

Phase

Initial Written Assessment

Definition Procedure

Assessment Procedure

Report Phase

Implementation

P344 'Project TERRE implementation into GB market arrangements'

P344 seeks to align the Balancing and Settlement Code (BSC) with the European Balancing Project TERRE (Trans-European Replacement Reserves Exchange) requirements.

This will implement the TERRE balancing product at national level and enable compliance with the obligations stemming from the European Electricity Balancing Guideline (EB GL).



The BSC Panel recommends **approval** of the P344 Alternative Modification and **rejection** of the P344 Proposed Modification

This Modification is expected to impact:

- BSC Parties
- Non-Balancing Mechanism participants
- Transmission Company
- Central Registration Agent (CRA)
- Balancing Mechanism Reporting Agent (BMRA)
- Electricity Contract Volume Aggregation Agent (ECVAA)
- The Funds Administration Agent (FAA)
- Half Hourly Data Aggregators (HHDAs)
- Settlement Administration Agent (SAA)
- Supplier Volume Allocation Agent (SVAA)
- ELEXON

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About This Document

This is the P344 Final Modification Report, which ELEXON has submitted to the Authority on behalf of the BSC Panel. It includes a summary of the Workgroup's assessment, the Panel's full views and the responses to both the Workgroup's two Assessment Consultations and the Panel's Report Phase Consultation. The Authority will consider this report and will decide whether to approve or reject P344.

There are nine parts to this document:

- This is the main document. It provides details of the defect, solution, impacts, costs, benefits and proposed implementation approach. It also contains details of the Workgroup's membership and its full Terms of Reference.
- Attachment A contains the draft legal text changes to the BSC for the P344 Proposed Modification.
- Attachment B contains the draft legal text changes to the BSC for the P344 Alternative Modification.

Please note that the contents of Attachment A and B are spread across a number of BSC legal text documents.

- BSC Section A 'Parties and Participation'
- BSC Section D 'BSC Cost Recovery and Participation Charges'
- BSC Section H 'General'
- BSC Section J 'Party Agents and Qualification Under the Code'

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- BSC Section K 'Classification of Registration of Metering Systems and BM Units'
- BSC Section M 'Credit Cover and Credit Default'
- BSC Section N 'Clearing, Invoicing and Payment'
- BSC Section P 'Energy Contract Volumes and Metered Volume Reallocations'
- BSC Section Q 'Balancing Mechanism Activities'
- BSC Section R 'Collection and Aggregation of Meter Data from CVA Metering Systems'
- BSC Section S 'Supplier Volume Allocation'
- BSC Section S Annex S-2 'Supplier Volume Allocation Rules'
- BSC Section T 'Settlement and Trading Charges'
- BSC Section V 'Reporting'
- BSC Section X Annex X-1 'General Glossary'
- BSC Section X Annex X-2 'Technical Glossary'
- BSC Section Z 'Performance Assurance'
- Attachment C contains the full Business Requirements that will be used to develop the BSC Systems and has been used to develop the P344 legal text.
- Attachment D contains the full responses received to the Workgroup's first Assessment Procedure Consultation.
- Attachment E contains the full responses received to the Workgroup's second Assessment Procedure Consultation.
- Attachment F contains the letter that the BSC Panel Chair sent to Ofgem requesting its provisional thinking in respect of the P344 solution and Ofgem's subsequent response.
- Attachment G contains National Grid's cost breakdown for its TERRE system developments.
- Attachment H contains the full responses received to the P344 Report Phase Consultation.

Why Change?

Project TERRE is a balancing product implementation project, developed by a group of European Transmission System Operators (TSOs), including National Grid. It will fulfil incoming legal requirements on TSOs included in the European Electricity Balancing Guideline (EB GL). The EB GL requires those TSOs that use Replacement Reserve (RR) to implement and make operational a new European platform for the exchange of energy.

The EB GL Entered into Force on 18 December 2017, and the legal deadline for National Grid to utilise the TERRE platform for GB balancing of RR products will be December 2019 subject to intermediary proceedings as outlined in section 6 of this paper.

Solution

The TERRE product will enable all TERRE participating Balancing Service Providers (BSPs) to submit bids (upwards or downwards) to their national TSO (i.e. National Grid for BSPs in GB) on an hourly basis to fulfil 15 minute delivery periods. The TSO will forward these Bids to a central platform (termed LIBRA) which will process them in order to meet the RR requirements specified by TSOs. Activations and associated delivery instructions will be passed back to the BSP via the national TSO.

P344 will seek to implement the TSO-BSP Settlement solution of the TERRE balancing product within the GB electricity market arrangements. It will facilitate payments between National Grid and GB BSPs for activations issued to GB BSPs by the LIBRA platform via National Grid. Payments to BSPs will be subject to validation of expected delivered volumes against actual metered data (with any non-delivery subject to imbalance charges and potentially additional Non-Delivery Charges). Project TERRE will also introduce a TSO-TSO settlement process (which will, for example, pay National Grid for RR delivered by GB BSPs to meet a non-GB requirement); but this is outside the scope of P344 (and of the BSC).

TERRE implementation in the GB market has interlinked impacts with National Grid's Grid Code (GC) through Modification [GC0097 'Grid Code Processes Supporting TERRE'](#) which focusses on the physical balancing of the system, from bid formats to the dispatch of BSPs.

The P344 solution will allow customers and independent aggregators (as mandated by the EB GL) to participate in the TERRE balancing product (using embedded generation or demand side response to deliver RR, independently of their electricity Supplier). The BSC changes for P344 will also remove all BSC barriers to customers and independent aggregators participating directly in the existing Balancing Mechanism (BM)¹, although there may be other restrictions outside the BSC (e.g. in the Grid Code).

The Workgroup developed both a Proposed and Alternative solution to Modification P344. The only difference between the solutions is whether customer's Half Hourly (HH) delivered volumes being shared with its Supplier requires the customer giving explicit

¹ Whilst Modification P344 was not specifically intended to remove BSC barriers to independent aggregators participating in the BM, the P344 solution does so. This is because the P344 processes for settling RR are closely linked to existing BSC processes for settling Bid Offer Acceptances (BOAs) in the BM. Therefore it allows customers and independent aggregators to access both markets.



What is Replacement Reserve?

Replacement Reserve (RR) products are Pan-European balancing energy products with a >15 minute lead time.



What is a BSP?

A BSP is a market participant with reserve providing potential that is able to provide balancing services to the TSO.

Not to be confused with Balance Responsible Party (BRP), which is responsible for the imbalance position as a result of balancing activities.

consent (Proposed Modification) or is done on a mandatory basis (Alternative Modification).

Appendix 1 contains a set of TERRE FAQs devised during the course of P344 solution development, aimed at assisting market participants' understanding of the core features of the TERRE solution.

Impacts & Costs

P344 is expected to impact BSC Trading Parties, market participants that wish to participate in the TERRE product (customers and independent aggregators), the Transmission Company and a number of BSC Agents, with further details identified in section five of this paper.

Following ELEXON's Impact Assessment with its service provider, the total cost to deliver the P344 solution will be £3m, plus internal costs of approximately £150k. Further, there will be Transmission Company implementation costs for P344 and associated Grid Code Modification GC0097 of between £25-£28m.

Implementation

The overall TERRE product implementation in the GB market will comprise of two stages. The first will include a parallel running phase, intended by the European Central TERRE project to be a full end-to-end test of all systems and associated processes outside of the live system balancing and associated Settlement environments. This test phase is expected to commence in August 2019, subject to further amendment/confirmation by the European TERRE Central Project team.

The second stage refers to the live environment implementation phase in advance of the legal backstop whereby National Grid, as the GB TSO, is mandated by the EB GL to utilise the TERRE product for balancing of the GB Transmission System. This operational go live window is expected to be between October-December 2019, as determined and subject to further amendment/confirmation by the European TERRE Central Project team.

