ELEXON

P462 Workgroup Meeting 3 Summary

Summary

1. Meeting Objectives

The Chair welcomed attendees and presented the meeting objectives:

- To provide further understanding on the Modelling done to derive the potential benefits of P462;
- To provide analysis for Wider Impacts regarding Day-ahead market impact and Carbon impact; and
- To provide a high level view of what is involved for the CBA.

2. Action review

2.1 The Lead analyst provided updates on all Actions:

2.2 Closed actions:

- Action 1 (Why BSC Modification) has been closed however, the Lead Analyst noted that this did not mean ToR (m)[*] was answered and it will require final Workgroup views for the Assessment Consultation [and Assessment Report to be presented to the BSC Panel].
- Action 4 (Review of wider impacts) is closed, however, this does not mean the wider impacts ToR [ToR (e)[†]] is closed. Action 4's aim was to gather the initial list of potential wider impacts - the Workgroup will need to assess the best routes to assess the wider impacts which will likely require a Workgroup meeting.
- Action 6 (Consider if issue covered by TCLC), as per the Workgroup meeting 2 discussion, was closed.

2.3 Open Actions:

- Action 2 (Detailed list of assumptions) along with Action 3 (carbon impact), Action 8 (CBA process overview) and Action 9 (RO and REGO impacts) were covered as part of Workgroup meeting 3.
- Action 5 (Review of REMA impacts), is planned to be covered in Workgroup meeting 4. Action 7 (P462 interaction with government policy) may also feed into WG4.

3. Assumptions and Simplifications (slides 8-9)

3.1 Ahead of Workgroup meeting 3, NGESO shared an information pack detailing their analysis for P462, it also outlined their Assumptions and Simplifications defining the parameters for their analysis.

3.2 NGESO went through each of the assumptions in the Workgroup meeting to gather feedback on the appropriateness of each assumption and to gather any further areas for consideration.

Assumptions

Assumption	Workgroup feedback
A. Everyone is complying with TCLC and all other market rules (REMIT, Grid Code, BSC)	One Workgroup member wondered if TCLC could be enhanced to achieve some of the aims [of P462]. NGESO noted that this assumption is more for the model not on the approach of resolving the issue identified by P462.
B. There is sufficient subsidised bid volume available that it creates a	No feedback

[*] ToR (m): 'Is the BSC an appropriate route to amend the issue identified in P462?'
[†] ToR (e): 'What are the wider impacts of this Modification? Are the Workgroup comfortable with the wider consequences from implementing this Modification?'

Assumption	Workgroup feedback
floor price we cannot buy beyond	
C. The market is rational, if paid a subsidy amount explicitly it will reflect that in its pricing behaviours	One Workgroup member stated that this is fundamental - for any model one needs to assume that the actors are rational. This should be at the top. NGESO noted that this is fundamental, the ordering does not dictate the precedence of the assumptions.
D. A unit with existing contract types should be kept whole for its subsidy	One Workgroup member, although not disagreeing with the principle, wanted to understand the interaction between the various parts that make up the subsidy. For the RO, it is far more complicated. For example, it is not clear from the analysis how the interaction between a set pounds budget and people pricing in risk for the buyer price, which itself is determined by how many people get turned down, interacts with any of the assumptions.
E. That we can adjust P462 proposal to work for all identified subsidy [or other distortive characteristics based on metered output]	One Workgroup member noted that for completeness, NGESO could consider the REGO subsidy, however, recognising that REGO is quite an untransparent market so there could be some challenges estimating the fair value for that.
F. FES predicted constraint levels occur (various scenarios modelled)	No feedback
G. Future units hold a subsidy regime on metered output	No feedback
H. A unit would not hold intentional imbalance	One Workgroup member stated they do not agree with this assumption and stated the breach of REMIT according to German law case does not translate to GB markets. They stated this example is completely different market and it was regarding wholesale market trade [not balancing]. Another Workgroup member disagreed with Assumption H and added it may be a rational trading strategy for particular renewable assets to go intentionally long to potentially protect against the risk of imbalance. NGESO stated that rather than amending the model, consideration for assumption (H) could be taken forward and explored as part of the CBA.
I. All units can fulfil all requirements in a half hour period (stacks are not split for what could have delivered the system specific needs)	No feedback

