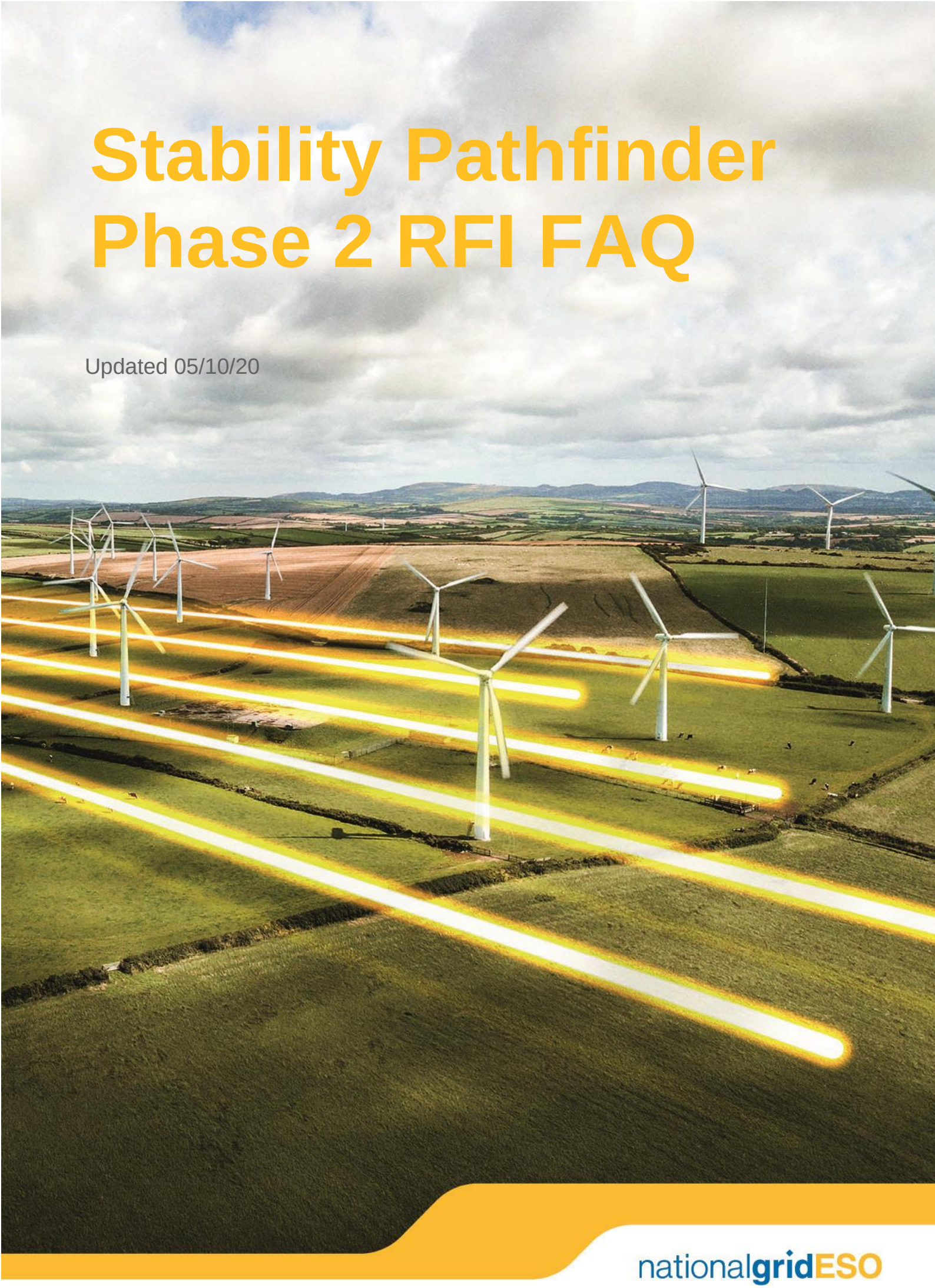
Stability Pathfinder Phase 2 RFI FAQ

Updated 05/10/20



nationalgridESO

Contents

Introduction

This Document contains the question submitted at or before the RFI from July this year. We have update some of the response to reflect the latest information. As the EIO progresses we will publish answers to common questions we are receiving.

