

## EBGL Article 26: Proposal for defining and using specific products for balancing energy and balancing capacity

### Executive summary

Further to our previous submission June 18th 2019, this revised proposal seeks to address and provide clarity on the areas raised in the Request for Amendment (RFA) by Ofgem dated 09/10/2020.

In their RFA, Ofgem requested the inclusion of the Optional Downward Flexibility Management (ODFM) service as a Replacement Reserve specific product.

The existing ODFM product is time limited and will expire on October 25<sup>th</sup> 2020 and NGENSO are still evaluating the most appropriate product for meeting this system need in 2021. Where possible any new product would be modified to reflect the feedback that we have had from market participants regarding ODFM.

Hence, ODFM in its current form has not been included in this RFA. NGENSO will request the specification for any replacement product to be added to the list of RR specific products after conducting an Article 26 consultation in advance of it being used as an operational tool.

The remainder of this document sets out our requirement to maintain GB specific reserve products, along with supporting justification. The products that we propose to maintain are:

- Short Term Operating Reserve (STOR)
- Balancing Mechanism (BM) activations

Specific products remain vital to NGENSO for the following reasons:

- a) **Timescales of use.** NGENSO needs a variety of products with different timescales of use to manage the system
- b) **Availability.** There is no obligation on BSP's to participate in the RR platform, therefore there is no guarantee that NGENSO would be able to procure the required volume.
- c) **System constraint needs.** RR auctions cannot remedy local constraints within the system and subsequently we need to rely on the Balancing Mechanism to address these system issues.
- d) **Business Continuity Management (BCM).** Should the RR processes fail, a back-up process is required.

- e) **Pre fault and post fault management:** NGESO needs a variety of pre-fault and post-fault tools available to manage the system.

Section 26.1.b below outlines the reasons why NGESO needs these specific products in more detail.

The Annex section at the end of this proposal was provided in February 2020 to ENTSO-E as part of the EBGL Article 59.2 Market Report detailing the use of Specific Products over a two-year period from December 2017 to December 2019 inclusive.

## Purpose of this Proposal

Article 26.1 of the Electricity Balancing Guideline (EBGL) states: *“Following the approval of the implementation frameworks for the European platforms pursuant to Articles 19, 20 and 21, each TSO may develop a proposal for defining and using specific products for balancing and balancing energy capacity.”*

This proposal shall include at least:

- a) a definition of specific products and of the time period in which they will be used;
- b) a demonstration that standard products are not sufficient to ensure operational security and to maintain the system balance efficiently or a demonstration that some balancing resources cannot participate in the balancing market through standard products;
- c) a description of measures proposed to minimise the use of specific products subject to economic efficiency;
- d) where applicable, the rules for converting the balancing energy bids from specific products into balancing energy bids from standard products;
- e) where applicable, the information on the process for the conversion of balancing energy bids from specific products into balancing energy bids from standard products and the information on which common merit order list the conversion will take place;
- f) a demonstration that the specific products do not create significant inefficiencies and distortions in the balancing market within and outside the scheduling area.

NGESO does not intend to convert specific products into standard products, and as a result points d) and e) are not included in this document.

## 26.1.a) a definition of specific products and of the time period in which they will be used

### What is STOR

In addition to the Balancing Mechanism (see section below) NGESO can enter into contracts with providers of balancing capacity to deliver when called upon. These additional sources of power are referred to as reserve. NGESO holds an Operating Reserve Requirement (ORR) from 4 hours ahead of time to real time, to take account of demand forecast errors, plant losses and market imbalance. The ORR is met by headroom on market synchronised machines, additional actions taken by NGESO via the Balancing Mechanism (BM) and contracted reserve products. Most of the reserve that NGESO procures is called Short Term Operating Reserve (STOR). The proportion of the ORR met by STOR is determined by

considering the technical system requirements and the forecast cost of alternatives versus the cost of the tendered STOR units.

