



GUIDANCE FOR BSC PARTIES ON SETTLEMENT IMPLICATIONS OF PROJECT TERRE FACILITATING GB PARTICIPATION IN THE EU REPLACEMENT RESERVE MARKET

Summary

Recent Modifications to the Balancing and Settlement Code (BSC) have introduced arrangements for GB Balancing Service providers to participate in the EU Replacement Reserve (RR) Market:

- Modification P344 ([TERRE and Wider Access](#)) introduced arrangements for GB Balancing Service Providers to trade balancing energy volumes (i.e. generation or demand) and participate in the European Replacement Reserve Market via NGESO. The P344 solution includes arrangements to bid into the Replacement Reserve Market, how Replacement Reserve volumes will be settled, paid and reported.
- Modification P386 ([Corrections and clarifications to the P344 'Project TERRE' legal text](#)) provided additional clarity to the P344 arrangements.
- Modification P403 ([BSC TERRE Market Suspension Arrangements](#)) was raised in March 2020 to amend the Balancing and Settlement Code (BSC) to align with the Grid Code TERRE market suspension arrangements.

This note provides guidance for BSC Parties who may want to participate in the EU Replacement Reserve Market and for those who don't how they will be affected by these arrangements.

How can a Balancing Services Provider participate in EU Replacement Reserve Market?

To participate in the EU Replacement Reserve market a Balancing Service Provider (BSP) must accede to both the BSC and CUSC.

Under the BSC a BSP must qualify in a relevant participation capacity (e.g. Supplier or VLP). Once qualified they will need to register a BM Unit with both BSC and NGESO and complete the Pre-Qualification process under the Grid Code.

Further information on acceding to the BSC and the Qualification process can be found on the [Market Entry](#) page on the ELEXON website.

Further information on acceding to the [CUSC](#) and Grid Code [Pre-Qualification](#) process can be found on the NGESO website.

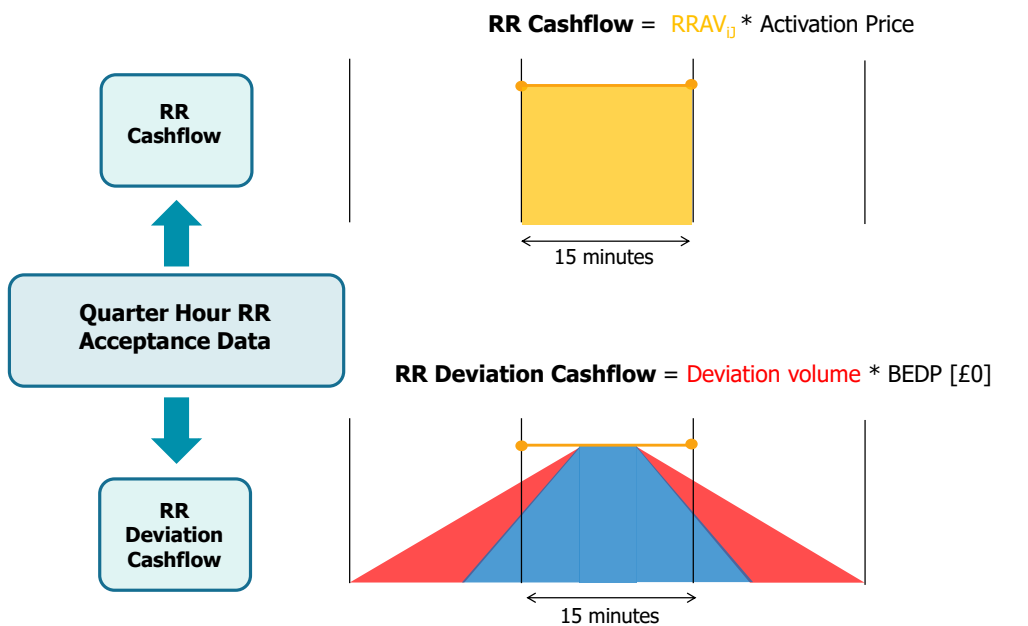
Participants in the European Replacement Reserve market are obligated to ensure that any submission or re-submission of Replacement Reserve Bids are made in accordance with the [TERRE Data Validation and Consistency Rules](#) which are defined under the Grid Code.

How will the Replacement Reserve Market be settled?