In order that GB market participants are given the opportunity to participate in the TERRE product from its inception, the BSC legal text is proposed to be implemented in the February 2019 BSC Release. However, only the legal text that is applicable for product pre go-live tasks will be active at this point, and the full BSC obligations will become active upon product go-live.

BSC Panel final recommendation to the Authority

The BSC Panel agreed that the:

- P344 Proposed Modification (customer consent) would better facilitate Applicable BSC Objectives (c) and (e); and
- P344 Alternative Modification (mandatory sharing) would better facilitate Applicable BSC Objectives (c), (d) and (e).

Overall, the Panel recommended to the Authority that the P344 **Alternative Modification** (mandatory sharing) should be **approved** and the P344 **Proposed Modification** (customer consent) **rejected** as detailed in section 10 of this paper.

2 Why Change?

Project TERRE is a balancing product implementation project, developed by a group of European TSOs, including National Grid. It will fulfil incoming legal requirements on TSOs included in the EB GL. Among other things, EB GL obligations require those TSOs that use RR to implement and make operational a European platform for the exchange of energy. The TERRE product will harmonise the despatch of RR across several TSO areas including Great Britain, France, Italy, Portugal, Spain, Switzerland, Romania, Poland, Hungary and Bulgaria (Greece, Czech Republic and Norway are currently observers).

In relation to current GB market arrangements, the TERRE product will be utilised to balance the Transmission System in a similar manner to how current localised products such as BSC Bid-Offers or Short Term Operating Reserve (STOR) submissions are used.

National Grid raised BSC Modification P344 on 1 June 2016 with a view to implement the product at national Settlement level to ensure GB compliance with the EB GL as preceding work on [Issue 60 'Interfaces between the European Balancing Project TERRE and the current GB market arrangements'](#) was inconclusive.

What is the issue?

The EB GL Entered into Force on 18 December 2017, meaning that it carries the backing of European law. Due to this, the legal deadline for National Grid to utilise the TERRE platform for GB balancing of RR products is expected to be December 2019. This legal deadline is subject to intermediary approval proceedings as outlined further in section six of this paper.

National Grid is expecting to utilise RR Products for energy balancing in GB from the TERRE product go-live window. As noted previously, this is currently scheduled for October-December 2019, in advance of the legal backstop date. Compliance to the EB GL is of importance to ensure that GB doesn't risk infraction proceedings and the potential for fines to be levied against GB market participants. It is important to note that, until otherwise directed, TERRE product implementation in the GB market is continuing with the assumption of no impact from ongoing Brexit negotiations.

National Grid wishes that the TERRE product should feed into the BSC calculations of imbalance prices and volumes, as soon as it is used as part of GB balancing. This requires changes to the GB market arrangements, including the BSC provisions.



What is STOR?

Short Term Operating Reserve (STOR) is a balancing product whereby generation or demand can be amended by at least 3MW (can be aggregated with a collection of smaller sites). The participants providing the service to National Grid may be Balancing Mechanism (BM) or non-BM and connected to either the distribution or Transmission System.

Defining GB implementation approach

In advance of Issue 60 and P344, National Grid worked in collaboration with the Department for Energy and Climate Change (DECC)², Ofgem and ELEXON on determining the most appropriate GB implementation approach to overarching obligations stemming from the EB GL.

As a result of discussions from this group, the GB implementation approach to the EB GL requirements seeks to maximise the exchange of cross border (XB) products in a manner that is proportionate to, and recognises the specific needs of GB balancing. This approach was discussed with stakeholders at an industry workshop in January 2015 in advance of the subsequent work to develop and implement the TERRE product in the GB market.

Common European Electricity Market and GB Specific Products

It was determined that the option of the GB market utilising common European Electricity market and GB specific balancing products simultaneously for balancing purposes would be most beneficial and efficient for the market as a whole. Under this option, European standard products are introduced into the GB market with expectation they will replace some volume currently provided by GB-specific products. This would mean the number of GB specific products would be reduced (for instance, the removal of System Operator (SO) to SO trades upon the TERRE product being implemented). However, some GB balancing products will be retained in order to meet balancing requirements not met by standard products (e.g. Bid-Offer Acceptances (BOAs)) in the GB Balancing Mechanism (BM).

What is an RR Product?

Replacement Reserves (RR) are formally defined within the legally-binding European 'Guideline on System Operation' ([Commission Regulation \(EU\) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation](#)). This defines RR as the active power reserves available to restore or support the required level of Frequency Restoration Reserve (FRR) to be prepared for additional system imbalances, including generation reserves. The European Network Codes (ENCs) from which the EB GL stems, define various types of reserves (to be standardised and shared where possible on an EU-wide basis) to manage energy balancing, i.e. to manage system frequency.

One of these defined reserve types is Frequency Containment Reserve (FCR), which is intended to be the fastest European response reserve, used for halting any further divergence of system frequency from the nominal GB standard of 50Hz. Frequency Restoration Reserve (FRR) is slower and is used to return the system frequency to the nominal standard. The slowest is RR and this is used to replace FRR that has been utilised. Not all EU TSOs use or will use RR, but National Grid is one that does so, and hence is legally bound to using the TERRE product.

The TERRE product is a standardised bid and offer platform for RR across Europe. It will be formally defined as part of the implementation of the European Electricity Balancing Guideline (EB GL).



What are SO to SO trades?

Trading of electricity between the GB market and continental Europe is possible due to interconnectors and this trading determines the direction of electricity flow across these assets. The System Operator (SO) may in some cases need to adjust these interconnector flows closer to real time via System Operator to System Operator (SO to SO) trades.

² Now the Department for Business, Energy and Industrial Strategy (BEIS).

RR products must be compliant with TSO requirements and meet all 12 criteria, set out below:

1. Full activation time (FAT) of 30 minutes (inclusive of preparation and ramping time).
2. Preparation period from 0 to 30 minutes.
3. Ramping period from 0 to 30 minutes.
4. Minimum quantity of 1 Mega Watt (MW).
5. Minimum delivery period of 15 minutes.
6. Maximum delivery period of 60 minutes.
7. Location (bidding zone) – this will be Great Britain for parties bidding into TERRE in respect of GB-based generation or demand.
8. The validity period as defined by the BSP but equal or less than 60 minutes.
9. The recovery period as defined by the BSP (time before another activation is possible).
10. The maximum bid size will be:
 - in the case of a divisible offer (part-acceptance possible), no maximum bid size will be applied.
 - in the case of an indivisible offer (all or nothing acceptance), the local rules will be implemented.
11. Bid divisibility will be under the responsibility of BSP. The bid volume:
 - Min volume (resolution): 1MWh.
 - Resolution after Common Merit Order (CMO): 0.1MWh³.
 - For indivisible bids (not applicable for divisible bids).
12. Price of submitted bids/offers: the cap and floor prices will be compliant with the local market rules⁴.

TERRE Standard Product Shape

The TERRE product will be required to meet the 12 criteria of an RR product. However, the way in which it meets these requirements is not clearly specified. The definition of how the TERRE product will meet the RR criteria within the GB market has been discussed by the P344 Workgroup, guided by the central TERRE project team.

The central TERRE team previously presented the proposed ideal shape that the delivery of TERRE volumes should follow within each TSO area. National Grid has confirmed that it wishes for this standard product shape to be used in the GB market as the basis for delivery of TERRE volumes. The standard product shape provides the desired delivery

³ Having a resolution of 0.1MW means that in case an offer is partially accepted (e.g. pro rata), the value will be rounded at the value with one decimal number.

⁴ TSOs are seeking harmonisation of caps and floors with the latest information suggesting that caps and floors will not be applied to balancing energy offers submitted to the RR platform, and that only technical (IT) limits will be applied.



