

Electricity System Restoration (ESR) Competitive Procurement Event

FAQs

Executive summary

To ensure equal access to information and to support Tender participants we have included all questions and answers below that were asked during the Market Engagement Webinar held on the 27 September 2022. During the request for feedback period on previous tenders ran by the ESO we answered several questions from potential participants, we have included the ones still relevant below. Once the tender is launched this will be replaced by a formal clarification submission process.

Questions and Answers

*Questions marked with 'N' were asked during the Northern Region stakeholder webinar held 27 September 2022.

*Questions marked with 'W' were asked during our Wind Tender which commenced in August 2022.

*Questions marked with 'S' were asked during the South East region Tender that launched in June 2022.

Ref	No	Question	Response
N	1	How does the funding for capital contributions work? Will this be part of the providers commercial bid or is this separate?	Yes, the capital contributions will need to be included as part of your commercial bid. The ESO can settle Capex costs at the end of the build stage using a PO route. Your other Opex costs will be part of your availability payment price that is paid per settlement period, monthly.
N	2	Will green, low carbon technologies now be favoured over conventional technologies, and the evaluation process?	The ESO we will remain technology neutral, we won't favour any type of technology. This is a requirement driven process.
N	3	What are the telecoms availability resilience requirements to order for a generator to offer these restoration services?	The availability of communications should, as a minimum, follow suit with the availability of the service. We are expecting you to demonstrate to us that you will be able to communicate internally, for a minimum of 72 hours. We accept that outside your control, and by outside your control, we mean a comms path between yourself and the ESO control room or the DNO control room or the TO's control room is completely outside your scope, and it will be for us to manage that comms path. We are expecting providers to demonstrate to us that if we are under a national power outage event, that you will have the resilient comms in place

			that will align with your declared availability of the service.
N	4	Have the DRZ areas already been defined, or will they be driven by the locations of the generators and participants in the tender?	Correct. For Distributed ReStart type projects, the geographical location, and the combination of Anchor Generators with Top Up services will be possible, if feasible, within a given geographical location and electrical connection. They have not been defined yet and they will align with the market reaction to this tender.
N	5	Are you seeking solutions from the Yorkshire DNO area?	Northern Powergrid, yes.
N	6	Is the commercial offer submitted in ITT stage one considered final or can it be amended to any degree in the FS2 submission?	The final commercial offer is submitted as part of the last FS2 submission. For the first part, we're not expecting you to outline a lot of the commercial values, just what is needed to be eligible for the final second stage.
N	7	Are there any specific connection points system voltage that you prefer for this service?	No. This tender is driven by a technical requirement within your boundaries. We are accepting that if you meet the requirements, you will be considered.
N	8	Can BESS still operate in power exchanges markets if they are awarded a black start tender?	BESS are already operating in the restoration market. We expect battery power providers to guarantee that if they are asked to contribute to restoration during a national power outage event, that they can deliver against the contracted figures.
N	9	Can the ESO indicate how many existing providers are within an existing zone, and their technology type to incentivize tenderers to take part?	There is only so much we can share about the existing contracted providers. We are technology neutral and we accept that incumbent providers starting points will be different, but the requirement is also evolving in alignment with the electricity system restoration standard and different technologies is something that we are considering in our process, but ultimately it is a tendering process and different technologies or different providers may have a better starting point than others but that doesn't mean that new providers won't have a part to play or an opportunity to enter the market.
N	10	Will there be a formal consultation on the terms in the expression of interest stage?	It is not a formal consultation, but we will be sharing the draft terms at expression of interest stage and if there is feedback then we are most keen to hear it and to 11understand it. If any changes need to be undertaken, we will do that in full conjunction and it will be at the last ITT stage where we'll have the finalised terms ready for any legal checking that providers will need.

