

P407 'Project MARI'

Article 20 of the Electricity Balancing Guideline ([EBGL - Commission Regulation \(EU\) 2017/2195](#)) requires Transmission System Operators (TSOs) to establish a platform for the exchange of balancing energy from manually activated frequency restoration reserves (mFRR) by July 2022. To achieve this, the European Network of Transmission System Operators for Electricity (ENTSO-E) launched the Manually Activated Reserves Initiative (MARI) to deliver the European wide mFRR platform. P407 will ensure that the Balancing and Settlement Code (BSC), and associated systems, are amended to participate in MARI ahead of go-live.



ELEXON recommends P407 is progressed to the Assessment Procedure for an assessment by a Workgroup

This Modification is expected to impact:

- Suppliers
- Generators
- Virtual Lead Parties
- BSC Agents
- Party Agents
- NGESO
- BSCCo

Phase

Initial Written Assessment

Definition Procedure

Assessment Procedure

Report Phase

Implementation

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About This Document

This document is an Initial Written Assessment (IWA), which ELEXON will present to the Panel on 14 May 2020. The Panel will consider the recommendations and agree how to progress P407.

There are two parts to this document:

- This is the main document. It provides details of the Modification Proposal, an assessment of the potential impacts and a recommendation of how the Modification should progress, including the Workgroup's proposed membership and Terms of Reference.
- Attachment A contains the P407 Proposal Form.

It should be noted that ELEXON has worked very closely with National Grid Electricity System Operator (NGESO) in developing the MARI proposal, so this IWA differs little from NGESO's Modification Proposal Form, other than where BSC specific matters are discussed.



Contact

Chris Wood

020 7380 4142

bsc.change@elexon.co.uk

chris.wood@elexon.co.uk



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1 Summary

What is the issue?

There is a requirement to implement changes to the BSC and Grid Code by July 2022 to allow GB market participants to be able to interact with the mFRR platform.

What is the proposed solution?

The BSC Solution will form part of a wider end-to-end (E2E) solution that will ensure NGESO and ELEXON are able to deliver their own parts of the MARI solution. The solution will be developed as a single solution for the GB market and we have been working with NGESO since 2019 to identify the proposed solution. A summary of the E2E solution is shown in this diagram (blue is BSC, yellow is Grid Code):



The BSC aspects will identify how data is submitted to BSC Agents, how the BSC Agents compute that data and how it subsequently feeds into the Settlement process. It should be noted that while MARI is developing a unique stand-alone balancing product, we have already identified that we will be able to emulate large parts of the [P344 'Project TERRE'](#) solution as it is expected that MARI will use the same platform (LIBRA) as TERRE.

Impacts

There will be a significant impact on BSCCo (and the BSC Agents) and NGESO as they will need to make significant changes to their respective Codes and Systems. Like other balancing products, industry participation will be voluntary, but we will make use of existing provisions so far as practicable so the impact won't be as high as it could have been and we anticipate that P407 will have a medium impact on industry members.

Implementation

The legislated go-live date is July 2022, so all changes need to be implemented and ready before that date. This means that we need to start the implementation process early in 2021. We have been working with NGESO for some time and our solution is almost complete, but would benefit from industry verification and input during the Assessment Phase. Our understanding is that the NGESO solution is in a similar state and we are confident that we will be able to consult in the autumn.

Recommendation

As per the comments above, we would welcome industry input and recommend P407 goes to the Assessment Procedure for assessment by a Workgroup.

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2 Why Change?

What is the issue?

Although the United Kingdom (UK) has left the European Union (EU), the terms of the [European Union \(Withdrawal Agreement\) Act 2020](#) require that EU legislation is adhered to until the end of the transition period on 31 January 2020. This means that National Grid Electricity System Operator (NGESO), in its role as the TSO for Great Britain (GB) is required to implement the mFRR platform via its participation in MARI. Whether GB market participants will be able to participate in MARI from 1 January 2021 onwards is subject to on-going negotiations between the UK and EU.