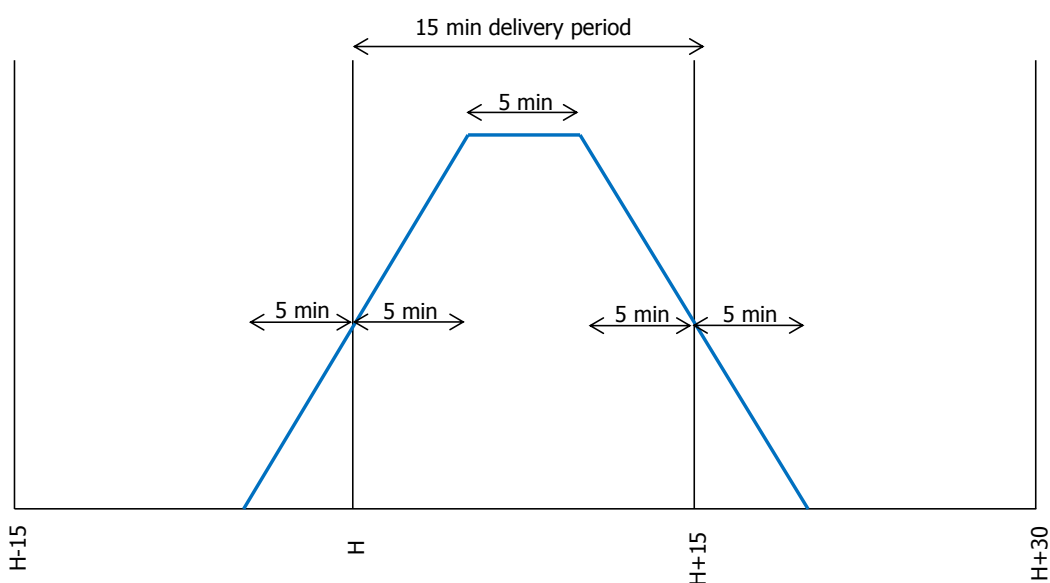
What are Balancing Services?

Balancing services are used by the Transmission Company in its role as System Operator (SO) to balance supply and demand in real time. These are also used in the calculation of imbalance prices (also known as cash-out prices).

based on the XB exchange schedule and minimises excess volumes being produced where multiple TERRE activations are stacked.

The standard product shape to deliver the TERRE product in the GB market will consist of symmetrical ramps around the start (H) and end (H+15) of the 15-minute TERRE block. At the start of the delivery block, the TERRE standard product shape suggests that ramping should ideally commence at (H-5) and finish at (H+5). There will then be a fixed period at full delivery for 5 minutes before the ideal down ramp commences at (H+10) and concludes at (H+20). The ideal duration for the TERRE product delivery is therefore 25 minutes (from H-5 to H+20) and that the duration of the maximum delivered volume is 5 minutes (from H+5 to H+10).

TERRE Standard Product Shape



The TERRE Procurement Process (Auction)

A TERRE procurement process will run hourly through an auction and results will be associated with a one hour delivery period, which comprises four 15-minute TERRE blocks. Through the bid process, TERRE blocks can be linked together by BSPs and can be conditional on delivery of another block in the same auction. Participation in the hourly auction by BSPs is voluntary. The TERRE auction will conclude with a Cleared Price (not pay-as bid) for the required volumes determined by the requirements submitted by the TSOs

Under TERRE there are certain rules that enable the relevant TSO (e.g. GB SO) to “exclude” bids from certain BSPs units from a TERRE auction (for example as a result of constraints on the transmission system which could impact system security).

BSPs will submit bids to National Grid, who will pass bids into the TERRE auction through the central TERRE “LIBRA” platform which is operated by the central TERRE service provider. An algorithm designed to ensure the highest social welfare for all TSOs will determine the least cost provision of the TSO requirements through the TERRE auction. Results from the hourly auction will be published centrally through the TERRE platform and on the BMRS. GB BSPs will be instructed by the GB TSO to deliver the TERRE products (see Modification [GC0097 'Grid Code Processes Supporting TERRE'](#)).

TERRE Product Settlement

For each 15 minute period associated with an hourly auction, the TERRE central algorithm will determine a clearing price for activated bids, based upon the requirements submitted by the TSOs.

BSP bids activated by the optimisation algorithm will be instructed to deliver by the relevant TSO. Settlement between TSOs will be based on the marginal prices resulting from the algorithm without considering any constraints.

For the majority of cases, activated bids from BSPs in TERRE TSO participation areas will be settled using a single clearing price that is calculated centrally by the TERRE platform.

The central TERRE project team has identified a scenario where the BSP should be settled using a pay as bid price. In this scenario a TSO may identify a need to manage the cross border exchange flow and will introduce a constraint on an interconnector in the central algorithm. Any constrained bids activated through the TERRE process on this basis with a higher price than the marginal price will be paid on pay-as-bid basis. In this case, the TERRE central platform will flag the relevant activations to TSOs for Settlement.

Interaction with current BSC arrangements

The P344 Proposer and Workgroup believe that the P344 solution should be closely integrated with existing BSC processes for BM Settlement, in order to facilitate participation in both markets (for those GB BSPs who choose to participate in both). In particular they propose that:

- GB BSPs wishing to participate in TERRE should be required to register a BM Unit containing the assets (generation or demand side response) that will be used to deliver RR. Suppliers will be able to participate using their Base or Additional BM Units, Generators using Embedded/CVA BM Units and Virtual Lead Parties (defined under 'Who can participate in TERRE?') using Secondary BM Units. These arrangements contrast with existing ancillary services such as STOR, which allow a BSP to participate without registering a BM Unit (a 'non-BM' participant);
- The Settlement process should allow a Secondary BM Unit to participate in both TERRE and the BM simultaneously (rather than having to choose which market to participate in). Note that participation in both markets remains optional, so BSPs will not be required to participate in both (or either); and
- Payments to (or from) GB BSPs for RR should be treated as Trading Charges under the BSC (with similar payment terms to existing Trading Charges).

As a result, the implementation of Project TERRE will impact a number of BSC areas including (but not limited to):

- BSC Party and Participation Capacity registration
- BM Unit registration and requirements
- SVAA data procurement requirements
- Default rules for missing or late TERRE data
- SVAA data aggregation
- Settlement of Balancing Mechanism Actions

- Settlement of TERRE Activations
- The calculation of Trading Parties' Imbalance Volumes
- The calculation of Trading Charges
- The timing of BMRS data publication
- Non-delivery charges
- Credit calculations
- Imbalance Price calculation
- The publication of information on the BMRS relating to Imbalance Price calculations and GB-related RR Product Acceptances

It will also bring current non-BM providers into the BSC arrangements in order that they can participate in the TERRE product.

Who can participate in TERRE?

All current BM participants will be able to participate in TERRE, should they opt to do so.

The EB GL also requires that TSOs facilitate demand response participation in the TERRE product, including independent aggregation facilities and energy storage. Ofgem defines independent aggregators⁵ as market participants who bundle changes in consumer's loads or distributed generation output for sale in organised markets, and who do not simultaneously supply the customer with energy. In order to facilitate this, the P344 Workgroup has introduced the concept of a "**Secondary BM Unit**" (as described in section 4 below).

The Workgroup recognised that requiring all TERRE participants to accede to the BSC – including customers and independent aggregators, who currently provide Balancing Services through a 'non-BM route' – could act as a disincentive to participation. To mitigate this risk, the P344 solution includes proposals that allow such participants to be recognised as a distinct new category of BSC Party ("**Virtual Lead Parties**"). The Workgroup suggests that this new category of BSC Party should not be subject to the same level of charges and obligations as existing BSC Parties. This is on the basis that they participate in the BSC only for the purpose of registering Secondary BM Units to participate in TERRE and/or the BM. If they wished to participate in other aspects of the BSC (such as registering Primary BM Units or trading in wholesale markets) the full BSC charges should apply.

Settlement timescales, reporting and TERRE

It is envisaged that the TERRE settlement timescales and reporting process will be aligned with the current Settlement timescales and reporting processes.

Under the BSC, Settlement data is reported to BSC Parties (including BM participants) in various Settlement reports produced by BSC Central Systems e.g. the SAA. These reports are produced in a pipe-separated 'NETA' (New Electricity Trading Arrangements) file format and distributed via File Transfer Protocol (or high grade dedicated communication lines (optional) for paying Parties).