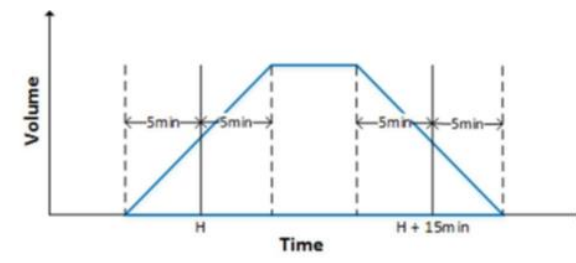
Project TERRE creates a central European platform for the trading of balancing energy with transmission System Operators in nine participating countries, including GB. The central platform will inform National Grid of RR bids and offers that have been accepted through RR Activations. National Grid will forward this information to settlement where the SAA will interpret this information and create activation data for each 15 min within the TERRE Auction Period hour.

The settlement of these RR Activations (blocks) will be handled under a new process whereby settlement systems multiply the RR Activation Level (for a given BM Unit and quarter-hour) with the Replacement Reserve Activation Price (i.e. TERRE Clearing price) for that quarter-hour.

How will TERRE Acceptances be paid?



A further settlement process will be introduced to calculate the volume difference between the European Replacement Reserve Standard Product Shape (shaded blue in the above and detailed below) and the TSO dispatched shape.



The European Replacement Reserve Standard Product Shape represents the preferred delivery shape of RR Activation 'blocks'. This particular shape is preferred as it aligns to the EU interconnector delivery shape.

However within GB a decision has been made to not actively incentivise delivery of the European Replacement Reserve Standard Product Shape and therefore any deviation from

this shape will be settled at the Balancing Energy Deviation Price (BEDP) which has been set to zero.

RR Instruction Settlement

Upon receiving the RR Activation 'blocks' from the central TERRE system, National Grid will interpret the data and intend to issue an appropriate RR Instructions directing them to deliver the RR Activation. However a number of scenarios have been identified where issuing the RR Instruction won't be in the best interest of the GB system. In those instances National Grid has indicated they will not issue a RR Instruction.

Therefore to facilitate accurate Settlement the SAA will construct an RR Schedule for use in settlement to account for the instances where a RR Instruction is not received. These RR Schedules are treated by settlement systems just like any other instruction (i.e. setting a new baseline), except that they do not create Accepted Volumes that are payable.

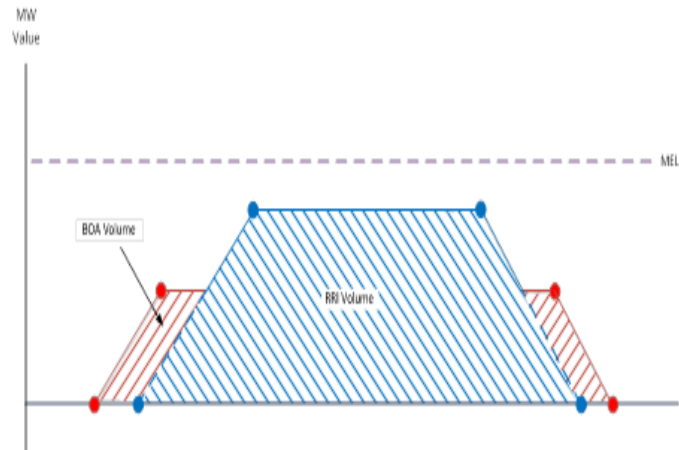
The RR Schedule will respect the TERRE Standard Product shape and align with TSO RR Dispatch Principles (as defined by National Grid) including:

- Where a RR Activation is deemed to be feasible;
 - RR Schedule will respect submitted Dynamic Data Set parameters
 - The full MW delivery will be achieved between 0-5 mins into the 15min RR Auction Period
 - There will be a minimum duration of full MW delivery of the RR Activation of 5 mins
 - Run-Up Rates and Run-Down Rates < 10 min TERRE Standard Product Ramp rates will be dispatched symmetrical to the 15 min TERRE Auction Period boundary

- Where the RR Activation is not deemed to be feasible;
 - RR Schedule will not respect submitted Dynamic Data Set parameters
 - The full MW delivery will be achieved between 5 mins into the 15min RR Auction Period
 - There will be a duration of full MW delivery of the RR Activation of 5 mins
 - Run-Up Rates and Run-Down Rates will be determined as the maximum feasible rate

BOA Settlement

Due to the delay between the submission of a RR bid and receiving the RR Activations at H-30 there exists a possibility for the TSO to issue BOAs to a BM Unit that is then subsequently accepted for TERRE. Analysis of the scenarios that result from these circumstances has identified a particular instance where the BOA acceptance is not compatible with the RR Schedule i.e. settlement integrity is comprised.



