

Frequently Asked Questions Pennine & North England reactive power service

7 May 2021



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Frequently Asked Questions

Version 1.3

Last updated: 7 May 2021

Section	Changes since last version?
General	Y
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General

What has changed from the Mersey voltage pathfinder? (last updated: 26 Mar)

We will run a technical webinar on 31 March 2021 and a further Q&A session on 27 April 2021. We will also run a commercial webinar early in the commercial stage with a follow up Q&A session – dates are to be confirmed.

We have two distinct regions that will be assessed differently. In the West Yorkshire region, we are unable to apply the effectiveness methodology, as we did in Mersey, because this region needs solutions across multiple sites to ensure compliance. In the North East region, we will apply the effectiveness methodology similar to Mersey. Further details are available in the technical assessment methodology.

We have engaged with the Transmission Owner to undertake site feasibility studies for most of the sites in the region ahead of the tender. The feasibility report will be available on request from the ESO when we publish the tender. We have also provided information on the non-operational land process as part of the tender.

Can I participate in this tender? (last updated: 26 Mar)

We invite tender submissions from any provider which can meet the technical requirements for reactive power provision, are located within the tender regions, connected by 1 April 2024 and available for the full ten-year period. The technical requirements and highlighted region are contained within the tender information pack.

I'm due to connect / will be available after 1 April 2024, can I participate? (last updated: 26 Mar)

As explained in the question above, we are seeking solutions that can be connected by 1 April 2024 to meet the identified system need. If, following the feasibility studies, an option cannot meet a connection date of 1st April 2024, it may still be included in the assessment with additional costs added to represent the cost to the ESO of managing the voltage up until the option's connection.

The earliest in-service date for a 400kV Stalybridge connection is July 2024. Does this mean technical submissions for Stalybridge will be rejected? (last updated: 7 May)

We expect parties to be ready for 1 Apr 2024 subject to the connection date offered by NGET, which means for a 400kV connection for Stalybridge would be July 2024.

It is worth noting that options connecting after 1 April 2024 will have additional costs added to represent the cost to the ESO of managing the voltage up until the option's connection.

How do I participate in this tender? (last updated: 26 Mar)

We are running a two-stage tender process. Participants are asked to submit technical information initially within section A of the Pennine tender submission proforma and the Pennine DRC schedule template provided by 5pm on 14 May 2021. NGENSO will then conduct a technical review and liaise with the DNO/TO as appropriate and share effectiveness (where applicable), power factor and reinforcement information within section B by 3 Sept 2021. Participants will then be required to submit their commercial offer(s) including a Programme Capability within section C of the proforma by 5pm on 15 October 2021.

All submissions should be sent via email to box.pennine.tender@nationalgrideso.com

Am I allowed to stack additional balancing services revenues if I'm successful? (last updated: 26 Mar)

Providers can stack additional balancing services provided that it does not impact the ability for the provider to deliver the contracted reactive power services.

When the ESO returns the technical assessment results on 3 Sept, will individual results be sent to the respective participant, or shared with the whole market? (last updated: 7 May)

Technical results will only be sent to the respective participant.

Please note that after the pathfinder has completed, results will be published showing the cost, MVAR and cost per MVAR of each tender, but no other technical information is published. See the equivalent file for Mersey called Mersey Reactive 2022-31 Final Results Table at:

<https://www.nationalgrideso.com/future-of-energy/projects/pathfinders/high-voltage/Mersey>

Although the pathfinder is specifically tendering for reactive power, does the ESO foresee need for more SCL in this region, and would bids that were able to resolve for both SCL and reactive power be received more favourably? (last updated: 7 May)

In this pathfinder there is no weighting given to increasing Short Circuit Level.

At the present time, voltage and short circuit level are treated independently. There is a separate stability pathfinder that is addressing Short Circuit Level requirements. Phase 2 for Scotland is underway now, and a Phase 3 is being developed with communication on this likely to go out in the next couple of months.

As part of the 'learn by doing' approach, we do not rule out combining the voltage and stability considerations in future.

Does National Grid have any requirements for redundancy of the technical solution? (last updated: 7 May)

We have taken redundancy into account when setting the requirement (including faults of the new equipment to be procured) and so there is no additional requirement. Participants should note the availability requirements, which contribute to meeting redundancy needs.

Requirement

What is the requirement in the Pennine & North England pathfinder? (last updated: 21 Apr)

We have two distinct regions with different requirements. In the North East Region, we require a minimum of 200 effective MVAR with respect to Norton 400kV substation. In the West Yorkshire

Region, we require a minimum of 500 MVAR across the region, which must be spread across at least three sites. For technical reasons, static shunt reactors at Stocksbridge 400kV site must be 200MVAR minimum size. Please refer to the tender information pack for further details.

