
P462 Workgroup Meeting 4 Summary

Summary

1. Meeting Objectives

The Chair welcomed attendees and presented the meeting objectives:

- To allow the Workgroup to query and feedback on the analysis presented at Workgroup meeting 3;
- To provide an overview of the potential interactions between P462 and REMA; and
- To capture the Workgroup's initial views on the P462 and REMA interactions.

2. Action Review

- 2.1 The Lead Analyst covered the open Actions on Slide 4.
- 2.2 Action 5 (Review of REMA Impacts) was to be covered in Workgroup meeting 4.
- 2.3 Action 7 (Elexon engagement with DESNZ) is an ongoing action.
- 2.4 Action 10 (NGESO to provide data). This Action was completed by NGESO ahead of the Workgroup meeting, therefore, the aim is to close the Action at the next Workgroup meeting.
- 2.5 The Lead Analyst noted that closed Actions can be found in the appendix of the Slides.

3. Further questions on P462 NGESO Analysis

- 3.1 As per the Workgroup's request at Workgroup meeting 4, NGESO opened up to the Workgroup for any questions or feedback to their analysis presented at the previous Workgroup, plus any other areas that the Workgroup wanted to highlight.
- 3.2 One of the questions received prior to the Workgroup was, does the benefit of P462 mostly come from exchange of value between wind farms rather than displacing other technologies. NGESO presented their answer to this, while it is not exclusively the exchange value between wind units, they do make up the most significant proportion of the benefits [~£530million out of ~£640million]. NGESO highlighted that in the historic analysis, Biomass represents £17.6million in exchange of value. Pump storage, which have historically competed near the price of wind units but would be lower given the change in pricing post TCLC findings, represents up to £44.5million exchange of value. Non-pumped storage hydro represents £21.7million of value, however in this case they are not always able to store any of the water so they may have a higher marginal cost leading them to fall out of merit.
- 3.3 NGESO noted there are some instances of CHP, CCGT, OCGT and Coal units falling below these Bid Price levels, but they are predominantly associated with managing the largest loss. Given these units have fuel cost economics, if there were different competitive pressures in place, they may or may not actually be displaced under this analysis.
- 3.4 One Workgroup member queried, what is meant by Bid Prices being lower for pump storage after the TCLC findings. NGESO clarified, there have been TCLC findings against two units who have since changed their pricing behaviour, therefore the historic value case would be different forward-looking. NGESO noted that historic data is not necessarily ideal to model and the Workgroup can input on whether to include this data in the model and when defining the CBA scope.
- 3.5 One workgroup member queried if the ESO would need to overlay any further parameters for the restacking of the bids and if it is practically possible. For example, the location or size of asset, or would it actually be something that could happen with the revised merit order.
- 3.6 NGESO noted that the analysis is high level and not a genuine available counterfactual. Things such as location and size of unit [depending on requirement] could be factored in to determine whether a unit is a

genuine alternative to a unit displaced [in the Bid Stack] in this analysis. However, the control room would largely make pure merit order based decisions.

