

**NIA ENWL022**  
**Reflect Uncertainties Around**  
**E-vehicle Charging To Optimise**  
**Network Forecasting**

**Progress Report**

**31 July 2019**



## VERSION HISTORY

Version	Date	Author	Status	Comments
V1.0	20/05/2019	Christos Kaloudas	Final	

## REVIEW

Name	Role	Date
Lucy Eyquem	Innovation PMO Manager	21.05.19
Paul Turner	Innovation Manager	26.07.19

## APPROVAL

Name	Role	Date
Steve Cox	Engineering & Technical Director	29.07.19

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# GLOSSARY

Term	Description
EV	Electric Vehicle

# 1 PROJECT FUNDAMENTALS

Title	Reflect Uncertainties Around E-vehicle Charging To Optimise Network Forecasting
Project reference	NIA_ENWL022
Funding licensee(s)	Electricity North West Limited
Project start date	March 2019
Project duration	2 years
Nominated project contact(s)	Christos Kaloudas (innovation@enwl.co.uk)

## 2 PROJECT SCOPE

The Reflect project will improve the electricity demand forecasting for EV charging by reflecting the regional uncertainties around slow (<20 kW) and ultra fast (up to 450kW) charging in the forecasting scenarios and consequential cost and risk assessments. The project aims to use EV charging profiles produced from trials and analysis carried out by projects such as the Recharge the Future and the CarConnect projects and will enhance the scenario-based forecasting methodology to include probabilistic assessments. The developed methodologies will allow Cost Benefit Analysis (CBA) tools such as the Real-Options CBA (ROCBA) tool to reflect the uncertainties around slow and ultra fast EV charging in risk and cost assessments.

## 3 OBJECTIVES

The Reflect project will develop the forecasting methodologies to model the uncertainties around slow EV charging from the LV networks (e.g. home and destination charging) versus ultra fast charging (e.g. at service stations).

This project supports the following primary objectives:

- develop methodologies and tools that consider regional characteristics to frame uncertainties around slow and ultra fast charging;
- introduce the use of probabilistic assessments within the scenario-based forecasting approaches followed by DNOs;
- consideration of traffic flow data in modelling;
- interoperability with EV charging profiles produced by analyses and trials from other UK and European projects (e.g. UKPN's Recharge the Future and WPD's CarConnect projects).

## 4 SUCCESS CRITERIA

The project will be successful if:

- it delivers partial prototypes of load estimates that consider both slow and ultra fast EV charging;
- it improves the currently followed scenario-based forecasting approach by considering via probabilities the likely effects of ultra fast charging of EVs on future demand uptakes; and,
- it provides specifications on how the uncertainties modelling in the developed methodology can be used to enhance CBA processes.

## **5 PERFORMANCE COMPARED TO THE ORIGINAL PROJECT AIMS, OBJECTIVES AND SUCCESS CRITERIA**

This progress report covers the period up to 31<sup>st</sup> March 2019. The project was registered in February 2019 and so there was very limited time to produce work that could be compared against the original project aims, objectives and success criteria.

Within this limited period there have been meetings with consultancies and academics to discuss the potential for data assessment work that will be used to understand advantages and disadvantages of different datasets of geospatial data that can be used in the project to understand regional characteristics affecting residential and public charging of EVs. Due to their previous research work in the area, the University of Strathclyde was asked to provide a quote for this data assessment.

## **6 REQUIRED MODIFICATIONS TO THE PLANNED APPROACH DURING THE COURSE OF THE PROJECT**

Due to the limited time period the project has been running since registration, (from February to March 2019), no modifications have been required.

## **7 LESSONS LEARNED FOR FUTURE PROJECTS**

Again, due to the limited time period the project has been running since registration there have been no lessons learned at this stage.

## **8 THE OUTCOME OF THE PROJECT**

Not applicable.

## **9 DATA ACCESS**

Electricity North West's [innovation data sharing policy](#) can be found on our website.

## **10 FOREGROUND IPR**

There is no foreground IPR associated with the project.

## **11 PLANNED IMPLEMENTATION**

Not applicable.

**12 OTHER COMMENTS**

Not applicable.