Further aspects for consideration

Flexible demand:

3.3 One Workgroup member mentioned that as part of NGESO's 'Beyond 2030'‡ vision there are suggestions of 10 GW of hydrogen electrolysis capacity north of B6§. The Workgroup member suggested the need for assumptions in the model about increasing amount of bids from flexible demand, rather than just focusing on Bids to turn down generation. Furthermore, there will be a different market potentially in 10 years' time, which

‡ https://www.nationalgrideso.com/future-energy/beyond-2030
§ https://www.bmreports.com/bmrs/sites/default/files//System_Zone_map.pdf (map on page 4 showing B6)

isn't just about turning down generation. Therefore, the assessment of cost plus profit and subsidy is going to be very different for Bids for demand turn up compared to generation turn down.

3.4 NGESO stated this links in with Assumption F regarding the Future Energy Scenarios. They queried how this would be different as a Bid price still reflects a cost and profit. They would be happy to try and calculate anything that should be different in a forward-looking model. The Workgroup member proposed to go away and work through examples for NGESO to consider.

Offers:

3.5 One Workgroup member asked if NGESO had considered modelling Offers also, as not doing so could lead to unintended consequences. NGESO noted that extending the solution to Offers is not impossible but would be different to NGESO's base proposal, however, is something worth considering. NGESO agreed to explore this offline with the intention of reporting back to the Workgroup.

3.6 NGESO went through the simplifications applied to the model as per the table below.

Simplifications

Simplification	Workgroup feedback
1. Every **accepted** BOA 01-Jan-2018 to 01-Mar-2024 has been added to the data set:	No feedback
2. Every unit holding subsidy is given a Static subsidy assumption (ROC rate or CfD strike)	One Workgroup member noted that static subsidy is not true in reality. They stated there needs to be a separate analysis on the impacts of ROCs as they differ to CfD. They also queried how NGESO account for the varying operating costs which are priced into Bids. NGESO confirmed, that is not something they would know – an asset has a subsidy recovery and they cannot unpick the cost/profit element of an asset's Bid price and they do not propose on doing so.
3. If the unit holds a ROC contract the ROC buy out price is **assumed at £50/MWh** as their subsidy expectation	One Workgroup member sought clarity if units that expect to make £50/MWh from their subsidy are bidding in at minus £50/MWh in the model. NGESO clarified that the modelled units' Bid prices are repriced to reflect the subsidy which would be paid to them directly as proposed in P462.
4. If the unit holds a CfD **the contract award strike price** is assumed and the intermittent market reference price is used to calculate their subsidy expectation	One Workgroup member was interested on the sensitivity of the numbers (i.e., how much are numbers affected if buyout price is altered). NGESO proposed they consider this and inform of any outcomes.
5. **Volume Weighted Day Ahead Price** is used to represent the Intermittent Market Reference Price (IRMP)	No feedback
6. A best endeavours approach is used to account for which units hold ROCs – no **complete BMU mapping presently exists** in ESO	No feedback

4. Example re-pricing in model, methodology for analysis and results (slides 10-14)

4.1 NGESO outlined re-pricing done in the model on slide 10. One Workgroup member suggested to NGESO adding an asterisk on slide 10 where there is cost plus profit to make a note of the assuming just RO and CfD as some of the cost/profit might actually be also the lost REGO subsidy. NGESO explained REGOs are included within the 'cost and profits' as opposed to the subsidy element in the Bid - even though it is a subsidy element. NGESO agree that this is a fair thing to call out in terms of the benefits case.

4.2 One workgroup member asked NGESO if they had looked at the timing dynamic for the different subsidies, for example capacities that will be leaving the RO scheme from around 2027 onwards, i.e., the older assets. Also, the CfD is inflation indexed, hence the strike price will increase over time.