Short-term Operating Reserve (STOR) is valuable to NGENSO to provide balancing capacity in the event of a fault. It provides NGENSO with additional power when actual demand on the National Electricity Transmission Network is greater than forecast and/or there is unforeseen generation unavailability. STOR is a reserve service and is used to cover the largest loss. When required, it can be used pre-fault, but its main purpose is to be held as reserve in the event of a fault. In the event of a fault, frequency is maintained using response and reserve. At this point the reserve that is utilised is based on operational and economic factors.

NGESO procures STOR ahead of using it via a competitive tender process which form firm contracts while providers are also able to offer it closer to real time via the optional route. Under firm contracts, availability payments are made to the balancing service provider in return for the capacity being made available to NGENSO during specific times (STOR Availability Windows). For optional contracts, no availability payment is made when the capacity is offered by the service providers. When both firm and optional STOR is instructed, they are paid for the energy at its utilisation price. Some STOR is dispatched in the Balancing Mechanism (BM STOR) while some is dispatched separately (Non-BM STOR).

### Timescales of use

The requirement for STOR is dependent upon the demand profile at any time across the year. The STOR year starts in April and is split into six seasons, which specify the Availability Windows where STOR is required each day.

From April 2020, all new STOR contracts have been required to provide the service within 20 minutes. Existing contracts remain unchanged. Additionally, providers must have the ability to sustain delivery of STOR for at least 2 hours, though most STOR instructions are shorter than this.

### Flexible and Committed STOR

STOR can be provided by BM and non-BM participants via a flexible or committed service. For the committed service, a provider must be available for all contracted availability windows. For the flexible service, providers can specify how many hours they wish to make the service available, and when the service is offered. Flexible service providers are committed to provide the service at the week ahead stage. From April 2021 all STOR will be procured and committed at day ahead.

Characteristics	Committed STOR	Flexible STOR *
<b>Mode of activation</b>	Manual, Directly Activated (DEF)	-
<b>Preparation Period</b>	BSPs BM and NBM units must acknowledge instruction within 2 minutes	-
<b>Full Activation Time</b>	Full Activation time defined by BSP (From April 2020, all new STOR contracts need to be able to provide the service within 20 minutes)	-
<b>Deactivation period</b>	Cease time defined BSP	-

<b>Minimum Quantity</b>	3 MW	-
<b>Maximum Quantity</b>	None	-
<b>Minimum duration of delivery period</b>	Minimum non-zero time defined by BSP	-
<b>Maximum duration of delivery period</b>	Defined by BSP	-
<b>Location</b>	Non-locational, but constraints are taken into account upon activation	-
<b>Validity Period</b>	<p>BM – Within the STOR availability windows if declared as available. No option to offer STOR outside availability windows</p> <p>Non-BM – Within the STOR availability windows if declared as available. Outside availability windows if offered by the BSP</p>	<p>Non-BM – Within the STOR availability windows if declared as available. Outside availability window if offered by the BSP</p>
<b>Minimum duration between the end of deactivation period and the following activation</b>	Defined by the BSP	-
<b>Divisibility</b>	Bids are not divisible	-
<b>Price of bid</b>	For BM and NBM prices are submitted by Gate Closure	-
<b>Availability price</b>	defined by BSP via competitive tender	defined by BSP via competitive tender - during accepted availability windows
<b>Timeframe resolution</b>	Can instruct STOR down to minute resolution	-
<b>Gate Closure time</b>	<p>Historically, BM &amp; Non-BM – GC for declaration is 10:00 on Tuesday for following week (05:00 Monday)</p> <p>Subsequent redeclarations can be for both an increase or decrease in availability. i.e. up to contracted MW or down to 0, not in between.</p> <p>However, from April 2021 all STOR will be procured at day ahead.</p>	<p>Historically, Non-BM – GC for declaration is 10:00 on Friday for following week (05:00 Monday)</p> <p>Subsequent redeclarations can be for both an increase or decrease in availability. i.e. up to contracted MW or down to 0, not in between.</p> <p>However, from April 2021 all STOR will be procured at day ahead.</p>

\* additional information is included in the Flexible column only where it differs from the committed product

## What is the Balancing Mechanism (BM)?

The Balancing Mechanism is a platform used to ensure electricity supply and demand is balanced in each half hour trading period of every day. It is also used to address a wide range of other system needs beyond balancing, such as managing voltage levels. The BM allows NGENSO to manage system needs and volatility close to real time.

