The voice of the energy industry

Energy UK Response: Reserve Product Reform Consultation (Initial Design Consultation)

April 1 2021

About Energy UK

Energy UK is the trade association for the energy industry with over 100 members spanning every aspect of the energy sector – from established FTSE 100 companies right through to new, growing suppliers and generators, which now make up over half of our membership.

We represent the diverse nature of the UK's energy industry with our members delivering almost all (90%) of both the UK's power generation and energy supply for over 27 million UK homes as well as businesses.

The energy industry invests over £13.1bn annually, delivers around £85.6bn in economic activity through its supply chain and interaction with other sectors, and supports over 764,000 jobs in every corner of the country.

Summary

We welcome the fact that National Grid ESO are engaging with industry with regards to the Reserve Product Reform and very much appreciate prior clarification from ESO that what has been proposed is a 'straw-man' proposal with scope for industry to input into and shape the design of the products. Preferably we would like to see this delivered through multiple co-creation workshops following on from the high-level workshop held in December 2020. We would welcome formal clarification from National Grid ESO that industry will be consulted thoroughly and there will be ample opportunity for all parties to provide input before a decision is reached.

We note that an EGBL Article 26 Consultation on Reserve Product Reform will take place from September- October 2021. We would like to request that prior to this, National Grid ESO engage in a further consultation with industry. When reflecting back on the process followed for Dynamic Containment product design, we noted that a long period of time elapsed between initial designs being presented to industry and detailed engagement, without formal opportunities to contribute over the intervening period. By introducing an interim consultation in this instance, it will allow industry to feed in on the details of the new products such as performance monitoring and testing, avoiding the need to correct oversights after an initial launch.

In terms of the consultation process itself, we defer to a joint Energy UK and ADE paper submitted to National Grid ESO on 9 March 2021 detailing a suggested approach to consultation for changes to balancing services design. We appreciate the proactive engagement we have received from National Grid ESO in terms of discussing this paper so far. Within the paper we ask that consultations should be for a minimum of eight weeks for any substantial change and four weeks for any minor change. We consider Reserve Product Reform to be a substantial change and therefore ask for future consultations on Reserve Reform to be open for eight weeks.

Please find the Energy UK response to the questions below and I confirm that we are happy for our response to be published. You will note that we have presented a wide range of views within our response to reflect the different perspectives within the Energy UK membership, who in turn represent a diverse range of technologies and assets. We ask that you consider all views articulated in this consultation when moving forward with co-creating the new reserve products. In order to find a solution that works for all parties, we would like to reiterate the importance of multiple workshops and further consultation as the designs develop, whilst keeping in mind the end goal of the evolution of these products.

Q1: Do you believe that the product suite outlined will deliver open, transparent and competitive markets for reserve?

There are a range of views across Energy UK members on whether the product suite outlined will deliver open, transparent and competitive markets for reserve. The respective positions of Energy UK members are articulated below and we ask that National Grid ESO consider all perspectives when moving forward with co-creation.

i. Agree

Some Energy UK members feel that the current broad design will allow standardisation and provide scope for a number of assets to potentially participate. These members hold the view that that the product suite with short response helpfully recognises the need for faster acting flexible services that can be delivered by technologies already in the market.

ii. *Disagree: Lack of clarity around the type of technologies that can deliver these proposals*

Currently, some Energy UK members feel that the 'Straw Man' Reserve Reform proposal as it stands contains idealistic requirements in terms of technical parameters, that are not reflective of what certain technologies currently in the market can actually feasibly deliver. For example, some members, believe the proposed approach to assets with flexible connections like Active Network Management (ANM) is strict, and hold concerns around the continued proliferation of ANM. These members feel that the current proposed approach will unduly limit competition.

To further expand on the lack of clarity perceived by some members around technology types that can deliver these proposed products; some members have highlighted that batteries and highly flexible gas engines cannot deliver either of the products as currently defined. The quick reserve product as proposed essentially only seems to be suitable for synchronised plants or potentially some batteries (although the lack of recovery time will prove challenging for batteries). In addition, some of these members expect batteries to be focused on response services. Finally, a further issue some members have highlighted is that the minimum run time of one minute for the slow contract excludes even fast gas reciprocating engines.

iii. Disagree: Concerns around procurement timescales

Different members question whether it is necessary to procure Quick or Slow Reserve at the day ahead stage, rather than using the BM timescales (for BM and non-BM plant) which should maximise the number of providers. If the Balancing Mechanism (or equivalent for non-BM) was sufficiently valuable then plant would target the Balancing Mechanism at the expense of the trading market. The current flaw in the BM is that the ESO uses it mostly to manage the system via large, slow assets rather than being willing to rely on flexible assets.

iv. Next Steps

Taking the above positions into account, we would like to emphasise the need for further thorough engagement with industry throughout the product design process to ensure the new product suite is successful in delivering open, transparent and competitive markets for reserve. Ultimately Energy UK members will need to see more detail on the final design to ensure it works for all. As mentioned, preferably we would like to see this delivered through multiple workshops with industry and an additional consultation prior to the EGBL Consultation.