How big does my solution need to be? (last updated: 26 Mar)

Transmission connected assets must be no less than 40MVAR (but see also the Stocksbridge guidance). Distribution connected assets must be no less than 15MVAR. Aggregators must be a minimum of 15MVAR and sub-units must be a minimum of 5MVAR. Assets can be any size of MW but providers should confirm any limitations or restrictions with the relevant DNO or TO.

Is there a limit on how big my solution can be? (last updated: 26 Mar)

The maximum size is often limited by the voltage step change limits in the event of the credible faults or a single switching action and will depend on the voltage levels at which the provider is connected. The maximum size will broadly be in line with the following guidelines: 200MVAR at 400kV, 100MVAR at 275 kV, 60MVAR at 132kV, 30MVAR at 66kV, 15MVAR at 33kV. However, solutions exceeding these guidelines were submitted, and deemed technically viable, in the Mersey pathfinder tender.

Please note that the Bilateral Connection Agreement requires participants to ensure there are no adverse temporary voltage or power quality problems to the system or other users arising from their equipment. Hence, for solutions larger than the guidance above, these considerations need to be factored in. See the “Connection Review Scope” for more information.

The TO and DNOs will undertake technical assessments to determine whether proposed solutions are within the voltage step change limits (but not on complex transient considerations).

Why do I need to be available to receive instruction on a 24/7 basis? (last updated: 26 Mar)

For a long-term commitment such as this NGESO requires 24/7 availability. This acknowledges that our utilisation profile through the period will change and is reflective of the alternative solution of installing a network asset.

Can my solution change after submission? (last updated: 7 May)

The MVARs cannot change after submission. The TO will evaluate projects as they are submitted by 14th May. The returned technical information will be based on the submissions, including DRG data. We cannot allow a material change later in the process, as this could invalidate the assessment outcome and a winning tender may no longer be able to connect at the same timescales and at the same costs as outlined in the feasibility assessment (e.g. additional reinforcements may be required to accommodate higher fault in feeds, or higher ratings etc. due to a change in technology).

This means that the equipment can change, but not materially.

A real-world example might be:

- Purchasing a reactor from a different supplier to that originally envisaged would probably be acceptable, as the change will be minor for the same size.
- Switching from a reactor to a battery would not be permitted.

Technical

What has changed from the Mersey voltage pathfinder? (last updated: 26 Mar)

We have updated the minimum size of new transmission connected solutions. New transmission connected assets must be no less than 40MVAR. New is defined as anything not on the TEC register in January 2021.

We have provided further clarity that distribution connected parties will need to comply with the fault ride through requirements set out in G99.

How do I know where I am connected / connecting? (last updated: 26 Mar)

You should contact the NGENSO Electricity Customer Connections team to enquire about connections to the transmission network, or the local DNO for your connection to the distribution network in the Pennine and North England region. For distributed providers, the DNO will be able to provide an indication of your nearest Transmission connection point for referring to the diagram in the tender pack.

NGESO Electricity Customer Connections: <https://www.nationalgrideso.com/connections>

Northern Powergrid <https://www.northernpowergrid.com/get-connected/>

Electricity North West <https://www.enwl.co.uk/get-connected/>

How do I know my effectiveness? (last updated: 26 Mar)

Effectiveness will only be considered for transmission and distribution connected solutions within the North East region. NGENSO will communicate unit level effectiveness information to parties in the North East region as part of the technical return at the end of the technical tender stage by 3 September 2021. This will allow participants to structure their commercial offer.

The effectiveness of proposed options can vary according to their points of connection and sizing. It will impact the total volume of Reactive Power procured. Options in different locations, connected at different voltage levels or of different sizes have different impacts on the transmission system voltage. NGENSO will work with the DNO to calculate the effectiveness factors when all technical data is received. Please see the Pennine effectiveness factor assessment methodology for more details.

Within the West Yorkshire regions, the complexities of the network mean that an effectiveness approach can't be used. We will be assessing the optimal combinations of options required across the region to ensure its compliance. The effectiveness methodology works well when you have a single reference site and single worst-case contingency however for the West Yorkshire region, we require solutions across multiple sites. We will undertake a combined economic and technical assessment for this region and further details on this are included in the Pennine commercial assessment methodology document.

Can I provide a substitute unit if my contracted unit becomes unavailable? (last updated: 26 Mar)

Yes, however where the substitute unit is not located at the same connection point the participant will be expected to work with the relevant parties (the local DNO if distribution connected and NGENSO if transmission connected). In the North East region, we will need to ensure that the effective MVAR at the transmission network remains at least the same. In the West Yorkshire region, we will need to ensure the regional requirement is still met and providers will deliver no less than contracted reactive volume. NGENSO reserve the right to reject any substitution requests that adversely impact the original contracted service.