To meet the July 2022 go-live date, work must start now to identify changes to impacted Industry Codes (Grid Code, Connection Use of System Code (CUSC), and the BSC), and allow time to develop and implement changes to associated systems. Rather than wait until the outcome of the UK-EU negotiations, and (dependant on when an announcement is made) be behind the curve and rushing to catch-up, it is felt that it is better to proceed as if GB's MARI participation will not be hampered.

The intention is for GB to remain in the Internal Energy Market, and it is hoped that GB participants will be able to use MARI. Even if they are not able to from 1 January 2021, then it is hoped they will be able to at some point in the future, so it would be better to have the necessary changes ready to go with everything on hold, rather than develop a solution later, which would take two years.

If P407 is not implemented, and NGESO is required to adhere to EU legislation, then they will be non-compliant with EU legislation. Further, it will, potentially, put GB market participants at a disadvantage as they will not have the same market access opportunities as their European counter parts. From a wider perspective, this would delay the benefits of MARI if participants can't access EU markets and, ultimately, reduce the number of products available to NGESO to manage the Total System.

Background

The mFRR platform is one of several established in the EBGL, known as standard balancing products in EBGL. GB is not participating in all of them, but we will participate in MARI as well as TERRE. It should be noted that MARI is not an extension, alternative, or otherwise of TERRE. It is a balancing product in its own right much like Fast Frequency Response (FFR) and Short Term Operating Reserve (STOR) are unique products in the GB market (known as specific products in EBGL). That being said, like with GB products, there will be some similarities in how the product is delivered and changes are implemented and we will draw on this wherever possible.

The EBGL came into force in December 2017 and as per Article 20, a proposal for the implementation for MARI was submitted by TSOs to the National Regulatory Authorities (NRAs) in December 2018. The NRAs had 6-months to reach a decision, but because they couldn't reach a consensus, the matter was referred to the Agency for the Cooperation of Energy Regulators (ACER) in July 2019. ACER had 6-months to make a decision and their final decision came on 24 January 2020. This means that we now have 30 months to implement and make operational the mFRR platform – that is, we need to be ready for go-live by 24 July 2022.

Desired outcomes

P407 will run in conjunction with a similar Grid Code Modification to develop complimentary solutions for the Grid Code and BSC. The intention will be that, as far as industry is concerned, there will be a single GB solution for participation in MARI. Each Code's Modification will develop changes to their respective Code text as well as identifying required changes to BSC System and ESO Systems.

These System changes will (subject to confirmation during the Assessment Phase) be developed during 2021 to be tested in the first half of 2022 ahead of go-live on 24 July 2022.

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3 Solution

The European platform to deliver MARI is still to be confirmed, but we are expecting it to be the LIBRA platform used for the delivery of the Trans-European Replacement Reserve Exchange (TERRE). It is important to note that MARI will be a balancing product in its own right and will have its own rules and applications. That being said though, we [NGESO and ELEXON] intend to replicate and emulate the TERRE delivery mechanism as much as possible.

Once operational, and participants are submitting bids, MARI will have two types of activation:

1. Scheduled activation (SA) every 15 minutes (same as TERRE); and
2. Continuous Direct activations (DA).

The MARI processes can be summarised as follows:

- NGESO will collect mFRR bids from Balance Service Providers (BSPs)
- NGESO will send bids and needs and cross border capacity to the mFRR platform
- Platform will run an algorithm to choose which bids are activated
- Platform will send activated bids to host TSO (e.g. NGESO) to dispatch under local arrangements
- Platform also sends Clearing Price, Need Met and Border Schedule to TSO
- Relevant info sent to TSO-TSO settlement function

Proposed Solution

The BSC Solution will form part of a wider end-to-end (E2E) solution that will ensure NGESO and ELEXON are able to deliver their own parts of the MARI solution.