If you want to ask us a question, please send it to:

box.networkdevelopment.roadmap@nationalgrideso.com.

General

1. **Will the ESO be running future tenders for Stability after phase 2 completes? (updated 03/07/20)**

Yes, parallel to phase 2 tender, we will be defining our stability needs for the whole of the GB system. Our ambition is to run annual GB wide procurement exercises after phase 2 completion.

2. **What plans are already in place in relation to the comment relating to future tenders moving closer to 'real time'? Is this likely to be the last auction for longer term contracts? Does ESO believe the future requirement can then effectively be met by existing assets? (updated 03/07/20)**

We see the future of stability to be managed through a mixture of long-term contracts (e.g. through stability pathfinder) and a close to real time market. Our pathfinders are 'learning by doing' approach, we will further improve and develop future process based on pathfinder learnings. The slide 13 in the RFI relates to our plans for these long-term contracts for GB. There is work ongoing with the aim of creating a short term stability market which will provide commercial opportunity for all stability products to participate. We are in the very initial stages in the thinking of stability market. When we are able to do so we will share more information on this.

3. **Is the 132kV connection requirement going to be enduring for the future GB wide procurements or is it purely applicable to the Scottish Phase 2 tender? (updated 03/07/20)**

Our position at this stage is to keep the 132 kV and above rule as lower voltage solutions are less effective to address our transmission network's stability needs. However, once we have defined our regional needs there could be a case to review this.

4. **What is the interaction with this Pathfinder and the Constraints Management Pathfinder (CMP)? (updated 03/07/20)**

There is no direct interaction between these two pathfinders. Stability pathfinder is looking to raise the overall stability characteristics of the system. CMP is looking to establish the thermal limit at which generators would go unstable and reduce the output rapidly such that its equivalent to pre-fault constraints management. Any questions related to constraints pathfinder can be sent to box.networkdevelopment.roadmap.com with CMP in the email subject.

5. **Why have there been so many delays in getting this RFI out? How will NGESO avoid further delays? (updated 03/07/20)**

We have experienced some delays in the phase 2 process, compared to our Network Development Roadmap update, due to a few factors. We had a delay to the phase 1 procurement based on providers' feedback on timescales being very tight. We also wanted to make sure we took into consideration and incorporated any learnings from phase 1 ahead of launching phase 2. With the impact of COVID 19 we also needed to consider and review how we could run this tender with most of our teams working remotely. The RFI stage of the process was added in as a direct consequence of us wanting to ensure there were no negative impacts of COVID-19 on any party's ability to tender.

6. **Will the EOI feasibility Assessment include an economic assessment? Or will that be delayed until the commercial tender process? (updated 05/10/20)**

The EOI pack contains the draft assessment methodology of how we will assess the commercial tender. This is open for consultation and a final version will be published based off the feedback we receive.

7. **What are the links between your NOA Pathfinders project and your Early Competition Plan project? (updated 05/10/20)**

In our RIIO-2 Business Plan we committed to continuing to progress and enhance our Pathfinders. Our Pathfinders seek to satisfy specified Transmission network needs through competition by exploring whether more economic alternative solutions are available. We also noted that Ofgem has asked the ESO to develop an Early Competition Plan to set out how early competition for onshore transmission could be introduced in future.

Therefore, we are progressing both our Pathfinders and our Early Competition Plan work in parallel at this point time. Both are being developed separately with engagement from stakeholders and we are using the lessons we learn through our Pathfinders to not only improve the future tender processes we have planned for our Pathfinders but also to help inform the development of the Early Competition Plan.

Whilst the Pathfinders are a form of early competition in their own right they are not being undertaken due to (or within the scope of) the Early Competition Plan.

Our Early Competition Plan submission scheduled for February 2021 will however start to consider what the implementation of early competition could mean for the future of our Pathfinders but until such time a decision is made by Ofgem on the implementation of early competition we will be continuing to progress and enhance our Pathfinders as per the commitments within our RIIO-2 Business Plan.

We appreciate your ongoing engagement with the development of both our Pathfinders and our Early Competition Plan.

