



European Energy Network

The voluntary network of European Energy Agencies - at the heart of the clean energy transition

Name and Country of EⁿR Member

EST - United Kingdom

**energy
saving
trust**

Name of Project/Programme & Link to website

Powerloop – Vehicle to grid demonstrator project

Description of Project

As a first of its kind project, Powerloop will provide critical insight into how effective EVs are as a grid balancing mechanism, how drivers would like to interact with their EV charging system and the technology required to make all this possible. The data and insight from this project will support the UK in encourage greater uptake of EVs while smoothly integrating them into the grid and aligning with the UK's decarbonisation goals.

The project aims to lease 135 Nissan Leafs, with a 100% renewable energy Tariff and V2G charger in distribution network area within the UK. Powerloop aims to demonstrate the potential of using bi-directional car batteries to power homes and/or supply excess energy to the grid during times of peak demand, while recharging the battery when demand is low; potentially avoiding huge investment to static storage and network upgrades.

Aim/Expected Impact of Project

The objectives of the project are to:

- Gain critical insights into customer needs and driving behaviours, and which V2G propositions they're most attracted to



- Understand the benefits V2G can bring to the grid
- Understand the technical development of the charging unit
- Develop a viable business model that delivers value to all parties in the value-chain.

The anticipated results of the project are:

1. Development of a V2G scheduling engine
2. Development of a V2G aggregation platform
3. Development of a V2G customer app
4. The sale of up to 135 V2G compatible electric vehicles and domestic V2G chargers
5. The installation of 135 domestic V2G chargers and integration with the scheduling engine
6. A domestic V2G customer best practice guide
7. Provide results on the feasibility of creating new flexibility markets, suitable for participation by domestic electric vehicles.
8. The creation of these markets, pending the feasibility results
9. Domestic V2G operations data and learning

Involvement of the Agency and Link to the EU Green Deal

Smart Mobility

The Energy Saving Trust will be leading on the consumer behaviour and engagement aspect of the project.

Our aim is to try and understand exactly what the customer wants. This information is vital to the success of this



project as regardless of the more technical aspects of the project, if customer uptake is not sufficient, or it is not long-lasting, then the full potential of the V2G system cannot be utilised.

To help understand the customers' preferences, we will endeavour to find out the following throughout the trial:

- The customers motivation for participating
- The customers driving and charging routines/ preferences
- The propositions customers find most attractive
- The messaging and system control customers find most attractive
- The customers perceptions of required compensation versus relinquished control of EV battery
- How does reality of the project meet initial expectations?
- Any positive feedback, improvements or recommendations from customers.