At a high level, the diagram below shows the E2E solution (blue is ELEXON's role, yellow is NGESO's and the weighting represents proportional responsibility in each step):

High level E2E solution



The BSC high level solution is shown in the following diagram:

High level BSC Solution



Based on the requirements in the EBGL and information from ENTSO-E and ACER, the BSC solution will:

- Identify which Balancing Mechanism (BM) units are activated by MARI, and what their cash flow for each 15 minute auction is
- Amend Trading Charge Advice notes to reflect MARI cash flows
- Allow the Settlement Administration Agent (SAA) to process notifications from NGESO in relation to MARI activations
- Enable the SAA to be able to determine how MARI activations affect and interact with wider Settlement operations by comparing Bid-Offer Acceptances (BOAs) against MARI notices
- Enable SAA to calculate Non-Delivery Charges
- Allow SAA to include MARI activations when calculating System Buy Price and System Sell Price
- Allow for reporting of MARI actions and effect on Settlement (including via BMRS where required)
- Allow for the MARI to be included in calculations of Actual Energy Indebtedness

We will also consider the following as alternate solution requirements:

- SAA & BMRA shall receive, validate and process new MARI-specific data from National Grid.
- MARI Bids, MARI Auction Results, MARI Instructions etc.
- SAA shall calculate new MARI Cash flows for each BM Unit for each quarter-hour.
- New MARI Cash flows shall be a new Trading Charges, included on Trading Charge Advice Notes that are sent to Parties
- SAA shall calculate MARI volumes and define the interactions between MARI, BM and RR activations
- SAA shall use MARI volumes and prices in the existing Non-Delivery Charge calculation
- SAA shall
- SAA shall include MARI activations when calculating System Buy Price and System Sell Price
- Reporting of MARI actions and effect on Settlement
- The SAA-I014 Settlement Report shall contain new MARI-specific data items.
- New indicative MARI-specific data shall be calculated by BMRS
- EU Transparency reporting
- Allow for the MARI to be included in calculations of Actual Energy Indebtedness
- MARI Cash flows shall be included in the calculation of Actual Energy Indebtedness (Credit)]

We have developed a list of draft Business Requirements (see Appendix One). These will form the initial basis for developing the BSC solution and will be amended and/or replaced as the Assessment Phase develops to dovetail with the Grid Code solution.



What are the Applicable BSC Objectives?

(a) The efficient discharge by the Transmission Company of the obligations imposed upon it by the Transmission Licence

(b) The efficient, economic and co-ordinated operation of the National Electricity Transmission System

(c) Promoting effective competition in the generation and supply of electricity and (so far as consistent therewith) promoting such competition in the sale and purchase of electricity

(d) Promoting efficiency in the implementation of the balancing and settlement arrangements

(e) Compliance with the Electricity Regulation and any relevant legally binding decision of the European Commission and/or the Agency [for the Co-operation of Energy Regulators]

(f) Implementing and administrating the arrangements for the operation of contracts for difference and arrangements that facilitate the operation of a capacity market pursuant to EMR legislation

(g) Compliance with the Transmission Losses Principle

Benefits

MARI will enable a new route to market for GB market participants. The EBGL encourages aggregators' and storage providers' participation in European markets and this will be reflected in the MARI solution. It is intended that we [NGESO] will conduct a cost-benefit analysis during the Assessment Phase, but our initial findings are that there will be clear benefits for the GB market. MARI will increase competition in the market by allowing more people to offer services. It will increase the number of services available to NGESO to balance and manage the Total System which will, in turn, increase the efficiency of our management of the National Electricity Transmission System. Ultimately though, it will ensure that we remain compliant with relevant legislation.

Applicable BSC Objectives

The Proposer's [NGESO's] views are as follows:

- The Transmission Company has an obligation to implement MARI, therefore P407 will enable them to meet this obligation (Applicable Objective (a))
- MARI will lead to greater operation of the National Electricity Transmission System (Applicable Objective (b)) as NGESO will have a wider choice of standard products to balance the Total System.
- The introduction of a new standard product will, as per the EBGL objectives, allow more options for accessing the market, thus increasing effective competition (Applicable Objective (c)).
- The implementation of balancing and settlement will become more difficult as it will be adding even more calculations and will therefore be detrimental against Applicable Objective (d);
- MARI is a legislative obligation (Applicable Objective (e)) and NGESO will do this in the least disruptive way feasible.

