Summary of project changes:

October 2023: Initial changes were made to project costs and duration.

June 2024: The overall project cost has been increased from £427,836 to £442,836. The project duration has increased from 1 year and 9 months to 2 years and 5 months. This increase in costs and time is associated with the proposed integration into existing workflows and continued trialling of the solution to maximise use and delivery of benefits when transitioned into BAU.

Method(s)

The project is looking to enhance and trial a video-sharing platform that utilises tools such as video/image capturing, AI detection and live markups to improve our existing capabilities. It enables effortless connection between two devices, such as smartphones, laptops or tablets. Additionally, the solution can be used straight through the browser without the need for additional downloads or software installations.

The front end of this solution will be tailored for each use case (described below) to optimise the user experience based on their specific needs. Once consent is obtained from the user, visual, audio and text prompts are utilised to deliver the required service from this solution based on each use case. The gathered data from safety assessments will be used to understand on-site hazard identification and mitigation plans.

The method of project implementation will be specific to the three uses cases considered:

Customer Calls:

The proposed method is to introduce a photograph and video-calling-based application to be used in customer support. The solution will allow a call agent to assist customers via a video call. The agent will also be able to annotate directly onto the call which can aid customers with following instructions more easily. Those recordings can then be attached to the issue raised. It will provide guidance through one-to-one call interaction to support in resolving a large portion of customer issues without the need for an engineer to attend. This will allow the call agent/site engineer to have visibility of the issue and to provide a quicker resolution to the problem. With this

method, we will also be able to be consistent in the information we provide to the customer and avoid dispatching employees to attend customer premises unnecessarily.

Network Damage:

The proposed method will allow customers to report damages to our network more efficiently and effortlessly whilst on a call with our agents. This will ensure that the agent is able to confirm the clarity of the reported information/pictures and eliminates any human errors such as failure to send the pictures once the call concludes. It will also allow the agents to assess whether or not such damaged assets do in fact belong to UK Power Networks.

Safety:

The proposed method is to introduce video-based work assessment to replace the current paper-based and Toughpad solutions. The solution will utilise AI in the identification of known hazards. The outputs of this solution can be used to support the development of safety behavioural exchanges, information, and training. Together these have the potential to increase our safety awareness and build evidence of any possible gaps in our ability to mitigate against specific risks. This will also enhance our safety culture as we continue striving to be an incident-free workplace.

All data used within this project is for the purposes described above, and therefore quality will be measured on this basis. The project will follow all data quality rules, logging, and prioritising issues as they arise in line with the approved methodology set out in our Enterprise Data Management Policy, which forms part of the UK Power Networks Integrated Management System.

Data quality will be measured across five dimensions where applicable:

- Accuracy
- Completeness
- Consistency
- Validity
- Uniqueness

Data quality rules for each of the appropriate data quality dimensions above will be set by the project, measuring them closely on a regular basis to identify quality issues.

Data quality issues will be logged in a central location and prioritised using an approved matrix which combines the importance of the issue, and the amount of data affected, this gives an indication of the issue's impact on the project and wider business, considering factors such as:

- The impact on the health and safety of the public and employees
- Whether it may result in a breach of our licence conditions or relevant regulations
- The impact on UK Power Networks' reputation
- The impact on our operations and efficiency
- The financial impact, including project delays and charges from external service providers

The project will then seek support for resolving the issues in priority order. All data and background information will be stored centrally and securely in a project specific Sharepoint folder or in our Enterprise Data Store if required by the wider business in accordance with data protection requirements.

Scope

The development of this project will be broken down into two phases. The first phase will focus on proving the concept of the solution to deliver the intended service. Once the first phase is successful, the second phase will investigate the full integration of the solution and a streamlined operational process. Once successful, the project will aim to work with suppliers to achieve full or partial integration based on the outcome of the investigation. Based on that, the project plan is as follows:

Phase 1: Solution Testing and detailed Cost Estimation

· Project planning and setup

o Contracts finalisation

o Stakeholder engagement

o Training and pre-trial workshops

· Trial Stage 1

o A proof of the solution concept within a controlled environment

o Training of the AI hazard detection tool

· Phase 1 Conclusion

o Trial closedown and findings collection

o User surveys and engagement activities

o Integration plan finalised

Phase 2: Solution Integration and Business as Usual (BAU) Assessment

· Project Development and Upgrades

o Solution integration into existing workflows

o Solution development based on phase 1 findings

· Trial Stage 2

o Assessment of the workflow and integration performance

o Development of feedback loop to suppliers

o Fine-tuning for BAU transition

· Project Conclusion

o Project closedown report

o Findings and lessons learned dissemination

o Once successful, transition to BAU

Objective(s)