Can I participate in this tender if I am a dynamic service provider? (last updated: 26 Mar)

Yes, but a dynamic provider will need to operate in a mode which enables constant reactive power absorption.

What protection settings do I need to have to participate in the tender? (last updated: 26 Mar)

Transmission connected parties will need to comply with protection and fault ride through requirements set out in the Grid Code. Distribution connected parties will need to comply with the fault ride through requirements set out in G99.

For the avoidance of doubt, the protection settings requirement relates to the loss of mains protection and fault ride through requirements. Solutions which implement loss of mains protections based on RoCoF (Rate of Change of Frequency) need to have a setting of 1Hz/s or above with a time delay of 500ms and those which implement loss of mains protection based on

Vector Shift will either need to change or reprogram their relays to RoCoF protection with the same above settings.

Participants who are successful in the tender will need to have the right protection settings on or before the scheduled commercial operations date i.e. 1 April 2024.

What information is available in relation to electrical and physical space for transmission connections at the point of tender launch? Is any more available upon request? (last updated: 26 Mar)

We have engaged with the Transmission Owner to undertake site feasibility studies for most of the sites in the region ahead of the tender. The Site feasibility report will be available on request from the ESO when we publish the tender.

We have included the “Enquiry form for Use of National Grid Land” document within the tender pack, which should be completed by tender participants seeking use of National Grid UK non-operational land. It includes a high-level chart of the process and the indicative timescales involved. To help manage the volume of enquiries for this Pathfinder process, NGENSO will collect this information on behalf of National Grid for the purposes of the Pennine tender. All interested participants should complete and return the enquiry form provided in the tender pack to NGENSO as indicated in the form.

How do I access the TO site feasibility report? (last updated: 26 Mar)

TO initial site feasibility report is available on request – we require each recipient to confirm that they shall not communicate, reproduce or disclose any part of the report, without the express written consent of National Grid Electricity Transmission plc. To receive a copy of the report please email us with the above confirmation at: box.pennine.tender@nationalgrideso.com

What if the site I’m interested in is not covered in the feasibility report? (last updated: 21 Apr)

We have worked with NGET to provide site feasibility assessments for all of the sites within West Yorkshire. In the North East, we have not been able to provide site feasibility information for Saltholme 275kV, Lackenby 275kV, Greystones 275kV and Tod Point 275kV. The site feasibility work for these sites, to confirm the scope, costs and delivery dates, will be undertaken by the TO as part of the 12 week feasibility assessment.

What feedback has been given by the DNOs at the point of tender launch? (last updated : 26 Mar)

We have not undertaken any feasibility assessments with the DNOs. Participants wishing to connect to the DNO should in the first instance review some of the publicly available data from the relevant DNO websites.

Northern Powergrid <https://www.northernpowergrid.com/get-connected/>

Electricity North West <https://www.enwl.co.uk/get-connected/>

What information will come back from the TO / DNO technical feasibility assessment prior to making commercial submissions? (last updated: 26 Mar)

Transmission connected participants will receive:

- Outcome of TO technical assessment
- List of Reinforcements (if applicable)
- Cost of Reinforcements (if applicable)
- Operational Diagrams
- Earliest Date the Reinforcements can be delivered (if applicable) & programme for NGET works relevant to your solutions
- Site specific information
- Land availability to complete NGET works at site
- An indication of the risk of interaction with existing connection applications, in-flight applications or offers out with customers

- System Outage, Resource and Programme Impacts
- Charging information for relevant equipment
- An indication of the risk of third party works where relevant
- Effectiveness of solutions in the North East region.

Distribution connected participants will receive:

- Outcome of DNO technical assessment
- Power Factor of proposed option (if no reinforcements are delivered)
- Power Factor of proposed option (if reinforcements are delivered)
- List of Reinforcements (if applicable)
- Cost of Reinforcements (if applicable)
- Earliest Date the Reinforcements can be delivered (if applicable)
- Effectiveness of solution.

What is the process if you are connecting on a private wires network which is not owned by a TO or DNO? (last updated: 9 Apr)

If you wish to submit solutions relating to your private wires network, you can do so as it will be similar to the process we are following with the DNOs. If you wish to submit solutions connected to your network, you will need to provide evidence of the effective MVARs at the interface point, and ensure your network can accommodate your solution(s). If you want to submit a whole solution across your network which delivers MVARs at the interface point then you can do this also. It's worth noting that we have a provider in the Mersey region which operate on a private wires network. The service is delivered at the interface point.

Why is Greystones 275kV not in your effectiveness factor table? (last updated: 22 Apr)

Greystones 275kV was not included in the original table because there is existing reactive compensation equipment at the site, which if new reactive equipment were to be installed there, could create too great a concentration of reactive support in a small area, leading to poor voltage profile and ultimately security of supply risks.