N	11	How is the regional requirement defined? Is it in relation to regional/DNO demand or transmission/demand?	There are discussions around demand in a specific change to Grid Code GC0156 about the implementation of the electricity system restoration standard. The current view is that it will be the demand aligned with the intended (formerly known as) Black Start Zones. They will move to become electricity system restoration zones and it will be transmission demand. This approach will evolve over time.
N	12	Is the intention that anchor generators and top up services work together within the DRZ to meet voltage frequency requirements of the network before the Power Island is connected into the wider grid?	The expectation is that the combination of an anchor generator and a top up service as a minimum will be responsible for the creation, development and maintaining of a power island volume in complete isolation from the rest of the world. And at some point, you will seek to reconnect that power island with an adjacent Power Island at DNO level and/or seeking to energise up towards the transmission level. Yes, maintain vaults, frequency, everything needed to continue or maintain the power island running.
N	13	We have already done a F1/F2 Scope/F2 study that you approved earlier in the year; can you confirm it is still valid?	If you wish to participate in the tender and have already completed one or more steps of the process, please notify us with your EOI, ESO will formally respond to confirm the validity of your study. We will minimise rework as far as possible.
N	14	Will this be open to new builds only or existing assets can participate as well?	Everybody.
N	15	Are there penalties for non-delivery and are they the same against all providers IE anchor and all top up services?	the biggest penalty any provider can suffer is if you are unavailable for the provision of the service, that will mean that your availability payments will seize accordingly. The second one is about derogation from the Contracted figures, namely the availability. E.g., If you are declaring that you'll be available 85% of the time then over time you end up demonstrating that you are not compliant with your declared availability, there are some penalties in place that are in the contract terms.
N	16	If the battery is fully discharged when the blackout happens, then BESS can't provide the Black start service. Will this be taken as unavailable or suffer the penalty?	If the blackout happens at the point in time where the BESS is in a position that is unable to fulfil its contracted position, what we expect to have visibility of this; the point in time at which the BESS was in a position that would prevent it from fulfilling its contractual obligations. We would expect to see visibility of the BESS availability ahead of the event.

N	17	If you're not available due to an outage that needs to be coordinated, who will do that?	If you are not available due to an outage, your availability payment will seize. If we as the electricity system operator conclude that all providers within a given restoration zone decides to take an outage at the same time, that would leave us in a depleted position, and if we see ourselves in a vulnerable position, we will proactively reach out to the key parties and understand what options we can pursue to resolve. We welcome all feedback on the terms during the request for feedback period, so that we can make any appropriate amendments ahead of the EOI. Please use appendix 5 of the Request for Feedback document to share this with us.
N	18	Are the draft contract terms available?	They will be available on the ESO website along with all relevant EOI documents on 17/10/22.
N	19	Are the technical requirements and assessment criteria fixed or could they change during the tender?	The technical requirements and assessment criteria we have published now are a proposal, and we have requested feedback from industry to help shape our approach. It may be that amendments are made following review of the feedback submitted. If this is the case, this will be finalised before EOIs are requested. No further changes will be made after EOIs are requested.
N	20	If a generator is unavailable due to an upstream DNO fault or other issue will the generator be penalised?	If the generator is unavailable due to an upstream DNO or TO fault, something outside their control, they will not be penalised.
N	21	Given the 50/50 (Commercial/Technical) alteration are you accepting that there should be more non delivery than 70/30?	One of the key drivers behind the move from 70/30 to 50/50 was removing barriers to entry for new technologies. If you are or if you were an incumbent provider and progressing with 70/30 on the commercial versus technical front, it was felt that that could potentially be a bottleneck for entry to market. The move to 50/50 is to indicate that we are valuing the technical aspects of the service you are planning to deliver more robustly so that we can enhance the score from a technical perspective.
N	22	Is availability measured on a HH (Half Hourly) basis?	Availability is measured on a settlement period basis every 30 minutes.
N	23	If a prospective provider proposed a solution for an ESR main unit including a synchronous condenser alongside a source of generation for example battery, would that source of generation be allowed to supply the synchronous condenser auxiliaries, or would an auxiliary unit be required?	If you meet the requirements, that is ok.

