Electricity Network Innovation Competition Full Submission

Supplementary Answer Form

Project: Black Start from Distributed Energy Resources

Tick if this answer has been provided verbally: ☐

Project code	ESOEN01	Question Number	58
Question date	18 Sept 2018	Answer date	20 Sept 2018
Submission section question relates to	Appendix H - Summary of Necessary Innovations		
Topic	(b) Value for money		
Question	How will the results from Black Start feed into BaU as opposed into an innovation programme, i.e. what undertaking is there that the outcome of this project will not only serve to inform a further innovaion project rather than leading to BaU.		
Notes on question			
Answer	Each workstream of this NIC project is designed to deliver tested and proven concepts and frameworks that can be directly implemented as BAU, assuming the concept is technically and economically viable. **Technical:** This NIC project will investigate, and ultimately demonstrate for the first time, the ability to create and manage a complex decentralised Power Island with a number of participants. This workstream will provide the ESO with the degree of engineering certainty that is necessary for a new approach to be rolled out, including: • Studying the power system to understand what challenges a decentralised restart will present • Ascertaining and designing the functional requirements from participants or service providers • Designing and executing case studies and trials to demonstrate the concept • Designing the testing process • Compiling all of the workstream outputs into recommendations and a proposal		

	The Technical workstream will design a concept and specify the technical requirements. This requirements specification will feed directly into the Regulatory and Procurement workstream, which will in turn develop the models and frameworks to implement the concept in business as usual (BAU). Once transitioned into BAU, the concept will continuously improve, perhaps with the addition of a wider range of technologies. **Organisational and Systems:** This workstream is arguably the most complex part of the project, and will deliver the functional description of the processes, roles, tools, systems and telecoms needed to successfully manage the complex Power Island whilst GB is blacked out. For the creation of the initial 1-2GW Power Island, the current NETS process might have 4 parties involved, with a decentralised Power Island concept there could be between 20-40 parties. The project will deliver a resilient and tested process, including roles and responsibilities for various parties, for the creation and management of a decentralised Power Island. The workstream will engage with industry stakeholders to ensure that the design is applicable across GB. The desktop exercise will test the strengths and weaknesses of the process, ready for implementation into BAU. Telecommunications resilience and functionality will be reviewed for the case studies, with particular attention paid to efficiency and value for money, and a functional specification will be created. More details of this can be found in our response to Q63. The processes, standards and functional specifications will feed into the Regulatory and Procurement workstream, which will create frameworks and commercial models for rollout in BAU, those this is under review as part of the resubmission. **Regulatory and Procurement:** The licences and codes that have been expertly written and fit for purpose for many years did not envisage a widescale decentralisation of generation. Therefore, within this work stream we will be drawing on the outputs of the other workstreams to design the frameworks to implement the concept in BAU. NIC governance does not allow for funding of changes to codes or licenses. We will design the proposals for change as part of the project, and will present these proposals back to the relevant industry particicapant (e.g. Distribution/Grid code, Network Operator and ESO Licensees), who will be responsible for achieving the changes as BAU. This is a change to the inititial bid, that will be captured during resubmission. The procurement solution, and any mandatory or commercial mechanisms, will be particularly complex due to the large number of market participants and combinations of service components. Understanding how to technically evaluate these options, and assign a commercial value will require an innovative solution to fulfil based on the requirements established by the Technical and Organisational workstreams. The optimal solutions will be

	designed as part of the NIC project. This will include compiling recommended requirements for: contracting, resources, systems, as well as designing the contract structure and terms. These recommendations and associated tools/processes will be presented back to the ESO, and responsibility for managing the procurement process and securing contracts will be handed over into BAU. **Knowledge Dissemination:** We will engage and consult with the industry throughout development to ensure widespread suitability and readiness for adoption of the concept, removing any surprises for the industry. This should expedite the implementation, mitigating the risk of challenge during the transition to BAU. Once the concept has been trialled and demonstrated, the responsibility for industry engagement will be handed back to the ESO to manage and continuously improve as part of the amended BAU activity.This project is the step change to enable decentralised start up, it will create functional specifications from learnings and trials, and create frameworks for future implementation in business as usual.
Attachments	