

Demand for Constraints (DfC) Expert Group Collaborative Session – 9 September 2025

Q&A pack

The following questions were submitted by stakeholders working with NESO on the detailed design of Demand for Constraints on Tuesday 9th September. This work forms part of NESO's plan to incentivise new, flexible demand behind constraints, thereby reducing curtailment costs and volumes as part of our ongoing Constraints Collaboration Project (CCP).

Questions	Answers
Can you say what kind of demand types featured in your CBA and what the volumes were in each?	<p>In our cost benefit analysis, we considered five technologies: flexible hydrogen, commercial demand (data centre), industrial demand (electrification of industrial process and electric arc furnace), BESS, and pumped hydro.</p> <p>The average annual demand volumes modelled across cases were:</p> <ul style="list-style-type: none"> • Case 1, which covers B0-B1, B3-B4, B6 & EC5 boundaries and assumes 3.5 TWh annual demand contracted. • Case 2, which covers B0-B1 and assumes 0.8 TWh annual demand contracted. • Case 3, which covers B0-B1, B3-4 & B6, B0-B1 boundaries, and assumes 2.8 TWh annual demand contracted. • Case 4 and 4a, which covers B0-B1, B3-4 & B6, B0-B1 boundaries, and assumes 0.7 TWh annual demand contracted.
<p>Can you give us a rough idea of how often, for how long and typically when you might want additional demand in a year to overcome constraints?</p> <p>For example, is it enough of a driver to design a scheme around flexibility and bidding for Hydrogen Allocation Round (HAR) funding – or whether it is just a nice bit of bonus income for the operator of the hydrogen production facility which can be decoupled from HAR as it isn't going to affect the Final Investment Decision.</p>	<p>For this service, NESO will require additional demand to manage system constraints. We are looking more closely at undertaking assessments as to the future requirement. NESO is transparent about our actions and responsibility to ensure these are cost effective for the bill payer – we also try to provide past figures as a helpful indication. For additional information about past actions for constraints please find here the review of our Balancing Cost report.</p> <p>We have taken on board stakeholders need more clarity – In the meantime, we recommend providers consider value sources across a range of markets and consider the</p>

	best value stack to fit with their proposal, with DfC viewed as one of several routes to support their CBA.
You have set out the possible contract structures in the slides, and it looks from the slides that these options are still open. Could you say something about what you assumed for the CBA that you ran and, roughly, how you assumed the service would operate.	<p>For the CBA we drew on the assumptions set out in Arup's modelling. The approach considers some quantitative measures like including consumer welfare, carbon emissions) etc. We assumed a phased roll-out of demand from 2028, with a mix of flexible and baseload operation. Two different proposed pricing structures have been modelled as an illustration: 1) A fixed utilisation tariff (£/MWh for excess electricity consumed) from demand facilities to NESO ; 2) A utilisation tariff based on an agreed percentage discount from spot price from demand provider to NESO.</p> <p>For cases where baseload has been included, baseload demand is utilised first to resolve the constraints and if there is any additional constraint to be resolved (below the constraint resolution cap), flexible demand is called upon, focusing on the key constrained boundaries in Scotland (B0–B1, B3–B4, B6) and in East Anglia (EC5).</p>
Would you be able to outline currently what technologies you expect to be able to provide the service?	We are looking for flexible demand assets which can ramp up in short notice at times of constraints (within hours is preferable) and provide constraints management services for the duration of constraints. The types of assets considered include: flexible hydrogen, commercial demand (hyperscale data centre), industrial demand (electrification of industrial process and electric arc furnace), BESS, and pumped hydro.

	<p>Our minded-to position states any flexible asset that otherwise would not come online without long-term incentives would also be qualified. For example, installation of thermal storage systems in an existing distillery facility.</p>
<p>Roughly what are the run hours that would be guaranteed, given they will have to be not running at all other times?</p>	<p>NESO has no services that currently guarantee a level of constraint action but we do publish all actions and the general forecast is for actions in Scotland to increase as more generation comes on-stream.</p> <p>We hope to be able to share more information as we progress the service design in due course. In the meantime, we encourage you to review all the NESO published data on balancing actions and trends.</p> <p>Day Ahead Constraint Flows and Limits National Energy System Operator</p> <p>Thermal Constraint Costs Data 24-25 National Energy System Operator</p> <p>In addition the Local Constraints Market (LCM) has previously published some provisional guidance that includes volumes in Scotland – see <i>Sample of Scotland Constraint BM prices</i> documents available here on our NESO website: https://www.neso.energy/industry-information/balancing-services/local-constraint-market#Document-library.</p>
<p>A solid contract duration is going to be essential for bankability, e.g. 15 year contracts as per the Capacity Market (CM). I noticed the statement that DfC would phase out if network build takes place in the 30s (which is likely!). Can you expand on what's behind this please?</p>	<p>With the REMA decision to discount zonal pricing, we will continue to progress with Demand for Constraints to incentivise new demand to locate behind constraints in advance of network build out in 2030.</p> <p>We recognise the need for clear investment signals to be combined with a mix of revenue sources to help mitigate risks of stranded assets beyond 2030.</p>