Ref	No	Question	Response
W	1	How does the wind tender interact with the region-specific tenders? e.g., can parties submit for both and what's the implication?	Yes, parties can submit for both if they can meet the minimum technical requirements.
W	2	Will you track MW output over the year (outside declared outage periods) to verify 80% 'availability' of the declared MW?	ESR availability is carried out on a trust basis and ESR providers should only declare themselves available if they can meet the technical parameters as per their Commercial Services Agreement.
W	3	What involvement do you expect OFTOs to have in this tender process?	The purpose of this tender is to procure restoration services from windfarms. OFTOs will be able to participate in the tender if they don't have the obligation under the SO-TO Code combining with an offshore windfarm. Therefore, if there is no obligation, they could offer a restoration service combining with an offshore windfarm to provide either a full service or a top-up service. We would expect the offshore windfarm providers to have this early engagement with the OFTOs.
W	4	Could you elaborate how stack ability with balancing services work? Does it mean the ESR volume needs to be taken out when parties bid into the balancing market?	No ESR volume is ringfenced and therefore parties can still provide other balancing services whilst being contracted for ESR
W	5	Can you please clarify launch and submission dates for consultation and EOI?	The EOI will be launched on the 8th August and the submission date will be the 5th September
W	6	Do you have a minimum MW capacity in mind for the 'regional' tenders? Presumably the 80% availability and 10MW block load criteria both would still apply	The criteria for the region-specific tender will be shared as part of the ITT Tender Part 1, correct for wind providers the 80% availability and 10MW block load will apply.
W	7	Are providers paid as bid? per MW?	Yes, pay as bid, but we ask for an availability payment that we will be paid monthly. The only consideration on MWs is during the technical criteria assessment, i.e., the more MW you can offer the greater score you will get in this assessment. More details on technical criteria and

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			weighting will be provided in the tender documents.
W	8	Would all locations carry the same weighting / score equally e.g., onshore, offshore, England, Scotland?	Yes, in short, all locations will carry the same weighting.
W	9	With respect to offshore wind providers, please confirm the point at which the ESO shall measure and validate any reactive lead contributions, in terms of the NETS/OFTO?	Windfarms will have to meet the requirements at the Grid Entry Point, as specified in the BCA. OFTO's must meet the requirements at the Transmission interface point as stated in the grid code.
W	10	Why are anchor generator and top up service provider requirements not included in wind EOI tender?	<p>Through the wind tender, the ESO is seeking to provide additional resilience requirements for restoration services, to bridge any potential technology gaps and by working with the industry, demonstrate that the provision of a 'full service' from Wind is feasible." The capability of providing anchor generator or top up services is open through the regular region-specific restoration tenders for any technology types, so long as they can provide the service by the stipulated deadlines. Another primary driver for full-service provision from wind is to tap into the 50 GW of offshore wind generation forecast for 2030.</p> <p>We are interested to hear back from potential wind providers around what they can provide so far as the full-service technical requirements go, and what investments they may need to add, in order to be able to meet those requirements and start the contract by December 2026 at the very latest.</p>
W	11	Inertia Definition for Converter-Based Technology	<p>The Active Inertia Power is now defined by in the updated Grid Code.</p> <p>The inertial response must be provided from a Grid Forming Plant for frequency changes in both directions. Inertia shall be defined as in the following equation:</p> $\text{Inertia (MWs)} = \frac{\Delta P \times f_0}{2 \times R_o C_o F}$ <p>Where:</p> <p>ΔP is the Active Inertia Power of the Grid Forming Plant for a frequency event of 1Hz/s (MW).</p>

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			<p>For frequency ramps events, ΔP must be calculated using the following formula:</p> $\Delta P = [\text{Average MW provided by the plant at Grid Entry Point across all recorded samples over the frequency ramp period}] - [\text{Initial MW provided by the plant prior to the event}].$ <p>RoCoF is the Rate of Change of Frequency (RoCoF) in Hz/s.</p> <p>f0 is the pre-fault System Frequency (Hz).</p> <p>The above equation gives acceptable inertia calculation accuracy for both synchronous machines and Grid Forming Converters for a 1Hz/s RoCoF events lasting for 1 sec.</p>
W	12	Determination of Minimum Inertia for a Grid Forming Converter	<p>In order to determine the minimum inertia for a GFC it is required to apply in time domain simulation 8 events and calculate the inertia for each of the events. The simulation time step should not exceed 1ms. The frequency events must be modelled as a change in the grid source frequency. The minimum inertia from these 8 events is "minimum guaranteed inertia".</p> <p>More details can be found in the updated Appendix 1</p>
W	13	How to decide the service availability calculation with a forward window > 10hrs	<p>Full details are yet being finalised. Further details will be shared as soon as possible.</p>
W	14	Clarify how coordinated sequencing requirements across different technologies/service providers would be considered in the wind tender with respect to the time to connect requirement	<p>We will take this into consideration, and this will be addressed further into the process.</p>
W	15	Is the wind restoration service to be provided at the offshore point of connection or at the onshore point of connection?	<p>The contracted service is measured at the Grid Entry Point.</p>
W	16	How is the role of the OFTO foreseen in the provision and contracting of the restoration service?	<p>OFTOs will be relevant. The framework is being reviewed for further clarity and further details will be shared as quickly as possible.</p>