⁵ See 'Ofgem's views on the design of arrangements to accommodate independent aggregators in energy markets' open letter dated 24 July 2017

Settlement data is published in accordance with the BSC Settlement timetable:

BSC Settlement timetable		
Settlement Run	ID	Average timing (Working Days after Settlement Date)
Interim Information Run	II	5
Initial Settlement Run	SF	18
1 st Reconciliation Run	R1	37
2 nd Reconciliation Run	R2	82
3 rd Reconciliation Run	R3	152
Final Reconciliation Run	RF	290

NETA reporting

The implementation of Modification [P114 'Entitlement of Licence Exemptible Generators \(LEGs\) and other Non-trading Parties to BSC Membership Without Evidence of Trading'](#) meant that non-BSC Parties can apply to receive the SAA-I014 (sub-flow 2) for each Settlement Run under licence, granted on a case-by-case basis by ELEXON in accordance with the BSC ([further information](#)).

In addition to NETA Settlement reports, disaggregated data is published to the market via the [Balancing Mechanism Reporting System website](#). Under the current arrangements in the BM, National Grid sends Bid-Offer data to BMRS shortly after Gate Closure for a given Settlement Period, with publication soon afterwards. National Grid also sends Acceptance data to BMRS shortly after being instructed. BMRS publishes both types of data shortly after receipt from National Grid.

EU reporting requirements

Aggregated balancing data is reported via BMRS (and ENTSO-E's EMFIP) in accordance with Article 17 of the Transparency Regulation. See Modification [P295 'Submission and publication of Transparency regulation data via the BMRS'](#) for further information.

Article 12(2) of the EB GL requires each TSO to publish various information on balancing energy bids. ELEXON proposes that these requirements are satisfied by publication of such information on BMRS.

Existing BM Settlement arrangements and TERRE

It is envisaged that the existing BM Settlement arrangements will remain largely unchanged. Under the BM, National Grid can issue MW profile instructions to a BM Unit to deviate from a MW baseline. However, provisions have been included to account for a scenario whereby a BOA is issued before an RR Activation.

BSPs that want to participate in the BM must indicate the MW level at which they expect their BM Unit to be at for any given Settlement Period. This is known in the Grid Code as a Physical Notification (PN). At Gate Closure, this MW level is finalised and sent to Settlement where it is termed the BM Unit's Final Physical Notification (FPN) and acts as a baseline for any future deviation instructions from National Grid.



What is the SAA-I014 (sub-flow 2)?

This report contains everything that happened in the Settlement systems on a particular day, broken down into half hour Settlement Periods.

This includes System Buy/Sell Prices, information on trading activity and charges for each Balancing Mechanism Unit (Party), Metered Volumes and Settlement cash flow information. It also has all the information needed to re-calculate the System Buy/Sell Prices.

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For a given Settlement Period, National Grid can issue these instructions (deviations from the FPN) between Gate Closure and the end of that Settlement Period in order to balance the system. These instructions should respect physical and dynamic data (intended output level, maximum/minimum limits, ramp rates etc.) that the BM Unit submits to National Grid.

For each instruction received, Settlement calculates Offer or Bid Acceptance Volumes based on the difference between the instruction and the baseline. BM participants are settled (i.e. paid or must pay) on the basis of these volumes. As the baseline is the Final Physical Notification (FPN), if there is no instruction post Gate Closure to the BM Unit from National Grid, the baseline will equal the FPN.

Instructions have a sequential BOA Number set by National Grid. This is important as National Grid can make a series of 'revisions' to what it wants the BM Unit to do, through a series of instructions (some of which may 'undo' a previous instruction). Settlement processes instructions in order of BOA number, with an intention that they are processed in the time order that instructions were issued.

Imbalance pricing and TERRE

Under the current arrangements, individual actions taken to balance the GB system (e.g. Accepted Bids and Offers under the BM) are ordered and subject to various calculation steps such as Flagging, Tagging and repricing.

The TERRE procurement process will impact on GB imbalance pricing where the volume activated meets GB requirements for energy balancing. However, because the central TERRE system cannot identify whether a given RR Activation is required to meet a GB or foreign need, GB Settlement cannot simply isolate individual actions associated with BSP BMUs. This will necessitate aggregation of the TERRE actions in the GB imbalance pricing calculation associated with TERRE volumes.

Credit, invoicing, payment default and TERRE

Under the current arrangements in the BSC, if a BSC Party fails to pay its Balancing and Settlement Code Company (BSCCo) or Trading Charges invoices, all other BSC Parties are required to pay for these amounts under a Default Funding Share mechanism (i.e. mutualisation payments), based on their market share of Credited Energy Volume.

Under the P344 solution the Default Funding Share arrangements are unchanged. However, it should be noted that Virtual Lead Parties that are not a Trading Party (i.e. without Energy Accounts) will not be subject to the Default Funding Share mechanism as they do not have any Credited Energy Volume associated to them (similar to Non-Physical Traders under the current arrangements). Should non-Trading Parties fail to pay their BSCCo charges, this would be treated as debt, which is included in BSC Costs and is, in turn, recovered from Trading Parties through the Net Main Cost, which is allocated by Funding Share.

BSC Contingencies, Black Start and TERRE

A Black Start event is an event whereby the Transmission System has shut down and requires a series of localised start-up activities (without relying on the Transmission



What is Settlement?

Settlement is the process by which payments are made or taken by the Settlements company (ELEXON) in respects of energy trades and the operation of the BM.



What is Gate Closure?

Gate Closure is the point of time one hour prior to a Settlement Period by which all notifications relating to that Settlement Period must be submitted. This deadline is the point by which Trading Parties, mainly generators, must notify their Final Physical Notifications (FPNs) and Bids and Offers for that Settlement Period to National Grid, acting as the System Operator.

System), leading to restoration of normal operation. BSC Section G 'Contingencies' states that a Market Suspension Period will exist during:

- a Total Shutdown (as defined in the Grid Code) or;
- a Partial Shutdown (as defined in the Grid Code) that also meets the Market Suspension Threshold, essentially meaning that national demand is 95% less than previously forecasted.

During a Market Suspension Period, the BM is suspended in addition to the following:

- No compensation to BM participants for BM outages
- Energy Contract Volume Notifications (ECVNs) are suspended
- A single imbalance cash-out price applies (calculated by BSCCo and approved by Panel, based on the cash-out prices in the previous 30 days)
- Credit Assessment Energy Indebtedness (CEI) and Metered Energy Indebtedness (MEI) are set to zero
- Actual energy Indebtedness (AEI) (for Settlement Days within the Market Suspension period) is set to zero

The P344 solution proposes that the BSC contingency arrangements include the TERRE process but are otherwise unchanged.

Interaction with other BSC Modification Proposals

P344 has similarities to two other Modification Proposals progressing through the Formal BSC Change mechanism: Modification Proposal P354 (['Use of ABSVD for non-BM Balancing Services at the metered \(MPAN\) level'](#)), and Modification Proposal P355 (['Introduction of a BM Lite Balancing Mechanism'](#)).

Modification Proposal P354 is intended to ensure that Suppliers' Energy Imbalance Volumes are adjusted for 'non-BM' balancing services provided by their customers to National Grid. Similarly, some elements of the P344 solution are intended to ensure that Suppliers' Energy Imbalance Volumes are adjusted for RR provided by their customers to National Grid through participation in Project TERRE. Therefore some elements of the P344 and P354 solutions are similar. Each Workgroup has attempted to align the solutions of the Modification Proposals, where appropriate, in order to facilitate efficient implementation of both Modifications (should they both be approved by Ofgem). At the time of writing this P344 Assessment Report, the P354 Final Modification Report was with Ofgem pending final decision.

