



# Electrification of Transport Research for Net Zero

Transforming the future of transport  
and energy



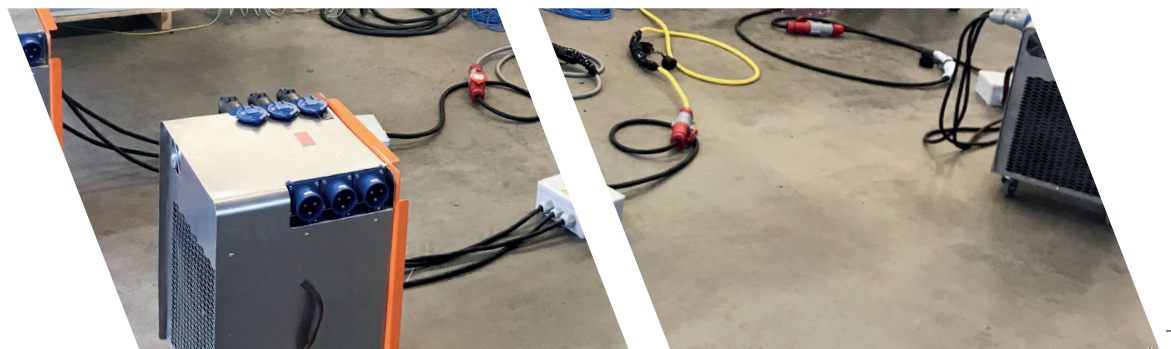
# Accelerating Innovation

## A proving ground for cutting-edge R&D

PNDC's work in transport & mobility research is helping the public and private sector research and demonstrate future transport products and services in a realistic test environment.

### Our areas of expertise include:

- ▶ **EV supply equipment and energy infrastructure**  
Testing and demonstration of novel EV supply equipment hardware and software.
- ▶ **Smart charging strategies**  
Design and analysis of EV smart charging and energy system flexibility strategies.
- ▶ **Vehicle-to-grid (V2G)**  
Testing V2G scenarios in our comprehensive lab infrastructure, from domestic to grid-scale.
- ▶ **Planning the EV charging infrastructure rollout**  
Local and regional strategy development, consultancy and due diligence analysis.
- ▶ **Charging network operational efficiency and financial planning**  
Identifying operational improvements, asset management strategies and energy supply cost reductions.
- ▶ **Regulatory policy and standards compliance**  
Consultancy and testing on engineering standards for EVSE products and grid connections.
- ▶ **Whole systems modelling**  
Modelling and analysis of transport and energy system interactions and optioneering.
- ▶ **Charge point product development**  
Requirements, design and prototyping of on-board and off-board charging innovations.



# The Future of Transport

## From strategy to commercial deployment

PNDC supports technology developers, system integrators and end-users from product definition, system testing and through towards full commercial deployment and impact assessment.

### Agile Streets:

#### PNDC supported delivery of £1.5M BEIS funded project



- ▶ Supported system design of innovative smart meter-based smart charging solution.
- ▶ Undertook end-to-end systems integration and performance testing at PNDC labs.
- ▶ Supported ongoing monitoring and analysis of 100 EV charge point field trial.
- ▶ Winner of 'Best Consumer Proposition' at the 2022 EVIE Awards.

### Assure Charge:

#### Delivered project in collaboration with Connected Kerb



- ▶ Developed prototype platform to improve operations, maintenance and repair of EVSE.
- ▶ Pulled data from multiple public and private sources, covering 1000s deployed charge points.
- ▶ Developed dashboards, reporting and alerting system for different EV stakeholders.
- ▶ Platform now used in operations by local authorities and EV Association of Scotland.

### FASTER:

#### Supported 3 Scottish local authorities in future EVSE developments



- ▶ Implemented a layered modelling approach to identify optimum sites for 24 new rapid EV charge points.
- ▶ Considered EV charging demand forecasts, geospatial coverage of the current network, existing usage rates and site-specific metrics.
- ▶ Produced a ranked-order list and an interactive GIS mapping file to support local authorities and transport partnerships to understand priority locations for EVSE.

### Discreet EV Charging:

#### by Trojan Energy



- ▶ PNDC tested Trojan Energy's prototype charge point under realistic loading conditions.
- ▶ Power quality monitoring and logging provided valuable data on the electrical performance.
- ▶ Parallel thermal assessment proved the patented prototype was thermally safe and operational.

## GET IN TOUCH

Find out more about our work or talk to us about opportunities for collaboration, including PNDC membership.

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