An active BM participant means a party with one or more BMUs that are 'dispatchable' by NGENSO. This means that they are available to change their generation/consumption when asked to by NGENSO. The BM allows BSC Parties (if they wish) to submit Offers to sell energy (by increasing generation or decreasing consumption) to the system and Bids to buy energy (by decreasing generation or increasing consumption) from the system, at prices of the BSC Party's choosing.

Where NGENSO predicts that there will be a discrepancy between the amount of electricity produced and that which will be in demand during a certain time period, they may accept a 'bid' or 'offer' to either increase or decrease generation (or consumption). The BM is therefore used in this way for energy balancing purposes. The BM also allows NGENSO to manage constraints on the transmission system. In the BM, NGENSO can instruct parties to vary their generation or consumption, or, to mitigate or work around a constraint by changing the power flows on the network. In this scenario, the BM is used for non-energy, system management reasons.

Unlike STOR, capacity is not secured ahead of time for the BM, but rather BSPs are able to submit bids up to gate-closure (one hour before real-time). Where a BSP is instructed, they will be paid a utilisation payment (based on the price they have submitted) for the energy delivered.

While STOR is primarily a reserve service and is used to cover the largest loss, the BM is used in pre fault and post fault circumstances. BM decisions are made based on price and speed (economic and technical parameters).

### Timescales of use

The Balancing Mechanism is active in the period between gate closure (one hour prior to real time) and real time. During this time NGENSO can instruct (or dispatch) parties to increase or decrease their generation or consumption. Parties who respond to this instruction in the Balancing Mechanism do this through their BM Unit (BMU).

Following other, longer term market timeframes, market participants are able to offer their remaining flexibility into the Balancing Mechanism for NGENSO to utilise. Participants submit their dynamic parameters, available volume and prices, and NGENSO can then activate volume according to these dynamic parameters, on a pay as bid basis.

Standard Characteristics	BM Activations
Mode of activation	Manual, Directly activated
Preparation Period	Defined by BSP
Full Activation Time	Defined by BSP
Deactivation period	Defined by BSP
Minimum Quantity	1MW

Maximum Quantity	None
Minimum duration of delivery period	Defined by BSP
Maximum duration of delivery period	Defined by BSP
Location	Non-locational, but constraints are taken into account upon activation and location is known
Validity Period	Defined by BSP, set on a per settlement period basis
Minimum duration between the end of deactivation period and the following activation	Defined by BSP
Divisibility	Bids and offers are divisible
Price of bid	Defined by BSP - Pay as bid merit order list
Timeframe resolution	Instruction down to the minute, defined by system needs
Gate Closure time	60 minutes before real-time

## Confirm the activation purpose of the specific products

As mentioned above, the Balancing Mechanism is used for energy balancing and system constraint purposes. STOR is a reserve service and is used to cover the largest loss. There is no set order on when RR, the BM or STOR is used. Rather, activation decisions will be made based on availability, price and speed (economic and technical parameters). See section 26.1.A and 26.1.C for more detail.

## 26.1.b) a demonstration that standard products are not sufficient to ensure operational security and to maintain the system balance efficiently or a demonstration that some balancing resources cannot participate in the balancing market through standard products

There are five areas where NGESO would seek to demonstrate that the standard RR product alone is insufficient in providing operational security:

- a) **Timescales of use.** NGESO needs a variety of products with different timescales of use to manage the system. NGESO can submit a requirement for RR at T-45 (i.e 45 minutes before the delivery period). The time between the decision to submit an RR request and the full activation time is 45 minutes, during which system and energy requirements can change. As a relatively small island system, spot power has to be balanced second by second and not in half hourly balancing of energy blocks. An error in balancing of 300 MW will generally cause the frequency to deviate from operational limits with the consequential risk to the quality of supply from further faults. Therefore, we need to use the BM (which gives NGESO access to a wider range of units with different lead times) and STOR (which can be activated within 20 minutes) to help manage any changes –

whether these changes are for energy balancing reasons, transmission constraints or to cover the largest loss.