Modification Proposal P355 is intended to allow smaller generators to participate in the Balancing Mechanism. The P355 Workgroup has discussed a number of possible approaches to achieving this, following which the P355 Proposer has concluded that the Secondary BM Unit element of the P344 solution covers much of what was intended by P355. The Proposer has therefore requested that any further work for P355 is put on hold until June 2018, when the Draft Modification Report for P344 is presented to the BSC Panel.

Estimated central implementation costs of P344

Since the first Industry Consultation period, the solution was further developed by the P344 Workgroup. Therefore, previous indicative costs on BSC Central Systems are no longer accurate or reflective of the final P344 Proposed and Alternative solutions.

In light of this, ELEXON conducted further work with its Service Provider to determine the likely implementation cost of the P344 solution within the BSC arrangements. These costs will be around **£3m** with a further approximate **£150k** internal delivery costs. This aligns to the ELEXON 2018/19 business plan projected cost for P344.

ELEXON's enduring P344 costs following implementation are estimated at **£100k** per annum. These enduring costs relate to an increase in operational activities required as a result of the P344 solution.

Indicative industry costs of P344

It is expected that there will be costs amongst all market participants that wish to participate in the TERRE product within the GB market in terms of system/process development, compliance and operational costs.

Those that are not currently BSC Parties but that who to participate in the TERRE product will incur further costs to accede to the BSC alongside the standing monthly charges applicable to their participation capacity.

Transmission Company costs

As part of the Assessment Procedure, ELEXON requested that National Grid performs a Transmission Company impact assessment, to in part, determine the scale of costs ultimately borne by market participants of implementing the TERRE product.

As part of its response, National Grid expects its costs to deliver both P344 and GC0097 (the overall TERRE solution) to be between £25-£31m. P344 Workgroup members challenged this cost and requested that National Grid provides further breakdown of the cost in order to provide the respective Code Panels all information required in order to make determinations on the Modifications. National Grid provided this justification as Attachment G to this paper, whereby it has confirmed a total cost for the full solution of **£25-28m**.

National Grid is unable to provide an exact breakdown of the costs between P344 and GC0097 as it impact assessed the implementation of the TERRE product as a whole, given that it would not be appropriate to develop one Code Modification without the other. Similarly, there are efficiency benefits from developing both P344 and GC097 together; hence it would not be possible for National Grid to accurately split its costs between P344 and GC0097 Modifications.

P344 impacts

Impact on BSC Parties and Party Agents

Party/Party Agent	Potential Impact
BSC Parties	BSC Parties and non-BSC Parties will be required to make the corresponding adjustments to their systems and process should they wish to participate in the TERRE product.
Non-BSC Parties	

Impact on Transmission Company

The Transmission Company will be required to make the corresponding adjustments to its systems and process to interact with Settlements as part of the TERRE product.

Impact on BSCCo

ELEXON will be required to make the necessary systems and process changes in order to implement this Modification.

Impact on BSC Systems and processes

BSC System/Process	Potential Impact
BMRS	Changes will be required (to systems/processes listed to the left) to implement this Modification.
CRA	
COMMS	
DM	
ECVAA	
FAA	
FSS	
Portal	
SAA	

Impact on BSC Agent/service provider contractual arrangements

BSC Agent/service provider contract	Potential Impact
BMRA	BSC Agents (listed to the left) will be required to implement this Modification.
CRA	
ECVAA	
FAA	
SAA	
SVAA	

Impact on Code	
Code Section	Potential Impact
Section A	Changes (to documents listed to the left) will be required to implement this Modification.
Section D	
Section H	
Section J	
Section K	
Section M	
Section N	
Section P	
Section Q	
Section R	
Section S	
Section S Annex S-2	
Section T	
Section V	
Section X Annex X-1	
Section X Annex X-2	
Section Z	

Impact on Code Subsidiary Documents	
CSD	Potential Impact
BSCP15	Changes (to documents listed to the left) will be required to implement this Modification. Changes to Code Subsidiary Documents will take place following Modification approval due to time constraints during the Assessment Procedure. Document development will include industry working groups to develop the processes that most heavily impact market participants, with such working groups being communicated through the usual BSC Change communications channels.
BSCP38	
BSCP65	
BSCP70	
BSCP71	
BSCP503	
BSCP507	
BSCP508	
BSCP537 Appendix 1	
BSCP537 Appendix 2	
BSCP537 Appendix 3	
New BSCP 1 (BSCP602)	
New BSCP 2 (BSCP603)	
Communication Requirements Document	Changes (to documents listed to the left) may be required to implement this Modification. These changes will be made

Impact on Code Subsidiary Documents	
CSD	Potential Impact
CVA Data Catalogue and Annex's A-C	following the Authority approval of P344.
SVA Data Catalogue documents	
Reporting Catalogue	
NETA Programme, Interface Definition and Design (IDD) documents and spreadsheets	
Funds Administration Agent IDD documents	
BMRA Service Description (SD)	
CRA SD	
ECVAA SD	
FAA SD	
SAA SD	
SVAA SD	
SVAA (ISRA) Settlement Software and associated Settlement Software Documents	
BMRA User Requirements Specification (URS)	
CRA URS	
ECVAA URS	
FAA URS	
SAA URS	
SVAA URS	

Impact on Core Industry Documents and other documents	
Document	Impact
Grid Code	The Grid Code is impacted by having to make changes in order to accommodate TERRE as a whole and fit in with the P344 solution that has been devised by the Workgroup. These impacts have been assessed during the cross-code Workgroup meetings.
Transmission Licence	Changes to the C16 statements will be required as a result of Project TERRE. There may be specific impacts as a result of this Modification.

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Impact on Core Industry Documents and other documents

Document	Impact
MRASCo's Data Transfer Catalogue (DTC)	<p>A change will be required to the Data Transfer Catalogue as a result of the solution proposed under P344. In the interests of efficiency, this change utilises the same DTC change as originally proposed under BSC Modification P354. This DTC change relates:</p> <ul style="list-style-type: none">• Data flows for SVAA to notify HHDA of MSIDs for which half hourly metered data is required, and for the HHDA to provide the data; and• A data flow for SVAA to share HH metered volumes with the relevant Supplier, for MSIDs in a situation whereby customer consent is provider (P344 Proposed solution) or whereby the sharing of such data is mandated (P344 Alternate solution).

Impact on Electricity Market Reform (EMR)

Electricity Market Reform Settlement (EMRS) will be required to make the corresponding adjustments to EMRS systems as a result of the implementation of P344. EMRS has noted that the current solutions to P344 may have a neutral impact on the Contracts for Difference (CfD) arrangements. The Adjusted Load Following Capacity (ALFCO) calculation could potentially be impacted as a result of P344, which was discussed with Electricity Settlement Company (ESC). EMRS recommended to the ESC that a discussion be had with BEIS for further guidance.

Impact on a Significant Code Review (SCR) or other significant industry change projects

This Modification does not impact on any ongoing SCR.

Impact on Consumers

The implementation of this Modification will give some consumers the ability to participate in another balancing product within the market. Further, positive consumer impacts may be realised by the reduction in GB balancing services costs, estimated around €13m per year. There are no direct negative impacts on consumers that have been identified from the implementation of the solution to this Modification Proposal.

Impact on the Environment

This Modification does not have any direct impact on the environment.

TERRE Implementation Timescales

The implementation timescales surrounding Modification P344 are closely linked with the EB GL given that this document outlines the European legal obligations to implement the TERRE product across the participating markets. Further dependencies include the central TERRE parallel run (commencing in August 2019) and go-live window (October-December 2019) timescales.

The EB GL became law on 18 December 2017. As explained previously, Article 19 of the EB GL mandates those TSOs using the RR products to develop a European platform for the exchange of balancing energy from RR.

Article 19(1) of the EB GL requires that within six months, (i.e. by 18 June 2018) those TSOs must make a formal proposal for the platform to their National Regulatory Authorities (NRAs). Article 10 requires that the draft proposal must be subject to a public consultation lasting for at least one month before being submitted to the NRAs. Article 19(3) sets out what this proposal must cover.