In order to identify the role of the proposed solution in enhancing customer service and increasing the safety levels within our networks, the project aims to achieve the following:

· Assess a new workflow for providing customer service and completing safety assessments

· Evaluate the benefits of using video-aided technologies in providing customer service

· Trial the proposed solutions with customers, agents and field staff to ensure the effectiveness

· Enhance the AI capabilities of the solution to detect industry-specific hazards

· Provide exportable insights and data for auditing and training purposes

· Investigate the possibility of a fully integrated and automated workflow of the solution throughout the customer journey

Consumer Vulnerability Impact Assessment (RIIO-2 Projects Only)

The solutions deployed by this project will take the form of three separate use cases, the effect that each solution is expected to have on consumers in vulnerable situations is detailed below.

Customer Calls:

This solution is not changing the current service offering we provide to all our customers, if customers in vulnerable situations have access to mobile phones or tablets, they will be able to use the solution providing they give UK Power Networks permission. The Our View solution is an additional service offering to all our customers, where we have customers do not have access to digital platforms, we will still offer the existing over the phone service.

Vulnerable consumers may benefit in the following ways:

- Depending on the circumstances the customers supply could be restored through advice offered by customer services removing the need for a vulnerable consumer to wait for a field engineer to attend the premises and assess the problem in person. This could be of particular importance for vulnerable consumers who depend on electricity due to medical reasons.
- The project does not directly benefit those in fuel poverty or at risk of fuel poverty, however, it may reduce the stress which these consumers face when engaging with the DNO should they have a power cut.

Network Damage:

The solution will be available to customers with access to digital devices. Vulnerable consumers may benefit in the following ways:

- As a result of the ability of any member of the public providing more accurate visual information on network damage, restoration of any associated fault may be expedited. This would reduce the amount of time which vulnerable consumers are without power.

Safety:

This solution will be solely accessible to UK Power Networks staff and as a result will not have an effect on vulnerable consumers.

Success Criteria

The project will be deemed successful when we have:

· Assessed a new workflow for providing customer service and completing safety assessments

· Evaluated the benefits of using video-aided technologies in providing customer service

· Trialled the proposed solutions and assessed the effectiveness

· Investigated the achievability and challenges associated with a fully integrated and automated workflow of the proposed solution.

· Based on the outcome of the investigation, complete or partial integration will be implemented

Project Partners and External Funding

As part of the project delivery, we will be partnering with Vyntelligence which will be supplying the video-sharing platform. During the second phase of the project, we aim to partner with more suppliers such as Enzen to assess the integration of this solution into existing business workflows.

Vyntelligence will be covering a portion their internal costs, 3 months in kind, during phase 1 of the project with their internal costs being covered fully in Phase 2 of the project. No other external funding will be utilised as part of this project.

Potential for New Learning

The project will deliver key internal and external learnings in light of this innovative solution and how it will impact both the network as well as customers.

For customer service, we will be able to assess customer satisfaction with the new solutions. Additionally, by collecting feedback, we can improve our existing processes to maximise the benefits to our customers.

For our network, we will gather key data that can be used to enhance our safety assessments and auditing processes. The AI tool has the potential of identifying new risks which may not have been identified beforehand. It can also allow users to report problems more effectively which further enhances the safety of our task force.

Scale of Project

The first phase of the project aims to trial the proposed technology within the UK Power Networks area. The trails will be held within a controlled environment in order to ensure the safety of the users.

The second phase of the project will focus on the integration of the solution within the existing customer service and safety workflows. We will be working with suppliers to identify the scale of the required integration and the benefits that will result from it.

The scale of the investment is based on initial engagements with suppliers and stakeholders. A smaller investment scale would result in partial or no integration to be achieved which invalidates one of the key project deliverables.

Technology Readiness at Start

TRL5 Pilot Scale

Technology Readiness at End

TRL7 Inactive Commissioning

Geographical Area

Project will be trialled within the UK Power Networks' licence areas. Exact locations cannot be identified due to the nature of the project.

Revenue Allowed for the RIIO Settlement

No funding was provided within the current RIIO settlement that will become surplus to requirements as a result of this project.

