Holly Lake

Electricity System Restoration Competitive Procurement Webinar
5th May 2022
South East region tenders

- This session will be recorded
- Please remain on mute during the presentations
- Type in your questions in the chat box
- Please refrain from asking questions that may identify you as a current Electricity System Restoration (ESR) Service Provider

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Presenters

Roop Phull, Senior Restoration Contracts Manager

Steve Miller, Senior Restoration Contracts Manager

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Purpose of the webinar

- ❑ Provide an overview of the tender process for electricity system restoration (ESR) services in 2022
- ❑ Highlight key changes from previous restoration tenders
- ❑ Invite feedback from interested service providers to improve the proposed process
- ❑ Take early questions about the process and requirements to enter this service
- ❑ Outline the plan for further tender rounds upcoming this year

We encourage you to ask us questions and provide your feedback now, and afterwards

"It is our commitment to work collaboratively with our stakeholders to respond to the changing energy landscape and incrementally evolve our process and restoration strategy to include newer technologies as their contribution to restoration is proven, to reduce the risk to end consumers"

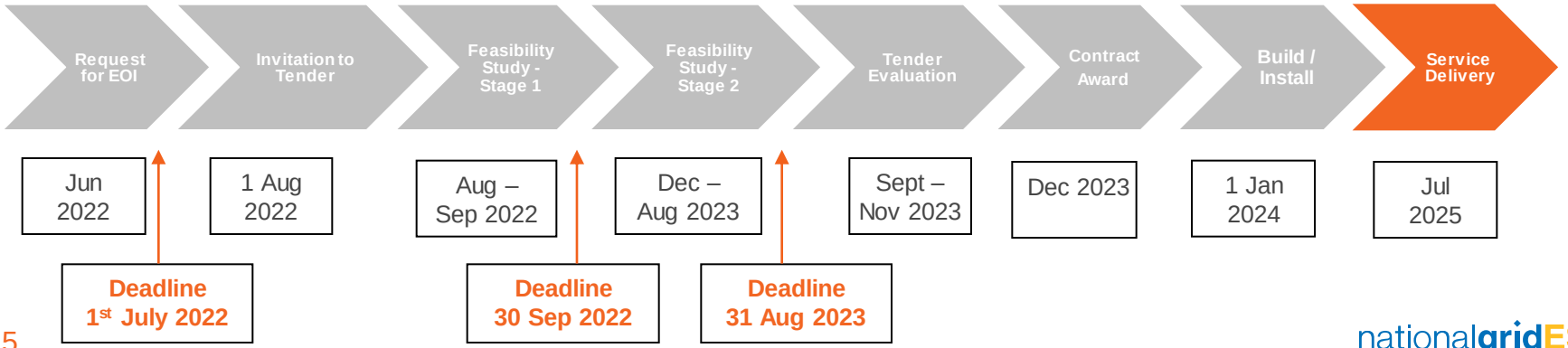
Session agenda

1. Tender plan for SE region
2. Proposed changes
3. Benefits
4. Tender market inc. Distributed ReStart
5. Technical requirements
6. Tender process
7. Technical assessment criteria
8. Upcoming tenders
9. Q & A

1. What we are doing for SE region

- ✓ Continuing with our commitment to move towards a more competitive and transparent procurement approach
- ✓ Removing barriers to market entry for new providers
- ✓ Introducing more technology types for restoration services

- As before, launching a competitive tender bid for restoration service providers
- As a minimum we will procure to maintain our existing capability in the region, plus any additional requirements to meet the new restoration standard (ESRS)
- Launch campaign in June 2022, service go-live July 2025 and contract expiry July 2030



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2. Proposed changes

Innovation meets BAU
Distribution Restoration to supplement existing process and help meet ESRS requirements

More routes to market
Service providers can choose to tender for: Full service requirements, or as an 'Anchor Generator', or as a 'Top-up Service' (for both Tx or Dx assets)

Reduced technical requirements 'Availability' reduced from ≥90% to ≥80% and 'Block Loading size' from ≥ 20MW to ≥ 15MW Final tender evaluation weightings changed from 70:30 to 50:50

Following stakeholder feedback FS2 moved from 6 to 9 months allowing more time to complete study and build time increased by extra 6 months

3. Benefits

Caveat - The requirements outlined may be subject to change if we get more insights from the DNO, the final outcomes from the Distributed ReStart project and ongoing development of ESRS

Other factors beyond our control:

- Ofgem/BEIS direction about restoration services especially regarding gas resilience for GB
- Changes in RIIO ED2 business plans in regard to restoration services
- Future outcome on the role of the DSO versus the new FSO direction
- Mainstream government policy changes.