- b) **Availability.** Once active, NGENSO would look to procure Balancing Energy from the TERRE platform where there is economic reason to do so. However, the RR platform is auction based and there is no obligation on BSP's to participate in this market, therefore there is no guarantee that NGENSO would be able to procure the required volume. Availability issues will also arise if there are flow constraints on the interconnectors or when there is no volume available in the direction that NGENSO requires (e.g. if the spread between the two markets is strong, resulting in maximum flow in a certain direction). In such circumstances, NGENSO may have to rely on specific products to manage the system.
- c) **System constraint needs.** The GB Transmission network is extremely complicated and there are often system constraints on the network (e.g. inertia, thermal and voltage constraints). One particular example where the Balancing Mechanism (BM) is required is when there are constraint management issues on the system. This happens when the electricity transmission system is unable to transmit power to the location of demand, due to congestion at one or more parts of the transmission network. RR auctions cannot remedy such constraints and subsequently NGENSO needs to rely on the Balancing Mechanism to address these system issues.
- d) **Business Continuity Management (BCM).** Should the RR processes fail, a back-up process is required. The specific products mentioned in this proposal would allow us to balance supply and demand.
- e) **Pre fault and post fault management:** NGENSO needs pre-fault and post-fault tools available to manage the system. STOR is a reserve service and is used to cover the largest loss and provide remedial actions to faults on the transmission network. When required, it can be used pre-fault, but its main purpose is to be held as reserve in the event of a fault. The BM and RR can be used in pre fault and post fault circumstances, and decisions will be made on the basis of price and speed (economic and technical parameters). Having STOR and the BM available to use gives NGENSO increased flexibility and contingency to manage pre and post fault circumstances, especially in situations where RR volume is not available or feasible (e.g. because of lack of liquidity in the market or timescales of requirement). Having access to all three products minimises costs to the end consumer as we can better optimize constraints and minimize congestion with greater pre and post fault capability.

### 26.1.C) a description of measures proposed to minimise the use of specific products subject to economic efficiency

Through the future of Balancing Services work, NGENSO is building on stakeholder feedback and conducting a review of all products and services to ensure they are fit for purpose in the future. This includes a reform of reserve services and development of more standardised products with procurement closer to real time, whilst lowering barriers to entry. In doing so, NGENSO will ensure that both European standard products and GB specific products are compatible.

Currently, when balancing energy is needed, the utilisation of reserve is carried out on a price basis whilst ensuring there is enough STOR to meet our requirement for 20-minute reserve. Replacement Reserves will form an important part of our balancing strategy (while being dependent on the outcome of the UK-EU withdrawal agreement). If RR is more economic and can meet the technical characteristics and timescales that are needed, then it will be used instead of the Balancing Mechanism. It is also expected that RR will be the most economic option once the TERRE market gains liquidity, so NGENSO expects its use to increase with time.

STOR is used to secure the largest loss and provide post fault remedial actions which are required in a maximum time of 10 or 20 minutes. The timescales of use of the two products (RR and STOR) are different and the availability of RR cannot be guaranteed. As STOR can be activated quickly, it is required for the initial loss. NGENSO could then use RR for subsequent auctions (which will in turn relax the availability need on STOR once the RR market becomes more liquid).

Where there is a system constraint, the Balancing Mechanism will be used. RR auctions cannot remedy such constraints and subsequently NGENSO needs to rely on the BM to address these system issues.

NGESO needs to utilise all available tools to manage energy balancing and system constraints so that the system can be operated as economically and efficiently for GB consumers.

### Unwinding/resolving previous actions

If there is an unforeseen shift in the market (e.g. the market has moved from short to long over a particular time period), the actions taken to resolve this will be based on what is available, technical requirements (i.e. lead time of activation) and what is most economic. This shift may be resolved via unwinding a previously activated BOA in the Balancing Mechanism, instructing a different/new BOA, or activating RR volume (depending on whatever is cost effective and technically available). In a circumstance whereby RR has been instructed, and there is a shift in the market in that RR auction period resulting in a need for an adjustment in the 'opposite direction', the BM will be the only available option to resolve this. This scenario will also be relevant if RR volume on a BMU needs to be adjusted. This issue has been explored through a grid code work group, and further details can be found on page 40 of the [GC0097 Workgroup Report](#).