Q2: Do you agree with our choice of the two products to take forward out of the original four?

Again, we present below a range of views expressed by Energy UK members and ask that National Grid ESO give all views due consideration.

i. Agree: although there are questions around the range of requirements

Firstly, some Energy UK members agree that there is a need for both products proposed, however we would like to highlight the large disparities between the Quick and Slow Reserve and would welcome clarification from ESO as to what could fill in the 'gap' in the middle. A proportion of Energy UK members think that taking forward Quick and Slow Reserve as they stand sends contradicting signals to the market. In particular, these members refer to Slow Reserve which is expected to be met by STOR providers, however, we note that STOR utilization has been negligible over the past couple of years.

Some Energy UK members also have concerns with regards to the range of requirements for both Quick and Slow Reserve. In addition, a proportion of Energy UK members hold overarching concerns that the products proposed by National Grid ESO require substantial fine-tuning to ensure a wide range of market participants in these services, to maximise competition and lower the costs to consumers.

ii. Disagree: some see the need for 'Moderate Manual Frequency Restoration Reserve'

Some Energy UK members would have welcomed a more qualitative approach to the desired products considering the needs of supporting a Net Zero system by 2025. In this respect, some members believe there is merit in including the 'Moderate Manual Frequency Restoration Reserve' which has a 3-minute response time. This response time will be particularly useful for warm CCGTs for example, as well as fast and flexible gas reciprocating units which have historically been offering reliable services to the ESO.

It is also worth nothing that the service gap between 30-second and 15-minute full delivery suggests that the ESO could end up overpaying for reserve services.

iii. Disagree: some would have welcomed a variation of ODFM

A proportion of Energy UK members also recommend that a variation of ODFM is considered as they do not believe the proposed products will be viable for small, distributed assets to participate in Slow Reserve as they will not be able to respond in 15 minutes (many of these units require a site visit to turn them on and off), nor take one minute dispatch instructions. These Energy UK members would therefore like to suggest a product with three hours' notice, a minimum run time of three hours and three hours recovery time.

iv. Disagree: some see no need for either proposal

Whilst other members agree that there is a need for both products proposed, different members hold the view that the BM should be the main procurement method; if the product cannot be bought in the BM (Quick Reserve) then it is a suitable product. Since it is possible to buy Slow Reserve in the BM, we question whether it needs to be part of this suite of products.

These members feel that If the products are taken forward then it may be worth considering a hybrid product such as Quick Reserve with a maximum utilisation period of longer than 20 minutes. It is not possible to stack Quick Reserve and Slow Reserve and a longer maximum utilisation period may open up more opportunities to optimise the utilisation of the two products.

Q3: Quick Reserve – What are your views on the overall product design? Are there aspects which are unclear or have impacts that we have not considered?

In terms of the overall product design, some Energy UK members have expressed concerns that the proposal to have "1-minute extendable blocks, with a max of 20 minutes" could lead to some very short runs of 1, 2 or 3 minutes. This outcome would not be good from a technical perspective for many assets. By comparison, for services such as STOR and Fast Reserve many assets place technical limitations on bids such as "no more than 5 instructions per 24hr period". These limits are imposed for a reason; not allowing any limits will cause some assets no longer able to participate,

Regarding aspects which are unclear, some members have highlighted that stacking opportunities between the quick and slow reserve products should be investigated and further clarified, for example, to allow assets that can sustain a quick response beyond the 20 minutes requirement of quick reserve and up into the 240 minutes proposed for slow reserve, to offer their MWs both in the quick and slow reserve.

A proportion of Energy UK members would like to highlight that the 30-second ramp is relatively slow for batteries. These assets are best suited to providing premium response services such as Dynamic Containment and, in general, for the faster acting frequency response suite that the NG ESO is rolling out. Conversely, a 30-second full ramp is too fast for almost every other provider, with potentially the exception of pumped storage and some existing static FFR providers.