New providers

- Introduction of more DER providers for Dx Restoration, in supplement to Tx connected providers
- New participants = more competition, ensuring more economic and efficient solutions for end consumers

New technologies

- Creation of more diversity and replace as appropriate, resilience on only CCGTs and interconnectors in these areas
- Initiatives for more wind energy providers to join this market

ESRS

- Adopting a more flexible approach, moving away from a set number of providers (3 per zone) to contracting instead for regional requirements to help meet the target (60% in 24hrs)
- Having a variety of technologies ensures more resilience in the service and opens the playing field to newer technology types

Cost efficiency

- Decisions must be economic and efficient in accordance with our licence obligations, whilst also recognising that costs could increase to support diversity and resilience.

Stakeholder led

- We are learning from past tenders, listening to stakeholder feedback by having longer contracts, lowered technical requirements for entrants to Distribution Restoration, clearer feasibility study requirements and early market signals for future bidders

4. Tender market for SE region

Regional requirement = [Demand vs Generation]

Existing generation includes CCGTs and Interconnectors

Potential for more wind generation, battery storage and biomass providers 10-100MW range

Why is this service of any benefit to you?

- ✓ Open to transmission and distribution connected energy resources
- ✓ Five-year restoration service contract
- ✓ Funding provided for FS2, capital contributions and availability fee
- ✓ Your plant can still provide other balancing services
- ✓ Service only required in the event of a partial or full blackout situation

What is Distributed ReStart?

Innovation project

3.5 year Network Innovation Competition (NIC) partnership: NGESO, SPEN, TNEI

Technical, organisational and procurement service designs have been delivered

Final year focused on demonstration

Objective

Use DER to energise the distribution and transmission system to compliment and expand on existing Restoration procedures.

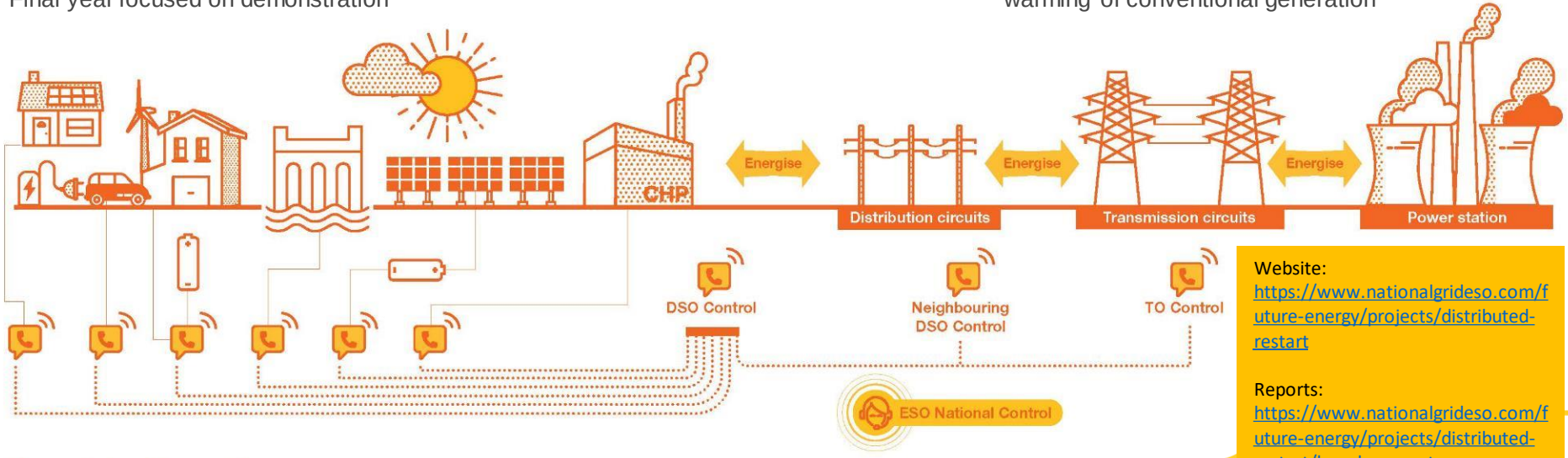
The project will design and demonstrate the technical capability, organisational capability and functional route to market for this service.