Indicative Total NIA Project Expenditure

We estimate the UK Power Networks' NIA expenditure to be £442,836, of which £398,552 (90%) will be recovered from NIA.

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:

Not applicable.

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

The solution will be available to customers with access to digital devices and consumers in vulnerable situations may benefit in the following ways:

Customer Calls:

- Depending on the circumstances, consumers in vulnerable situations could have their supply restored through advice offered by customer services removing the need for a vulnerable consumer to wait for a field engineer to attend the premises and assess the problem in person.
- The project does not directly benefit those in fuel poverty or at risk of fuel poverty, however, it may reduce the stress which these consumers face when engaging with the DNO should they have a power cut.

Network Damage:

- As a result of the ability of any member of the public providing more accurate visual information on network damage, restoration of any associated fault may be expedited. This would reduce the amount of time which vulnerable consumers are without power.

Safety:

- This solution will be solely accessible to UK Power Networks staff and as a result will not have an effect on vulnerable consumers.

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)

Due to the trials taking place within a controlled environment, no direct benefits or savings are estimated to be realised throughout the duration of RIIO-1.

In RIIO-2, we anticipate an annual saving of £848k once the solution fully transitions to BAU.

Please provide a calculation of the expected benefits the Solution

The total benefit of this project is estimated based on the following points:

- The average cost of incidents identified as internal customer fault in each licence area
- The average number of aborted visits over the past five years in each licence area
- An assumption that the rollout of this solution will reduce those figures by 40%
- An environmental benefit of reducing fleet CO_2 and NOX emissions due to less wasted journeys
- A reduction in levels of stress experienced by some customers during an outage
- A reduction in the time customers spend without power during an outage

Based on the above assumptions, the project is estimated to reduce operational costs by £948k annually.

The anticipated annual cost of using the proposed solution is £100,000.00.

Therefore, the overall anticipated annual benefit from this project following a BAU transition is forecasted to be £848k

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

Once successful, the solution has the potential to be rolled out to all network operators across Great Britain.

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

The roll out costs will be comprised of:

· The licence cost of using the proposed solution

· The costs associated with integrating the solution into BAU processes

The exact implications of a BAU rollout will be assessed as part of the project.

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 project will assess the utilisation of video aided technologies in enhancing customer service and the safety of the task force. The learnings obtained from this assessment will contribute to enhancing the service we offer to our customers, improving operations and fleet management, and increasing the safety levels within the industry.

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

Not applicable.

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.

A check has been completed on the smarter networks portal and no similar projects addressing the use of video-aided technologies in improving customer service and the safety of the task force within the electricity distribution industry.

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

Not applicable.

Additional Governance And Document Upload

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

The project will utilise innovative, video-aided, technologies when providing customer service and during the implementation of risk assessments. The technology used in this project uses AI to extract the required data from customer interactions and when identifying hazards during risk assessments. To our knowledge, such technology was not tested before within the electricity distribution licences. This can be due to the complexity of the internal workflows and processes which this project is also aiming to optimise.

Relevant Foreground IPR

The data created, outputs and deliverables produced as part of the project will conform to the default treatment of IPR.

The supplier background IPR will be essential to use some of the foreground IPR. However, based on the tender completed, multiple suppliers have been deemed capable of providing a similar background IPR that allows the replicability of this project.

Data Access Details

To view the full Innovation Data Sharing Policy, please visit UK Power Networks' website here:

https://innovation.ukpowernetworks.co.uk/wp-content/uploads/2021/11/UK-Power-Networks-Innovation-Data-Sharing-Policy-.pdf

UK Power Networks recognises that Innovation projects may produce network and consumption data, and that this data may be useful to others. This data may be shared with interested parties, whenever it is practicable and legal to do so, and it is in the interest of GB electricity customers. In accordance with the Innovation Data Sharing Policy, UK Power Networks aim to make available all non-personal, non-confidential/non-sensitive data on request, so that interested parties can benefit from this data.

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

The project aims to trail a new and innovative technology which, to our knowledge, was never implemented in the industry. Due to this, it is deemed high risk for the business to trail such a solution without any prior validation. Innovation can help fast forwarding this technology which will facilitate the business as usual transition once the project succeeds in delivering its objectives.

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 NIA funding will enable UK Power Networks to undertake a project which has technical and operational risks associated with it, in terms of a lack of certainty on results. In addition, UK Power Networks is working with a small supplier, for which there is a degree of commercial risk should their operations be affected for economic reasons.

This project has been approved by a senior member of staff

☑ Yes