4.3 NGESO, stated that for the RO exit the units may continue to compete with subsidised units around £60/70 per MWh or there is potential they would tend towards 0 MW/h. Depending on that assumption one would end up with very different outcomes, therefore NGESO have kept it as the scheme running through to 2030, despite that not being true. Regarding the CfD strike price NGESO have simplified the model to not include inflating CfD, however, there is potential to look into this.

4.4 One Workgroup member raised a query about the wholesale market impacts. A key scenario being, where supply increases or demand falls within day compared with day ahead, meaning supply/demand balance is "longer" and assuming everyone spills any additional imbalance into cash out. What would the overall impact be on the Net Imbalance Volume (NIV) and what would be the additional cost of balancing? NGESO noted that this would be something to consider as part of the Cost-Benefit Analysis.

4.5 One Workgroup member asked for more clarity on the results from NGESO's analysis on slide 13. They requested that NGESO provide more of a breakdown of the numbers. They also queried how NGESO can demonstrate the model applies and predicts pricing accurately for the future when lots of assets aren't being taken into the BM now due to legacy systems issues. An example being a storage asset, even when pricing the Bid at zero, it does not get taken for constraint actions. Understanding of how we factor in developments, changes and sub-optimal actions currently taking place.

4.6 NGESO acknowledged the points raised, noting that there is an issue with the way in which some units are not necessarily always taken in strict merit order behind constraints for various system and potentially technology issues too. However, the model presented only looks at accepted units as opposed to a full bid stack of availability. The consequence is there is an under representation of the benefits because the majority of the time there would be more units available with a better marginal consumer price than what was taken, as NGESO would take Bids in merit order on average.

4.7 NGESO stated they were open to specific suggestions on how to reflect the issues raised. NGESO's expectation if one were to reprice the whole stack and say what was available, then it would end up with substantially higher benefits because of their size, location and technology type that weren't used because of their Bid price, rather than units that might have been able to fulfil that requirement otherwise. The Workgroup member acknowledged that it is difficult to know.

5. Outstanding Actions (slides 14-17)

Worked Example of Demand Action

5.1 One Workgroup member, queried if the cost benefit presented are net values [after the unit is paid their subsidy]. They queried if the subsidy is paid back through BSUoS.

5.2 NGESO clarified that the values are net, i.e., the results look beyond subsidy pricing and assumes that the subsidy itself is still paid in the analysis. They stated there might be some shift between subsidy pots and the BSUoS pot, but this needs to be considered. NGESO anticipate the cost savings for consumers arrive from the consumer outcomes from the transaction as opposed to just reduction in BSUoS. NGESO noted slide 18 provides an overview of the "market interactions and rules" which could help understanding of money flows and thus savings.

Impact on Renewable Obligation Certificates (RO)

5.3 NGESO provided their view on the impact on ROCs. They stated that the value of the ROC value is calculated via buy out price plus the recycle rate. NGESO stated the recycle rate is the over-riding factor in setting the value of a ROC at the point of generation, therefore if a methodology to incorporate recycle rates effectively were developed this would improve the benefits analysis by increasing the marginal subsidised unit expected price.

5.4 One Workgroup member stated that NGESO's assumptions were incorrect and that the calculation of ROCs is more complicated than what was presented [for example, as mentioned in the feedback to Assumption D]. The Workgroup member stated that NGESO should break out the numbers out for both the RO and CfD assets for more clarity. The Workgroup member stated they would send through some more details on this so that NGESO can review this further.

Renewable Energy Guarantee of Origin (REGOs)

5.5 NGESO provided their view on the effect on REGOs. They believe P462 has minimal impact on the REGO value as the change to renewable output is expected to be negligible. As REGOS are traded and not an obligatory support mechanism (like the CfD or RO schemes), they form part of the profit and cost base for a generating asset in the base proposal of P462, rather than a direct subsidy considered as a sunk cost.