The Proposer does not anticipate that P407 will have any impact on any of the other Applicable BSC Objectives i.e. the operation of EMR legislation (f) or the Transmission Loss Principles (g).

Implementation approach

The joint progression plan is that the Final Modification Reports will be sent to the Authority in March 2022. Our initial thoughts are that this plan should allow sufficient time for Systems to be updated and changes implemented, including testing and commissioning where applicable. However, we will confirm this as part of the Service Provider Impact Assessment to be undertaken during the Assessment Phase. As with other complex changes, there may be need for staggering implementation i.e. document changes ahead of system changes.

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4 Areas to Consider

In this section we highlight areas which we believe the Panel should consider when making its decision on how to progress this Modification Proposal, and which a Workgroup should consider as part of its assessment of P407. We recommend that the areas below form the basis of a Workgroup's Terms of Reference, supplemented with any further areas specified by the Panel.

NGESO and ELEXON have given considerable time to considering how to implement MARI. It has been particularly complicated for NGESO as MARI will have some significant impacts on their Control Room operations. We believe that the solution is almost complete and as such, we intend to use the Workgroup to validate our proposal and sense-check that nothing has been missed.

The above notwithstanding, there are still some areas where we would appreciate industry input to finalise the solution given the impact on them. We would also very much welcome their critical analysis of the solution and validation of the solution and any alternatives.

Interaction with the Grid Code

We expect that BSC Workgroup Members will give equal due diligence to their role as Grid Code Workgroup members where they hold dual membership.

It is not intended to develop a BSC Solution and a Grid Code solution – instead a single joint solution is being developed for GB market participants. From this we are able to identify required changes to the BSC and Grid Code. Workgroup members should therefore ensure that nothing 'falls between the gaps' and all aspects of the solution are covered by the respective Codes and/or both Codes where applicable.

Adherence to the EBGL

Article 20 of the EBGL sets out the requirements for the development and implementation of the mFRR platform. The EBGL principles that MARI should adhere to, and therefore the P407 solution, are:

- Procurement of balancing services should be:
 - Fair;
 - Objective;
 - Transparent and market based;
 - Avoids undue barriers to market entry;
 - Fosters liquidity in the balancing market; and
 - Prevents undue distortions within the internal market
- Shall facilitate the participation of demand response, including aggregators and storage, on a level playing field
- Allow renewable to participate and support the EU's target for renewable penetration

There are also wider EBGL obligations that need to be considered as part of the solution. These include:

- Data provision – Article 12
- Any Balancing Service Provider shall have the right to participate – Article 16
- Terms and conditions for balancing products – Article 18
- Gate Closure time harmonisation – Article 24

Future Relationship with the EU

The UK's relationship with the EU from 1 January 2021 onwards is still to be determined. For the purpose of P407 Workgroup Members shall reflect BSCCo and NGESO's position to negotiations – we shall develop the solution as though we will not be hindered in our participation.

That being said, everyone involved (Workgroup Members and Code staff) should be mindful of the possibility of not being able to participate in MARI when it goes live. They should keep in mind whether there are any benefits from developing a GB only product similar to MARI in a similar vein to the relationship between Wider Access and TERRE.

N.B. at these stage neither BSCCo nor NGESO think this is possible or viable, but retain an open mind and would welcome Workgroup Members views on this.

System changes alongside the Foundation programme

The Workgroup should be mindful of how potential MARI system changes may interact with [BSCCo's Foundation Programme](#) to update BSC System platforms. BSCCo will be able to advice on this in more detail as required and as part of the impact assessment process.

Covid-19

At the time of submission we do not know when lockdown restrictions will be lifted in the UK.