Given the site was not assessed as part of the pre-tender information pack, we have not been able to provide an indication on the feasibility of a solution at that site. We will only be able to make that determination if and when a proposal is submitted, and it progresses through the feasibility assessments. Therefore, we have now provided indicative effectiveness for Greystones 275kV below and parties may submit an option at that location which will be assessed at the feasibility stage as per all other submitted proposals.

	Modelled Size (MVar)	Effective MVar	Effectiveness factor	Contribution to meeting requirement	NGET Site Information available
Greystones 275kV	100	90	90%	45%	No

Please also note that due to the presence of the existing reactive equipment and the specifics of the network design, there are some specific limitations:

1. A maximum of 100MVar can be installed at each of Greystones A 275kV and Greystones B 275kV sites.
2. The total maximum new compensation that can be accommodated across the Greystones group (this includes the 275kV A and B sites and Greystones 66kV) is also limited to less than 200MVar.

As per the outlined process, in the feasibility assessment stage, any projects submitted within the group will be individually assessed for compliance. In the final Solution Validation stage, if multiple options at Greystones are selected as part of lowest cost combinations, it will be determined if these can be accommodated on the system.

Can hybrid technologies be tendered, such as battery and reactor? Are there issues to be aware of? (last updated: 9 Apr)

Hybrid technologies can be tendered provided they are submitted as one solution at the same connection point. They will then be treated and assessed as a single asset/solution. We are not aware of any technical limitations, but the solution must meet the minimum requirements set out in the tender information pack.

Please note the cap on submissions as outlined in the information pack. In this example, a battery only solution would be one submission, a reactor only solution would be a submission, and a battery plus reactor solution would be a submission. Hybrid submissions will be assessed as a combined solution – the individual components will not be assessed separately, and parties will not be able to change the details of their submission after the technical submission deadline e.g. a reactor cannot be removed from a battery plus reactor submission.

For Hybrid solutions can the reactive power capability that is required in the grid code be used towards the overall solution? (last updated: 7 May)

The existing grid code reactive capability can be used as part of the bid. However, its use will no longer be paid at ORPS through the service, it will be paid as per the details in the tender. Please see “I am obligated to provide reactive power, what is the impact for me?” in Commercial section.

If a provider submits a tender outside the boundary, could it still be considered based on effectiveness? (last updated: 9 Apr)

Anything submitted outside the boundary will not be assessed. In the tender area definitions, we are seeking a balance between not artificially reducing the tender area (such that we would predetermine the outcome) against broadening it to the extent of allowing submissions to be tendered that have no realistic chance of being selected, which would simply waste the time of participants.

In the case of West Yorkshire, sites outside the tender boundary contribute little to nothing to the requirement in certain critical faults, while those within will always contribute to some extent.

For the North East, the effectiveness drops off very quickly outside of the defined area, to the extent we would be likely to procure more than double the 200MVAR requirements. To the south of the boundary, this is due to large geographical distance to the nearest sites, while to the north it is more to do with specific system faults.

Is a tertiary connection to an NGET SGT considered compliant as a connection point? (last updated: 7 May)

We have not explicitly mentioned tertiary connections in the pack because we understand from NGET that no new tertiary connections are available.

For an already contracted connection, a tertiary connection is viable and acceptable. The only caveat is that it is not SQSS-compliant since when the SGT is out of service for maintenance or fault, the solution is disconnected. This could have material impact on availability of the solution but please see “Will I receive availability payments during TO/DNO outages?” on page 9 for more information.

In terms of how to select this option on the proforma, the voltage selection is limited to either “275kV” or “400kV” and not the tertiary voltage itself, so please simply select the relevant substation voltage.

At Stocksbridge, the connection review discusses the intention to decommission the site subject to Ofgem approval. If a party were to apply to connect there, would the site remain, or would a party be offered an alternative site? What would be the impact on connection charges and timing? (last updated: 7 May)

Decommissioning Stocksbridge has been discussed due to the site currently having limited purpose, but at this time there is no final plan to do so. We have discussed it with NGET, and it has been agreed to proceed with the tender as if no such plan exists, because a winning tender at the site would become the driver to keep it, hence the site would remain.

At Monk Fryston, given fault levels are quoted as 0kA headroom, what are the timescales for reinforcing the site if a new party connected and can you confirm that while bidders would have to securitise the works, these would be infrastructure works and not attributed to connection assets? (last updated: 7 May)

Any reinforcements triggered by tendered projects, and their cost and timescales, will be determined in the 12-week feasibility assessment. This is roughly June-August, following the technical submissions. It isn't an absolute given that a new party would trigger new breakers, depending on the nature of the connection and the latest assessment at time of feasibility study.

Regarding Monk Fryston, these are NGET assets so the assumption is correct that these are infrastructure and not user connection assets. The works would need securitisation if the project was 'attributable' to them.