- 3.7 One Workgroup member stated that geography is the first order effect and that there is not much to be gained from looking at the whole market analysis. The negative wind bids are primarily in Scotland. From their own analysis, around 62% of the volume that would be repriced by P462 are two plants in the hands of one company. One of which is a CCGT which is coming to the end of a voltage support contract with the ESO, so its behaviour may change as well. If you add in one other plant, you have one more company which makes it 81% of the total volume. Both of the operators have been subject to adverse TCLC findings in the recent past. This also makes TCLC findings a first order effect. The Workgroup member asked why change the Balancing and Settlement Code, when it is the behaviour of two companies.
- 3.8 NGESO agreed that locationality will be very important. The analysis shows that the vast majority of the value is not from the alternative resources, it's from introducing competition between wind units themselves, i.e., beyond subsidy recovery, the remainder of the bid is extremely variable between a fuel source.
- 3.9 The Workgroup member fed back that analysing competition needs to be done in a realistic market context with consideration on how the competition affects prices. They raised concern that there might be an over interpretation of the ~£600million benefit [as per slide 6] and that there needs to be analysis that gets into the details about what happens in Scotland [for example]. They also believe consideration is needed on whether P462 results in more or less wind generation being accepted. They are concerned there is a risk of creating a system that increases the discarding of wind energy which cannot be economically optimal.
- 3.10 NGESO agreed that this type of analysis could be done, agreeing to come back to a Workgroup meeting with more analysis. This would also be something that the Workgroup could consider as part of the Cost Benefit Analysis. NGESO noted that at Workgroup meeting 3 analysis was presented of the impact on the unrestricted bid-stack showing very little impact on non-renewable fuel source types.
- 3.11 One Workgroup member also highlighted that the updated TCLC guidance is about to be released by Ofgem. Therefore, the analysis may need to be redone based on pricing closer to the actual cost as per the new guidance.
- 3.12 NGESO noted that you may see a change in the price of wind behind constraint conditions. P462 would still be necessary as the TCLC guidance doesn't introduce competition between different subsidy tiers/types.
- 3.13 The Workgroup member felt that the Workgroup has not resolved the differences of the RO [fixed budget per year] and CfD. The RO is a fixed cost annually that the consumer will pay anyway. So it would be good to get further analysis on the impact to the taxpayer based on the fixed cost of the RO versus the CfD [based on strike price alone].
- 3.14 One Workgroup member, stated the impact on interconnectors needs to be considered, i.e., what will happen to the interconnector flow if we take the extreme negative prices out of our market and if that would create more of an inflow to the UK. Also, how this would then impact the redispatch costs which we would look to save. They stated that they would welcome discussion or examples in the Workgroup to make sure that the net overall is not setting us up to incur more cost by not having considered interconnectors.
- 3.15 NGESO recognise the need to assess the interconnector impacts and this is something which could be included in the CBA.
- 3.16 NGESO noted that prior to the meeting they received a query on how they calculated the benefits, NGESO provided the overview of their method. One Workgroup member also stated they still struggle to understand how the numbers are derived and a worked example would aid understanding. For example, providing one half-hour period with an actual stack and how it changes with P462. Elexon/NGESO took down the action to provide a worked example showing how the benefits are calculated from the data shared.
- 3.17 One Workgroup member raised an issue that in Scotland NGESO has issues with batteries in constrained areas in the present arrangements. Batteries face a national wholesale price and the locational BM price meaning they could do a locational BM Bid and as soon as it was charged, the battery can then do non-locational nationally priced sell of that energy. Then in a constrained period that battery can churn over the constraint, making money for the battery and providing a net negative value to NGESO, therefore batteries are not well used to help deal with constraints.
- 3.18 Furthermore, this is a separate problem which belongs to NGESO which is being resolved via the Constraints Collaboration Project. The resolution of this issue could affect the numbers in the NGESO analysis for P462

because there could be more batteries participating in this market moving forward. They noted it is worth considering the extent of an appropriate investment signal for batteries in constrained areas from the operation of the BM and wholesale markets, in the two different versions of REMA. Even before REMA, given the build rate, they believe there's very substantial economic value to be gained, which is likely to be of a similar magnitude as presented in the P462 analysis. They stated a market that incentivizes assets to build and create competition for negative volumes by physically being able to store renewable energy for release later when the network is less constrained is a good thing in the long term. They requested some analysis into the type of investment signals that would deliver a system that operates efficiently and uses all the wind energy that is available.

- 3.19 NGESO noted that this is something to take away and to bring back any further thoughts/analysis to a future Workgroup.
- 3.20 One Workgroup member shared a similar sentiment, as they are building 500MW in Scotland at the moment which will go live within the next year - a lot of other companies are building them also. They requested some forward-looking analysis and assume this could also go within the CBA. NGESO agreed this could be looked at as part of the CBA.

4. REMA Interactions with P462

- 4.1 DESNZ presented slides 8 to 19 on REMA.
- 4.2 REMA aims to identify and implement reforms needed to drive investment in and enable the operation of a secure low carbon electricity system by 2035 whilst ensuring affordability for consumers. They expect to publish the summary of responses to the second consultation [closed 7 May] by summer 2024 and to conclude the policy development phase of the programme by mid-2025 – note there will be a general election within this period which could impact timescales. Depending on the chosen option CfD reforms could be implemented from Allocation Round 9 (AR9) in 2027, although some potential reforms may need to be aligned with the whole market reform at a later date.
- 4.3 One Workgroup member queried whether P462 falls in the REMA package, or is implemented as separate from a governance perspective. DESNZ confirmed that this is not formally part of REMA and is being treated as an interaction with REMA.
- 4.4 DESNZ covered off the four challenges which were included in the second REMA consultation:

REMA Challenges

Challenge 1: Passing through the value of a renewables-based system to consumers

- 4.5 The conclusion of Challenge 1 is to retain marginal pricing across the wholesale market and future proof the CfD scheme because the combination of these two approaches is the best way to decouple gas and electricity prices and enable efficient electricity system operation.