Requirement

8. **Can you clarify the calculation methodology for short-circuit current, e.g. IEC60909 as generator block, which definition in IEC60909 fits to the RFI "the fault current is defined as the minimum RMS fault current seen between 5ms after a 3-phase symmetrical fault and the fault clearance (140 ms);" (updated 05/10/20)**

We have stated a period that we propose to consider in our commercial assessment for all proposed solutions. In light of this comment and other RFI feedback, we have reviewed this and updated the text to avoid any confusion.

9. **Why has the SCL definition been changed from 5ms to 140ms? (updated 03/07/20)**

Refer to the previous question.

10. **Why has your MVA requirements changed so much since last summer? (updated 03/07/20)**

Since the last publication we have reviewed our requirements. We have taken account of the solutions procured through Stability Pathfinder phase 1, some TO assets that are planned for other network needs drivers but will contribute to our stability needs. We have also reviewed the underlying studies to ensure we are procuring at an appropriate level.

11. **Can you provide a technical description of what 'short circuit need' is? What causes it, what is needed to rectify it. (updated 03/07/20)**

In our analysis of system stability, we considered several technical parameters that were traditionally provided by synchronous generators including short circuit current, synchronising torque, dynamic voltage

support and regional inertia. With declining level of these we expect to see several operability challenges on the system including; converter instability, TOV, voltage instability, voltage dips and local frequency swings. Through our analysis we see that sufficient short circuit level enables us to address these operability challenges. We therefore decided to require a solution to contribute to all these operability challenges through meeting our technical specification, but we would value the SCL and inertia contribution in the assessment methodology. We also note that by considering the contribution the remote nodes we are also valuing synchronising torque.

12. **Will the 90% availability need to be guaranteed? Is it a yearly evaluation? (updated 05/10/20)**

As part of contract terms in EOI, we have shared our thinking on the payment mechanism to ensure this level of availability.

13. **Does the availability requirement have a correlation with wind or renewables penetration? If that's so, would it be fair for a wind farm to offer the service just when there is windy as it's when the service is more necessary? See Eirgrid in Ireland for their ancillary services programme (DS3) increases the payments using a scalar based on non-synchronous penetration at the time of enacting the service. Higher level of non-synchronous penetration, higher the revenue for a provider. (updated 05/10/20)**

There is some correlation between wind output and the level of SCL need. However, there are times where there is a stability requirement, but we expect a low wind output. As we need solutions to contribute in all conditions, therefore we have set a 90% availability condition. Technologies that cannot guarantee this 90% availability may need to add additional equipment (e.g. storage) to deliver the required availability. Inertia availability will be treated separately and will be a tender parameter for the provider to specify.

14. **Can you please explain the fault current after 140 ms means and how it will be evaluated? Will this be a calculation with the transformer impedance and the saturated transient value instead of the sub transient? (updated 05/10/20)**

We are considering the transient fault current contribution. We have tried to be precise in what we are requesting as different definition of SCL exist. We have provided further information in the feasibility study guidance document for simulations. Refer to Q8.

15. **Is there any value for Inertia requirements for each location? (updated 05/10/20)**

There are no location specific inertia requirements being considered for this tender. However, solutions with inertia will contribute towards our national need for inertia and so will be valued with this in mind. Detail of how this will be valued is shown in the draft assessment methodology.

16. **Will there be a definition of simultaneous injection of fault current and inertial response from VSM providers? (updated 03/07/20)**

Yes, you will be expected to support a simultaneous voltage and frequency event.

17. **Do you see the requirements, for any of the eight locations, being met from providers from outside that immediate area? (updated 03/07/20)**

Yes, it is possible. Solution at any site (outside of the 8 locations) will contribute to the identified locations as per their effectiveness value. Our tender assessment will determine what is the best combination of solutions that meet our needs at the identified locations.