Expected Benefits

Future proof restoration through using DER, increasing the diversity of providers

Expected savings of £115M by 2050 through enhanced competition

Save up to 810,000 tonnes CO_2 through avoiding warming of conventional generation



Website:
https://www.nationalgrideso.com/future-energy/projects/distributed-restart

Reports:
https://www.nationalgrideso.com/future-energy/projects/distributed-restart/key-documents

What services do we need from DER to achieve a DRZ

Roop Phull

The total requirements for each DRZ will be site specific (depending on the scope of the DRZ and capability of DER within), but will consist of the following:

Service	Requirement	Description	Potential providers
Anchor generator (or power park)	Essential	Only one anchor generator is required per power island. Self-start and provide a controlled voltage source, able to energise the network to reach the next resource.	Synchronous generator, or other technology with required capability. A single point of connection is required with the DNO network.
Fast MW Control	Potential	May be required to supplement technical capability of anchor generator for example enhance block loading.	Battery, loadbank, flywheel, generator, others.
Inertia	Potential	Increase frequency stability of the DRZ and/or/ allow greater demand blocks to be picked up.	Synchronous generator, synchronous compensator (an inherent response is required without any measurement delays), others.
Frequency control	Potential	May be required to support the anchor generator to maintain frequency parameters during normal operation.	Synchronous generator, converter based sources with appropriate control, others.
Voltage control	Potential	May be required to enhance the MVAr capability of the DRZ to expand the island/energise to a higher voltage.	Wind farm, solar, battery, synchronous gen, Statcom, SVC, others.
Short circuit level	Potential	Increase the DRZ fault level. Facilitate protection operation at higher voltage levels or converter DER to connect	Synchronous generator, synchronous compensator, others.
Energy (MWh)	Potential	Enhance capability of the DRZ to restore demand above the capacity of the anchor generator. This could come from other any other gens on the island. (May be schedulable or intermittent.)	Schedulable MW - Synchronous generator (additional to the anchor), Intermittent resources (constrained and controlled by a set point),demand side management, others.

5. Technical Requirements

Full Service

- Time to Connect ≤ 2h
- Service Availability ≥ 80%
- Voltage Regulation
- Frequency Regulation
- Resilience of Supply:
  - Service ≥ 10h
  - Auxiliary Unit(s) ≥ 72h
- Block Loading Size ≥ 15MW (TBC with local DNOs)
- Reactive capability ≥ 100MVAr Leading
- Sequential Start-ups ≥ 3

Anchor Generator (Dx)

- Time to Connect ≤ 8h
- Service Availability ≥ 80%
- Voltage Regulation
- Frequency Regulation
- Resilience of Supply:
  - Service ≥ 72h up to 120h
  - Auxiliary Unit(s) ≥ 120h
- Block Loading Size ≥ 2MW
- Reactive capability 0.95 lead/lag pf minimum
- Short Circuit Level ≥ 1xDER MVA rating
- Sequential Start-ups ≥ 3

Top-up Service (Dx)

- Service Availability ≥ 80%
- Fast MW Control ≤ 200ms
- Inertia inherent MW to frequency response (no measurement delays)
- Frequency Regulation
- Voltage Regulation
- Short Circuit Level ≥ 1xDER MVA rating
- Energy (MWh) generate within 10s of request
- Resilience:
  - Service for minimum 72h duration
  - Maintain control & comms up to 72h

6. The tender process

- Follows the same stages as previous ESR tender rounds but with longer timings in some sections
- For potential bidders – concise route/set of documents to follow irrespective of service type: Full Tx service, AG or TuS
- For ESO – all the technical specifications for both Tx & Dx restoration services, assessment criteria and how the commercial stacking might work is still WIP
- FYI - copies of previous ESR tender documents can be found on our website:

https://www.nationalgrideso.com/balancing-services/system-security-services/black-start

6.1Expression of Interest (EOI)

To identify and confirm eligible tenderers ahead of the formal ITT

- EOI is a mandatory prerequisite to the tender
- One month submission period for potential providers
- Assessed by ESO using pass/fail questions
- Information submitted to confirm:
  - Type of Service (Full Service/Top up Service/Anchor generator)
  - Confirmation of technical characteristics and capability
  - Location
  - Ability to meet service commencement date
  - Acceptance of draft contract terms

6.2 Invitation to tender stage 1

ITT marks the start of the feasibility assessment process, during which the tender participants will be expected to produce and submit two sets of feasibility reports at stage 1 and stage 2

ITT Stage 1

- Two-month submission period for Stage 1 Feasibility Study Report (F1 Report) and proposed scope of works for Stage 2 (F2 Scope)

F1 Study / F1 Report – Overview

- Provide a first assessment around the provider's potential to become a Service Provider (technical capability, needs, timescales, etc.)
- Development / Delivery of the report not expected to be time consuming
- Highlight any risks/concerns the potential provider considers should be included in the more detailed study (F2 study)

6.3 Invitation to tender stage 2

ITT Stage 2

- Nine-month submission period for Stage 2 Feasibility Study Report (F2 Report)
- Complete F2 will form technical submission for tender
- F2 Study Process - Capped contribution - Price dependent on offering (Full Service / TuS / AG)

F2 Study / Report – Overview

- Confirm technical capability (validated by the OEM) and how will the 'Service' be delivered
- For some TuS, certificate of assurance might be required
- If applicable / necessary, develop network modelling to ensure the 'Service' will not cause any impact or damage to third party plant or equipment
- Provide an Implementation Strategy
- Provide a Commercial Offer for the Service

6.4 Tender evaluation

Tenders will be assessed on the tender participant's contribution to a restoration, based on specific capabilities or characteristics, with a weighting of (50:50), (Commercial : Technical).

