Energy Networks Innovation Process

Annual Project Progress Report Document

The voice of the networks

Date of Submission: 26/07/2023

Annual Project Progress Report Document

Notes on Completion: Please refer to the NIA Governance Document to assist in the completion of this form. Please use the default font (Calibri font size 10) in your submission. Please ensure all content is contained within the boundaries of the text areas.

Project Title (*This cannot be changed once registered*)	Project Reference
Power Supply for Pole Mounted L V Monitoring Devices where no Neutral is Present.	NIA_SSEN_0066
Funding Licensee(s)	**Project Start Date**
Scottish Hydro Electric Power Distribution Southern Electric Power Distribution	March 2023
Project Duration	**Year**
12 months	2023

Nominated Project Contact(s)

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1. Scope

Stage 1 Investigation as to the potential methods of deriving 230v power supply where no neutral is present including:

- Small solar panel
- CT clamp round the phase to harvest power, that would not require access to the substation LV neutral
- Phase to phase connection with no neutral in the case of multi-phase units
- Phase to HV earth through an isolating transformer or surge protector
- Battery (and combination of above)
- Install at the first pole out alongside the LV Neutral earth
- CT clamp round the phase to keep a capacitor topped up, basically parasitic power source.

This investigative phase shall produce a short report as to the drawbacks and benefits of the potential solutions. The report will identify a solution which will be taken forward and lead to the development of 2/3 prototypes.

Stage 2 Develop a prototype using the solution identified in Stage 1 and deploy this on live pole top monitoring situations.

As detailed in section 3.2, the project has the potential to deliver up to £4.522m in financial benefits to GB distribution customers based on monitoring of pole top transformers which would otherwise not be practical or cost effective to undertake an installation.

2. Objective(s)

Stage 1:
Literature review and research to determine the most appropriate method to obtain the 23Ov supply where the neutral is not accessible.
Stage 2:
Prototype development and testing of the selected solution in a pole top environment with monitoring equipment adjacent.

3. Success Criteria

The project will be deemed successful if a prototype 230V power supply unit for a pole top monitoring unit with no accessible neutral is developed.

Minimum success criteria (Must and should)	Measure
Must be applicable to all manufacturers of pole top monitoring equipment	Successful deployment of protype units providing 230V to adjacent monitoring equipment.
Must be durable and resilient to environmental conditions	Evaluation of real environment testing to validate performance
Desirable criteria (Could)	**Measure**
Easy to use	Evaluation of real environment testing results via feedback

4. Performance compared to the original project aims, objectives and success criteria

The project will be deemed successful if a prototype 230V power supply unit for a pole top monitoring unit with no accessible neutral is developed.

While the project was registered in March 2023 limited work has been carried out to date, so no performance update is available as yet.

5. Required modifications to the planned approach during the course of the project

While the project was registered in March 2023 limited work has been carried out to date and no required modifications have been necessary.

6. Lessons learnt for future projects

While the project was registered in March 2023 limited work has been carried out to date so no lessons learnt are available as yet.

7. The outcomes of the project

While the project was registered in March 2023 limited work has been carried out to date so no outcomes are available as yet.

8. Data Access & Quality Details

A description of how any network or consumption data (anonymised where necessary) gathered in the course of the Project can be requested by interested parties. This requirement may be met by including a link to the publicly available data sharing policy.

For information how to request data gathered in the course of this project, see Network Innovation Competition (NIC) and Network Innovation Allowance (NIA) Data Sharing Procedure at https://ssen-innovation.co.uk/innovation-strategy/.

9. Foreground IPR

No foreground IPR has been developed due to the early stage of the project.