### Pricing imbalance needs in TERRE

The TERRE platform allows NGENSO to request two kinds of needs (i.e. the MW to be delivered by BSPs that are active in the auction).

The first kind of need is called "inelastic", this need has no price associated with it. If NGENSO requests this kind of Need the TERRE algorithm will satisfy the MW requested without an associated price limit.

The second kind of need is called "elastic". In this case NGENSO can ask for a need but also, we can limit the price we would pay.

At go-live NGENSO will only submit elastic needs into the TERRE platform. The following steps will be taken to ensure we only take economic actions:

1. NGENSO will have calculated a volume requirement prior to the relevant RR auction. A percentage of this volume will be requested from TERRE. The percentage of required volume that is requested will be small initially in order to mitigate the risks associated with deploying a new platform and engaging in a new market, but is expected to increase as experience is built.
2. Price profiles will be created which will show the MW volumes and prices available in the market at that point in time.
3. Price profiles will be produced for both BM and RR markets
4. The solution will automatically look up the cost to instruct a need in the BM
5. Using this information, a price limit will be set to the need we request from TERRE

NGESO will have the ability to price the imbalance needs submitted into TERRE. This allows us to ensure that the actions we are taking are economic, an important aspect of our license condition (C16, paragraph 1). Therefore, we will price our imbalance needs in LIBRA according to the alternative volumes that we have available to us. We will always look to procure the volume from the TERRE platform when economic to do so.

### Post-event analysis



Once RR is implemented, NGESO will perform post-event analysis which will allow us to identify where our strategy for balancing can evolve and ensure optimal balancing of the system. This review will include a rigorous “Balancing Event” process based on the actual criteria against what would have happened against other platforms:

- The actual platform/product used against the need that NGESO requested
- NGESO would adjust the percentage of volume requested on the basis of how much of our need was being satisfied by the RR platform.
- NGESO would also look at the RR activation price compared to what was forecasted

This post event analysis will enable NGESO to determine the best outcome for balancing the GB system efficiently and securely for consumers.

This review can then be considered by NGESO and an adjustment to the hierarchy of appropriate Balancing Actions.

This should be considered as a constant refinement of processes with the overall objective being to utilise Standard Products rather than Specific Products where feasible, and where economic and efficient to do so.

### **26.1.f) a demonstration that the specific products do not create significant inefficiencies and distortions in the balancing market within and outside the scheduling area.**

NGESO believes that use of specific products will not create distortions or inefficiencies for the following reasons:

1. Standard products such as RR derived from the Libra platform will be used for energy balancing purposes to resolve real time differences between generation and demand.
2. Some actions in the Balancing Mechanism are taken purely to balance the half hourly energy imbalance of the Transmission System - these are ‘energy’ balancing actions and they filter into the energy imbalance price calculation. However, some balancing actions are taken for non-energy, system-management reasons. These are ‘system’ balancing actions. Elexon uses several processes to minimise the price impact of system balancing actions on the energy imbalance price calculation, therefore avoiding market distortions and inefficiencies (broadly grouped as, flagging, classification and tagging).
3. STOR utilisation prices are submitted by Gate Closure of the relevant STOR Availability Window, therefore they reflect market conditions at that point in time. Elexon uses a pricing mechanism to determine a Reserve Scarcity Price (RSVP) and a process that sets the price for STOR actions to be equal to the greater of its utilisation price and the RSVP. NB this repricing depends on whether the STOR action was taken during a STOR Availability Window. Actions from STOR providers outside the STOR Availability Windows are not re-priced because STOR units aren’t obliged to be available outside of the STOR windows. If they are taken outside of these windows it is just a normal BOA and not a STOR action.
4. There could be occasions when the BM is called on to meet energy balancing requirements if it is more economic than RR, therefore reducing costs to the end consumer. The pricing methodology described in section 26.1.C will provide NGESO with a hierarchy that will determine the most efficient method to balance the network. By having this robust methodology in place combined with a continual post event analysis regime in place it will be able to minimise any possible price distortions.
5. Offering a wider range of products will help to provide more routes to market for service providers , which should increase volume available for system operation and boost the real-time flexibility of the system. NGESO will support revenue stacking where feasible, so BSP’s can participate in multiple markets.