Article 5 sets out that normally such a proposal must be approved by the relevant NRAs within six months of receipt. However, Article 7 allows the NRAs to agree to require an amendment to the original proposal, which would add up to four months to the process. If the relevant NRAs fail to agree, the decision will then fall to, or they may refer the decision to the Agency for the Cooperation of Energy Regulators (ACER), who has six months following referral to make a decision.

Once approved, Article 19(5) requires that the RR platform is implemented within one year and that the relevant TSOs shall strive to fulfil all their balancing energy needs from RR.

If this overall process takes the maximum permitted time, and the NRAs determine to approve the proposal at the end of the initial six month period, TERRE should go live within two years (by 18 December 2019). However, the exact legal deadline for implementation will not be known until the NRAs (or ACER) approves the RR/TERRE proposal.

Ofgem, as the GB Regulator and as supported by the P344 Proposer National Grid, wishes for BSC Modification P344 to be implemented in a manner that allows for GB market participants to participate from the product go-live date. Therefore, official implementation of the BSC arrangements to facilitate TERRE should be suitable to enable this to take place.

Upon advice from the central TERRE project and as noted previously, it is expected that the parallel run phase will commence in August 2019. Ofgem and National Grid has indicated that it would be beneficial for GB market participants to be involved in the parallel run where possible. The format of the parallel running phase is yet to be confirmed by the central TERRE project. However, it is expected that parallel running will be a full-end to-end test, notably without actual energy volumes being delivered or payment flows being sent/received.

Subsequent to the parallel running phase, there will be a go-live window between October and December 2019, at which point TSOs will begin to utilise the TERRE product for operational balancing of their respective TSO areas.

Should there be any material technical amendments or alterations to delivery timescales from a central TERRE project perspective during the P344 development phase, there will likely be impacts upon implementation timescales for P344 and the TERRE product.

P344 Implementation Date

In order that GB market participants are given adequate opportunity to complete TERRE product pre-go live tasks, provisions have been included within the legal text that only the provisions relevant for the pre-go live tasks (namely accession to the BSC and registration of Secondary BM Units), will be active upon the formal Implementation Date. The broader legal text provisions for P344 will become active upon product go-live, which will be confirmed to ELEXON by National Grid at a later date.

Whilst the second Assessment Procedure Consultation suggested an implementation timeframe of June-July 2019 for the P344 solution, this did not include provisions for the legal text to allow pre go-live tasks to be completed in advance of formal go-live. Therefore, market participants will be given more time than previously consulted in order to complete TERRE pre go-live tasks. Further, the timeframe in which the TERRE product will go-live has been extended to an October-December timeframe. Given that the majority of market participants already supported the implementation timeframe outlined in the second Assessment Procedure Consultation, these updated timescales will only be beneficial for all market participants.

In consideration of the above, the Workgroup recommended, and the BSC Panel approved an Implementation Date for P344 (Proposed and Alternative Modifications) of:

- 28 February 2019.

GB Implementation Timescales Summary Table

The table below depicts a summary of the key dates applicable to GB market participants:

GB Implementation Timescales	
Item	Timescale
P344 Implementation Date (provisions for pre go-live activities)	28 February 2019 (February 2019 BSC Release)
TERRE parallel running period	August 2019 – October 2019
TERRE go-live window	October 2019 – December 2019
TERRE legal deadline for use of product in GB balancing	18 December 2019 (expected subject to central project intermediary approval proceedings)

Benefits of the TERRE product and wider market access

During the early stages of discussions at a European level, a cost benefit analysis was conducted that indicated efficiencies of around 13m Euro per year in balancing costs as a result of the GB market participating in the TERRE product. National Grid has, in part, used this analysis as justification to the benefits that implementing the TERRE product through P344 and GC0097 would deliver.

During the development of the P344 solution, the Workgroup established that the P344 solution, whilst not specifically intended to remove BSC barriers to independent aggregators participating in the BM, would do so. By removing barriers to independent aggregators participating in the BM, there would be further economic benefits in addition to the 13m Euro initially outlined from the TERRE cost-benefit analysis.

There have been a number of studies published that aim to estimate the economic benefits to the GB electricity industry of wider market access. The most recent of these was conducted by Charles River Associates in a paper produced for Ofgem in April 2017 titled 'An assessment of the economic value of demand-side participation in the Balancing Mechanism and an evaluation of options to improve access.' This publication estimated an indicative range of £110-£400m of economic benefits in 2020, rising to £160-£440m in 2030. Whilst these figures are approximate, they do indicate that the per annum benefits from wider market access included within the P344 solution would exceed £100m per year, in line with National Grid's cost justifications in Attachment G

BSC Modification [P355 'Introduction of a BM Lite Balancing Mechanism'](#), raised by PeakGen on 21 June 2017 sought to introduce a new BM Lite classification to allow smaller generators to offer energy to the System Operator for energy balancing, in competition with the larger BM Units already in the market. P355 has been placed on hold as the Proposer confirmed to ELEXON that they believe the Secondary BM Unit element of P344 covers the intention behind the reasons P355 was raised. It is expected that the P355 Proposer will withdraw the Modification upon Ofgem approval of P344 as P355 would no longer be required. Further, as per Attachment G, National Grid highlighted efficiency savings of between £7m-£19m by the P344 solution including wider access rather than being developed separately by P355.

Ofgem provisional thinking on the P344 solution

During the Assessment Procedure, ELEXON highlighted the likelihood that it would be required to commence development of its BSC Central Systems. As such, at the September 2017 [BSC Panel meeting 270](#), ELEXON presented a paper regarding Project TERRE Implementation Risks and Mitigation. This paper outlined the progression of the Modification and the risks and associated mitigation linked with the challenging implementation timescales required. The BSC Panel determined that ELEXON and the P344 Workgroup should prepare an interim report, from which the Panel may request Ofgem's provisional thinking as per BSC Section F 'Change Management' 2.6.10.

Due to further considerations required as part of the P344 and GC0097 solutions, ELEXON subsequently presented the interim report to the BSC Panel at its February 2018 [BSC Panel meeting 275](#). As a result of the interim report which outlined the P344 solution, the BSC Panel determined that Ofgem's provisional thinking should be sought in respect of the P344 solution developed by the Proposer and Workgroup members.

Upon recommendation of the BSC Panel, ELEXON and the P344 Workgroup members, the BSC Panel Chair wrote to Ofgem on 15 February 2018 requesting clarity on:

- Does Ofgem have any concerns in relation to barriers to either entry or competition in relation to the proposed P344 solution?
- Does Ofgem have a view on whether Suppliers should be informed of an independent aggregator's customer's participation in the TERRE product/Balancing Mechanism? Do you agree that the sharing of HH delivered volumes with the customer's Supplier should only take place where the customer opts-in to such an arrangement?
- Does Ofgem have any overarching concerns with the P344 solution that has been developed by the P344 Workgroup and Modification Proposer?

Ofgem formally responded to the BSC Panel Chair on 6 April 2018, confirming their understanding that ELEXON will need to commence development of BSC Central Systems in advance of Ofgem's decision on P344 in order to play its role in ensuring overall GB compliance to Article 19 of the EB GL. Ofgem also outlined its responses to the aforementioned questions whereby:

- It understands that the Workgroup has developed arrangements that would be workable and facilitate new participants under the BSC, and by closely replicating current market arrangements, costs would be minimised.
- It understands that, for the benefit of the development of the market, market arrangements will evolve as market experience is gained, through subsequent BSC Modifications.
- It did not fetter its discretion in relation to whether the sharing of HH delivered volumes with the customer's Supplier should be mandated or take place only where the customer has consented. Ofgem noted that, as these options align to those presented to it through P354, it would not be appropriate to make a determination through its provisional thinking response.
- It noted that it does not have any concerns in relation to the solution based on its initial assessment or its attendance at the P344 Workgroup meetings.
- It noted that the BSC Panel and ELEXON's decision on when to commence development of BSC Central Systems could determine overall GB compliance with Article 19 of the EB GL. It noted trust that the BSC Panel would take this into consideration in its decision of whether to agree the advanced development of BSC Central Systems.