	<p>In the future, we will undertake a regular review to assess the level of demand procured via the service and the system need to determine if additional tenders needed to alleviate constraints.</p>
<p>I'd also point to a market like <u>MW Dispatch</u>, to consider the primacy aspect of aligning design requirements? Which do you do first – use MW Dispatch to turn down a generator to solve one side of a constraint, and/or turn up a demand via its Demand for Constraints on the other side of the constraint.</p> <p>Appreciate MW Dispatch areas (South-East Coast and South-West) are different to envisaged Demand for Constraint areas may not overlap though so it may be purely theoretical.</p>	<p>We welcome the positive and helpful responses already coming from our DNO colleagues as NESO is working to be proactive. We have already reached out to discuss relevant DNO/NESO interactions and we agree there is considerable remaining work to do to advance the current Primacy programme. We want to enable the fullest market participation and engage in widest and most inclusive competition to deliver most cost effective actions able to manage growing thermal constraints. We look forward to continued NESO/DNO dialogue to ensure NESO balancing actions avoid any unwinding or impact on value of actions and costs met by the bill payer.</p>
<p>On investment timescales, what was the rationale for demand for constraints being new assets only?</p>	<p>The aim of Demand for Constraints is to incentivise more flexible demand in constrained areas. Existing assets/Balancing Mechanism Units (BMUs) can already provide flexibility via the BM but there are some potential demand projects that could develop more flexible assets but cannot establish a business case using the BM as the basis for new investment.</p> <p>In our presentations we noted that New Asset could be any of:</p> <ol style="list-style-type: none"> 1) New project that is not operational now – for example, an electrolyser plant looking to site in B2/B4 ; or 2) New, flexible asset that otherwise would not come online without long-term

	<p>incentives. For example, installation of thermal storage systems in an existing distillery.</p> <p>New assets are the original ambition. This will be decided based on ongoing analysis and industry proposal giving details about good application of the incentives. For such proposals we will want to consider how all additional flexible demand able to deliver new constraint-benefits and would not otherwise be realised can still participate.</p>
<p>The system benefit of using otherwise curtailed energy comes from using it during periods of (otherwise) curtailment – and not from not consuming power at other times. Insisting on the latter is a killer for fundability of projects i.e. they cannot be built (thinking about hydrogen). Can this point be addressed urgently please.</p>	<p>Thank you for your suggestion – we would be interested in hearing about any major “fundability” barriers to viability – please review all the funding incentives considered in the CBA assumptions within Arup report and send us further input (including on the potential for an Availability Payment based on MW capacity per year).</p>
<p>Should REMA updates on SSEP + TNUoS be incorporated? The lack of clarity is now having an impact on investment certainty – industry not going to get an update until end of year.</p>	<p>As set out in the REMA Summer Update, DESNZ will work with Ofgem to deliver TNUoS reform within this Parliament, and by 2029 at the latest. Please also refer to Ofgem’s Open Letter setting out their initial thinking on how network charging signals could be reformed.</p> <p>DESNZ plan to publish a Reformed National Pricing (RNP) delivery plan by the end of this year, with a timeline of key activities for implementing RNP and plans for how locational signals will provide clear and consistent signals to developers and investors. DESNZ plan to support the necessary code modifications through legislation to accelerate implementation of the reforms.</p>

<p>There have been some excellent points made previously on defining exactly what % of constraints are available, and in what location relative to the constrained boundaries. I wanted clarification on with regards to cascading constraint management, so, if a developer was to deploy a data centre in the B0 – B1 region, would that address constraints at B6 & B4 levels</p>	<p>We are working on the modelling for DfC but location above more boundaries could be one factor affecting the hours utilised.</p> <p>Boundaries in Scotland and the North of England are nested because the flow is heavily interlinked. Constraining actions that are tagged for one boundary might have been taken to reduce flow at a ‘downstream’ boundary. So, deploying flexible assets in North Scotland could address constraints in the South, but this is not always the case as the actions on the day also depends on other factors, such as wind conditions, operability issues and voltage management.</p> <p>In the meantime, we would encourage you to review our CBA which provided indicative Frequency of Constraints and Size of Constraints across the 2025 – 2035 period.</p>
<p>Building on raising REMA point: are you able to say anything about how you’re thinking about DfC and other CCP outputs in light of the decision to stick with a national market? Previously, CCP was pitched as an interim solution until zonal pricing. Do you see it differently now?</p>	<p>With the REMA decision to discount zonal pricing, we will continue to progress with Demand for Constraints to incentivise new demand to locate behind constraints in advance of network build out in 2030. We recognise the need for clear investment signals to be combined with a mix of revenue sources to help mitigate risks of stranded assets beyond 2030.</p> <p>In parallel, we will be reviewing other CCP options that are being taken forward to assess whether there is potential impact and if changes are required.</p>
<p>Building on the definition of the service – Is the “Demand for Constraints” product only suitable for flexible assets? Or would baseload demand be able to benefit? Recognising that large baseload demand in Scotland could</p>	<p>Our aim for Demand for Constraints is to incentivise more flexible demand in constrained areas. NESO has been guided to focus on using our incentives to deliver increased flexibility that can help constraints and consumer bills (rather than inflexible</p>