6. Outside of the GB scheduling area we will mitigate market distortions due to the fact that we will be minimising (where possible) the use of STOR and BM as described earlier. However, these services are required for operational reasons and this is in line with other European TSOs. For example, RTE, the French TSO will continue to use specific products but have yet to submit their Article 26 submission to their local Regulator.

## Timescales

Under EBGL Article (5), the proposal for terms and conditions or methodologies shall include a proposed timescale for their implementation and a description of their expected impact on the objectives of this Regulation.

Timescales for proposed implementation for Replacement Reserves (Standard Product) are not currently available due to the delay in go-live on TERRE.

Following approval of this Art 26 submission, use of STOR and the BM would continue. It is expected that there would be negligible impact on the EBGL regulation article 5 (5).

## Conclusion

NGESO believes that the use of STOR and the Balancing Mechanism is vital for energy balancing and system constraint purposes. Without these specific products, NGESO would have insufficient tools to securely operate the GB transmission system.

It should be noted that whilst all TSO's across Europe must balance their networks, GB experiences more physical constraints in our transmission network than across the rest of Europe. Therefore, we need the tools to manage volatility in the energy market and system constraints as close to real time as possible (even with access to the RR platform). To do this, the specific products outlined in this document are essential.

**APPENDIX**

**STOR Capacity**

The table and graph below show the monthly breakdown over the period between December 2017 - December 2019, detailing the monthly actual STOR volumes available vs the contracted volumes. An average of 2.45GW was offered in real-time against an average contracted amount of 4.2GW.

Month	Actual Mw	Contracted Mw	Month	Actual Mw	Contracted Mw
Dec-17	2,646	4,525	Jan-19	2,492	4,248
Jan-18	2,648	4,525	Feb-19	2,554	4,238
Feb-18	2,692	4,539	Mar-19	2,453	4,238
Mar-18	2,767	4,539	Apr-19	1,842	4,208
Apr-18	2,179	3,695	May-19	2,359	4,318
May-18	2,201	3,739	Jun-19	2,520	4,318
Jun-18	2,284	3,739	Jul-19	2,613	4,318
Jul-18	2,337	3,739	Aug-19	2,545	4,318
Aug-18	2,430	3,739	Sep-19	2,593	4,598
Sep-18	2,379	3,848	Oct-19	2,279	4,567
Oct-18	2,361	3,870	Nov-19	2,489	4,601
Nov-18	2,348	4,248	Dec-19	2,606	4,601
Dec-18	2,643	4,248			