Therefore to maintain Settlement integrity the RR Schedule Volumes shall take priority over BOA volumes. To clarify this only takes effect where NGENSO issues a BOA after gate closure (H-60) and before the RR Activations are received (H-30) and the BM Unit has been activated in the same direction in both markets.

Non-Delivery

Deemed Standard Product Volumes and RR Instructed Offer/Bid Deviation Volumes will be included in the existing Non-Delivery Charge calculation to ensure all RR Schedule volumes can be associated with a RR Activation price (where appropriate).

The Deemed Standard Product Volumes and RR Instructed Offer/Bid Deviation will be priced at the GB TERRE clearing / bid price and Balancing Energy Deviation Price accordingly during the allocation of Non-Delivery Order Numbers (alongside any BOAs) to Non-Delivered Volumes process to ensure that there is no benefit in a BSP Non-Delivering on an RR Activation.

How will the Replacement Reserve Market be reported?

To ensure parity with the current settlement reporting BMRS shall publish Quarter Hour Replacement Reserve data shall also be published within 5 min of receipt from the TSO:

- Quarter Hour Replacement Reserve Bid Data
- Quarter Hour Replacement Reserve Activation Data
- Quarter Hour Replacement Reserve Volume of GB need met
- Quarter Hour Replacement Reserve Interconnector Schedule Volumes

Time Series Id	Settlement Date	SP	Q	Party	BM Unit ID	Divisible	Linking Bid Id	Multipart Bid Id	Exclusive Bid Id	Flow Direction	Min Qty	Qty	Price (£/MWh)	Status
NGET-RR1	2019-02-27	30	1	Party A	BMU A	Yes			RRBID1	UP	1.234	8.765	9.99	Available
NGET-RR1	2019-02-27	30	2	Party A	BMU A	Yes			RRBID1	UP	1.234	8.765	9.99	Available
NGET-RR2	2019-02-27	30	1	Party B	BMU B	Yes	RRBID2			UP	4.567	12.456	25.45	Available
NGET-RR2	2019-02-27	30	2	Party B	BMU B	Yes	RRBID2			UP	4.567	12.456	25.45	Available
NGET-RR3	2019-02-27	30	1	Party A	BMU C	No				DOWN	24.10	99.999	250.99	Unshared
NGET-RR3	2019-02-27	30	2	Party A	BMU C	No				DOWN	24.10	99.999	250.99	Unshared
NGET-RR4	2019-02-27	30	1	Party C	BMU D	Yes		RRBID3		UP	1.456	2.468	11.33	Restricted
NGET-RR4	2019-02-27	30	2	Party C	BMU D	Yes		RRBID3		UP	1.456	2.468	11.33	Restricted

BMRS currently calculates indicative volumes and cashflows in regard to BOA acceptances for the benefit of the GB market and P344 includes provisions for BMRS to calculate comparative indicative Replacement Reserve volumes and cashflows. Specifically:

- Indicative Period RR Total Accepted Bid Volume ($IRRAB^{n_{ij}}$);
- Indicative Period RR Total Accepted Offer Volume ($IRRAO^{n_{ij}}$);
- Indicative Period RR Accepted Bid Volume ($IRRAB^{kn_{ij}}$);
- Indicative Period RR Accepted Offer Volume ($IRRAO^{kn_{ij}}$);
- the Indicative Quarter-Hour RR Cashflow ($ICCR_{ij}$); and
- Indicative Period RR BM Unit Cashflow ($ICRR_{ij}$)

As per normal arrangement this data shall be made available on BMRS within 45 minutes after the end of the Settlement Period.