<p>reduce the impact of build out of North to South grid high voltage direct current (HVDC) reinforcements, will this value be recognised and asset incentivised to locate in Scotland? If not, why not?</p>	<p>baseload demand). In addition, <u>our CBA</u> shows that incorporating baseload demand tends to increase wholesale electricity prices.</p> <p>We are mindful of the UK Government decision to retain national pricing justified partly by the need to ensure confident investment nationally and NESO wishes to keep consistent with this principle and our remit, avoiding any skewing of regional pricing signals for generation or for base demand.</p>
<p>Recognise that NESO are still finalising outlining service terms – it would be really good if NESO could be clear on the intention of the product –i.e. in the case of B6 boundary, are NESO only intending to “payout” during HH periods when the wind generation in Scotland is high and the system is constrained?</p>	<p>We are seeking more feedback from potential projects to understand if the Arup CBA assumptions are valid for your project(s). NESO is still working on detailed service terms, but you can see two payment elements are considered by Arup in the report. One of them is Utilisation Payment (£/MWh) (the assumed figure is given) paid during constraint times.</p> <p>We would welcome your feedback on these in more detail.</p>
<p>Agree with points raised on timings for HAR etc. If a project was bidding for DfC with an existing HAR contract, would it meet the 'new' criteria?</p>	<p>Yes that would meet the 'new' criteria. In coming months, we will determine the detailed eligibility requirements.</p>
<p>How does the demand for constraints product differ from the DSO demand turn-up and down service?</p>	<p>DSO services are used to operate distribution network constraints, and the only alternative DSOs can price their services against is (nearly always very expensive) Network Build. Generally, NESO constraint actions are used instead of (nearly always relatively low-cost/MWh) of curtailing excess flexible generation. For this reason, NESO constraint action(s) (including DfC) would not attain the price break-points many DSO services can offer.</p>

	<p>In the case of DfC we are seeking to incentivise new flexibility where we can cost effectively do so for easing constraints in specific locations like Scotland up to (and potentially beyond) 2030. DfC therefore seeks a model that will enable CBAs on this basis and still deliver net value of saved overall costs for the bill payer.</p>
Would it be possible to bid demand for constraints into HAR ASAP?	<p>We are looking at getting the scheme set up as quickly as possible. We intend to introduce a T-2 DfC contract, so we are aiming for delivery in 2028. On that basis, we will be trying to tender in 2026 so that the timing aligns with HAR. However we cannot guarantee the exact DFC tender timeline now and NESO have little control or influence to the timeline or delivery of HAR3.</p>
How would the demand for constraints contract interact with the timings for the developer bidding into HAR3?	<p>We are minded to work towards a harmonised timeline between Demand for Constraints tender and the upcoming HAR in 2026. We intend to introduce a T-2 DFC contract, so we are aiming for delivery in 2028. On that basis, we will be trying to tender in 2026 so that the timing aligns with HAR.</p> <p>Successful bidder to the DfC tender could strengthen their hydrogen investment business case and would be able to submit competitive bid to HAR using DfC contract. This could reduce strike price, delivering lower costs to consumers.</p> <p>However we cannot guarantee the exact DFC tender timeline now and NESO have little control or influence on the timeline or delivery of HAR3.</p>