Carbon impact of P462

5.6 NGESO presented their results on the Carbon impact analysis. Their analysis indicated that there would be minimal carbon impact, [with a 0.1-0.3% increase of total MWh production from carbon based generators (e.g. CCGT)]. Only in the unlikely event of extended durations with negative fuel prices would there be any significant carbon impact from P462.

5.7 One Workgroup member asked for more context around the numbers and how exactly NGESO got to these results on Carbon impacts. NGESO agreed to share data where possible and were happy to explain further at a later Workgroup meeting.

5.8 The Workgroup appreciated the analysis presented by NGESO. They stated they needed time to digest the information presented and to continue the discussion into the next Workgroup meeting. They also requested NGESO share data that was used for their modelling to aid their understanding. NGESO agreed to share the data where possible.

6. CBA overview

6.1 The Lead Analyst provided an overview of the CBA approach. They noted that the CBA will require Workgroup input throughout the process and that a key output for the initial CBA progression will be the agreement of the CBA requirements. The plan is to cover CBA requirements in Workgroup meeting 5.

6.2 The assumption is that the CBA will be performed by an external party. However, this is will be dependent on the CBA requirements and thus the scope of the CBA.

6.3 One Workgroup member queried if Elexon had a list of potential consultancies and whether they had been contacted, noting this will help expedite the process for going out to tender. The Lead Analyst confirmed Elexon have an existing list of consultancies to contact. The Lead Analyst took an Action to contact potential consultancies in advance of the agreement of CBA requirements and tender process.

6.4 Another Workgroup member asked if the Workgroup would agree the tender document which will include the CBA requirements. The Lead Analyst agreed with this approach and did not see an issue with doing this if it is beneficial to the Workgroup.

7. Next steps

7.1 The Lead Analyst informed the Workgroup of the plan for the next two meetings, Workgroup meeting 4 will cover the REMA interactions with P462 and Workgroup meeting 5 will cover CBA requirements.

7.2 As per the request of the Workgroup, Workgroup meeting 4 will also allow for further feedback and questions to the NGESO analysis presented at Workgroup meeting 3.

Actions

No.	Workgroup raised	Action	Owner	Due by	Status
1.	WG1	To consider ToR (m) 'Is the BSC an appropriate route to amend the issue identified in P462?' in more detail at WG2. NGESO to show other routes considered prior to raising P462. Along with their impacts. To allow Workgroup feedback on these other solutions to the issue identified as part of P462.	NGESO/Workgroup	WG2	**Closed**
2.	WG1	NGESO to provide a detailed list of the assumptions in the analysis presented at WG1.	NGESO	WG3	Agree to close WG4

No.	Workgroup raised	Action	Owner	Due by	Status
3.	WG1	NGESO to present back an issues case illustrating the carbon impact of the proposal and what percentage of transactions might displace conventional units in the same settlement period (as opposed the renewable generators with support mechanisms). To consider this has a Wider Impact as per ToR (e).	NGESO	WG3	Agree to close WG4
4.	WG1	Review of the Wider Impacts as per ToR (e). This includes suggestions raised prior to the Workgroup. Along with issues raised from WG1. WG1 Issues raised: • Impacts on Wind curtailment • Impacts on Storage • Impacts on Flexibility markets • Impacts on the interaction between the Wholesale market and Balancing Mechanism • Potential Carbon impact (as per Action 3) • Interaction with TCLC (as per action 6)	NGESO/Workgroup	WG2	**Closed**
5.	WG1	To review the potential REMA impacts once the consultation is published by DESNZ	NGESO/Workgroup	WG4	Open
6.	WG1	Consider if the issue identified is covered as part of TCLC.	NGESO/Workgroup	WG2	**Closed**
7.	WG1	Elexon to engage with DESNZ on how P462 interacts with government policy.	Elexon	TBC	Open
8.	WG2	Present proposed Cost Benefit Analysis process to the Workgroup	Elexon	WG3	**Closed**
9.	WG2	NGESO to present further analysis on specifically RO and REGO impacts	NGESO	WG3	Agree to close WG4
10.	WG3	NGESO to provide data used in the analysis to provide further context.	NGESO	WG4	Open