At Monk Fryston, what will be the impact on a new user when the new 400kV substation is triggered. What affect will that have on availability of the connection and ongoing connection charges? (last updated 7 May)

The 400kV site itself is out of scope, and that is directly due to the forthcoming extensive rebuild of it that is alluded to, where access would be extremely impeded for many years.

For connections at the in-scope 275kV, we cannot be definitive regarding availability as we have not seen a fully finalised design for the project, and don't know the required construction outages. We are fortunate however that Monk Fryston is a double busbar site and has several connected circuits, so it is likely that the impact would be limited.

As for the ongoing connection charges, we are liaising internally and will provide a response as soon as possible.

Commercial

Will there be an opportunity to revise tender price post tender submission or after contract award? (last updated: 26 Mar)

No, all commercial submissions received on the 15 October 2021 will be full and final and we expect providers to include all future costs and risks in their submission.

Will I be penalised for not meeting the service commencement date? (last updated: 26 Mar)

Yes, we have included liquidated damages in the terms that the provider will be liable for should the service commencement date not be met.

Will I receive availability payments during TO/DNO outages? (last updated: 26 Mar)

Following Mersey, we have removed the penalty of non-availability if the TO/DNO is taking an outage, but the facility is deemed available. The provider would not receive payments for the first 14 days (this is to encourage providers to align outages with TO/DNO), thereafter they would be deemed available and for clarity if there is a Force Majeure event this would still be classified as non-availability.

What if there is a Change of legislation/regulation after service commencement date? (last updated: 26 Mar)

We have included a Standard Change of law clause in the Standard Contract terms to protect both parties should there be a change in legislation/regulation that materially impacts costs for either party.

Will the ESO be assessing the viability of service provider's proposals during the tender process? (last updated: 26 Mar)

Yes, we shall be expecting a Programme Capability methodology to be submitted alongside the commercial submission by no later than the 15 October 2021. The precise requirements are still to be agreed and will be shared as soon as possible. We will use set criteria to determine whether we will accept commercial submissions. Full details are to be determined but we shall expect to see elements such as financial standing, evidence of existing connections, letters of intent with their EPC and planning permission etc.

Will the contracts awarded be conditional? (last updated: 26 Mar)

To avoid any unnecessary delays post contract award, we shall make it essential that all contracts are signed within two months of contract award date and the contracts will be conditional on ALL contracts awarded being signed (in each specific region), otherwise the ESO will reserve the right to revert to the tendered stack for that region. Therefore all commercial submissions will be valid for a minimum of three months post commercial submission date.

What is the purpose of the Contract Declaration Form? (last updated: 26 Mar)

This is to ensure that the tenderer has read and is satisfied that the Standard Contract Terms will not be amended post contract award (save immaterial changes and at the discretion of the ESO) and the commercial submission is offered based on these terms.

What milestones do you wish to see in the Project Plan? (last updated: 26 Mar)

This will be an indicative milestone schedule that will state how the provider will meet the service commencement date post contract award and shall be included in the Standard Contract Terms if awarded a contract. All providers will have a different plan and schedule, however as an example if a new provider was to offer a service, we would expect to see elements, such as civil works start and commencement, electrical connections, mechanical tie-ins and finally commissioning prior to start date. These would be aside from conditional agreements (Connection offers, Land access, various permits etc....) that would be part of the condition's precedent to the contract. This will not be used as part of the assessment.

How will my availability be calculated? (last updated: 26 Mar)

Providers are deemed available or unavailable on a settlement period basis. If a provider can deliver $\geq 90\%$ of their contracted reactive capability they will be deemed available for that settlement period. If a provider's settlement meter reads $\geq 90\%$ of contracted volume whilst under instruction, they are deemed available.

For Force Majeure events, providers will not receive their availability fee.

For the avoidance of doubt, if a provider's ability to deliver contracted volume is limited by DNO restrictions, this is not a Force Majeure event.

Will I be paid for injection of reactive power, or absorption of reactive power without receiving an instruction from NGESO? (last updated: 26 Mar)

Providers are paid on an availability basis and so will receive the availability fee (subject to performance criteria) regardless of whether NGESO have issued an instruction to the provider. There is no utilisation fee, see utilisation price question below.

If a provider injects or absorbs reactive power whilst not under instruction by ESO, these settlement periods will not count towards the capped utilisation hours

What is the utilisation price? (last updated: 26 Mar)

There is no utilisation price offered for this service type.

