

# Distributed ReStart

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Stakeholder Advisory Group

13<sup>th</sup> January 2019

In partnership with



nationalgridESO

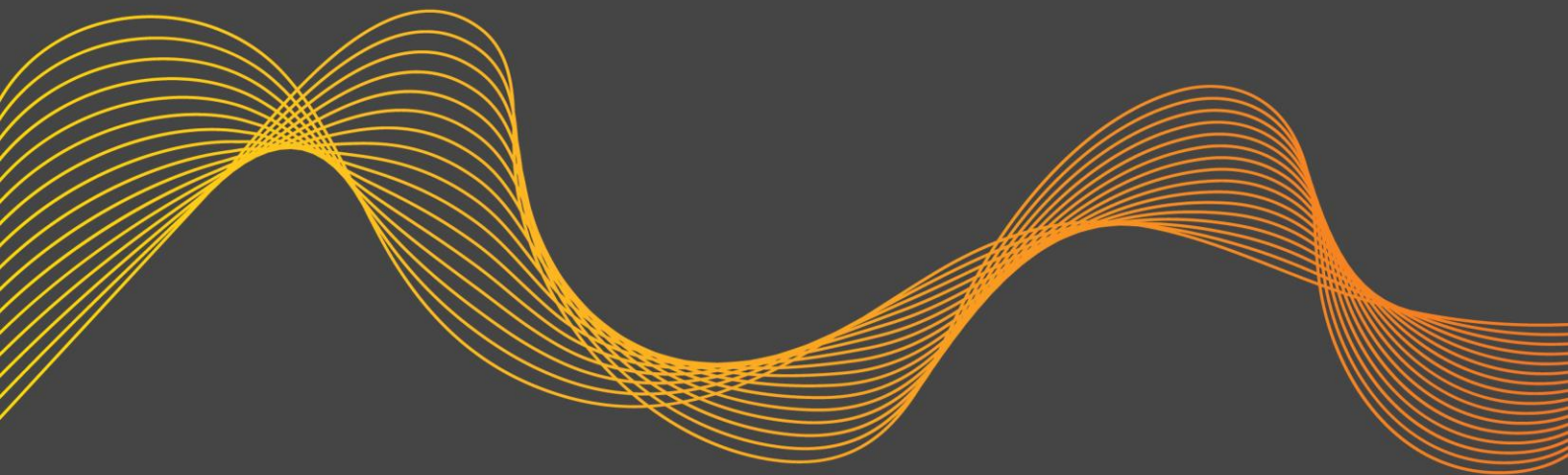
# Stakeholder Engagement Summary

Distributed ReStart aims to incorporate the views of wider industry at every opportunity, bringing in the diverse expertise found across the electricity market to solve this world first challenge of Black Start using Distributed Energy Resources.

On Monday 13<sup>th</sup> January, Distributed ReStart hosted a stakeholder advisory group meeting to provide wide ranging industry views on project outputs and planned next steps.

This event focused on reviewing the key conclusions from the Organisational Systems and Telecommunications Viability Report and the Procurement and Compliance viability report. In response to these papers, key questions were posed by the panel which were discussed during the meeting.

A summary of the outcomes from this event is provided in the following document to provoke thought and further discussion. If you have any queries or comments stemming from this, don't hesitate to contact us at [ReStart@nationalgrideso.com](mailto:ReStart@nationalgrideso.com), we look forward to hearing from you!



# Stakeholder Advisory Board



Distributed ReStart have engaged cross industry experts to hold the project to account and guide the overall outcomes and direction of investigation.



Figure 1: Our stakeholder advisory panel consists of representatives from Cardiff University, Energy Systems Catapult, Cornwall Insight, Citizens advice, Chiltern Power, The IET, BEIS and ENA

## Attendees

Name	Role	Company
Nick Jenkins	Technical Chair	Cardiff University
Alasdair Muntz	Panel Member	Energy Systems Catapult
Tom Palmer	Panel Member	Cornwall Insight
John Scott	Panel Member	Chiltern Power
Emma Penhaligon	Project Team (Secretary)	National Grid Electricity System Operator
Peter Chandler	Project Team (Lead)	National Grid Electricity System Operator

## Guests

Name	Role	Company
Neil Miller	Project Team (Power Engineering & Trials Lead)	Scottish Power Energy Networks
Dieter Gutschow	Project Team (INET Project manager)	INET
Joanna Carter	Project Team (Organisational Systems and Telecommunications Lead)	National Grid Electricity System Operator
Anyta Dooley	Project Team (PMO Lead)	National Grid Electricity System Operator
Chris Salter	Project Team (Project Coordinator)	National Grid Electricity System Operator

## Apologies

Name	Role	Company
Simon Harrison	Panel Member	IET
Herpreet Bhamra	Panel Member	Department for Business Energy and Industrial Strategy
Randolph Brazier	Panel Member	ENA
James Kerr	Panel Member	Citizens Advice

