Energy Networks Innovation Process

Annual Project Progress Report Document

The voice of the networks

Date of Submission: 05/07/2021

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
Whole System Growth Scenario Modelling Phase 2	NIA_SSEN_0043
Funding Licensee(s)	**Project Start Date**
Scottish Hydro Electric Power Distribution	January 2020
Project Duration	**Year**
18 months	2021

Nominated Project Contact(s)

SSEN NIA Programme Delivery Manager – Colin Mathieson

1. Scope

The scope of the project is to carry out whole system planning and modelling to a more granular level (11kv distribution network) to understand the impact of low carbon technologies and local authorities' strategies. The project will inform whole system methodology and will capture benefits for GB as a whole, from both a network planning and local stakeholders' perspective.

2. Objective(s)

1. Enhance a model tool to incorporate new governmental targets for economic and sustainable action plans and provide greater granularity by incorporating the 11kv network.

2. Understand the possible patterns of change associated with the Scottish Government 2045 climate change targets (Note: the UK target is 2050) in the distribution networks served by a single Grid Supply Point in an area of accelerated EV growth. Develop optimum solutions to meet whole system needs.

3. Validate and calibrate inputs for whole system planning with existing or planned requirements/expectations for the Local Authorities to avoid unnecessary extra work in producing local energy plans/strategies.

4. Develop a methodology and framework that allows the two-way transfer of knowledge and understanding between network operators and those that make investment decisions in the areas served by the network, to facilitate efficient whole system planning.

3. Success Criteria

If the project delivers the anticipated learning to GB stakeholders, then it is deemed successful.

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.

Project background

This project is associated with the next level of detailed investigation following on from NIA_SSEN_0030 Whole-System Growth Scenario Modelling which developed an initial model tool which demonstrated network impacts and informed possible investment decisions over a two-decade time period.

This project is known publicly as the Regional Energy System Optimisation Planning (RESOP).

Project progress

Between April 2020 and the end of March 2021 the following progress has been made against the objectives;

1. Enhance a model tool to incorporate new governmental targets for economic and sustainable action plans and provide greater granularity by incorporating the 11kv network.

and

3. Validate and calibrate inputs for whole system planning with existing or planned requirements/expectations for the Local Authorities to avoid unnecessary extra work in producing local energy plans/strategies.

The project has been delayed significantly by Covid 19, with work only beginning in the Summer 2020. SSEN have partnered with Baringa and Energy Systems Catapult to develop a methodology which can be rolled out across different local authorities to offer whole system planning. Whole system planning combines electricity, gas, transport, local and national government, regulated networks and community stakeholders to provide a better understanding of infrastructure requirements and allowing for a 'joined up' approached for delivery of suitable infrastructure.

During the first phase of this project we collaborated with Dundee City Council for the focus of trialling the modelling tool. Dundee has been recognised as the most visionary city in Europe for electric vehicles (EVs) and the City Council has set an objective to become a net zero city by 2045. As a progressive local authority, Dundee is developing its understanding around the infrastructure needs to support low carbon technologies, such as EVs and decarbonised heat, to inform the best pathway to net zero and therefore is a great match for the aspirations of this project.

The project has held several requirement gathering workshops with key internal SSEN stakeholders, Dundee City Council, Scotia Gas Network, Scottish Government and Transport Scotland. The key outcomes from these discussions were:

- Building, technology and network choices must be co-optimised to deliver an affordable local energy system pathway.
- The methodology should be able to undertake analysis without relying heavily on Local Authority inputs (given the huge difference in quality, availability and consistency across local authorities), and link where possible with mandatory data sets already being completed such as the Local Heat and Energy Efficiency Strategies (LHEES). LHEES have be mandated by Scottish Government for all local authorities in Scotland to complete by March 2021.
- Any outputs must support any investment ahead of need to ensure the network is not a barrier to adoption.

A draft design has been published in draft form to record the direction and seek agreement with all key stakeholders before progressing to the physical design.

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.

This project is known publicly as the Regional Energy System Optimisation Planning (RESOP).

It is anticipated that a time extension will be sought as the project relies heavily on input from Government and Local Authority, who have had to redirect their resource to address Covid 19.

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.

Capacity and Resource – Local authorities have limited resource to support whole system planning information or strategies for specific years or utilities. Any process established by the DNOs must be mindful of this and consider options to minimise 'extra work' by looking at data already being produced or in the public domain to support plans.

Data availability - Data varies in quality, availability and consistency across local authorities. Dundee City Council is progressive and has more data than most other local authorities on EVs, but the methodology produced by this project must be consistent and replicable across all regions. This means some assumptions like the up-take of EV's between 2025 and 2030 will need to be clearly defined, to ensure the methodology produced can be applied to all areas.

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.

The start date of the project has been delayed and as yet there are no outputs to report.

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 on 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://www.ssen.co.uk/InnovationLibrary/Distribution/

9. Foreground IPR

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

N/A