18. **Which year between now and 2030 is your network model based on? (updated 03/07/20)**

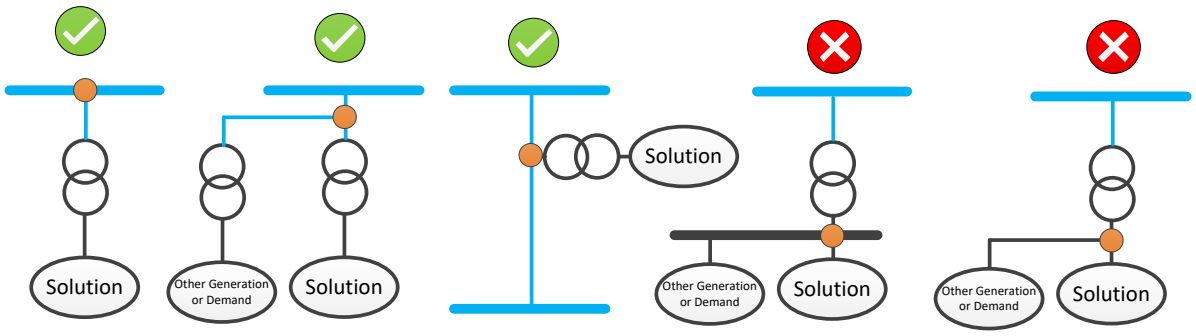
Our network models take a view of expected future network upgrades.

Tender eligibility

19. Can it be clarified on voltage connection levels as in Scotland many sites connect at 33kV with SGTs provided by the TOs - will this be considered a 132kV or above connection? (updated 05/10/20)

Solution must be 132kV or above, the reason for this requirement is that the effectiveness of solutions drop significantly with additional impedance (from transformers). We therefore set this limit to both set realistic expectation from providers and to simplify the assessment. The solution must be directly or radially connected to a point on the Scottish transmission system at 132kV or higher.

Examples of what will be allowed:



20. Will you be expecting a minimum level of TRL for the solutions? (updated 03/07/20)

No, however providers will be expected to demonstrate at the feasibility stage that they can meet some aspects of the technical specification. If you are considered a technology with a low TRL we would encourage you to speak to us before EOI so we can ensure there are no undue barriers to entry.

21. Can you submit multiple technological solutions to the EOI? (updated 03/07/20)

Yes, you can submit multiple option into the tender for different technologies and locations. You should make clear if any of your solutions submitted are mutually exclusive with each other - e.g. if you two options of size for the same asset and would only build one.

22. Are services open for 33kV connected battery storage projects too? (updated 03/07/20)

See answer to Q19

23. Will wind turbines that normally generate at 0.69kV via a step-up transformer to 33 kV and then a subsequent transformer to 132 kV or 275 kV (or 400 kV) be considered as 'transmission connected'? (updated 03/07/20)

See answer to Q19

24. Battery storage sites who has secured TEC through BEGA however 33kV connected and among many other projects on 33kV side of SGT - Are these eligible to participate? (updated 03/07/20)

BELLA and BEGA are embedded connections in the distribution networks and not eligible to participate in this tender.

25. Could please elaborate more regarding the need of storage (due to removal of 0MW export condition) for wind/solar facilities willing to participate? (updated 03/07/20)

We are not requiring storage, but we have had some feedback that converter-based solutions may need some form of storage to provide some aspects of the specification (particularly inertia). It is up to each provider to consider how their designs meet our technical specification and availability.

26. Why was the 0MW export requirement removed and what additional technologies and capacity is expected to benefit from this move? (updated 03/07/20)

0 MW requirement was removed to widen tender participation. However, we are still looking for additional capability to what current and future BM outlook is expected to provide. By removing 0MW requirement and defining additionality we can consider solutions who are generating a level of MWs in the BM but have changed their running modes or control systems or installed new equipment to meet the additionality criteria.

27. What feedback will participants received from ESO upon submission of the EOI? How strict will the pass or fail decision be? (updated 05/10/20)

We have published pass/fail criteria in the EOI pack. EOI participation is needed to progress further in this tender exercise.

28. I have an existing unit that provides Stability but cannot be adapted to operate at 0MW. Can this participate in this process? (added 12/10/20)

No, as this does not meet the criteria of additionality. However, if the unit is able to reduce is MW output while being able to provide Stability, it may be able to participate in Super SEL.

Network owners related

29. Are network upgrades with "proceed" status in the NOA assumed to go ahead when you are calculating effectiveness? (updated 03/07/20)

Effectiveness is declared as a single number to simplify the assessment and to make the process simple and transparent for providers. Here we have used a mid-decade average view of the network. We accept that in reality the value will change within year as outage are taken and as new transmission assets are built/ changed, however we believe in this a simple and transparent process outweighs the need for complete accuracy.