## Review of outstanding actions / questions

Action	Discussion Point(s)
<b>Project to utilise an academia forum</b>	Intent to organise an academic forum for February or March. May be possible to create PhD work with regards to a-synchronous generation
<b>Project to consider the role of a-synchronous generation</b>	Energy storage options being considered by the team through a progressed case study with battery installation, project intent to produce functional requirements any proven technology can meet to enable findings from wider projects to feed in. Storelectric have approached the project around potential capability to act as an anchor generator so there is industry appetite for providing this capability.
<b>Project to consider use of microgrid controller solutions</b>	Tender issued to deliver a Distributed Restoration Zone controller (see OST report for further details on DRZ)
<b>Project to consider use of trip to house load services</b>	The trip to house load service is something we will consider within the DRZ controller concept but focus is on capability to deliver restoration. Close link with complimentary NIC project Resilience as a Service will progress this further and we will work collaboratively on this issue. Furthermore, the OST and P&C papers discuss opportunities for this form of Black Start service.
<b>Project to consider environmental issues with regards to energy from waste</b>	The project has engaged with the environment agency, SEPA and NRW with regards to appropriateness of derogations for the purpose of Black start, this is common across all steam generators not just energy from waste. Furthermore, there is continued engagement with Viridor.
<b>Project to consider community energy groups in proposals</b>	Out of scope for the purpose of live trials. However, modelling option will be considered
<b>Project to ensure solution is fit for the future</b>	Against a backdrop of immense change in the electricity and telecommunications industry, engagement is the principle means of achieving this. We are currently in discussions with OFGEM, ENA, Cornwall insights, strategic telecoms group as our means of futureproofing solutions.
<b>Project to consider impact on restoration timescales</b>	Integration of solutions into BAU processes including alignment with the Black Start standard and consideration of the role of people compared with automation will review this.
<b>Project to consider synthetic inertia</b>	Engagement with the innovation project virtual synchronous machines and other wider network innovations to enable consideration of this issue. Functional specifications to be produced and if proven could be an option.

# Organisational systems and telecommunications

High level overview of the organisational systems and telecommunications viability report published in November

Topic	Key Discussion Points
<b>Webinar</b>	Signposted to webinar available on website shortly
<b>Rapidly changing environment</b>	The telecommunications and energy industry are undergoing a period of rapid change. Outside the context of Black Start the inter-reliance between these two utilities is rarely considered. The project is a member of the Strategic Telecoms Group which will ensure that these changes are captured and influence appropriate cross industry solutions.
<b>Complexity</b>	Introducing a large number of stakeholders to the Black Start process will impact on the complexity and number of data points. The project will consider this in creating functional requirements. From a procurement perspective we also want to keep the service terms simple to enable providers to participate.
<b>Resilience</b>	Consideration is given to a range of resilience challenges from power loss to physical and cyber security. All elements of resilience are critical for project success.
<b>Organisations</b>	A range to organisations and automation options are considered by the report to enable impact analysis. The reality is that a blended approach will likely be needed mitigating against the individual shortfalls of each model. These are illustrative to guide focus of the design stage rather than proposals. At every stage we will seek to align with ENA Open Networks and wider the DSO transition.
<b>Telecommunications</b>	No single solution represents an optimum rollout plan. Functional specification will be created which in turn will allow for a variety of technologies to meet this. The optimal cost option will be highly dependent on existing DNO assets and hence may vary across GB.
<b>Conclusions</b>	There is a requirement for the design stage to consider: flexibility, resilience and familiarity.

**Q1:** Has the project considered the interaction with ESO pathfinder projects?

*A pathfinder is an open expression of interest to the industry for solutions to specific technical challenges. These are then followed by a formal tender process for a range of technical options meeting these requirements.*

*The project is aware of interactions with the stability pathfinder project. However further consideration will be given to constraint pathfinders and reactive capability pathfinders in the future and look to integrate learnings from these in the design stage.*

**Q2:** Can the project more specifically signpost innovation projects compared with 'BAU innovation'?

*From a project perspective we are agnostic to funding mechanisms used to generate the innovation but are highly focused on the impacts these wider network changes have on the project. As a result of this feedback we will take this comment away for future reporting but are happy to answer any clarification questions at [ReStart@nationalgrideso.com](mailto:ReStart@nationalgrideso.com)*

**Q3:** The report has a heavy focus on existing arrangements, is this suitable?

*The project's intent is to create a process for procurement and enactment that is ready to be integrated from the end of the project. Initial impact analysis focuses around current structures, capabilities and processes as a basis for this transition in order to baseline the change requirements. and to understand what might need to change and why as we develop the structure and process for a future service. It is important to stress that we will continue to be open to new approaches and arrangements inclusive of exploring non-ESO led models which are a distinct change from the present scenario. This applies across OST and P&C outputs.*

**Q4:** Will the project consider the trip to house load service equivalent being implemented as part of a DRZ?

*We will work closely with the Resilience as a Service NIC project which is looking at options for implementing this approach. There is a possibility that this service could be procured in parallel or aligned with the Distributed ReStart service design to enable both options.*