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S	1	How do I get paid in the event of a National Power Outage?	Like as it happens currently. There is a process for generators to get cost recovery of any fuel utilised by their asset to provide restoration. This process is covered in the Balancing and Settlements code.
S	2	Will submissions that deviate from the technical requirements be allowed?	We want to remove or minimise barriers to entry and are proposing to consider EOI submissions where the provider can meet almost all of the technical requirements. Where this is the case, EOI submissions are not guaranteed to be accepted, and it will be at the discretion of ESO assess whether the provider would be able to contribute to a restoration. Where applicable, reduced capability will be scored appropriately in the technical assessment (and may be given a zero score for that section).
S	2	We note that the block loading requirements have been revised, can you provide the context for this?	The block loading requirements have been revised to: <ul style="list-style-type: none"> - Reflect the current capability of DNOs to switch in smaller sections of network. - Reduce risk to plant Reduce/remove barriers to entry
S	3	How is shutdown defined with respect to the 2-hour restart time? Is the time from a blackout or from the point a station can safely shutdown systems?	As per the Grid Code Definition, this is "... the ability to Start-Up from Shutdown and to energise a part of the System and be Synchronised to the System upon instruction from The Company, within two hours, without an external electrical power supply".
S	4	Is the funding cap across both F1 and F2 studies?	As per the current process, the provider is expected to fund the F1 study themselves.
S	5	What happens to the tender process if there are less bids than demand?	We will know at EOI stage how many tenderers to expect and will be able to assess then, however, we don't expect this to be the outcome
S	6	What information on tender responses will be published during the process?	We won't disclose any information that could identify a ESR provider,

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			but will aim to publish information about awarded contracts, for example, technology types, total MWs, total cost etc.
S	7	How will the feedback on the commercial submissions work in practice? Will there be a chance for resubmission of a Best and Final Offer?	We will aim to share feedback on total costs and may employ a third party to scrutinise designs and capital costs. We are currently proposing that there will be the opportunity to resubmit the commercial element after clarifications - all providers will be given the same opportunities.
S	8	Is it expected that all capital costs will be recovered through the commercial offer, or can this be defined by the bidder?	<p>We expect the capital costs to be open book, and to be recovered based on invoice evidence. Capital costs should not be recovered through the availability fee.</p> <p>If the provider does not wish to recover all of the capital costs (for example, will partially recover via another revenue stream), they should still state the full costs of all associated works in the commercial submission for review.</p>
S	9	We have previously done a F1/F2 Scope/F2 study that you approved earlier in the year; can you confirm it is still valid?	<p>If you wish to participate in the tender and have already completed one or more steps of the process, please notify us with your EOI, ESO will formally respond to confirm the validity of your study.</p> <p>We will minimise rework as far as possible.</p>
S	10	Will I be able to ask technical queries confidentially?	<p>Yes, you will be able to use the query form and mark your query as confidential. ESO will provide comment where we can but will not input into or steer decisions.</p> <p>Queries submitted marked as confidential will be reviewed, if ESO does not agree that it is appropriate to respond bilaterally, we will notify the tenderer that we will anonymise the answer and publish it and will give the Stenderer the option to retract their question.</p>

