Energy Networks Innovation Process

Annual Project Progress Report Document

The voice of the networks

Date of Submission: 25/07/2025

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*)

Alternative Jointing 2

Project Reference

NIA_SSEN_0075

Funding Licensee(s)

Southern Electricity Power Distribution

Project Start Date

July 2024

Project Duration

48 months

Year

2024-2025

Nominated Project Contact(s)

Tim Sammon, Innovation Programme Delivery Manager at SSEN

1. Scope

Stage 1

Development of a foam compound and shell to pass testing to BS EN 50393:2015 and ENA C81 for LV straight joints. Development of a shrink wrap either cold or heat activated to pass testing to BS EN 50393:2015 and ENA C81 for LV straight joints. Identify any other techniques suitable for trial.

Stage 2

Field trial any successful designs from Stage 1, and develop application of successful designs to other joint types including breach, service and multiple service.

Benefits are estimated to include cost reduction which could amount to £1.6m per annum, and reductions in carbon and waste footprints. The translation of project learning into a more detailed CBA will be reported as the project progresses and Embedded carbon and waste reductions will also be reported

2. Objective(s)

Stage 1

Development of foam compounds, shell and a shrink wrap LV straight joint to pass BS EN 50393:2015 and ENA C81 tests and targeting the following benefits;

- Reduce overall joint costs for customers.
- Improve ergonomics and safety of job for jointers.
- Reduce jointing susceptibility to human error and environmental variability.
- Reduce waste and carbon footprint of joints.
- Reduce weight and volume of components.

Provide health and safety assessments on new materials/processes and report cost breakdowns of the final product based on testing the products in an operational environment.

Stage 2
Deliver field trials of successful new LV straight joints, and develop and test prototypes of other joint types including breach, service and multiple service.

3. Success Criteria

The project will succeed if it delivers new methods of LV jointing which deliver some or all of the benefits targeted, pass tests to the required standards and are deployed to field trials.

The following benefits are targeted:

- Reduce overall joint costs for customers.
- Improve ergonomics and safety of job for jointers.
- Reduce jointing susceptibility to human error and environmental variability.
- Reduce waste and carbon footprint of joints.
- Reduce weight and volume of components.

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

Details of how the Project is investigating/solving the issue described in the NIA Project Registration Pro-forma.
Details of how the Project is performing/performed relative to its aims, objectives and success criteria.

The project has begun developing foam compounds and is making progress towards its success criteria. Functional requirements for the foam compound have been specified which are detailed below with brief updates on each:

Essential criteria

- Be applicable to all LV Waveform and PILC cable types.
    - Designs are accounting for different cable types.
    - Testing has not yet started.
- Suitable for TE and Sicame connector kits.
    - Designs account for both connector kit types.
- Competitive unit and/or operational costs compared to current methods.
    - Material costs are part of the brief with all resin formulators and suppliers.
- Be able to be work as a 1-person lift in harsh environment (25kg for men and 16kg for women).
    - Materials under development are around 25% - 33% of the weight of the current BAU product.
- Be safe to use on site and reduce operator(s) exposure to isocyanates.
    - Resins are being developed with low isocyanate (<0.1%) or have zero isocyanate.
- Deployable in all UK weather conditions.
    - Tests so far indicate that the resins can cure in the presence of water.
- Have some level of cable damage resistance.
    - Impact tests have yet to be started.
- Practicable without requiring intensive/ excessive operational training.
    - Product development is focussed on minimal changes to current procedures.

Desirable criteria

- Improvements towards the SSEN Distribution 2028 Zero Waste Target.
    - Low density system will reduce waste mass but target remains to eliminate waste by re-designing, holistically, the whole process including mixing and resin delivery.

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

The Network Licensee should state any changes to its planned methodology and describe why the planned approach proved to be inappropriate. Please confirm if no changes are required.

No changes to the plan at this stage.

6. Lessons learnt for future projects

Recommendations on how the learning from the Project could be exploited further. This may include recommendations on what form of trialling will be required to move the Method to the next TRL. The Network Licensee should also state if the Project discovered significant problems with the trialled Methods. The Network Licensee should comment on the likelihood that the Method will be deployed on a large scale in future. The Network Licensee should discuss the effectiveness of any Research, Development or Demonstration undertaken.

Programme is seven months into a four year project and no lessons learned are available at this stage.

7. The outcomes of the project

When available, comprehensive details of the Project's outcomes are to be reported. Where quantitative data is available to describe these outcomes it should be included in the report. Wherever possible, the performance improvement attributable to the Project should be described. If the TRL of the Method has changed as a result of the Project this should be reported. The Network Licensee should highlight any opportunities for future Projects to develop learning further.

Programme is seven months into a four year project and no major outcomes are available at this stage.

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

A description of any foreground IPR that have been developed by the project and how this will be owned.

No IP has yet been developed.