Challenge 2: Investing to create a renewables-based system at pace

- 4.6 The conclusion of Challenge 2 is to commit to retain a CfD type scheme as the primary and most effective mechanism for driving investment in renewable generation to deliver net zero. Additionally, to ensure that the CfD is future-proofed by considering a range of reform options.

Challenge 3: Transitioning away from an unabated gas-based system to a flexible, resilient, decarbonised electricity system

- 4.7 The conclusion of Challenge 3 is to retain the Capacity Market (CM) as the primary mechanism for ensuring adequate capacity and to optimise the CM by introducing a minimum procurement target into the auction to better support investment in low carbon flexible technologies.

Challenge 4: Operating and optimising a renewables-based system, cost-effectively

- 4.8 The conclusion of Challenge 4 is to continue considering the options of:
- zonal pricing which could send whole market participants location or investment and operational signals;
 - alternative location options that could be implemented under national pricing, so potential changes to network charging and access rights;
 - a centralised dispatch alongside the option of a reformed BM; and/or

- shorter settlement periods.

Decoupled CfDs

- 4.9 DESNZ presented on two main types of CfD reform options. De-coupled CfDs removes the link between a unit and its actual metered output [which is the method to date for the CfD support mechanism].

Decoupled CfD - Deemed generation

- 4.10 The Deemed generation CfD is similar to the current CfD structure, however, rather than being paid on metered output, CfD payments would be based on a 'deemed' amount of generation, i.e., the amount the asset could have produced [in a half-hourly period]. This seeks to separate the behaviour driven by the subsidy payment and encourage assets to respond to market signals.
- 4.11 The potential benefits of this option are that it can remove volume risk compared to the current CfD. This is mainly through removing the negative pricing rule not to generate below short run marginal costs while giving additional protection through those periods of negative pricing via a continued subsidy payment.
- 4.12 There are different variations on how to apply the model and DESNZ are maintaining a flexible design approach to accommodate the other REMA reforms, for example zonal pricing. DESNZ are also considering how to allocate the risk in different ways for deemed generation CfDs.
- 4.13 The biggest challenges of this approach is accurately determining the deemed generation and how it would work in practice. More detail was put forward in the latest consultation and DESNZ are working closely on this CfD option at the moment.

Decoupled CfD – Capacity-based

- 4.14 The Capacity-based CfD would provide a regular fixed payment based on the generator's installed renewable capacity which would be set via a competitive auction, independent of market activity.
- 4.15 The asset is then exposed to other market signals and incentivised to maximise revenues across markets and optimise trading strategies. DESNZ have proposed a consumer protection mechanism if this type of CfD were to be implemented that would take the form of a gain-share above a price point. This would, for example, protect consumers against high prices seen during an energy crisis. This CfD is aiming to avoid the operational distortions that exist with the current CfD.
- 4.16 DESNZ may need to look into having an 'availability factor' which would encourage minimal offline time for maintenance etc. This CfD provides revenue certainty while also exposing generators to market signals, which would be stronger compared to the deemed generation CfD.
- 4.17 The Capacity-based CfD is potentially a better fit with some of the other REMA reforms, such as zonal pricing because it would be potentially easier to expose assets to locational signals. Assets may be exposed however to an increased price risk, therefore DESNZ need to assess the potential of increased cost of capital.

Decoupled CfD – interaction with P462

- 4.18 As the CfDs are decoupled from metered output, there would not be a need for 'price recovery' of the subsidy payments via the BM. However, without P462, the merit order into which the new units would bid into would remain distorted by existing CfD and RO subsidies. The new decoupled CfD units would likely have a significant advantage over legacy assets who need to recover their subsidies and so it could be perceived as unfair.
- 4.19 The current policy thinking is combining P462 with these types of CfD reforms would be favourable as it would help support competition between new and existing assets on a consumer cost basis.