Some Energy UK members believe the approach taken to delivery tolerances will be crucial: resources should be judged on delivering at least the volumes they are dispatched for, for at least as long as requested. Unless it can be shown that it is critically important to system security, resources should not be penalised for over-delivering either in volume or duration. If it is shown to be essential to limit over-delivery, then the limits should be as generous as possible. It would not be reasonable, for example, treat over-delivery the same as under-delivery. These issues are particularly important for the types of assets that have previously provided static frequency response, where they typically have a switching characteristic, and may not be able to re-start the consumption processes (and hence stop delivering) without local manual intervention, for safety reasons.

Finally, under the current proposals, we believe there is limited information on the process for setting utilisation prices during within day. As such NG ESO should provide clarity in this respect, for example, will this be consistent with the BM timeframe for submitting bids/offers.

Q4: Quick Reserve – What are your views on the different activation methods? Are there any consequences of having both manual and automatic frequency trigger set points that we have not considered? What are your views on having the trigger level change within day?

There are differing views amongst Energy UK membership with regards to frequency triggers and different activation methods. I have presented the views below and ask that NG ESO give all views consideration.

i. Frequency Triggers

Some Energy UK members do not believe that there should be a frequency trigger at all as this is the role of frequency response. Whereas, other Energy UK members support automatic activations as it allows the control room to achieve the desired response times and also allows participants to scale - However, to achieve this benefit, providers would have to be able to choose whether to offer resources as manually-activated, frequency-triggered, or both.

ii. Activation Methods

Furthermore, a proportion of Energy UK members have expressed views that National Grid should ensure uses of the different activation methods encourages assets to operationally position themselves in a way that is most helpful for meeting system needs. Changes in automatic frequency trigger set points within day increases uncertainty for providers about their ability to deliver in all periods where an asset has cleared in day ahead. Within day trigger level changes also increase uncertainty about expected throughput and therefore the opportunity cost for providing the service. This challenge is amplified when combined with a product design with no recovery periods (despite this having its own independent merits) and is likely to lead to sub-optimal positioning and bidding of assets that may add unnecessary cost to the procurement of these services.

Further to this, some Energy UK members recommend to provide better visibility of the potential degree of trigger level changes, NG ESO should at least consider providing an estimated range for possible High Frequency /Low Frequency trigger level changes that might be used prior to the Day-ahead auction.

iii. Manual dispatch granularity

A larger problem that has been brought to our attention by an Energy UK member, is that the manual dispatch does not fit within the one-minute granularity of the BM framework. This leads to the following options for amending the existing BM framework:

- a workaround adaptation
- rewrite it
- dispatch outside of the BM framework.

These options are all non-trivial and any dispatch outside of the existing framework fails to make use of the current successful architecture and risks losing the transparency that the BMRA brings to the market.

Q5: Slow Reserve – What are your views on the overall product design? Are there aspects which are unclear or have impacts that we have not considered?

Some members believe that by placing all providers that cannot deliver in 30 seconds into one single category that includes the slowest reserve providers, the ESO would not appropriately value and remunerate fast assets that have historically been successfully supporting the system

However, other members believe the 15-minute full delivery time bears the risk of excluding a proportion of STOR providers, which historically have been delivering between 15 and 20 minutes. The 15-minute full delivery time could mean that many assets that have the potential to deliver useful Slow Reserve services, and have a track record of reliably providing 20-minute response times, would be unnecessarily excluded. We request that ESO factor in these delivery times when considering the delivery time for Slow Reserve Products.

Some Energy UK members have highlighted a delivery time of 19 minutes for many of their assets. Taking this into account we request that ESO consider changing the 15-minute delivery time to 20 minutes, to ensure a wider range of participants in this service.

As mentioned in our response to Question 2, some members do not believe that this will support all previous ODFM customers.

Finally, some Energy UK members would like to highlight that in their view NG ESO as a balancer of last resort should be developing only those products that cannot be delivered by the BM market. These members note that Slow Reserve can be delivered in the BM.

Q6: What are you views on the effective minimum run time of 1 minute for both products? Are there any consequences that we have not considered?

There are differing views amongst Energy UK members with regards to a minimum run time of 1 minute for both products.

i. Disagree with the 1-minute minimum run time

On the one hand, some Energy UK members feel that the effective minimum run time of 1 minute for both products is too short, which may result in limiting participation and un-neccesairly excluding potential providers of less flexible assets. It would be useful to get a steer from National Grid ESO with regards to what technologies does the ESO think can deliver on these products and commit for one minute reserve time. In addition to this, it would also be useful to understand how National Grid ESO plan to operationalise a one-minute despatch instruction. As discussed in our response to Question 3, it will be important for many potential providers that they are allowed to continue to deliver beyond the end of the requested despatch period.

ii. Agree with the 1-minute minimum run time

On the other-hand a proportion of members felt that it is important that products should be technology neutral and specified in a way that reflects system needs. These members considered that it is appropriate to have short (e.g. 1 minute) minimum run times for both products. This would allow National Grid ESO to economically assess reserve available from the new reserve products with reserve available from BMUs in the BM.

