



PNDC (University of Strathclyde)

Established in 2013, PNDC is a whole energy systems research, test and demonstration facility with a focus on the de-risking and acceleration of novel electricity, heat and transport systems that have the potential to make a material contribution to the realisation of net zero emissions. PNDC is an open-access facility and engages with the innovation ecosystem through multiple collaboration models, working closely with government, industrial and academic partners to connect key stakeholders to enable innovation through collaboration.



Key Capabilities / Centres

Descriptions

PNDC Wardpark (Cumbernauld)

PNDC's test, demonstration and simulation environment at Wardpark provides a MW-scale real-world platform for validating and accelerating whole energy system technologies, primarily those associated with electricity networks, smart grids, and the role of electrification in the delivery of net zero. Facilities to support the testing of hydrogen-based technologies can also be arranged.

PNDC Inchinnan (operational summer 2024)

As part of a wider University of Strathclyde initiative, PNDC is developing a second MW-scale facility at Inchinnan (near Glasgow airport) focussed primarily on net zero heat and transport applications to complement our Wardpark facilities. This includes a dedicated hydrogen store (circa 80kg) for the testing and validation of hydrogen-based technologies and plans to install a bespoke thermal innovation facility to enable the testing and demonstration of low-carbon thermal technologies and systems up to 1MW, including two test cells dedicated to hydrogen systems.

Whole Energy Systems Accelerator (WESA)

WESA is a collaboration between PNDC and Energy System Catapult's Living Lab that enables the interactions between activity in homes, energy networks and market structures to be tested in real-time in a range of controlled scenarios.

Value Chain Areas

Testing & validation

Pilot manufacturing

Digital tools & simulation

Open innovation spaces

Skills development

Production	✓	X	✓	X	X
Networks	✓	X	✓	✓	✓
Storage	✓	X	✓	✓	X
Transport	✓	X	✓	✓	✓
Industry	✓	X	✓	X	X
Power	✓	X	✓	✓	✓
Heat	✓	X	✓	✓	✓

*Tick = yes, O = potential, X = no

Collaboration opportunities

- PNDC engages with its collaboration partners to develop and share knowledge, skills, expertise and insights to maximise impact and accelerate commercialisation pathways across shared innovation priorities and strategic focus areas.
- We create and deliver high-impact, high-value innovation project ideas through collaboration with academia, government and industry.
- We provide insights into leading, relevant use case applications and market opportunities for whole systems applications, including the de-risking and integration of hydrogen technologies into the wider energy system.

Centre location



Hydrogen case studies

- PNDC has been a partner in the **Hydrogen Accelerator**, a collaboration between the University of St Andrews and the University of Strathclyde. This supports the co-ordination of Scotland's hydrogen initiatives and delivers project management and technical guidance and support, particularly in fuel cell technology.
- **MAKE - MOVE - USE:** PNDC engages with industry to provide research support and conduct analysis of the challenges and opportunities for technology de-risking to accelerate the evolution of hydrogen-related technologies.

Key hydrogen contact:

Priya Bhagavathy
Lead R&D Engineer
(Whole Energy Systems)
priya.bhagavathy@strath.ac.uk

Ronnie Gardiner
Innovation Engagement Officer
ronnie.gardiner@strath.ac.uk