I am obligated to provide reactive power, what is the impact for me? (last updated: 26 Mar)

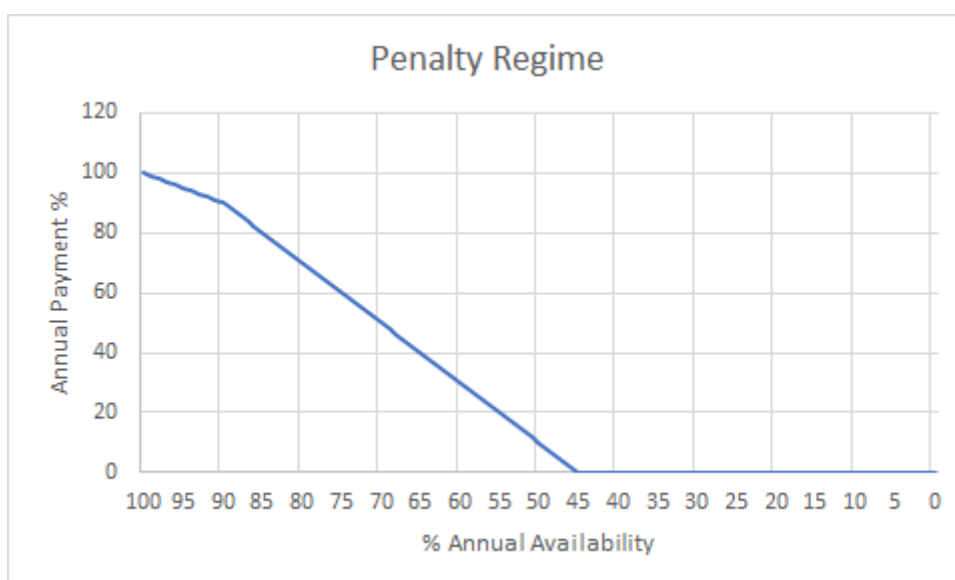
Obligated providers of reactive power agree they will cease to be entitled to payments for the Obligatory Reactive Power Service throughout the Service Term. This applies regardless of whether a dispatch instruction has been issued.

What are the penalties for unavailability? (last updated: 26 Mar)

Providers are required to be available year-round. An annual assessment will be conducted to calculate annual availability based on the number of settlement periods a provider was deemed available. For $\geq 90\%$ availability, providers will be paid their availability fee for the settlement periods they were available.

For availability $< 90\%$ providers will not be paid their availability fee for the periods they are not available and will be subjected to a further penalty equal to the same amount. For avoidance of doubt, penalties will only apply to the unavailability periods below 90%.

The graph below reflects the level of annual payment as a percentage of the maximum annual payment based on annual availability.



For example:

- Provider available for 94% of the year.
Availability fee paid for every settlement period provider was available.
- Provider available for 75% of the year.
Annual payment = 75% of maximum annual payment – a penalty of (90-75) % of maximum annual payment
= 60% of maximum annual payment.

What are the penalties for underperformance? (last updated: 26 Mar)

As above, however if we observe poor performance, we can request a re-proving test to determine whether the contracted volume and pro-rated availability rate should be reduced. Re-proving tests can be requested where the performance expectation of 90% is not met in more than 20% of instructed settlement periods within a calendar month.

What agreements do I need to have in place with NGESO? (last updated: 26 Mar)

Our aim is to enable more providers to deliver balancing services. For the tender process, potential providers do not need to be BM parties, signatories to the CUSC, have an MSA or a Connection Agreement. Providers will need to have a Connection Agreement for delivery of

service, but not to tender. Providers may need agreements with NGET or the local DNO and/or licences.

What milestones do I need to provide if I have not yet connected? (last updated: 26 Mar)

NGESO would like to ascertain that successful providers who are not yet connected to the network can demonstrate that they are on track to deliver their solution such that the reactive power service can commence on the 1 April 2024. As such we have defined an indicative set of post tender milestones which successful providers will need to have achieved by certain post tender milestone dates. Please see schedule 4 of the Pennine reactive service agreement for further details on the post tender milestones. Please also note that these will be finalised prior to contract award.

- Indicative Phase 1 Post Tender Milestones (12 months before commercial operation date)
 - Signed connection agreement with relevant network owner
 - Confirmation of planning permission
 - Confirmation of land purchase/ lease
 - Agreed procurement, construction and installation contracts along with latest construction plan.
- Indicative Phase 2 Post Tender Milestones (6 months before commercial operation date)
 - Construction is well underway and close to completion
 - All relevant consents, permits and licenses achieved.

What happens if I miss a milestone? (last updated: 26 Mar)

There are consequences if a provider misses a milestone. If the Post Tender Milestones have not been satisfied and, in the Company's reasonable opinion, there is no reasonable prospect of the Provider being capable of satisfying the applicable Post Tender Milestones within two months after the applicable Post Tender Milestones Date, the Agreement may be terminated.

What happens if I take a connection offer in a different location to the one I tendered? (last updated: 26 Mar)

Participants are asked to contact NGESO immediately upon being made aware that the tendered connection location cannot be supported. NGESO reserve the right to terminate any agreement where the effective MVARs contracted for at the point of the transmission system are adversely impacted by a change in a successful participant's solution.