Month	Avg Actual MW
All	2,450

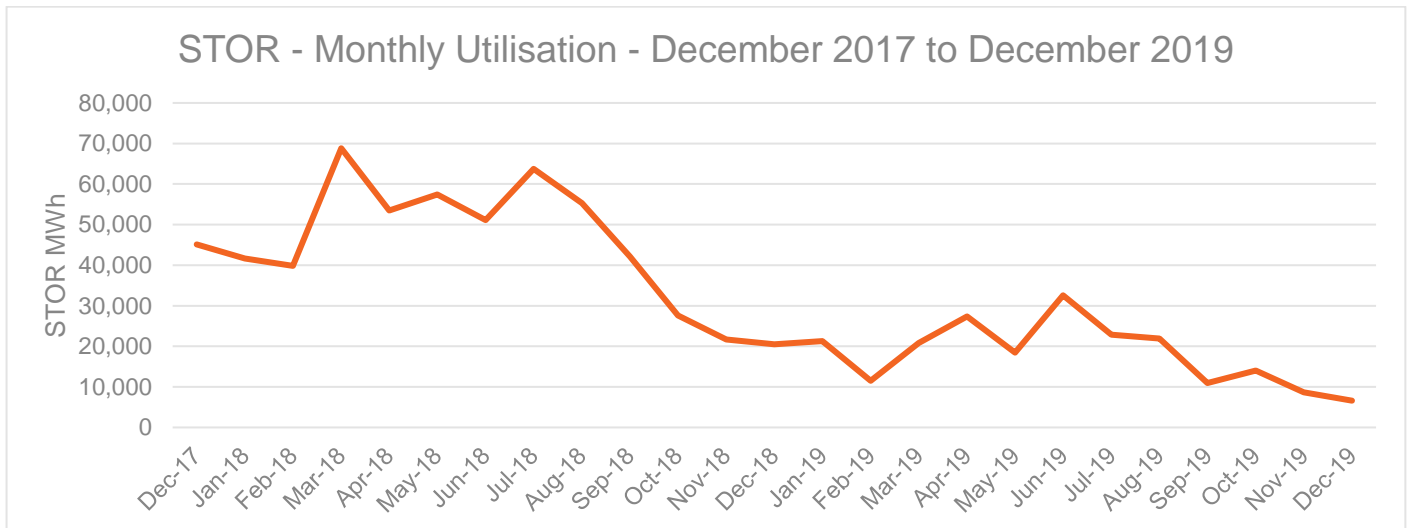
Avg Contracted MW
4,223

### STOR Utilisation

Utilisation of STOR is shown below over the period. This illustrates the aggregate amount of increases in generation and demand reduction that was delivered by contracted units.

Month	Mwh	Month	Mwh
Dec-17	45,121	Jan-19	21,257
Jan-18	41,670	Feb-19	11,499
Feb-18	39,822	Mar-19	20,795
Mar-18	68,822	Apr-19	27,359
Apr-18	53,452	May-19	18,475
May-18	57,469	Jun-19	32,565
Jun-18	51,113	Jul-19	22,888
Jul-18	63,772	Aug-19	21,954
Aug-18	55,272	Sep-19	10,947
Sep-18	42,160	Oct-19	13,999
Oct-18	27,615	Nov-19	8,685
Nov-18	21,646	Dec-19	6,604
Dec-18	20,511		
<b>Total</b>	<b>588,445</b>	<b>Total</b>	<b>217,026</b>

Month	Total MWh
All	805,471



### Balancing Mechanism (BM) activations for balancing purposes

The table and graph below show the monthly breakdown over the period detailing the monthly volumes of BM activations.

They show that NGENSO on average, sold in all periods except October – December 2019, where we bought due to lack of reserves. During the period, a net total of 2,642 GWh was sold in the BM for balancing purposes.

Month	Mwh
Dec-17	-32,703
Jan-18	-142,730
Feb-18	-160,255
Mar-18	-114,052
Apr-18	-234,870
May-18	-214,304
Jun-18	-116,049
Jul-18	-94,895
Aug-18	-150,203
Sep-18	-106,651
Oct-18	-108,868
Nov-18	-70,776
Dec-18	-139,447
<b>Total</b>	<b>-1,685,803</b>

Month	Mwh
<b>Jan-19</b>	<b>-182,240</b>
<b>Feb-19</b>	<b>-182,145</b>
<b>Mar-19</b>	<b>-121,717</b>
<b>Apr-19</b>	<b>-91,992</b>
<b>May-19</b>	<b>-125,100</b>
<b>Jun-19</b>	<b>-52,764</b>
<b>Jul-19</b>	<b>-106,878</b>
<b>Aug-19</b>	<b>-89,343</b>
<b>Sep-19</b>	<b>-91,188</b>
<b>Oct-19</b>	<b>19,354</b>
<b>Nov-19</b>	<b>28,299</b>
<b>Dec-19</b>	<b>39,440</b>
<b>Total</b>	<b>-956,274</b>

Period	Mwh	Gwh	Twh
<b>Buy</b>	87,093	87	0.09
<b>Sell</b>	-2,729,170	-2,729	-2.73
<b>All</b>	<b>-2,642,077</b>	<b>-2,642</b>	<b>-2.64</b>