## Procurement and compliance

### High level overview of the procurement and compliance viability report published in November

Topic	Key Discussion Points
<b>Workstream Aim</b>	Key aim of the report was to draw out potential options to take for industry consultation. Across the design stage we will review this variety of options for refinement.
<b>Strategy</b>	The project looks to: <ol style="list-style-type: none"> <li>1. Agree objectives.</li> <li>2. Review inputs from existing commercial models and processes.</li> <li>3. Define insights as an output from this and align with technical options.</li> <li>4. Refine these options through stakeholder engagement.</li> <li>5. Transition into normal Black Start procurement activities from project completion.</li> </ol>
<b>Worked Example</b>	There is an opportunity to improve competition and liquidity through breaking down technical requirements into component parts. The example of lots is illustrative only but shows a possibility of multiple routes to market and differing timescales for procurement overall.
<b>Timelines</b>	The project looks for synergies with normal procurement processes, seeking to compliment the tender trials. The first region which is likely to be in a position to benefit from Distributed ReStart procurement is the South East region. However, the project will support progression of any DER options being progressed through tenders.
<b>Code changes</b>	Principle finding with regards to code changes is that the principle requirement is for changes to be consistent across codes for Black Start from DER. Significant changes only required for ESQCR, Grid Code, Distribution Code and G99. Minor change requirements identified in STC, P28, P29, G5, BSC, DCUSA, CUSC, G91. Additionally, a horizon scan has been used to enhance awareness of future code changes.
<b>Conclusions</b>	Intent to develop further detail on code changes this year alongside requirements for the Black Start Standard. In addition, we will use stakeholder engagement to assess the viability of commercial options.

**Q5:** How will the project effectively manage the technical and commercial balance of options?

*The project emphasis is on consumer value which is appropriate technical capability at the optimal price. Procurement scenarios presented at this stage are indicative only and subject to stakeholder consultation. We appreciate the need to strike this balance and will consider the proposal of phased procurement changes as a means of achieving this.*

**Q6:** How will the project consider societal impact of the Black start from DER proposals?

*In the published report PESTLE analysis is used which includes consideration of societal impact and we will look to carry these considerations forwards into the design stages. Furthermore, our commercial processes will be refined through stakeholder engagement which will capture some of these societal challenges or benefits. Societal impacts will need to be considered across the project.*

**Q7:** In the future can the project consider community energy schemes as part of the restoration process?

*The project will seek to create a set of functional requirements which can be met by a variety of technologies and set out a roadmap for change. In addition, our broad stakeholder base means we will disseminate to and learn from these ventures.*

## Power engineering & trials

### High level overview of progress since viability publication

Topic	Key Discussion Points
<b>Case study refinement</b>	Since the viability report publication the PET workstream has refined the 10 case studies progressed to four case studies for detailed review.
<b>Live trial preparation</b>	There is ongoing work to contract with these case studies and to define practical plans for live trial delivery inclusive of costing the options. The overall timeline for case study delivery has been brought forwards to allow testing of ramp rates, block loading and self-starting capability separate from wider network restoration.
<b>Chapel Cross</b>	Chapel cross is the most advanced case study with preliminary contractual agreements, site meetings and manufacturer engagement over self-starting and block loading capability. This biomass plant enables testing of a steam driven generator.
<b>Other Case studies</b>	Galloway hydro generation is engaged providing the option for testing hydro generation capability. Legacy gas generator is engaged providing the option for testing gas generators capability. Glenrothes Region case study will potentially allow for testing of solar and battery technologies.
<b>Microgrid Controller options</b>	Currently undergoing a tender. Will review the cost benefit of automation in the longer term after design stage outputs.
<b>Studies</b>	Imminently commencing the transient studies. Restoration strategies are being considered inclusive of sequential and simultaneous switching actions and options which minimise switching requirements.

**Q8:** Will whole system energy solutions be considered? Including flexible assets such as electrolysis or aggregation for flexible demand?

*Our approach is technology agnostic, live trials will define functional specifications which any technology can be part of.*

*The project will take forward consideration of functional specification for flexible demand as well as generation as this could enhance competition, reduce costs and lead to wider innovation.*

**Q9:** How far advanced is commercial contracting for live trials?

*Contracting can be split into non-disclosure agreements, legal and environmental agreements, commercial remuneration for outages and auxiliaries, and indemnity/insurance options. All are being progressed, but NDAs and environmental agreements are more advanced at this stage.*

## Project Direction

The project has published a progress report which shows performance against the NIC bid criteria and demonstrates that work is on schedule, under budget and on benefit. In this report you will find discussion of stakeholder events, risks and dependencies, a forward plan and high level workstream performance summaries.

**Q10:** How can I access the project progress report?

*It is available on our webpage at <https://www.nationalgrideso.com/document/159801/download>*

## Conclusions

Though hosting this form of event, we can understand and build on the existing capabilities, systems and resources from across the industry. This will reduce the economic impact of our decisions and ensure the concerns of industry are appropriately addressed.

The outcomes of this engagement will be addressed in the next Stakeholder Advisory Group meeting and provide guidance for further investigation across all workstreams.

Further engagement will be announced through our mailing list (sign-up link available on the website) or through one of the many wider industry events we are attending (see our industry engagement calendar on the website).

The Distributed ReStart team would like to thank all delegates who have helped to deliver this event and look forward to continued engagement.