Further to the point made above, some EUK members have highlighted that longer minimum run time products could lead to sub-optimal dispatches. For example, it could result in National Grid ESO having to dispatch reserve in both directions to solve an imbalance with duration shorter than the duration of the reserve product, leading to increased costs for balancing the system.

Q7: What are you views on our proposal to progress with variable duration products over fixed? Are there other aspects we have not considered in our assessment?

Please refer to our comments on Question 6. Some Energy UK members have highlighted that variable duration products provide NG with more flexibility, and avoids the need to inefficiently dispatch reserve in both directions or take further actions to solve short-duration imbalances.

Furthermore, different members have highlighted their view that as the intention of the products is to deliver flexibility to the ESO then there seem few reasons to adopt fixed duration products as a fixed duration would act as an artificial constraint.

Q8: Do you agree with the proposal to not include provision for recovery periods? If not, please provide views as to how the ESO could mitigate the issues of reserve erosion.

There are differing views amongst Energy UK members with regards to recovery periods. Both views are presented below and we ask that NG ESO considers both and engages with industry to find a way forward.

i. Disagree

Some members do not agree with the proposal to not include provision for recovery periods. For these members, a recovery period is a vital technical parameter for all providers. It is indeed not clear which assets can operate safely without such a factor in their plant dynamics: no recovery time could exclude several technologies from providing reserve services, among which batteries which will need to maintain state of charge.

We request that ESO engages with industry parties to establish what a suitable recovery period would be as well as why and when it would be needed. One solution suggested by an Energy UK member could be considering an option to include a recovery time, rather than setting a prescriptive one, this could be included in the Dynamic Parameters.

ii. Agree on condition

Other members consider that a recovery period may not be necessary provided that:

- NG ESO procures reserve by Half Hourly Settlement Periods (Settlement Period granularity should enable providers to tailor their service offering).
- NG ESO allows assets to submit utilization prices for individual settlement periods within day, close to real time.

Some members believe this would allow an energy-limited asset to signal its state of charge and its availability to provide further reserve services in subsequent settlement periods via its utilization prices, this could increase the diversity of assets and operational flexibility available to National Grid ESO.

Q9: We are not proposing to include linking of bids, either for different settlement periods or different products. What are your views on this?

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Q10: What are your views on the order of market procurement and interactions with future frequency response markets?

Some members believe it would be helpful to procure all these services simultaneously, although there would need to be a mutual exclusivity function. A proportion of members support an optimisation system that allows providers to co-clear all their service offerings for an optimal combination of services. Others consider that the response markets should have priority as these products are essential whereas the reserve products can be sourced from the BM.

Different members consider that a sequence of auctions would allow assets that are unsuccessful in their preferred market to participate in a different service market. The sequence would require further careful consideration including coordination with energy auctions.

Q11: What are your views on utilisation payments, including whether they should be pay as bid or pay as cleared?

There is a divergence in Energy UK member views on this question, both sides of which are presented below.

One the one hand, some members prefer pay-as-clear and consider it to be the most efficient approach as it encourages all participants to offer close to their actual costs, rather than try to cluster their bids around where they think the clearing price will be.

While other Energy UK members support a pay-as-bid approach. Some members also believe that NG ESO should allow assets to set their utilization price within day, ideally consistent with how and when BM bids and offers are specified.

There is an opportunity here for National Grid to include this issue within the upcoming workshops, allowing different members to explain their positions in detail before a way forward is agreed.

Q12: What high level requirements should we consider when developing a single dispatch and communication system for reserve?

Some Energy UK members would like to express their support for a standard API and auto despatch.

A proportion of Energy UK members have also highlighted that they believe the most important requirement is that the process for accepting bids is deterministic, and that the logic is explicit and transparent, e.g. it should be clear what the conditions are that cause one unit to be accepted ahead of another, whether unit size plays a role and so on.

Overall, it is important that reporting of instructions to the wider market must be consistent and timely. Any instruction in these products will impact the wider market through the cash out arrangements. Historically, dispatch instruction for non-BM providers have taken a long time to be available to the wider market. Some Energy UK members feel that this should be a consideration at the start of the design process.

