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	Q72
Question date	2 Oct 2018	Answer date	4 Oct 2018
Submission section question relates to			
Topic			
Question	ESO is funded to deliver Black Start under its current settlement. Please explain what additional benefits NIC funders receive from funding this Black Start trial project as distinct from those arising out of a BAU approach.		
Notes on question			
Answer	We believe that there are several additional benefits that GB energy consumers (as the funders of NIC project) will receive from funding this project through the Network Innovation Competition (NIC), rather than through Business as Usual arrangements. First and foremost is the **pace and scale of change** which we believe can only be achieved within the NIC. We believe that funding through the NIC is the only way that the Black Start from DER method can be implemented both (i) quickly and (ii) at a very large scale, which will therefore provide additional benefits for consumers compared to a BAU implementation. Black Start from DERs involves multiple risks across technical, organisational, commercial and regulatory aspects. This means that, while there is potential and great interest in this concept, we cannot be sure it is definitely going to work. We believe that this means that any funding for the concept through BAU would have to be done in a more sporadic way, and only after individual areas of work have been suitably de-risked for the end consumer. Furthermore, we do not believe shareholders would speculatively fund this innovation, given the commercial implications for the ESO and DNOs (such as sunk costs in rollout for an unproven concept).		

	If this project is not funded, the ESO will continue to develop Black Start services and discharge its licence obligations for Black Start through the continued running of gas stations, interconnectors, and the inclusion of large individual embedded generators. Further development in the area of smaller DER may also occur, but this will be piecemeal, less coordinated due to the timing of T and D regulatory price control regimes, and at a much smaller scale than proposed in this project. Incremental changes will be made to systems and processes to demonstrate value to other DER to encourage their participation and changes to their respective systems and processes, rather than the scale and speed of the rollout of a collaborative wholesale new solution that is possible through NIC funding. This slower BAU approach would therefore drastically slow down inclusion of DER. Making de-risked but sporadic changes would make it more expensive overall. The most efficient way to implement is through a co-ordinated and pre-emptive approach, rather than piecemeal. We believe that funding the project through the NIC gives the industry (including the ESO, DNOs and DERs) the best chance of enabling this new approach at a large scale and at a much greater pace. Second are the **benefits of collaboration,** which can only be fully realised through the NIC. The NIC funding and approach allows for a collaborative partnership approach with clear accountabilities on all parties to demonstrate the value for the consumer, rather than solely with the ESO under standard market developments. Our project features extensive engagement with parties across the energy industry, including the DER community. This potentially has additional benefits, in that it will help to raise awareness of the challenges associated with system failure and restoration among a wider segment of the energy industry. This wide-ranging engagement can be most efficiently done at the scale we are proposing through the NIC. Our approach also ensures (if proven) the transition is efficient and maximises value for the end consumer. A co-ordinated and holistic approach achievable through NIC funding ensures the solution is best fit across industry and is easily adopted. Finally, we believe there are a **wide range of further potential benefits** which this NIC project will unlock. Within our submission, we have already quantified what we believe are clear consumer benefits from this project arising from expected changes in the cost of Black Start. We believe the submission clearly demonstrates that now is the right time to launch a NIC project to develop and demonstrate the right solution. We have strong and unanimous support to do this from the DER community, BEIS, Open Networks and the Energy Systems Catapult. However, there are likely to be other benefits that will arise from exploring this method in the NIC compared to under BAU. For example, we anticipate that implementing this at scale, which will only be possible through the NIC, will mean that the opportunity of contributing to Black Start is available for a much wider range of DERs. This potential new revenue stream could further

	incentivise the uptake of decentralised energy resources and local energy schemes. In addition, the NIC project may allow the method to be implemented at scale – as described above – which could significantly improve the resilience of power systems at a local level. By starting system restoration from the bottom-up, this could help customers get connected sooner, even before the overall restoration process is complete. This might further support the development of local energy schemes by reducing their reliance on the wider system. In addition, implementing the method at scale could potentially have positive impacts for restoration times in general which, in the unlikely event of a full or even partial system restoration, could save significant amounts of money for GB consumers.
Attachments	