30. Are there any limitations to the technology solutions that TOs can propose? (updated 03/07/20)

TOs can submit any solution to the tender consistent with their licence obligations, in the same manner as other parties.

31. Can TO's compete in the RFI? (updated 03/07/20)

TOs and commercial providers will be considered through two parallel processes through this pathfinder. Commercial participants will follow EOI submission whereas TOs will follow System Requirements Form (SRF) submission - Refer to RFI slide # 18. All stakeholders including TOs are invited to feedback to the RFI.

32. How will you ensure the TO and commercial solution are treated equally? (updated 05/10/20)

All commercial and TO solutions will need to be submitted to the ESO by the end of the EOI stage. After this no new solutions will be considered from commercial providers or TOs. This will be completed before we give any information to the TO as part of the connection review process so the TO will not be able to use any of this information to influence their solutions.

We have sought assurance from TOs to accommodate connections on their system according to their license obligations. The ESO has sought assurance that the TO does not have and is not perceived to have a conflict of interest with regards to this. We are also implementing any learning from Mersey Voltage pathfinder where TO solutions were compared against commercial solutions.

Commercial Assessment/ Cost Benefit Analysis

33. **Given batteries and other converter technologies are welcome to participate, we would like clarification on how the short circuit level requirement is going to be technology neutral and not play in detriment of these technologies. At the moment, requirement look mostly suitable to synchronous technologies. This will then result in a very similar outcome to what NGESO had in Phase 1. (updated 05/10/20)**

We are aware that Virtual Synchronous Machine/Grid Forming converter-based technologies potentially have a current limit that can reduce their SCL contribution. However, they can also potentially provide a greater contribution for remote faults where this current limit is not hit. We have received some feedback on this in the RFI and we have accounted for this within the assessment methodology so that all plants performance is reflected in both how it contributes to local faults and to faults in the wider network. We want to ensure that there are no barriers for Grid Forming Technologies to participate.

34. **Can you repeat the point about updating the table for grid forming invertors please? (updated 03/07/20)**

Refer to the previous answer.

35. **How will you assess the short circuit contribution from a proposed supplier? Will it be the total contribution at all 8 of the identified nodes considering the effectiveness factors you have published or something else? (updated 05/10/20)**

    Each solution will contribute to needs at all 8 locations. We will use the effectiveness numbers in this calculation. We have published an updated example in the effectiveness spreadsheet V3 to demonstrate how SCL contribution will be considered.

36. **If a project is holding TEC for a connection in the future, are you assuming it will go ahead from a stability requirement perspective and also (if it submits a tender) from an additionality perspective? (updated 05/10/20)**

Please refer to additionality slide in the EOI slide-pack for an explanation of what we would consider additional for participation in this tender.

37. **Please can you clarify an earlier remark: Confirm that if you are holding or have accepted a connection offer for your project but the project is not yet built or connected that you will be assessed as providing 'New' contribution to SCL? (updated 03/07/20)**

Refer to the previous answer.

38. **Will there be a chance to comment on the methodology before it is finalised? (updated 03/07/20)**

Yes, a draft methodology will be published at the EOI stage and we will be asking for comments before it is finalised.

39. **You mention that number of years provided in the tender will form part of the economic assessment, but discourage applying for grid connections. How will length of service be weighted? as surely this gives solutions already provided an unfair advantage? (updated 05/10/20)**

We are reviewing this based on the feedback so far. We understand that some parties may be applying for connections, but it is a risk for those providers to consider as the tender outcome may not be in their favour. For parties without connections, we are proposing to coordinate a connections review with the TOs and provide information to the provider to consider in their commercial tender submission. We are trying to strike a balance between someone paying for a full connections cost ahead of the tender vs a feasibility

study cost which would inform their commercial tender submission. We have published scope of TO connections review process at the EOI stage.

40. **How will you value earlier delivery when perhaps the need case is less? i.e. being ready in 2021 but SCL level requirement then much less than 2030. (updated 05/10/20)**

We are reviewing this based on the feedback. We are not looking to change our latest start date of 2024 and end date of 2030. Please see our draft assessment methodology published at the EOI stage for more information.