What are the minimum and maximum sizes of a clip that you'd procure through the service?	<p>We appreciate providers are keen to hear more on expected approximate scales NESO could procure and we will be doing more work on forecasts. As presented, DfC plans to instruct demand via BMUs and for ramp rates to be part of the DfC unit BMU registration terms.</p> <p>In the meantime, we would encourage you to review our CBA which provided indicative Frequency of Constraints and Size of Constraints across the 2025 – 2035 period.</p>
Is there a risk of increasing the After Diversity Maximum Demand (ADMD) on our network and causing overloads at low voltage if we are asking aggregators to turn up?	We are actively working with DNOs through the Primacy programme and associated Risk of Conflict processes to establish effective tools that enable DNOs to express specific and minimally-exclusive necessary limits that DNOs may need on the levels of ADMD that DNOs can accommodate. We welcome a continued discussion about this and we expect that any aggregated demand proposed for DfC would need to be considered as part of the Primacy process and helping progress the widest participation for flexible assets in helping to balance the transmission system.
How would this product feed into the demand turn-up standardised Flex product that is already on the market?	See above answers on DNO interactions and collaboration on primacy.
What factors should be considered to ensure alignment between the design requirements for demand constraints and DNO/DSO markets?	We welcome the positive and helpful responses already coming from our DNO colleagues as NESO is working to be proactive. We have already reached out to discuss relevant DNO/NESO interactions and we agree there is considerable remaining work to do to advance the current Primacy programme. We want to enable the fullest market participation and engage in widest and most inclusive

	<p>competition to deliver most cost effective actions able to manage growing thermal constraints. We look forward to continued NESO/DNO dialogue to ensure NESO balancing actions avoid any unwinding or impact on value of actions and costs met by the bill payer.</p>
<p>Where in that process would a developer bid for a demand for constraint contractor split?</p>	<p>[Comment: This question was raised during the discussion on how the Demand for Constraints contract would interact with the HAR process, particularly focusing on the timing and sequencing of bids in relation to project development milestones.]</p> <p>We are minded to work towards a harmonised timeline between Demand for Constraints tender and the upcoming HAR in 2026. We intend to introduce a T-2 DfC contract, so we are aiming for delivery in 2028. On that basis, we will be trying to tender in 2026 so that the timing aligns with HAR.</p> <p>Successful bidder to the DfC tender could strengthen their hydrogen investment business case and would be able to submit competitive bid to HAR using DfC contract. This could reduce strike price, delivering lower costs to consumers.</p> <p>However we cannot guarantee the exact DfC tender timeline now and NESO have little control or influence to the timeline or delivery of HAR3.</p>
<p>A little bit more information on the closed clause, which would essentially cancel the contract if there were to be sufficient network build out in the 2030s?</p>	<p>With the REMA decision to discount zonal pricing, we will continue to progress with Demand for Constraints to incentivise new demand to locate behind constraints in advance of network build out in 2030.</p> <p>We recognise the need for clear investment signals to be combined with a mix of revenue</p>

	sources to help mitigate risks of stranded assets beyond 2030.
What's your views on BESS?	We wish to consider the widest range of technologies able to help ease constraints through a sustained flexible response and we recognise a combination of technologies may enable the delivery of a flexibility. For demand sources that typically already operate within the market such as BESS, we acknowledge the importance of revenue stacking to BESS business case and the ability to participate in other balancing and ancillary services markets alongside Demand for Constraints will be essential.
What opportunities are there to align in targeted areas?	<p>[Comment: This question was raised when discussing coordination between NESO and DNOs. It was suggested that rather than just avoiding conflicts (e.g. with Active Network Management (ANM) schemes), there could be proactive collaboration to target specific areas where demand turn-up could be beneficial for both transmission and distribution networks.]</p> <p>NESO is delighted DNOs are actively participating in the DfC stakeholder engagement and to align to ensure smooth DfC dispatch by NESO. We agree that our collaborative efforts can help to deliver more flexible demand assets with potential to support more cost effective operation at many network levels and thereby deliver more value for the bill payer across the whole system.</p>

<p>What would you define as New, and who would be eligible?</p>	<p>In our presentations we noted that New Asset could be any of:</p> <ol style="list-style-type: none"> 1) New project that is not operational now – for example, an electrolyser plant looking to site in B2/B4 ; or 2) New, flexible asset that that otherwise would not come online without long-term incentives. For example, installation of thermal storage systems in an existing distillery to enable fuel switching. <p>We will try to consider good application of the incentives to enable constraint-benefits that would not otherwise be realised, while ensuring value for money to consumers.</p>
<p>Are you looking for this to be a transmission connected product for transmission connected demand or distribution connected?</p>	<p>We will try to consider any valid application of the incentives to enable constraint-benefits that would not otherwise be realised. At present this is open to both transmission and distribution connected projects (or their associated future connection applications).</p>
<p>Can BESS play in this market for DfC?</p>	<p>We wish to consider the widest range of technologies able to help ease constraints through a sustained flexible response and we recognise a combination of technologies may enable the delivery of a flexibility. For demand sources that typically already operate within the market such as BESS, we acknowledge the importance of revenue stacking to BESS business case and the ability to participate in other balancing and ancillary services markets alongside Demand for Constraints will be essential.</p>