TERRE implementation has already been delayed by NGESO due to Covid-19 and the impact it has had on their resource availability. At this time it is not known whether there will be a similar impact on MARI. Thankfully, so far, there has been minimal impact on BSC operations or implementation.

ELEXON staff have already successfully run several Workgroups over Skype. Similarly, we have met with NGESO using Webex on several occasions. Collectively, between the two Codes, we are very comfortable in hosting online meetings and do not anticipate hindrance to the Workgroup process.

We would ask that if the Workgroup becomes aware, by whatever means, that implementation may be hampered due to Covid-19 in anyway, then they should highlight this to the respective Code Panels who should, in turn, consider raising the matter with the Authority and advising on the best way to proceed.

Areas to consider

The table below summarises the areas we believe a Modification Workgroup should consider as part of its assessment of P407:

Areas to Consider
How will BSC Systems interact with TSO systems – in each direction?
How will BSC Agents receive data from sources other than TSO Systems?
Does the solution adhere to REMIT and Transparency requirements?
Does the BSC Qualifications processes and requirements need to be amended?
What changes are required to the registration and testing process?
What reports are required to be produced?
How are the requirements of Article 20 to being met?
How will charges be calculated and what 'shape' should be used when making determinations/calculations?
Is a staggered implementation approach required?
Can the MARI solution be adapted for GB participants if it is not possible to participate in the IEM: <ul style="list-style-type: none">• Is it technically possible?• Is it commercially viable/desirable?
How will P407 impact the BSC Settlement Risks?
What changes are needed to BSC documents, systems and processes to support P407 and what are the related costs and lead times? When will any required changes to subsidiary documents be developed and consulted on?
Are there any Alternative Modifications?
Should P407 be progressed as a Self-Governance Modification?
Does P407 better facilitate the Applicable BSC Objectives than the current baseline?

5 Proposed Progression

Next steps

We recommend that P407 progresses to the Assessment Phase and follow the timetable below. We will hold joint Workgroups with NGESO – that is attendees will be considered to be members of both P407 and the Grid Code Workgroup (so long as they qualify for each) simultaneously and will have voting rights for each Modification. P407 is a large and complex proposal that will greatly benefit from the input and scrutiny of a Workgroup.

Self-Governance

We recommend that this Modification should **not** be considered suitable for Self-Governance but should be sent to the Authority for approval, as it will have a material impact on:

- Competition as introducing a new standard product will open up another avenue for providers to come to market but will, invariably, have an impact on existing balancing service providers;
- MARI will make the operation of the national electricity transmission system potentially more complicated as it will create more work for NGESO in planning for each Period, but will give them greater flexibility; and
- Implementing MARI will, strengthen security of supply in that it will be another means of trading over the interconnectors – which are generally seen as being key to security of supply.

This Modification should not be Urgent or Fast-Track as there are not expected to be any consequences of not implementing in the normal way.

Workgroup membership

We recommend that the Workgroup comprise of participants who have expertise or experience in the following areas:

- Settlement processes;
- Balancing processes;
- European legislation;
- European balancing platform(s); and
- Interconnector operations.

We are particularly keen to reach out to Interconnector Parties as we recognise that this is one group that could have been engaged more during TERRE. Their insight will be even more invaluable for MARI as mFRR trades have the potential to have a notable impact on all continental Interconnectors.

Timetable

The timetable is very tight in order to allow as much time as possible for system development and testing ahead of go-live. We have already developed most of the BSC



What is the Self-Governance Criteria?

A Modification that, if implemented:

(a) is unlikely to have a material effect on:
(i) existing or future electricity consumers; and
(ii) competition in the generation, distribution, or supply of electricity or any commercial activities connected with the generation, distribution, or supply of electricity; and
(iii) the operation of the national electricity transmission system; and
(iv) matters relating to sustainable development, safety or security of supply, or the management of market or network emergencies; and
(v) the Code's governance procedures or modification procedures; and

(b) is unlikely to discriminate between different classes of Parties.