What happens if I cannot meet my contract start date? (last updated: 26 Mar)

NGESO recognises there could be unforeseen circumstances and providers may not meet the Commercial Operations Date, therefore there is a Long Stop Date of the 31 October 2024 which must be met otherwise the agreement will be terminated.

Assessment

What has changed from the Mersey voltage pathfinder? (last updated: 26 Mar)

Please see the Pennine commercial assessment methodology, along with the tender pack and other associated documents, but some of the changes, in brief, are as follows:

- There is no inclusion of the cost impact of equipment outages.
- The effectiveness methodology previously applied is not relevant to the West Yorkshire region – see the technical FAQs.
- The costs used for infrastructure works will be specific to the site rather than generic, based on output from the TO connections review.

- There may be a change in the methodology by which TOs calculate their costs for their submissions to us – further information will be provided as soon as possible and no later than three weeks before the commercial submissions.

What information will I receive following the conclusion of the commercial assessment?

(Last updated: 26 Mar)

Once the tender concludes we will publish a results table which includes the prices of all options and reasons for accepting or rejecting a tender.

Can a provider deliver earlier than 2024? (Last updated: 9 Apr)

The service is required from 1 Apr 2024 to 1 Apr 2034, therefore we can only assess a solution over this time period. If a successful provider is available prior to 1 Apr 2024, the contract may be extended forward if NGESO deems it economic to do so. The contract would still cover the 10 year assessment period from 1 Apr 2024.

Testing

Will I be subjected to an initial proving test? (last updated: 26 Mar)

All participants will need to demonstrate their ability to meet their contracted capability. How these tests are performed will depend on the licence under which they operate.

Distribution connected participants will need to prove their reactive capabilities at the point of connection, and their effectiveness at the relevant GSP.

Transmission connected BM participants will be tested through the traditional compliance route.

Where the participant operates under a transmission licence it is anticipated that they will carry out commissioning tests that will prove their asset's capability and therefore provide evidence and assurance of the installed capability.

NGESO will work with the contracted provider(s) to set out and agree the appropriate testing schedule as necessary.

What are the potential consequences from the initial proving test? (last updated: 26 Mar)

Potentially NGESO may reduce the contracted MVAr capability and prorated availability payment rate where the service delivered at the point of connection is less than the contracted value. Where agreement can't be made on a reduced capability a further proving test may be offered. NGESO reserve the right to terminate the contract where the provider is not able to meet the contracted capability.

Dispatch

How do I declare whether I'm available or not? (last updated: 26 Mar)

Providers are required to submit planned unavailability in December for the following financial year e.g. December 2024 to cover April 2025 to March 2026.

Providers should otherwise notify NGESO of unavailability as soon as they become aware. Providers must submit a redeclaration of availability once they are available again.

Providers must reconfirm planned unavailability to NGESO by 14:00 for the subsequent day (23:00 for 24 hours).

Declaration of unavailability should be by fax/email (to be decided).

Unless notification has been received, providers will be assumed available and reactive instructions could be issued at any point.

How will I be instructed? (last updated: 26 Mar)

Instructions for reactive power absorption will be delivered via an electronic dispatch system. BM providers will be dispatched using existing EDL/EDT systems. Other providers will need to host an IEC104 server such that NGENSO can connect via a VPN.

Providers will be required to acknowledge receipt of the instruction within two (2) minutes. The instruction may be delivered up to 30 minutes in advance of reactive power delivery.

What form of instruction will I be given? (last updated: 26 Mar)

Providers will receive a binary on/off signal via the electronic systems. Providers will be expected to deliver reactive absorption until the binary signal changes.

What level of utilisation can I expect? (last updated: 7 May)

We want to provide a level of certainty for potential utilisation across the service period so that participants can account for losses appropriately. We have therefore created a maximum number of settlement periods of utilisation per annum of 11,000. Whilst we require 24/7 availability, we have calculated this figure using all overnight periods, weekend days, allowance for six weeks of network outages, plus 10% for additional cover. We would expect the level of utilisation to increase over the nine-year period, however the 11,000 settlement periods per annum will remain constant. The level of utilisation per provider will vary depending on the exact requirement e.g. if one provider can meet the requirement of 150MVAR, we wouldn't utilise all contracted parties.

As this is a static requirement, the maximum MVAR will always be instructed except for parties with grid code obligations where they will need to operate in voltage control mode which may mean less than the contracted MVAR will be utilised.

Settlement

How will my performance be monitored? (last updated: 26 Mar)

Participants will be expected to provide operational and settlement level metering.