P462 and REMA

- 4.20 DESNZ note that they do not want REMA to delay important work to reduce balancing costs. Therefore, they are in favour of progressing P462 and REMA in parallel and to consider the interactions on an ongoing basis. The current view is that REMA outcomes will not remove the necessity for P462 or something similar to P462, even under some forms of centralised dispatch.
- 4.21 There is also a risk that subsidy related distortions could be even greater under a zonal market, i.e., by having a national strike price for a current CfD and a zonal price in the future.

5. Workgroup feedback to REMA and P462

Flexibility

- 5.1 One workgroup member requested what happens for flexibility and long duration, and how assets will price moving forward. They mentioned that REMA impacts prices in the BM and potentially flexibility assets. Those that bid into the long duration scheme may have to put a higher floor price to compensate because they could get their signals taken away.
- 5.2 Another Workgroup member highlighted the government's target of 55GW of short duration flexibility and 30 to 50GW of long duration flexibility. For flexibility, particularly storage, the business model relies on the ability to stack revenues from multiple markets, of which the BM is a key layer. Therefore, P462 will substantially affect the ability to draw revenues from those markets for flexibility and so has clear impacts for those flexibility targets that the government have announced, therefore they would welcome more from DESNZ on this.
- 5.3 DESNZ noted that this is something to take away and to consider at a later Workgroup.

CfD changes

- 5.4 One Workgroup member noted that it is unlikely to see any new CfD enter the market before 2030, so even if P462 was a solution, there would need to be consideration of the timing. This is also combined with the ROs coming to end around 2030. There needs to be a whole system impact assessment before we can determine if P462 is good or bad. Although this could be included in the CBA, it is important to determine this first.
- 5.5 One Workgroup member stated that they felt that the current CfD works fine as an investment mechanism. They also feel that the new de-coupled and P462 could be a double counting of actions [to reduce balancing cost], so why go down the additional complicated route of P462 which could create much wider impacts. For example, lost investment signals for battery storage, lack of batteries in specific locations and other things such as Cap and Floor.
- 5.6 DESNZ noted that the new deemed CfD is trying to address the operational distortions linked to the current CfD mechanism. It is true that current CfD has been successful as an investment mechanism, however, as more renewables are on the system we will likely see more price cannibalisation which the current CfD does not protect from. Deemed CfD is being put forward to give confidence to invest in renewables as they increase on the system and market price changes. Regarding P462, this modification would apply to all existing and future CfD [and RO] assets.
- 5.7 One Workgroup member raised a potential issue with Capacity CfD auction as there is an opportunity to win an agreement by assuming a higher return on the BM, so you could lower capacity payment and win the auction – this would be regardless of P462. DESNZ welcomed the feedback and would take this away to consider.

6. Further considerations and AOB

- 6.1 A couple of Workgroup members raised a concern that P462 has large market level impacts it's therefore important that the communication of the modification reaches a wide range of people, rather than those who may show just an interest in code modifications. Elexon agreed with the sentiment and agreed to look into how the Modification could be communicated wider to ensure engagement from market participants.
- 6.2 One Workgroup member asked if an SCR Modification would be more appropriate for P462 given the interactions. Elexon agreed to take away this question.
- 6.3 Workgroup members also asked for the process of the CBA. Elexon confirmed that the next Workgroup meeting will be on the CBA scope and that the aim is to provide a CBA Scope document ahead of the meeting to help aid discussion.

Actions

No.	Workgroup raised	Action	Owner	Due by	Status
5.	WG1	To review the potential REMA impacts once the consultation is published by DESNZ	NGESO/Workgroup	WG4	Open

7.	WG1	Elexon to engage with DESNZ on how P462 interacts with government policy.	Elexon	Ongoing	Open
10.	WG3	NGESO to provide data used in the analysis to provide further context.	NGESO	WG4	Open
11.	WG4	NGESO to provide analysis on the geographical limits of the model and what the results are when looking into Scotland market conditions.	NGESO	TBC	Open
12.	WG4	To provide an initial CBA Scope document with the Workgroup.	Elexon/NGESO	WG5	Open
13.	WG4	DESNZ to consider the interaction between P462 and government flexibility targets.	DESNZ	TBC	Open