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part of the solution (see business requirements at Appendix one). NGESO has done a lot of work on the Grid Code part of the solution, particularly in terms of potential system complications that have arisen and most of the Grid Code part of the solution is ready to go. We have been working together since last summer and have met on several occasions to ensure we are as aligned as possible. As much as the solutions have been developed by us and NGESO, we recognise and welcome the importance of Workgroup input to verify our proposed solution and fill in any gaps that arise. Just as importantly, the Workgroup may well see things from a different angle to ourselves and their critical analysis of our proposed solution will be invaluable.

Given the limited time we are proposing for the Assessment Phase, we would ask that all Workgroup Members arrive for meetings 'up to speed' on the background reading we (ELEXON and NGESO) will share ahead of each meeting as we will not have time to 'educate', but will instead be looking for the Workgroup Members to either agree to our proposals, or disagree and provide alternate ideas.

One of ELEXON's Senior Communication Managers is part of the P407 Modification team and has been involved for some time. We have a communications plan to engage with industry to ensure that our intent and messaging is clear and he will continue to ensure that we maximise all communications opportunities.

The complementary Grid Code Modification will be presented to the Grid Code Review Panel on 28 May 2020. The Grid Code requires that Grid Code Parties are then allowed three weeks to nominate Workgroup members, meaning we can't hold the first Workgroup until week beginning 22 June 2020.

Proposed Progression Timetable for P407	
Event	Date
Present Initial Written Assessment to Panel	14 May 2020
Workgroup Meeting one – Introduction to MARI and Qualification and registration	W/B 22 Jun 20
Workgroup Meeting two – Submission and acceptance of bids	W/B 6 Jul 20
Workgroup Meeting three – Dispatch and Settlement part one	W/B 20 Jul 20
Workgroup Meeting four – Dispatch and Settlement part two	W/B 10 Aug 20
Workgroup Meeting five – Reporting and Performance Assurance	W/B 31 Aug 20
Workgroup Meeting six – wrap up and finalise solution and consultation preparation	W/B 28 Sep 20
Assessment Procedure Consultation	12 Oct 20 – 30 Oct 20
Workgroup Meeting seven – review consultation responses and update solution if required	W/B 9 Nov 20
Workgroup Meeting eight – final recommendations to Panels	W/B 30 Nov 20
Present Assessment Report to Panel	14 Jan 21
Report Phase Consultation – EBGL Article 18 compliance	18 Jan 21 – 19 Feb 21
Present Draft Modification Report to Panel	11 Mar 21
Issue Final Modification Report to Authority	16 Mar 21

6 Likely Impacts

Impact on BSC Parties and Party Agents

Party/Party Agent	Potential Impact
Suppliers	New processes to participate and potential impact on imbalance in relation to Virtual Lead Parties
Generators	Changes to how they are dispatched and contracted
Virtual Lead Parties	New processes to participate and liabilities as Balance Responsible Parties
Interconnector Parties	Impact on Interconnector capacity and trading
Party Agents	Changes to how data is collected and sent

Impact on Transmission Company

NGESO are the proposer for P407 and will be impacted by the implementation of MARI as described above

Impact on BSCCo

Area of ELEXON	Potential Impact
Customer Operations	Provision of support to customers once implemented
Settlement Operations	Processing of data and support to customers
Market Entry	Support to new entrants qualifying and registering to provide mFRR services

Impact on BSC Settlement Risks

P407 is expected to impact settlement risks 28 to 33 inclusive. These are all concerned with central aggregation and Trading Charges. They cover NETSO submitting data into Settlement; BSC Agent processes; manual adjustments of data; and Interconnector Meter data submission. We will evaluate them further during the Assessment phase and incorporate possible mitigating actions into the solution as required.