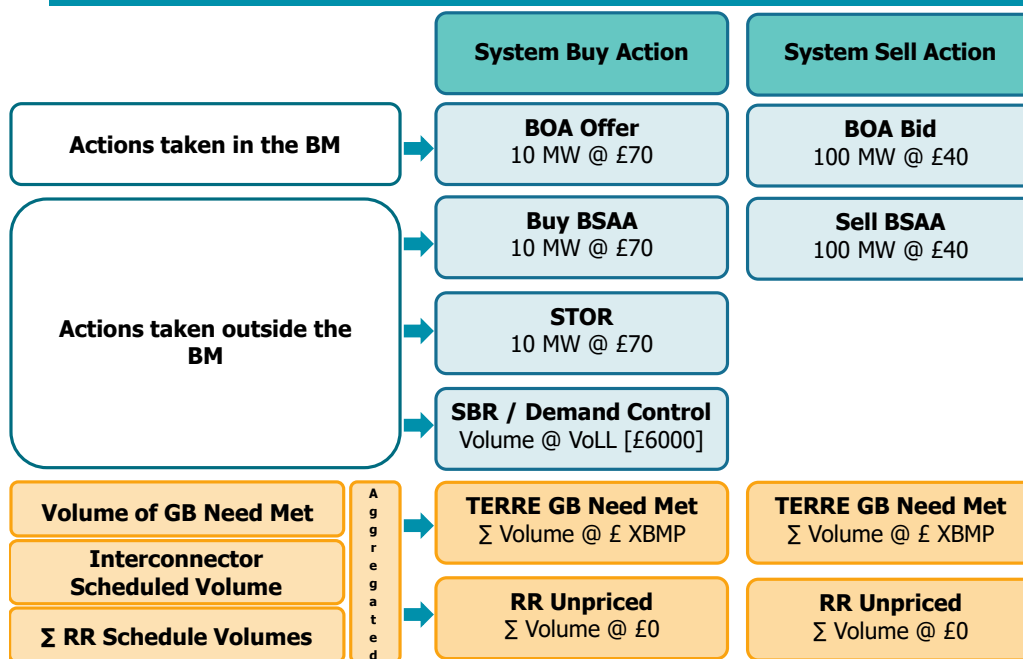
How will Imbalance Settlement be impacted?

The calculation of imbalance prices should include all the physical actions taken on the GB system to balance the system, i.e. only actions taken to balancing purposes.

Replacement Reserve is a balancing energy product that NGENSO can use to balance the GB system. Therefore RR actions should be taken into account within the imbalance price calculation. The RR actions to be considered are:

- The Volume of GB need met as declared by TERRE
- the sum of RR Schedule volume (i.e. GB BSP despatch);
- the sum of Interconnector volumes for each Interconnector scheduled by TERRE

Imbalance Price Calculation



The central TERRE system will not state whether a given RR Activation is to meet a GB or foreign need, meaning that the SAA cannot isolate those taken for a foreign need and ensure they are unpriced.

Therefore, Replacement Reserve actions (volumes/prices) are calculated at an aggregate level for each quarter hour, however individual actions should still be visible on BMRS and have traceability to a given imbalance price, and entered into the imbalance price calculation.

For clarity please note that the imbalance price calculation process is not changing. WE are only introducing new RR inputs.

SAA-I014

The SAA-I014 is an important settlement report produced by the SAA and is widely distributed to stakeholders. The SAA-I014 has multiple sub flows with specific purposes

- SAA-I014(1) sub-flow generated for BSC Trading Parties
- SAA-I014(2) sub-flow generated for the System Operator (NGESO)
- SAA-I014(4) sub-flow generated for Virtual Lead Parties (VLP)

Each sub flow has been updated to include relevant VLP and TERRE data items and has been live since the November 2019 release (v9.0). In addition ELEXON has recently introduced a v10.0 of the SAA-I014 to align with BSC Modification [P354](#) implementation in 01 April 2020.

ELEXON has released the SAA-I014 design for the benefit of the GB market and can be found under [April 2020 Standalone Release webpage](#).

I am an existing BSC Party and don't want to participate in the RR Market. Will I be impacted?

Yes, as a BSC Party you will receive the SAA-I014 Settlement report. As noted above we have made a number of changes to the SAA-I014 and introduced a new version (v10.0) that includes all the relevant VLP, TERRE and ABSVD data items that will be included in the report irrespective of whether you participate in the European Replacement Reserve market or not. System changes will therefore be required to continue receiving the SAA-I014 Settlement report.

Further Information

For more information please contact the **BSC Service Desk** at bscservicedesk@cgi.com or call **0370 010 6950**.

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