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S	11	I've already completed an F2 which I think will be valid. I think I could offer a better value solution in line with the revised technical requirements, but this would need design rework. Can I request funding for further design rework?	<p>Please notify us within your EOI. ESO will assess whether further funding for rework is justified, and if so, you will be asked to submit a scope for the additional work by the F1/F2 scope deadline.</p> <p>ESO will have no obligation to accept requests for further funding and will reject proposals for work that could create a competitive advantage.</p>
S	12	Will the tender programme be impacted if another tenderer falls behind?	The timeline will be fixed, and ESO will ask all interested parties to commit at EOI stage to meeting it. The overall timeline will not be impacted if one tenderer does not meet it.
S	13	Is there a standard contract duration or is it up to the bidder to propose? If so, what are the parameters?	<p>The contract duration will be standard, though if a provider can commence the service earlier, we invite them to notify us during the tender, and if efficient to do so, they may be able to extend their contract forwards.</p> <p>We are currently considering 5 years for the contract durations.</p>
S	14	What exactly is the definition of Sequential Start-ups?	Following a ESR event and during the re-instatement period the Power Island created by a ESR Service Provider may collapse. The expectation is that a ESR Service Provider will be capable of, consecutively, re-starting and re-establishing the collapsed Power Island a minimum number of times (3).
S	15	Who will pay for conducting the F1 & F2 studies?	The F1 is a short study that we aim to streamline with our submission template, and is a summation of current knowledge, we expect the tenderers to cover the costs. Subject to an approved F1 and F2 scope, and once contractually in a formal agreement, ESO will fund the F2 report up to a cap of £150,000 for a primary service, which will be reimbursable following completion of the study (including responses to

Ref	No	Question	Response
			clarifications) and following submission of invoices and evidence of costs incurred.
S	16	Are we able to meet the requirements by aggregating services? If this is a yes, then would they need to be in the same location?	Aggregated submissions will also be considered, providing the contracted Service is delivered and can meet the technical requirements at one point of delivery.
S	17	What information on tender responses will be published during the process?	We will not publish any tender responses or submissions. We will, where possible, publish anonymised metrics that may include total cost, number of contracts agreed, number of participants, technology types, MWs etc.
S	18	How would ESO interact with group-parties during this process, when dealing with joint proposals?	We advise that any combined proposal follows a 'lead party' structure, where the lead party is the point of contact, and organises any supporting contracts necessary with other parties.
S	19	How will the status of acquiring required planning permission for potential providers be assessed?	<p>We ask that during the F1 submission, providers are to provide proof of engagement with relevant authorities regarding consents (to be included as part of the submission template).</p> <p>In addition to the evidence provided in the F1, we also ask for evidence of application(s) being made as part of the F2 submission (will also be included as part of the F2 submission template).</p>
S	20	What do you mean by 'network assessments' at the EOI stage?	This will be performed by NG ESO in the event that your EOI submission highlights areas of limitation in the technical requirements. ESO will assess whether the specific proposal will still be able to contribute to a restoration when considering the limitation. No action will be required from the provider.
S	21	Should a potential Service Provider disclose its admissible rate of block loading (example: 20MW every 2 minutes)?	The actual rate will be driven by the providers needs along with the local DNO's switching ability. This will however be detailed/confirmed throughout the F1 & F2 stages (sizes of blocks, time between blocks, any hold points, etc.)

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S	22	Will there be provision to recover costs for testing?	It would not be economical to carry out testing for each proposal at F2 stage. We ask that a Statement of Capability from the OEM is provided as part of the F2, in lieu of pre-contract testing.
S	23	Is there the ability to drop out of the process following making an EOI?	You can withdraw from the tender process at any point (prior to a contract being signed). We do however ask that you give us notice of this withdrawal. If you would like to withdraw from the process during the F2 study, we advise that you ensure you complete and deliver the study to remain eligible for reimbursement.
S	24	Is mutual agreement required by both National Grid ESO and the party who is proposing the service in selecting the Study provider?	NG ESO will not approve study providers, but do, as part of the process, agree on a scope of works. We do expect the study provider to have the relevant knowledge and expertise to undertake the study, which is covered in the F2 side letter and terms. The obligation is on the potential provider to ensure the study provider is appropriate.
S	25	How is extra redundancy valued – multiple units providing the Service compared to a site with only 1 unit?	We require a high service availability ($\geq 90\%$) to cover for planned/unplanned outages. We also ensure that we have sufficient Service Providers contracted within each zone to cover for random faults.