Impact on BSC Systems and processes

BSC System/Process	Potential Impact
BMRS	Will need to be amended to report mFRR data
NOVA	Will need to be amended to process mFRR data

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Impact on BSC Agent/service provider contractual arrangements	
BSC Agent/service provider contract	Potential Impact
BMRA	Changes to processes to process mFRR data as well as updates to their Systems
ECVAA	
FAA	
SAA	
NOVA	

Impact on Code	
Code Section	Potential Impact
BSC Sections G, M, Q, T, X-1 and X-2	Amendments to deliver solution

Impact on Code Subsidiary Documents	
CSD	Potential Impact
CSDs	To be assessed as part of Assessment Phase – we will hold workshops with industry to develop these in a similar manner to how we developed the P344 TERRE CSDs

Impact on other Configurable Items	
Configurable Item	Potential Impact
IDD part one and two	Will need to be updated to reflect P407 – will determine during Assessment Phase whether they will be done as part of the Assessment Phase or Implementation Phase
Service Descriptions for BMRA, ECVAA, FAA and SAA	
User Requirement Specifications for BMRA, ECVAA, FAA and SAA	
Replacement Reserve (RR) schedule methodology	

Impact on Core Industry Documents and other documents	
Document	Potential Impact
Ancillary Services Agreements	Nil Impact
Connection and Use of System Code	Consequential Modification to reflect Grid Code and/or BSC changes
Data Transfer Services Agreement	Potential changes to reflect amendments to data flows

Impact on Core Industry Documents and other documents	
Document	Potential Impact
Distribution Code	Nil impact
Distribution Connection and Use of System Agreement	Nil impact
Grid Code	See above
Master Registration Agreement	Nil impact
Supplemental Agreements	Nil impact
System Operator-Transmission Owner Code	Nil impact
Transmission Licence	Nil impact
Use of Interconnector Agreement	Nil impact

Impact on a Significant Code Review (SCR) or other significant industry change projects
 No impact on SCRs expected – we requested Ofgem treat this Modification as an SCR Exempt Modification on 5 May 2020.

Impact on Consumers
 Some positive consumer impacts may be realised by the reduction in GB balancing services costs. There are no direct negative impacts on consumers that have been identified at this stage, but we will re-assess this during the Assessment Phase.

Impact on the Environment
 We do not expect any impact on the Environment

7 Recommendations

We invite the Panel to:

- **AGREE** that P407 progresses to the Assessment Procedure;
- **AGREE** the proposed Assessment Procedure timetable;
- **AGREE** the proposed membership for the P407 Workgroup; and
- **AGREE** the Workgroup's Terms of Reference.

Appendix 1 – Draft high-level business requirements

Area	Reference	Business Requirement
TSO interface	BR1	SAA & BMRA shall receive, validate and process new MARI-specific data from National Grid. MARI Bids MARI Auction Results
mFRR Activation Settlement	BR2	SAA shall calculate the mFRR Cash flow for each BM Unit for each quarter-hour.
mFRR Activation Settlement	BR3	Daily Party mFRR Cash flow shall be a new Trading Charge, included on Trading Charge Advice Notes that are sent to Parties participating in MARI.
mFRR Activation Settlement	BR4	SAA shall amend the RR Schedule to include both TERRE and MARI. Or SAA shall create a mFRR Schedule for each MARI Auction
mFRR Activation Settlement	BR5	SAA shall process the mFRR Schedule from National Grid. In practice an mFRR Schedule will be similar to (and processed in a similar way to) any other BOA, except that: SAA shall calculate mFRR Schedule Volumes, separate to QAOknij / QABknij and RRAOknij / RRABknij
mFRR Activation Settlement	BR6	SAA will probably need to calculate Period Deemed Standard Product Offer Volumes (DSPOJij) and Period Deemed Standard Product Bid Volumes (DSPBJij) for MARI
mFRR Instruction Settlement	BR7	SAA shall receive and process mFRR Instructions from National Grid. In practice an mFRR Instruction will be indistinguishable from (and processed in the same way as) a RR Instruction i.e. no equivalent QAOknij / QABknij will be calculated and qAkij(t) are used for baseline only
mFRR Instruction Settlement	BR8	SAA shall calculate the difference between the mFRR Schedule and the Deemed Standard Product Shape
mFRR Instruction Settlement	BR9	SAA shall calculate the MARI Period Instruction Deviation Cash flow
mFRR Instruction Settlement	BR10	Daily Party MARI Instruction Deviation Cash flow shall be a new Trading Charge, included on Trading Charge Advice Notes that are sent to Parties participating in TERRE.

