OFGEM CALL FOR EVIDENCE ON THE ELECTRICITY DISTRIBUTION BUSINESS PLANS FOR RIIO-2

EVIDENCE OF THE UNIVERSITY OF STRATHCLYDE'S POWER NETWORKS DEMONSTRATION CENTRE (PNDC) RELATING TO ANNEX 2.1 (INNOVATION STRATEGY) OF SP ENERGY NETWORKS' RIIO-ED2 BUSINESS PLAN FOR 2023 – 2028

Overview

Delivering the net zero transition in line with the committed timelines is hugely challenging. In this context innovation is needed more than ever, particularly in the areas of heat and transport decarbonisation, and in whole energy systems integration. This includes the need for innovation across the entire value chain from consumers, to networks, to the enabling business models and market structures. Targeted innovation will accelerate the transition to net zero and will significantly reduce the cost of delivering the UK's energy targets.

Delivering innovation through collaborative effort provides a number of benefits, most notably associated with efficiency, the sharing of benefits & risk, and the acceleration at scale of new innovations to business as usual through combining the complementary skills and capabilities of collaboration partners. Collaboration in support of delivering innovation across the RIIO-ED2 themes - Energy System Transition and Consumer Vulnerability – is particularly important given the diverse range of stakeholders that are needed to deliver impactful innovation in these new areas[1].

In the context of the above and the observations that follow, PNDC strongly supports the proposals in SP Energy Networks' RIIO-ED2 innovation strategy.

Evidence for Consideration by OFGEM

In the context of Annex 2.1 of SP Energy Networks' RIIO-ED2 Business Plan for 2023-2028:

- The need for innovation stimulus funding is stronger than it has ever been given the major changes that are needed within the energy sector to deliver the net zero transition, and the need to rapidly develop and de-risk cost effective solutions to deliver the transition. Continued funding of DNO innovation programmes through the RIIO-ED2 period is therefore crucial.
- Annex 2.1 outlines a portfolio of innovation activity that aligns with key industry challenges associated with the delivery of net zero, such as those described in the ENA's electricity and gas network innovation strategies[2] and BEIS' Energy Innovation Needs Assessments[3]. The diverse range of stakeholders that are needed to deliver impactful innovation in these areas naturally encourages multi-stakeholder collaboration. SP Energy Networks has highlighted its strong partnership network, including PNDC which offers system-level innovation acceleration in the whole energy systems area, to support its ED2 activities.
- The funding request for the proposed level of innovation activity targets a 4:1 benefits/cost ratio, offering strong value for money for consumers.

[1] SP Energy Networks' stakeholder consultation in their ED2 Innovation Strategy identified that 87% of stakeholders agreed that collaboration is needed to accelerating innovation

[2] https://www.energynetworks.org/newsroom/electricity-and-gas-network-innovation-strategies

[3] https://www.gov.uk/government/publications/energy-innovation-needs-assessments

- SP Energy Networks' innovation strategy will enable the realisation of customer benefits both during the duration of the ED2 period and in the long term. It also provides increased focus on the societal and environmental aspects of the energy transition which are critical.
- SP Energy Networks has a strong track record of delivery with previous innovation programmes, including rolling out innovation into business-as-usual. The embedded TOTEX savings of £87.2m from previous innovation programmes (detailed in Annex 2.1 of the Business Plan) are referenced to Engineering Justification Papers and therefore provide robust evidence of this track record of delivery. Confidence in SP Energy Networks' ability to deliver against their proposed innovation plan based on previous performance should therefore be considered high.
- SP Energy Networks' delivery plans for innovation funding in the ED2 period are clearly described in section 7 of Annex 2.1. Section 7.3 identifies five "spotlighted" innovation areas that specifically target solutions to Whole Energy System challenges, and also includes innovation activity aligned with the Consumer Vulnerability theme, a critical component of ensuring a Just Transition to net zero. Section 7.4 details the proposed innovation investment required to deliver impact within these areas, and per above this investment is offers good value for money to consumers.
- There is clear reference to the significant level of stakeholder engagement that has taken place to evolve SP Energy Networks' ED2 innovation proposals, again providing confidence that the portfolio of activity is aligned with sector needs.

PNDC Overview

The Power Networks Demonstration Centre (PNDC), part of the University of Strathclyde, brings together academics, industrial organisations and technologists to define and execute pre-commercial research, development, test and demonstration projects with the aim of shaping and optimising smart energy networks of the future.

PNDC has been fully operational since 2014 and works with it members[4], other collaboration partners, and leading academic expertise from within the University of Strathclyde, to provide critical acceleration of innovation in the mid-to-late technology readiness levels (TRLs) towards BAU. This is enabled through the use of PNDC's flexible real-world demonstration environment, coupled with a rich portfolio of research across all aspects of the energy system.

The centre is currently broadening its capabilities and partner network to focus on the validation and acceleration of Whole System Solutions.

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7th February 2022

[4] including SP Energy Networks, UKPN and SSEN