41. **Is the assessment criteria for phase 2 aligned with Net Zero strategy? How different is it from the one adopted in phase 1? (updated 03/07/20)**

We have a license obligation to ensure safe, reliable and economic operation of the electricity system. Based on this obligation we cannot discriminate based on technology and therefore not able to directly consider CO2 emissions in selecting solutions. The procurement of cost effective stability services will allow us to operate the system with more renewable generation and limit system operation actions to intervene in the market. This aligns with our zero carbon operation 2025 ambition.

42. **Is inertia part of the requirement or assessment for phase 2? How will inertia be assessed? (updated 05/10/20)**

Inertia will be part of the assessment but will contribute to the national inertia need rather than a requirement specifically for this area. We have set a requirement of 6000 MVA.s which could be met by participants in this tender. The assessment will look to minimise the cost to meet both SCL and inertia requirements. This may involve only buying part of the inertia requirement through pathfinder solutions and meeting the remaining requirement using units in the Balancing Mechanism. Please see the draft assessment methodology for further details.

43. **Are ESO missing a trick by not giving equal weighting to infeed and inertia in phase 2? (updated 03/07/20)**

We intend to make the weighting between inertia and SCL reflect the actual value of the two parameters to the ESO based on our regional and national stability needs. We have provided details of this in our draft assessment methodology as part of the EOI. Refer to previous question.

44. **From a previous question, so you are not looking for a service to provide the whole of the short circuit contribution required at a single node as the total is the contribution provided from all areas will compound to form the total service you need. (updated 03/07/20)**

Refer to Q35.

45. **Will you be releasing any further information on how dynamic voltage support will be valued? (updated 03/07/20)**

In the tender assessment, we will only be valuing short circuit current and inertia. The stability solutions are required to meet the technical specification which asks for instantaneous reactive current injection and absorption. The static reactive range which is based on steady state reactive consumption can be declared in the contract. We are considering this in our contract payments but this will not form part of our tender assessment.

46. **Will ESO take account of the benefits of multiple small projects which are not subject to common mode failure vs large projects subject to single point of failure/tripping? (updated 05/10/20)**

We are not assigning any benefit to multiple small projects over large projects.

47. **Is electrical consumption of the proposed solution taken into account in the offer evaluation? (updated 03/07/20)**

We will not consider the volume of electrical consumption of a solution as part of the economic assessment.

48. **How will you ensure a like for like comparison with the TO bids - for example them do not have to pay TNUOS charges and energy costs are socialised. (updated 03/07/20)**

For TO solutions we will be looking at the total cost to consumers, which would mean including a calculation of socialised energy costs. We are looking to ensure consistency wherever possible, with the aim of accurately reflecting the cost to the consumer of options proposed by all parties.

49. **The tender is looking specifically for short circuit level; however it is acknowledged that the contribution of solutions to national inertia will be valued and more information will be given at the EOI stage. Will contribution to voltage support also be considered? (updated 03/07/20)**

See Q43 & Q45

Connections

50. **Will you consider planning consents as part of the feasibility of projects? (updated 03/07/20)**

We are not planning to consider planning consents as part of the feasibility study of projects. However, should a solution be successful, it will be listed as part of the Post Tender Milestones. The full list of PTMs will be shared in the EOI.

51. **Will mod app fees be required to be paid by providers who need to modify their connection (for example if the MSA needs updating)? (updated 03/07/20)**

If changes are required to the connection agreement to be able to deliver the project, then the regular process to amend the agreement will need to be followed including fees.

52. **Will participants be required to have legally-binding land rights when bidding? (updated 05/10/20)**

This will not be a requirement as part of participating in the tender, but as part of the tender submission, providers are required to provide an indicative set of Post Tender Milestones outlining the steps necessary to complete their build / conversion project with associated timescales. Should a solution be successful, the PTMs will be finalised in the contract. A list of possible items that will be required as part of the indicative PTMs is included in the Heads of Terms which is published as part of the EOI.

53. **Are there any pre-requisite tender requirements around planning consent or necessary land rights? (updated 03/07/20)**

Refer to the previous question.

54. **How will you manage the fact that connection applications are likely to be submitted by developers very soon in aid of securing their connection? (updated 05/10/20)**

We do not require a connection offer as a pre-requisite for entering the tender. We are working with the TOs to streamline any connection queries and tender interactions.