- Technical scores – total of all scores given for each sub-criterion as per the assessment criteria
- Commercial scores – the commercial assessment methodology will be published. A percentage based on the tenderer's commercial submission in relation to all other tenderer's commercial submissions
- To combine the scores, the technical will be weighted to account for 50% of the total, and the commercial score to account for 50% of the total

7. Technical assessment criteria

The evaluations will create three price stacks with the assessment criteria for each detailed below. These tender stacks will be assessed in isolation

Full Service

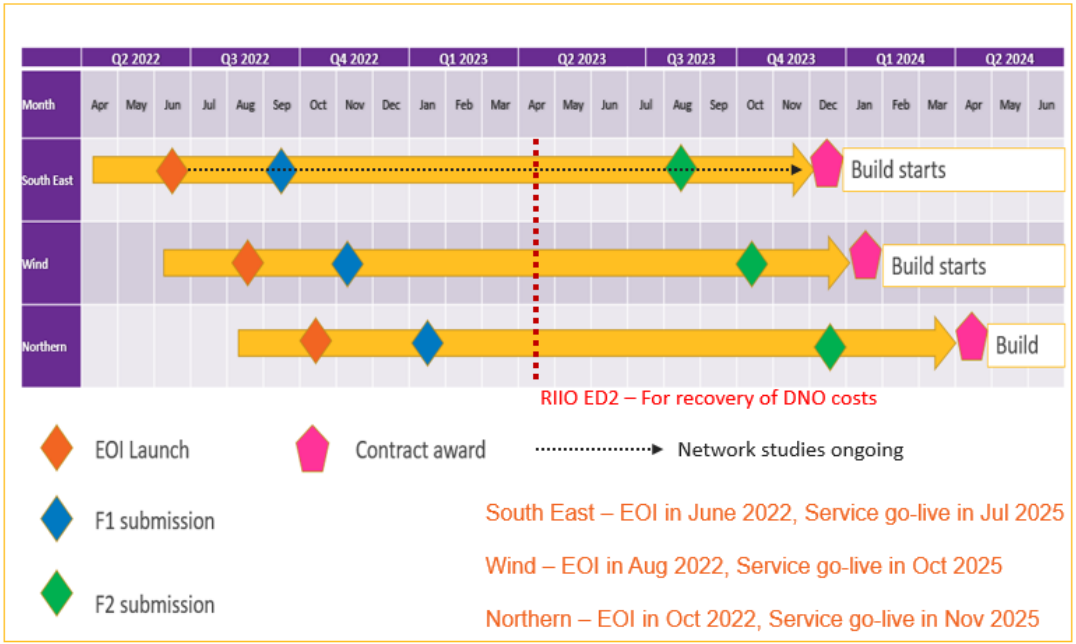
- Technical requirements Pass/Fail
- Connection to Network 10%
- Power Output 35%
- Resilience of Supply 30%
- Contribution to Inertia 15%
- Contribution to Restoration Time 10%

Top Up Service - TBC will be determined following consultation with DNO and 'Rules of Play' for feasible DRZ(s)

Anchor Generator - TBC will be determined following consultation with DNO and 'Rules of Play' for feasible DRZ(s)

8. Other Upcoming Tenders

ESR tender rollout plan for 2022 – Including DER for Distribution Restoration



Dates	Activity - Wind
Jun 22	Industry Consultation Opens
Aug 22	Expression of Interest
Oct – Nov 22	Feasibility Stage 1
Feb - Oct 23	Feasibility Stage 2 and Commercial Submissions
Jan 24	Contract award
Oct 25	Service commences
Sept 30	Service expires

Dates	Activity - Northern Tender
Aug 22	Industry Consultation Opens
Oct 22	Expression of Interest
Dec 22 Jan 23	Feasibility Stage 1
April - Dec 23	Feasibility Stage 2 and Commercial Submissions
April 24	Contract award
Nov 25	Service commences
Oct 30	Service expires

9. Q & A

Please use the chat function in Teams to submit your questions

Please do not disclose any information that could identify you as a restoration service provider

Questions will be published after the webinar

Let’s continue this dialogue

Please email us with your questions or further feedback:

commercial.operation@nationalgrid.com

To ensure you keep up to date with the Restoration Competitive Procurement Event, sign up for the Future of Balancing Services distribution list at the link below:
https://www.nationalgrideso.com/insights/future-balancing-services