



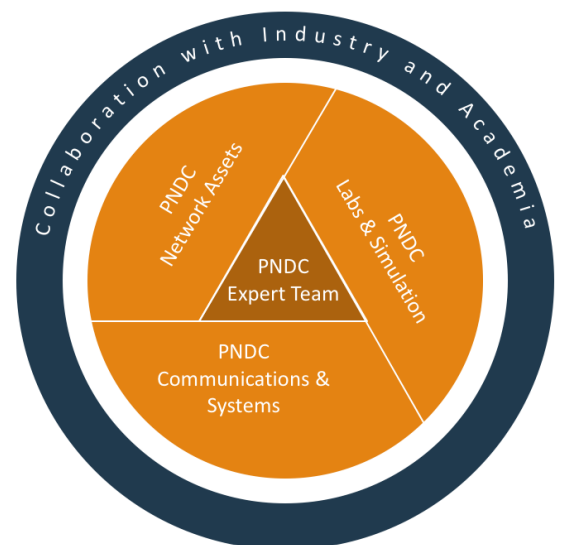
The **PNDC** is a dedicated power systems research test and demonstration centre designed to accelerate Smart Grid research and shorten time to implementation for new technologies. Our membership includes half of the UK DNO's as well as a broad spectrum of large multinational industrials and small to medium enterprises. We connect academic, industrial and Network Operator innovation in a collaborative way right across the smart grid spectrum of research. Our reach encompasses integrated systems in the marine, utility and transport sectors.



An Open access platform for:

- Industrial research
- Academic research
- System testing
- Equipment testing
- Pre-field trials
- Market Validation

- **SME Engagement**
- **Collaborative leveraged research themes**
- **Mid to late TRL innovation focus ... accelerate to BAU impact**
- **Unique testing environment for equipment and solutions**
- **Academic engagement on Industry defined challenges**
- **Members benefit from discounted access**



PNDC - Unique System Capabilities

Dedicated Expert Team

Generation Sources

Substations

Distribution HV Network

LV Network

Simulation & Systems

Communications Infrastructure

Utility Control System

Power Supplies

- On grid – 2 x 1 MVA 11kV supply routes
- Off grid – 1 MVA Gen Set
- TriPhase Converter: 500KVA ± 0 -1300V DC
- 11/11kV 1MVA Isolation Tx
- HV Fault Throwing
- LV Fault Throwing

DNO grade network assets

- 3 x 11kV u/g feeders equiv. length 6km
- 1 x 11kV o/h feeder equiv. length 60km
- 11kV/400V transformers from 1.2 MVA to 25kVA
 - 3 x 11kV PMRs
 - 11kv Series voltage regulator
 - Full LV network fed from HV
 - 600 kVA of flexible load



Communications & Systems

- PowerOn Fusion ADMS
- OSISoft PI Historian
- Fast DAQ 10kHz measurement of power network
- Fibre comms embedded into system
- Full MPLS test network with CISCO routers
- IoT test platform, Embedded LoRa Net APs

Simulation & Labs

- RTDS based Power Hardware in the Loop
 - 6 x RTDS racks, with 2 PHIL hardware interfaces
 - Typical 50 μ s time steps, accurate 3kHz freq resp
 - Large testing areas for equipment at LV

12

Industrial Members

84

Projects to Date

6

Research Roadmaps

43

NPS Score