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Area	Reference	Business Requirement
mFRR Instruction Settlement	BR11	Total System mFRR Cash flow shall be included in the calculation of System Operator Cash flow for each Settlement Period.
BOA Settlement	BR12	SAA shall compare each Bid-Offer acceptance data received against previous acceptance data. If the previously accepted data relates to a RR Schedule or mFRR Schedule and is of the same direction (i.e. offer/offer or bid/bid) and the Bid-Offer acceptance MW value is less than RR Activation MW value then Settlements shall not calculate Acceptance Volumes $q_{Akij}(t)$ for that time (t)
Non-Delivery	BR13	SAA shall include mFRR Activations Deemed Standard Product Volumes with MARI Instructed Offer/Bid Deviation Volumes in the existing Non-Delivery Charge calculations.
Imbalance settlement	BR14	SAA shall include MARI-specific actions in the calculation of the System Buy Price and System Sell Price.
Imbalance settlement	BR15	SAA shall include mFRR Activation Volumes in the calculation of Energy Imbalance Volumes.
Reporting	BR16	The SAA-I014 Settlement Report shall contain new MARI-specific data items.
Reporting	BR17	New MARI-specific data shall be published to BMRS.
Reporting	BR18	New indicative MARI-specific data shall be calculated by BMRS
Reporting	BR19	ETR and EBGL reporting will likely be impacted by MARI
Credit	BR20	Daily Party mFRR Cash flow shall be included in the calculation of Actual Energy Indebtedness.

Appendix 2: Glossary & References

Acronyms

Acronyms used in this document are listed in the table below.

Acronym	
Acronym	Definition
ACER	Agency for the Cooperation of Energy Regulators
BM	Balancing Mechanism
BMRA	BM Reporting Agent
BMRS	BM Reporting Service
BOA	Bid-Offer Acceptance
BR	Business Requirement
BSC	Balancing and Settlement Code
CSD	Code Subsidiary Document
CUSC	Connection and Use of System Contract
DA	Direct Activations
E2E	End-to-end
EBGL	European Balancing Guideline
ECVAA	Energy Contract Volume Allocation Agent
EMR	Energy Market Regulation
ENTSO-E	European Network of Transmission System Operators for Electricity
EU	European Union
FAA	Funds Administration Agent
FFR	Fast Frequency Response
GB	Great Britain
IDD	Interface Definition Documents
IEM	Internal Energy Market
IWA	Initial Written Assessment
MARI	Manually Activated Reserve Initiative
MW	Megawatt
NETSO	National Electricity Transmission System Operator
NGESO	National Grid Electricity System Operator
REMIT	Regulation on wholesale Energy Market Integrity and Transparency
SA	Scheduled Activation
SAA	Settlement Administration Agent
SCR	Significant Code Review
STOR	Short Term Operating Reserve

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Acronym	
Acronym	Definition
TERRE	Trans-European Replacement Reserve Exchange
UK	United Kingdom

External links

A summary of all hyperlinks used in this document are listed in the table below.

All external documents and URL links listed are correct as of the date of this document.

External Links		
Page(s)	Description	URL
1	The Electricity Balancing Guideline	https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32017R2195
3	P344 'Project TERRE' webpage	https://www.elexon.co.uk/mod-proposal/p344/
4	European Union (Withdrawal Agreement) Act 2000	https://www.legislation.gov.uk/ukpga/2020/1/contents
10	ELEXON's Foundation Programme	https://www.elexon.co.uk/about/about-elexon/foundation-programme-2018/