55. **Sorry, my question re phrased is developers will apply NOW with a view to secure, if this is done will it freeze out other applications and steal capacity. (updated 03/07/20)**

We understand that developers will apply now for connections, land rights and others. We cannot stop that from happening and we do not want to introduce provisions that have an inappropriate impact on prospective Users rights and obligations. However, we do not require connections as a prerequisite for the tender.

56. **It may not be a pre requisite of the tender, but developers will press ahead to secure grid and land rights, how will NG manage this to stop developers locking up land/grid well ahead of the tender (updated 03/07/20)**

We are not able to stop participants to do this. We are trying to ensure that participants are not disadvantaged in the tender assessment due to not having a connection offer or land rights.

57. **What confidence does the ESO have that the Scottish TOs can deliver new connections in a timely manner? (updated 03/07/20)**

We work with the TOs in Scotland to ensure that connections can be developed and delivered as efficiently as possible. Connections will be delivered in line with the provisions of our respective licences, the CUSC and individual Bilateral Connection Agreements.

Connections review

58. **Will you provide the assumed cost of connection for each connection type and level during EOI stage? (updated 05/10/20)**

This will form part of the connections review with TOs. We have published a scope of the connections review at the EOI stage.

59. **Does ESO intend to fund the connections review? (updated 05/10/20)**

No cost for the connections review will be passed on to providers and will be covered by the ESO.

Tender technical feasibility study

60. **Does ESO intend to fund feasibility studies? (updated 05/10/20)**

Feasibility study will be undertaken and paid for by providers to demonstrate meeting key technical specification.

61. **What costs are participants likely to be required to cover as part of the feasibility study, including the connection assessment? (updated 05/10/20)**

Feasibility study costs are expected to be covered by the participants. The connections review process will be coordinated by the ESO and providers will not be paying for it.

62. **Are you expecting any models of performance to be provided at this stage or results from studies? the level of fault contribution for different residual voltages during a fault as per type b FRT faults may be helpful in the consideration of GFC effectiveness to more remote faults. (updated 05/10/20)**

We are not expecting any models to be provided during the tender. At the technical feasibility stage, we will be looking for study results to demonstrate compliance against some aspects of the technical specification. We have considered an approach similar to the one described to account for effectiveness due to remote faults.

63. **What will be the process to determine the technical capability for the solutions to deliver the services required in this tender? (updated 03/07/20)**

Desktop based feasibility study ahead of commercial tender submission.

64. **Is synchronism and rotor angle stability considered in this phase? Will EMT models of non-synchronous machines be released for the sake of transparency? (updated 03/07/20)**

As the feasibility study stage, potential solutions will need to demonstrate performance of their solutions for a series of tests (including tests for voltage angle changes). As ESO we don't own models so we cannot share any user defined models.

65. **What feedback is provided during the feasibility study. Is there scope to refine parameters during the study? (updated 03/07/20)**

We have published more information at the EOI stage on what can be changed after EOI. At the feasibility study stage, we expect that providers will have some feedback from the ESO before submitting their final feasibility study report.

66. **Can ESO provide any further information at this stage on what we will be required to provide and demonstrate during the feasibility study? Will the feasibility scope and requirement be published prior to the EOI commencing? Is NG the sole determinant of whether the feasibility study is passed or not? (updated 03/07/20)**

Yes, we have published a feasibility study guidance note which includes a list of simulations that we want to see. We will also publish a feasibility study template which providers are expected to populate and submit at the end of the feasibility study.

The main purpose of the feasibility study is to understand technical capability of any proposed solution with respect to the technical specification. We will use SCL and inertia values determined at the feasibility study will be used for commercial tender assessment.

The ESO will determine if a particular solution has passed the feasibility study and will be invited for commercial tender.

Contracts terms

67. **With the statement of start dates from the conclusion of procurement up to 2024, and I think to an end date in 2030. does that mean that it is not a fixed period of 'x' years you are looking for but a service from the completion date of the project all the way out to 2030 (updated 03/07/20)**

We are reviewing this based on the feedback. We are not looking to change our latest start date of 2024 and end date of 2030.

68. **Does this mean up to a 9 year contract is available? (updated 03/07/20)**

The end date is end of March 2030. We are reviewing how we define the start date based on the feedback.