Q13: Are there any areas where changes to could be made to improve access to the market for energy limited assets such as battery storage?

Firstly, some Energy UK members remain unconvinced that there is a need to make exceptions for any particular class of asset. These members believe that the service design being consulted on, with certain amendments should be generic enough to maximise participation from asses which can meet the ESO's system needs.

Secondly, some Energy UK members feel that NG ESO should explore the procurement of reserve in shorter time scales (e.g. within day) either (1) through intraday reserve auctions; or (2) through the BM with the introduction of availability payments for all asset types such as during the Arenko trial. Some Energy UK members have also noted that many markets in the US and Australia already have within day reserve procurements. This provides a means for the ISO/TSO to complement reserve procured in Day-Ahead auctions with closer to real time products as more information becomes available. This helps ensure reserve is available when needed without over-procuring in day-ahead, and helps to reduce the overall cost of procuring reserve.

Finally, we would also like to suggest that a published view of annual product requirements to 2025 would provide a good investor signal here.

Q14: Do you agree with our decision to continue with spin gen / spin pump as optional products, and progress with a separate stability market outside of reserve product reform

There is no consensus about the answer to this question amongst the membership. The majority of members consider that spin gen products should be included as part of this reserve reform and are disappointed that they have not been included, however are understanding that this may not be possible until the implementation of a separate short-term stability market. Others disagree with this opinion.

Q15: ODFM – what are your views on our assessment of the ODFM market? Do you believe there are aspects which we have not considered?

Please see below a list of aspects that we feel National grid should be considering in this space:

- Energy UK members have highlighted that small DER will be unable to participate in Slow Reserve.
- We also believe that investment is needed for the Regional Development Programme with DNOs.
- Some members believe that the foot room services being consulted on should be designed to act as a replacement for ODFM.
- Some members feel that ODFM was meant to be a temporary measure to manage an unusual, unforeseen system condition and that it should not be an enduring feature of the market.

Q16: Future concepts – What are your views on measuring dispatch of reserve against provider's baseline output, and what do you think the challenges and opportunities are?

Firstly, we would like to request clarity over the baseline, for example, how ESO intends to address the different baselines of different products – particularly when this must be set at the day ahead stage. The complexity of the baseline concept is avoided through the BM: the obligation to submit a PN creates the baseline. It is not clear what additional flexibility the baseline idea would deliver to the ESO.

We suggest that there is an opportunity here to hold a workshop to explore this greater as preferable baseline may depend on the type of asset in questions. For example, for renewable generation the preference would be closer to real time, for example, 10 minutes before the settlement period.

We support the concept of allowing assets to provide these reserve services from a non-zero MW baseline as it will maximise value to NG ESO to dispatch reserve based on the baseline rather than a 0 MW power target and reduce the degree to which the ESO's Balancing Services 'sterilise' the flexibility of assets. For instance, a 10 MW storage asset could export 10 MW power during the evening peak while providing 20 MW of capacity in downward reserve if the response is measured using a baseline.

Giving another example, consider an asset with the following Parameters:

- MEL = 100MW
- MIL = -100MW

To provide 100MW of headroom, this asset might be able to have a baseline anywhere within the range of -100MW to 0MW. The asset would therefore have the ability to provide demand to system without destroying the 100MW of headroom.

Some members also have concerns that some of the historic STOR products that used non boundary point metering allowed providers to deliver STOR products without any change to the boundary point metering and this type of situation needs to be avoided.

Q17: Future concepts - What are your views on the potential introduction of utilisation price curves, particularly on what impacts it may have on smaller providers

We would welcome further clarity and information on future concepts, and would appreciate it if National Grid ESO could share any insight into thinking on how these might work. Alongside this, we would also welcome clear examples of technologies that are able to participate in future Ancillary Service products.

In addition, some members also observe that real time pricing can be delivered in the BM timescales and that this allows a lot of flexibility. From some members' point of view, the key step is to move non-BM providers into the competitive space of the BM arrangements. Instead, these members believe focus should be on delivering this goal (and indeed these new products, if appropriate). That is, focus on delivering the immediate goals before seeking to develop new goals.

Next Steps

We would like to thank you in advance for considering our response and for your prior engagement with Energy UK regarding Reserve Reform. Given the range of views put across in our consultation response we would like to highlight the importance of a substantial amount of further industry engagement to work through some of the issues articulated. We very much look forward to hearing further clarification of the next steps regarding workshops and future consultation in due course. If you have any questions regarding our response in the meantime please do not hesitate to contact me on the details below.

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