

ISP Questions 22 April

Q1: Under criterion (a), to the nearest order of magnitude please quantify the 'massive additional expense' referred to on page 4.

A1: The Smartgrid Forum WS3 report 'Assessing the Impact of Low Carbon Technologies on GB's Power Distribution Networks' used the Transform Model to forecast costs for enabling technologies such as communications. For scenario 1 (domestic decarbonisation to meet carbon budgets), application of the 'Smart Incremental Investment Strategy' (p.103) within comm.'s & control platforms shows a cost increase of at least £413m over the 'Smart Top-Down investment strategy'.

The conclusions drawn within section 9.2.2 of the same report highlight the underlying desire of Ofgem to increase long-term value for money, expanding the focus from the current 8 year regulatory period;

"Based on the input assumptions, the model is showing a slight bias towards the top-down smart investment strategy being optimal over the longer term. This being the case, the model implies that investment will need to be undertaken for a range of enabler technologies in the RIIO-ED1 period, in order to ensure it is available when needed (e.g. the second half of ED1 and into ED2)", p.135.

It is clear from the data presented within the report that, when it comes to the enabling technologies such as telecommunications, the bias is much more significant.

These industry findings highlight the timely need for the application of *Telecoms Templates*; a project which will actively investigate current telecoms technologies, with the aim of acknowledging the limitations of their application within Smart Grid Solutions and also identifying a holistic suite of tools which will bring the integration of Smart Grid Systems and telecoms into A DNOs BAU efforts.

Q2: Under criterion (d), please elaborate further on why this project is not business as usual.

A2: LCNF projects to-date, both completed and underway, demonstrated critical learning which has formed a required input to the DNO's ED1 business plan. Within the past 12-18 months feedback from a number of concluded LCNF projects has realised a limitation with regard to the application of BAU telecoms and the negative impacts which these technologies can have within the application and management of Smart Grid Systems.

In support of this submitted evidence, findings have been collated and disseminated as part of the 'DECC/ OFGEM Smart Grid Forum Workstream 3' report which acknowledges the need for the development of innovative telecoms solutions to address the current and future network requirements;

"New techniques for ensuring cyber security at the many communications interfaces anticipated in the future. Importantly this must address the challenge of facilitating integration of innovative solutions with legacy systems and provide for diagnostics and remote support to distributed intelligent systems" p.32-33.

The same report goes on to identify how further investigation is warranted for consideration by all stakeholders in order to establish an industry-wide understanding (e.g. common concepts and

terminology), whilst encouraging and actively enabling the development of fit-for-purpose competitive telecoms offerings from applicable industry players.

This requirement is borne out of the application of telecoms solutions within Smart Grid Systems, as for many emerging technologies TRL 8 or higher has not been realised.

Applying trials within test networks which demonstrate current and future Smart Grid Systems will form the foundation for the integration testing of these techniques with innovative electrical equipment.

The Telecoms Templates project will explore these areas which would not be possible in a business as usual scenario due to the TRL levels and inherent unknowns of their application.

References

Energy Networks Association, (2012), 'Assessing the Impact of Low Carbon Technologies on GB's Power Distribution Networks', *EA Technology*, 3.1, pp.1-239.

Energy Networks Association, (NA), 'DECC/ OFGEM Smart Grid Forum Workstream 3 – Developing Networks for Low Carbon, The Building Blocks for Britain's Smart Grids', *ENA*, 1(1), pp.1-81