ELEXON presented Ofgem's provisional thinking response to the BSC Panel at its April 2018 [BSC Panel meeting 277](#). At the same time, and in respect of Ofgem's provisional thinking response, ELEXON requested that the Panel agrees to a £1.1m spend on BSC Central System development over the period April-July 2018 in advance of Ofgem's final decision (expected by 31 July 2018). The Panel agreed unanimously that ELEXON should instruct its service provider to commence the P344 development of BSC Central Systems.

Attachment F contains the letter that the BSC Panel Chair sent to Ofgem requesting its provisional thinking in respect of the P344 solution and Ofgem's subsequent response.

P344 enhancement changes

During the P344 Assessment Procedure, the Workgroup discussed enhancements that could be made to the solution in order to better and more effectively integrate independent aggregators and/or customers within the proposed arrangements. However, due to time constraints in order that P344 can be delivered to allow market participants access to the TERRE product from its inception, it was determined that such enhancements should be made following the finalisation of the P344 solution.

In relation to these improvements, ELEXON will be facilitating two Issue groups, which will be raised shortly to discuss:

- Replacement Reserve and asset level metering 'behind the meter'

Participation in the provision of a Balancing Service outside the Balancing Mechanism (BM) requires the installation of Operational Metering at the assets providing the service, thus allowing real time monitoring. Questions arise over whether or not the data from Operational metering can be used for Settlement purposes and if not, will the customer need to install Settlement metering and will this be a barrier to entry.

Secondly assets chosen to provide Replacement Reserve (RR) may not be truly independent of other assets located on the customer's site which may affect Boundary Flows, and therefore may lead to under/over payment of RR. For example, the customer site could shift demand to another meter or absorb Exports through on site storage. The System would not benefit, but provision of RR may still be paid.

Thirdly, uncontrollable demand behind the meter may make it difficult for independent aggregators to accurately forecast Physical Notifications if settled at the Boundary point, potentially leading to Imbalance Payments or non-delivery charges.

- Alternative Baseline methodology

BSPs that wish to participate in the BM must indicate the MW level at which they expect their BM Unit to be at for any given Settlement Period. This is known in the Grid Code as a Physical Notification (PN). At Gate Closure this MW level is finalised and sent to Settlement where it is termed the BM Unit's Final Physical Notification (FPN) and acts as a baseline for any future deviation instructions from National Grid.

For each instruction received, Settlement calculates Offer or Bid Acceptance Volumes based on the difference between the instruction and the baseline. BM participants are settled on the basis of these volumes. As the baseline is the FPN, if there is no instruction post Gate Closure to the BM Unit from National Grid, the baseline will equal the FPN.

The proposed BM Settlement arrangements outline the requirement for Virtual Lead Parties to submit PN's for Secondary BM Units, with a forecasted MW value. Workgroup members within P344 noted the need to submit accurate PN's at Gate Closure as a potential blocker to participation in TERRE as well as other Ancillary services which require accurate PN's.

Certain P344 Workgroup members have noted that the expertise for new market entrants lies in calculating the cumulative change for the customer's sites but not the cumulative change relative to total demand for those customer sites. Where a site has fluctuating demand, the problem is further compounded.

Inaccurate PN's will lead to non-delivery charges, even if delivery at asset level has been achieved. Under current BM rules delivery of less than 90% of the MWh indicated is classed as a default with the MWh calculated according to QME (FPN – Energy Delivered).

In addition to the issue above, the submission of PN's does not provide a check that the customer site is behaving normally pre delivery and that the delivered reserve hits the system. I.e. a customer site could artificially ramp up demand pre delivery to the level of the PN then reduce down to normal levels. Delivery is achieved but the System does not benefit. Baselining acts as a way of preventing gaming.

Ofgem identified these subsequent changes as part of its provisional thinking response, highlighting that some market participants would prefer more flexibility for demand side providers, acknowledging the forthcoming Issues groups to discuss and evaluate the aforementioned points.

Subject to the outcome of these Issue Groups, there may be further BSC Modifications and/or Change Proposals as appropriate in order to implement the suggested arrangements.

7 Workgroup's Conclusions

At its final Workgroup meeting on 22 March 2018, the P344 Workgroup finalised the P344 Proposed solution and raised the Alternative solution.

Workgroup and Proposer views against Applicable BSC Objectives

The P344 Proposer and Workgroup members voted on both the Proposed and Alternative solutions as per the voting table below:

Key:

+ = Positive impact on Applicable BSC Objective

- = Negative impact on Applicable BSC Objective

N = Neutral impact on Applicable BSC Objective

Member	(a)	(b)	(c)	(d)	(e)	(f)	(g)
Sophie Tilley	N	+	+	N	+	N	N
Andy Colley	N	N	+	N	+	N	N
Bill Reed	N	+	+	N	+	N	N
Martin Mate	N	N	N	-	+	N	N
Paul Jones	N	N	+	N	+	N	N
Saskia Barker	N	+	+	N	+	N	N
Simon Reid	N	N	+	N	+	N	N
Steve Taylor	N	N	+	-	+	N	N

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

Neutral (Proposer and Workgroup unanimous)

(b) The efficient, economic and co-ordinated operation of the national electricity transmission system

Positive (Proposer) and Neutral (Workgroup majority)

The Proposer believes that the P344 solution would better facilitate BSC Objective (b) as there will be both GB and EU level benefits from the TERRE product. The TSO noted that it will be able to procure balancing services at a lower balancing cost once the TERRE arrangements have been implemented within the market. Further, there will be increased competition in the market due to wider access to balancing products for market participants, greater liquidity and the netting of TSO imbalance needs. National Grid also noted that the TERRE product will act as a replacement for SO-SO trades.

The P344 Workgroup supported National Grid's views as the Proposer and noted that increasing liquidity will also increase efficiency. However, the majority Workgroup view was neutral as there is a risk of currency conversion rates reducing the competitiveness of GB based TERRE product participants. Further, some Workgroup members noted that the

full economic benefits haven't been identified or scoped and it is difficult to vote positively in absence of costs justification from National Grid. (Note that the National Grid cost breakdown requested by the Workgroup is provided as Attachment G to this paper.)

(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

Positive (Proposer and Workgroup majority)

The Proposer notes that broadening the provision of balancing services from a national to pan-European level is likely to promote increased competition between BSPs from different countries. The cross border sharing of reserve capacity will increase access to reserves along with access to cheaper energy on the continent. Further, it will allow GB BSPs wider access to provide balancing services to National Grid.

The P344 Workgroup membership emphasised the benefits of a wider range of market participants having the provision of providing balancing services to National Grid through the TERRE product. The P344 Workgroup also noted the efficiencies for the market of having a single Settlement provider within the market that the BSCCo will provide for the TERRE product once implemented and through Modification P344. This is also relevant to ensuring a level playing field for all market participants without bespoke arrangements for some classes of participant.

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

Neutral (Proposer and Workgroup majority)

A number of views were put forward by the P344 Workgroup which led to a neutral view of impacts against Applicable BSC Objective (d). Some Workgroup members noted that implementing the TERRE arrangements is making the BSC more complicated. Further, there will likely be extensive costs involved to implement the P344 solution, however, in theory the long term BSC operating costs could be reduced as there will be a greater number of BSC Parties funding the BSCCo. One Workgroup member noted positives that ELEXON will be using its expertise to provide Settlement for the TERRE product and that there are efficiencies gained from dovetailing existing 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]

Positive (Proposer and Workgroup unanimous)

The P344 Proposer and Workgroup unanimously determined that the P344 solution better facilitates Applicable BSC Objective (e). The P344 solution will enable National Grid to be compliant with incoming EU legislation through the EB GL. It is discharging its Settlement processes for the TERRE product through the BSCCo. Failure to comply with the ENC, of which the EB GL stems, would mean that the GB market risks infraction proceedings and the potential for fines to be levied against market participants.