69. **Will there be a similar 'double-clawback' as for Phase 1 for availability payment? (updated 05/10/2020)**

We have shared in the Heads of Terms and associated spreadsheet our proposal to the rebate that we intend to apply for unavailability. We will seek feedback on this during the consultation of the draft contract terms.

70. **Will there be a similar 'double-clawback' as for Phase 1 of service fees for generators who would choose to generate when in merit? And how would this apply to generators that would typically only generate during periods of high inertia (i.e. when wind output is low and when this service is not required)? (updated 05/10/20)**

See previous question. We have amended the inertia requirement to allow individual providers to submit their own values, though the requirement for SCL remains at 90% for all.

71. **How will you monitor performance? Will there need to be some kind of fault recording device? (updated 03/07/20)**

We are considering how to monitor performance. We will publish more information later.

72. **How will ESO avoid risk of winners having lowest prices but not delivering. Will ESO consider bid bonds? (updated 05/10/2020)**

In the Heads of Terms we have set out our proposal to introduce liquidated damages to successful providers to ensure projects are delivered in line with the tendered start date. The exact amount that would be required will be shared in the coming months and circumstances when it would apply.

73. What securities are required for participation? (updated 05/10/2020)

Please see responses above

74. What will be stackability of this service? In particular for BM and energy markets for battery storage. (updated 03/07/20)

In the Heads of Terms we have shared a list of services that could be stacked alongside the Stability service. We would review this based on feedback from providers and the introduction of any new services.

75. Will the SO keep to the 10 year contract length rather than moving to short term contracts as has happened with ancillary services? (updated 03/07/20)

The contract length for future contracts will be based on system requirements. At this stage, we cannot commit to the number of years future contracts will be awarded for.

76. Will the SO consider extending the length of the contract from 2030 for those who connect in 2024? (updated 03/07/20)

The end date is end of March 2030.

77. What is the reason for contract ending in 2030 and not being set time frames from contract commencement? Will NG still require this service post 2030? (updated 03/07/20)

The end date of 2030 has been set based on our current analysis of system requirements. From our response to Q1 and Q2, our ambition is to run future procurement events for Stability though the years we would look to contract for will be defined by our studies of system requirements.

78. What due diligence do NG expect to carry out post contract award? (updated 03/07/20)

Similar to phase 1, we will require all providers who are successful in the economic assessment to complete a comprehensive list of Post Tender Milestones to ensure services will be delivered as stated in the tender.

79. What penalties are proposed for under delivery and non-deliver? (updated 03/07/20)

From our response above to "**double-clawback"**, we are designing a payment mechanism to incentivise providers to deliver the high level of availability required for this service. This has been indicated in the spreadsheet alongside the Heads of Terms. We will consult on this mechanism as part of the draft terms due out in October.

80. What is the reasoning for allowing contract commencement up to 2024? (updated 03/07/20)

To encourage wider participation in this service and to open it up to a range of technologies, we recognise that some solutions may require a lead time prior to delivery.

Codes related

81. Does NGESO believe there could be implications to level playing field for new converter technologies to participate in phase 2 given that GC0137 Grid Forming Working Group has been de-prioritise? I'd have expected both procurement process and working group, to progress in parallel to ensure converters with grid forming can participate competitively. (updated 03/07/20)

The Stability Pathfinder has been working closely with the GC137 group to ensure that our product aligns with their work. Specifically, the technical specification has been aligned with the GC137 specification. There are specific reasons for the delay of the GC137 work group but we do not feel that we need to delay the

Stability Pathfinder. If there are any specific barrier for converter technologies in the pathfinder RFI, we would like to know about them in the RFI feedback.

82. **Will you be waiting for the grid code modification GC0137 on the VSM service definition to be concluded before considering VSMs for this tender? (updated 03/07/20)**

See the previous question.

83. **Are sites going to need to become fully ECC and ECP compliant if they modify the grid connection? (ref 1.2.2 of tech spec) (updated 03/07/20)**

Providers will be subject to grid code clauses which are in their Bilateral Connection Agreements (ECCs or CCs as relevant). In addition to this, the providers will be subject to demonstrating compliance against the stability commercial service agreement which could mean additional compliance to their Bilateral Connection Agreements as some aspects of the stability pathfinder technical specification refer to ECCs.