

Annual Project Progress Report Document

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Project Title

E Tourism

Project Reference

NIA_SSEN_0038

Funding Licensee(s)

Scottish Hydro Electric Power Distribution

Project Start Date

July 2019

Project Duration

38 Months

Nominated Project Contact(s)

SSEN NIA Programme Delivery Manager – Colin Mathieson

Year

2020

Scope

The scope of the project is to carry out traffic flow and network modelling to understand the impact of EV charging. It will also design and develop a trial of specific network and local flexibility solutions to assist with security of electric supply to EV charging hubs to deal with highly seasonal charging peaks in the tourist season.

The geographical scope of the project will be a ‘tourist route’ suitably representative of the primary tourist routes.

The output will be proven through a modelling tool highlighting geographical areas of improvement calibrated against a real-life trial of a local flexibility solution(s).

The output of both the modelling tool and real-life trial of the flexible solution will feed into a report which captures all learnings and provides system planning with appropriate guidance of areas of focus for investment on the network but also areas of focus for Scottish government, Transport Scotland and Visit Scotland. The method will be transferrable to other parts of the UK where the appropriate data is available.

Objective(s)

1. Understand how increased EV uptake and tourist patterns will impact seasonal peak demand on the network.
2. Identify the scale, location and duration of any increased charging demand broadly for the North of Scotland followed by an in-depth study of specific locations.

3. Enhance stakeholder engagement for helping local community groups, local authorities and other organisations to understand impacts of heightened EV tourism on local demand.
4. Identify suitable local flexible solutions to assist in demand management during seasonal peaks but also benefiting residents all year round. These solutions may extend beyond charge points only to options such as valet charging.
5. Inform investment strategies for network development based on expected impacts of EV uptake and tourist patterns.

Success Criteria

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

Performance Compared to the Original Project Aims, Objectives and Success Criteria

The project is progressing satisfactorily against the aims and objectives at this stage. Below is an update against each of the objectives which have started in the reporting period.

1. Understand how increased EV uptake and tourist patterns will impact seasonal peak demand on the network.

and

2. Identify the scale, location and duration of any increased charging demand broadly for the North of Scotland followed by an in-depth study of specific locations.

The project has worked closely with key stakeholders in Transport Scotland to understand potential EV vehicle flows based on current conventional vehicle movements.

The following 8 use cases are being investigated and were chosen with Scottish Government and Transport Scotland to cover journey starting points, tourist hotspots for stopping and overnight accommodation as well as arterial routes:

- Ferry Journey - Uig, Isle of Skye to Tarbet, Isle of Harris
- Tourist hot spot - Fairy Pools, Isle of Skye
- Overnight accommodation / popular hotspot - Portree, Isle of Skye
- Tourist hot spot - Urquhart Castle
- Dundee City Centre
- A9 Perth to Inverness
- A82 Loch Lomond to Inverness
- A87 Inverness to Isle of Skye

Data has been provided by Transport Scotland to understand the average and peak daily car flows for each of the use cases and assumptions are being made to understand the average journey distance and patterns for Tourists. Data has also been taken from Visit Scotland Visitor Survey data. The EV uptake assumptions have been based around the SSEN Regional Scenario Modelling, which was delivered by Regen in September 2019 as part of a separate Business as Usual activity.

Network data is being gathered to understand the current network status, capability and predict future energy demands for each use case. The associated primary substations for each of the use cases listed above have been identified also, but to understand the network impacts of that EV charging has for some of the visitor hot spots an analysis will be conducted on a small number of secondary substations.

The project is currently performing a network analysis on the tourist data, traffic data and network data to understand the impact of EV charging for each of the agreed use cases. The results of the analysis will provide a technical view for inclusion and analysis in system planning as well as visibility for external stakeholders to signpost potential issues where there could be network constraints and therefore require

the next stage the project to focus on how to maintain resilience particularly during the tourist season. The outcomes are anticipated by May 2020.

3. Enhance stakeholder engagement for helping local community groups, local authorities and other organisations to understand impacts of heightened EV tourism will have on local demand.

There has been some engagement with national and local government and two Transport Partnerships, through word of mouth, to highlight the project objectives. A draft communications plan has been created to include a coordinated and focussed approach for stakeholder engagement which will be shared once the findings of the modelling are available in May 2020.

4. Identify suitable local flexible solutions to assist in demand management during seasonal peaks but also benefiting residents all year round. These solutions may extend beyond charge points only to options such as valet charging. – Not started, due to start late 2020.

5. Inform investment strategies for network development based on expected impacts of EV uptake and tourist patterns – Not started due to start in 2021.

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

Required Modifications to the Planned Approach During the Course of the Project

The project is progressing to the planned methodology described in the registration document.

The Network Licensee should state any changes to its planned methodology and describe why the planned approach proved to be inappropriate.

Lessons Learnt for Future Projects

The project is part of the EV Strategic Partnership with Scottish Government, Transport Scotland, SSEN and Scottish Power Electricity Networks. Working collaboratively has meant greater coordination for deciding the 8 use cases previously mentioned. Input was given on planned future activity, existing road infrastructure and community led projects to understand which use cases would recognise EV uptake the earliest and benefit from a flexible solution (which will be designed as part of the next stage). The project has shared lessons learnt with Transport Scotland to improve existing processes on connection applications.

Another EV Strategic Partnership is the Transport Scotland funded Electric A9 project. As part of this SSEN had assigned a System Planner to perform network feasibility studies at specific locations along the A9. The System Planner has been heavily involved in agreeing the assumptions around types of chargers, charging demand profiles and network related assumptions. Facilitating co-ordination will allow more informed results and the findings from this study will also help to inform future seasonal uptake for the Electric A9 project

Limited data is available on the future tourist growth and average journey distances. Visit Scotland do not have targets or forecasts for year on year tourist growth, due to multiple economic factors playing a part in the number of visitors likely to visit. For journey distances, although the number of cars travelling along a route can be based on logical assumptions, assumptions have also been made around the stopping points and average journey distance to understand where the EV charging is likely to occur. Assumptions have had to be made around the number of visitors travelling by car which has subsequently led to the decision to keep visitor numbers at the last Visitor Survey data from Visit Scotland. For future projects, other options such as commercially available data such as TomTom or allowing more time for speed camera data to be accessed would be beneficial.

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.

The Outcomes of the Project

The project is progressing to plan, and the outcomes of the research and modelling phases will be available in due course.

Data sets have been agreed for traffic flows, charging demand profiles and visitor numbers. Producing these have built stronger working relationship with Scottish Government and Transport Scotland.

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.

Data Access Details

See Network Innovation Competition (NIC) and Network Innovation Allowance (NIA) Data Sharing Procedure at <https://www.ssen.co.uk/InnovationLibrary/Distribution/>

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.

Foreground IPR

n/a

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