

Stability Pathfinder

Phase one outline plan

Legal disclaimer and Copyright

Disclaimer

This guidance document has been prepared by National Grid Electricity System Operator (NGESO) and is provided voluntarily and without charge. Whilst NGESO has taken all reasonable care in preparing this document, no representation or warranty either expressed or implied is made as to the accuracy or completeness of the information that it contains and parties using information within the document should make their own enquiries as to its accuracy and suitability for the purpose for which they use it. Neither NGESO nor any other companies in the National Grid plc group, nor any directors or employees of any such company shall be liable for any error or misstatement or opinion on which the recipient of this document relies or seeks to rely other than fraudulent misstatement or fraudulent misrepresentation and does not accept any responsibility for any use which is made of the information or the document or (to the extent permitted by law) for any damages or losses incurred.

Version Control

Version	Date published	Page No.	Comments
1.0	21/10/2019		

Introduction to stability pathfinder phase one

Purpose of this outline pack

- The purpose of this document is to make you aware of our intention to publish an invitation to tender in early November for stability pathfinder phase one
- Phase one is designed to support our national stability needs in the shorter term
- Our RFI responses suggested that solution providers typically needed between 12-18 months to deliver solutions to meet this need
- We are therefore proposing an accelerated tender process and timeline for phase one to give maximum opportunity for providers to develop solutions ready for service from no later than April 2021

Content of this outline pack

- This pack outlines the key principles of our phase one tender proposal:
 - **Acceptance criteria** – Anyone who wishes to participate in this procurement exercise will need to meet these criteria
 - **Requirement and technical specification** – The detailed technical capability which needs to be met by providers
 - **Overview of commercial terms** – This outlines the key contractual terms and framework.
 - **Assessment principles** – Any tenders received will be assessed using these principles
 - **Timelines** – These are the current proposed timelines for phase one

If you have any questions or feedback on this proposal, please contact us at commercial.operation@nationalgrideso.com

Please note we reserve the right to make changes to these proposals. Further detail and the final terms of the procurement exercise will be published at the invitation to tender stage.

Acceptance criteria for participation

Solutions

The timing and nature of our requirements for the stability pathfinder phase one, are such that we need high confidence in service delivery. Therefore for this exercise we will consider technology types proven for their capabilities to support our stability specification. The technology types we know to meet our specific requirements for readiness are:

- ✓ Synchronous compensators; and
- ✓ Synchronous generators running in a synchronous compensation mode

Phase two will facilitate a wider range of technology types.

Providers

Solutions could come from existing, conversion or new build technology but must be able to meet the acceptance criteria. Whilst this is a zero MW service, participation is open to generators who wish to forgo winter availability payments in favour of generation revenue streams.

Operational integration

For operational integration, we expect Grid Code compliance and operational integration, including:

- BM Unit
- CVA registered & MSA
- EDL & EDT

Requirement and technical specification

Requirement

- Inertia + Fast acting dynamic voltage + Short circuit level
- Procuring up to a maximum of 25GVA seconds
- GB wide, $\geq 132\text{kV}$ transmission & distribution connections (with effectiveness weighting)
- Zero MW output service – no payment made if generating

Technical specification as published in the stability pathfinder RFI with these additions & changes:

- Minimum steady state reactive power range of $\pm 0.4\text{p.u}$
- Capable of satisfying the requirements of ECC.6.1.5, ECC.6.1.6 and ECC.6.1.7
- Availability application as per commercial terms

Overview of commercial terms

Commercial Framework (Full contract terms will be published with the invitation to tender)

Contract Term	Earliest	Latest
Start Date (between)	1st April 2020	1st April 2021
End Date (either)	31st March 2023	31st March 2026

Payment Type	Price	Unit
Contract Fee	Tendered	£/settlement period
Reactive Power	Default rate (ORPS)*	£/MVArh
Consumed Power (required to provide service)	Imbalance Rate (system buy price)	£/MWh

* Requires MSA & CVA in place

Conditions	Type	Rate
Availability	Firm (24/7)	100% (with 5 calendar days agreed planned outages pa)
Indexation	On Yr1 tendered contract fee	CPI per Financial Year
Penalty	Non-available sett periods > planned outage level	Summer = 1x £/sett period availability payment clawed back per unavailable settlement period (or part of). Winter = 1x £/sett period availability payment forgone per unavailable settlement period (or part of).
Planned Outages	Fax declaration with notice	5 calendar days pa
Condition Precedents	Readiness milestones	Per contract schedule

Assessment principles

Forecast contract costs - we will scale the tender availability price to make an adjusted price using:

- **Inertia contribution**
Where higher inertia is good
- **Reactive range**
Where a larger lead and lag capability is good
- **Stability Support (national and local)**
Where being connected at 400kV is valued higher than 275 or 132kV
Where being connected at a substation where we have a higher stability requirement is good
- **Regional Voltage**
Where being connected at a substation where we have higher reactive requirement is good
- **Power consumption**
Where lower demand for power for their inertia contribution is good

We will compare the forecast cost of the contract with our forecast alternative cost to find the most economic solution

Forecast alternative costs - we will create our willingness to pay from one or more of:

- Footroom and headroom creation to allow units to be synchronised
- Synchronising additional synchronous machines
- Frequency response costs
- Curtailing the largest losses
- Voltage costs
- Additional bids and offers to maintain generation and demand balance.

If the adjusted price is less than our willingness to pay for that total quantity of MVA.s then accept, otherwise reject

Timeline - Phase 1

Stage	Milestone	Date
Pre-Tender Process	RFI Feedback deadline	13 th September 19
	Publication of RFI feedback and next steps	21 st October 19
	Publish service outline	21 st October 19
Tender Process	Invitation to tender	4 th November 19
	Tender deadline	29 th November 19
	Contract signature (conditional on award)*	6 th December 19
	Contract award	13 th December 19
Service Period	Service starts	1 st April 2020 - 1 st April 2021
	Service ends	31 st March 2023 or 31 st March 2026

* Contract to be conditionally signed by all participants ahead of contract award

nationalgrideso.com

National Grid ESO, Faraday House, Warwick Technology Park,
Gallow s Hill, Warw ick, CV346DA

national**grid**ESO