How will I be paid, and how often? (last updated: 26 Mar)

Payment terms are specified in the contract; however, you will be paid through the normal monthly settlement process and paid a month in arrears. For example, for service delivery in April 2024, you will be paid in May 2024 and so forth. Any reconciliation resulting from the annual availability assessment will be done at the end of the financial year.

Embedded providers

I'm connected below 33kV, can I participate? (last updated: 26 Mar)

Providers connected below 33kV cannot participate in this tender. One of the minimum criteria for providers to participate in the tender is be connected at 33kV or above. Previous analysis we have carried out suggests that the majority of connections below 33kV will have limited effectiveness at transmission level.

My current connection agreement with the DNO only allows me to operate between 0.95 lead and unity power factor. Can I still participate? (last updated: 26 Mar)

Yes, all providers who can meet the minimum technical requirement will be able to participate in the tender even if there are existing limitations in their connection agreement. Please see below question for further information.

Will the DNO alter the connection agreement to allow provider(s) to meet the MVar requirement (if feasible)? (last updated: 9 Apr)

The DNO will assess submitted technical solutions for both new and existing requirements, so where possible connection agreements may be modified to allow parties to operate at different power factors. Providers who win a contract for operating at a power factor outside their current connection agreement will need to submit a modification notice to the DNO soon after the contract

award to change their connection agreement. The DNO will then process the modification notice and approve as appropriate following their standard process. Please note that the associated modification application process may have associated fees.

To deal with the variety of real-life situations, there is some optionality built into the tender submission proforma. This firstly allows you to indicate your preference on operating power factor as well as whether you would like the DNO to consider applying reinforcements to facilitate it. Secondly, it asks if you are flexible, and if so the DNO will calculate the lowest achievable power factor for the tendered MVar absorption.

What happens if my capability is restricted by the DNO during the contract? (last updated: 26 Mar)

This would not be classified as a Force Majeure event, and if the capability is reduced to below 90% of the contracted absorption capacity the provider would be deemed unavailable and receive no payment. This period of restriction will also be included in the annual availability assessment for calculating any penalties necessary. Depending on the length of restriction, NGENSO may consider termination rights; however, it is expected that we would be discussing this with the provider and trying to agree a way forward.

This will only apply for the first 14 days per year. After this, providers will still be paid their availability fee so long as they are capable of delivering the contracted reactive volume.

Are there any distribution network restrictions providers should be aware of? (last updated: 26 Mar)

An impact assessment will be carried out to ensure the distribution network remains compliant. For example, restrictions could apply due to excessive active and reactive power flows or voltage control limitations. As part of the tender process, providers are requested to submit their reactive absorption capabilities at different power factors and the local DNO will determine the most optimum power factor of operation for each provider. Reinforcements may be suggested where possible to enable operation at different power factors and it will be up to the provider to decide whether or not to agree to the reinforcements.

Do I need to notify the local DNO that I want to tender / have tendered in? (last updated: 26 Mar)

No. There is no formal requirement to do this as NGENSO will inform the local DNO of all potential providers once the tender closes. However, for embedded participants yet to connect to the local DNO's network we would suggest that they engage early with them to determine if there are any restrictions that would impact their participation.

Will I need to notify the local DNO if I am instructed? (last updated: 26 Mar)

No, providers will not have to notify the local DNO of any instructions. If required, NGENSO will provide visibility of the instructions to the local DNO.

What is power factor mode? (last updated: 26 Mar)

It is a mode of operation whereby an equipment will adjust its reactive power output such that there is always a constant ratio between its reactive power output and its active power output. If a device is set to operate in Power Factor Control mode at a power factor of 0.95, the ratio of reactive power to active power will be approximately 1:3.

Aggregators

Can aggregators participate? (last updated: 26 Mar)

Yes, aggregators are able to participate. A tendered / contracted unit can be made up of multiple sub-units where each is at least 5MVar in size. Technical information for each sub-unit is required at the point of tender to facilitate DNO level effectiveness and impact assessments. If an aggregator is expecting to offer assets connected to the transmission network, please contact us.

As an aggregator, can I substitute my sub-units? (last updated: 26 Mar)

Sub-units can be reallocated across aggregated units but the total effective MVar of the aggregated unit must remain at least the same after reallocation. Sub-unit size must remain the same as tendered when being reallocated. New sub-units can be allocated to an aggregated site where the aggregator has worked with the DNO to determine the unit level effectiveness and impact to the DNO network. If an aggregator is expecting to offer assets connected to the transmission network, please contact us.

As an aggregator can I aggregate sub-units across the sub-regions and or within the West Yorkshire sub-regions? What geographical spread can parties aggregate across? (last updated: 26 Mar)

All aggregated sub-units will need to be located within the North East region, or one of the two West Yorkshire sub-regions. This is because there is only one point of dispatch for the service which will not allow for the ESO to dispatch reactive power in one sub-region or another.