The platforms and processes being developed will also form the basis for subsequent phases to meet other legal obligations for other balancing processes closer to real time into 2020 and beyond.

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

Neutral (unanimous)

(g) Compliance with the Transmission Losses Principle

Neutral (unanimous)

Self-Governance

The P344 Proposer and Workgroup unanimously do not consider that P344 should be treated as a Self-Governance Modification. The reason for this relates to a material impact on Self-Governance criteria a(ii) from the P344 solution. Whilst the P344 solutions have been developed by the Proposer and Workgroup to create a level playing field for all market participants to the best of their ability, the nature of the solution creates a material impact on criteria a(ii).

Further, the difference between the Proposed and Alternative solution in relation to customer consent could discriminate between different classes of Parties as per criteria (b).

Given the above, alongside the scale of the Modification and its associated costs funded by market participants, it is appropriate that Ofgem makes the final determination on the Modification.

Workgroup's final recommendations

Overall, the P344 Proposer and Workgroup voted by majority that the P344 Modification should be progressed to implementation in either Proposed or Alternative form (subject to BSC Panel and subsequent Authority decision). One Workgroup member presented a neutral view on the further progression of P344 due to the overall costs associated with implementation of the arrangements through the BSC and Grid Code.

Proposed vs Alternative Applicable BSC Objectives

The P344 Workgroup considered the P344 Alternative solution in relation to the Proposed solution, agreeing by majority that it better facilitates Applicable BSC Objective (c). Rationale provided by the Workgroup members suggested the Alternative solution would be preferable in relation to Applicable BSC Objective (c) due to increased information available to Suppliers in the interests of maintaining the integrity of Settlement. One Workgroup member representing independent aggregators did not agree with this view due to the potential for decreased competition and recorded a view that the Alternative solution has a negative impact on Applicable BSC Objective (c) in comparison to the Proposed solution.



What are the Self-Governance criteria?

A proposal 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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Second Assessment Procedure Consultation respondents' views against the Applicable BSC Objectives - Highlights

20 respondents to the Second P344 Assessment Procedure Consultation agreed with the Workgroup's initial view that the P344 solution better facilitates the Applicable BSC Objectives compared to the current baseline.

The respondents noted that by improving liquidity within the market, and allowing a wider range of market participants access to provide balancing services, such balancing services will likely be available to National Grid at a lower cost. A number of respondents highlighted that promoting competition is a positive market development.

Compliance with the EB GL was highlighted by respondents as important in relation to Applicable BSC Objective (e).

Respondents noted that the proposed arrangements do not necessarily make the BSC arrangements more efficient and in many aspects introduce increased complexity. However, they note importance of ensuring assets have access to balancing services and ensuring that all market participants can be settled fairly.

One respondent to the Consultation noted no comment as they did not believe the solution was complete. The respondent noted they have received conflicting advice regarding when relevant information such as RR Activations, RR Instructions, the clearing price and whether the volumes are meeting a GB or non-GB need will be published. The respondent noted that some advice suggests relevant data would be published up to 30 minutes after the end of the delivery period, which would give market participants who have received an RR instruction an unfair advantage as they would have access to additional data points in comparison to other market participants.

The full responses to the second Assessment Procedure Consultation can be viewed in Attachment E.

Panel's discussion on P344

At its meeting on 10 May 2018, the BSC Panel was invited to provide its initial views on the P344 Proposed and Alternative Modifications, outlined in the P344 Assessment Report.

A Panel member mentioned the recent publication from the European Commission '[Notice to Stakeholders - Withdrawal of the United Kingdom and the internal energy market](#)', questioning whether resource is being spent developing a product that may not be implemented. Another Panel member noted concern regarding the costs, if in such a scenario, the product were not to be used within the market on an enduring basis, as the economic benefits may not outweigh implementation costs.

ELEXON noted that the publication outlines what will happen if a 'no- deal' Brexit scenario materialises. It added that development should continue to ensure compliance with EU law and hence, it is ELEXON's view that the development and progression of P344 is not at this time impacted by the European Commission's publication. National Grid highlighted that the P344 solution will deliver benefits to industry much wider than just the TERRE solution, such as through wider market access as highlighted in Attachment G to this paper. A Panel member noted the importance of Ofgem working closely with the government to understand the full implications of the European Commission's notification, such that the large financial costs of TERRE are worthwhile in relation to the impact on consumers' money.

The Panel Chair questioned why the GB arrangements outlined in the European Commission notice to stakeholders are different from the suggested Swiss arrangements (whereby Switzerland does participate in the TERRE product). National Grid informed the Panel that discussions are ongoing, but this is in part due to the legal obligations encompassing TERRE participants. The European Court of Justice (ECJ) oversees European legislation, and Swiss market for TERRE falls under this jurisdiction, whereas the GB market would not.

A Panel member raised concerns that the benefits of wider market access wouldn't be realised if National Grid is unable to dispatch certain customer/independent aggregator units due to locational constraints. National Grid confirmed that its impact assessment and presented costs to deliver the TERRE product will enable it to dispatch all units where it is appropriate to do so for system balancing.

Due to the level of costs associated with the development of the P344 and GC0097 solutions, a Panel member wished for Ofgem to provide assurance that National Grid does not utilise P344/GC0097 funding to progress with other ongoing IT projects.

Panel's initial views against the Applicable BSC Objectives

The BSC Panel members noted that their initial views on whether the Proposed (customer consent) or Alternative (mandatory) Modification should be approved in relation to customer consent, was for reasons as already outlined under BSC Modification P354.

Through P354, the Panel previously noted a concern amongst some industry members of data being shared without a Customer's consent. The industry member's concern related to competition aspects around the sharing of HH delivered volumes with a customers' Supplier.

Through P354, a Panel Member previously commented that there appears to be a distinction between 'big' and 'small' parties and BM and non-BM Parties. They suggested Ofgem may be able to gain a better insight into these distinctions.

Through P354, the Panel were previously informed of concerns that there is not currently a level playing field between Balancing Service Providers and that the P344 solution will improve this through the TERRE product and access to the BM.

Proposed vs current baseline

Ten Panel members provided their initial views against the Applicable BSC Objectives for the P344 Proposed Modification:

- Applicable BSC Objective (c) – The Panel **unanimously** believes P344 Proposed better facilitates;
- Applicable BSC Objective (e) – The Panel **unanimously** believes P344 Proposed better facilitates; and
- Applicable BSC Objectives (a), (b), (d), (f) and (g) – The Panel **unanimously** believes P344 Proposed is neutral.

The Panel therefore **agrees** with the Workgroup's majority view that the P344 Proposed solution **better facilitates** Applicable BSC Objective (c), and unanimous view that the P344 Proposed solution better facilitates Applicable BSC Objective (e) compared to the current baseline, for the reasons outlined by the Workgroup in section 8 of this paper.

Alternative vs current baseline

Ten Panel members provided their initial views against the Applicable BSC Objectives for the P344 Alternative Modification:

- Applicable BSC Objective (c) – The Panel by **majority** believes P344 Alternative better facilitates;

Four Panel members voted neutral due to the potential impacts on competition. The members voted neutral as the impacts are not wholly positive or negative, and hence took a neutral overall view.

- Applicable BSC Objective (d) – The Panel **unanimously** believes P344 Alternative better facilitates;

Contrary to the views provided by the P344 Workgroup, a BSC Panel member provided a view that Applicable BSC Objective (d) would be positively influenced by the P344 Alternative Modification due to increased efficiency.

Three Panel members abstained due to being unable to make a decision against Applicable BSC Objective (d).

- Applicable BSC Objective (e) – The Panel **unanimously** believes P344 Alternative better facilitates; and
- Applicable BSC Objectives (a), (b), (f) and (g) – The Panel **unanimously** believes P344 is neutral.

The **Panel** therefore **agrees** with the Workgroup's majority view that the P344 Proposed solution **better facilitates** Applicable BSC Objective (c) and unanimous view that the P344 Proposed solution better facilitates Applicable BSC Objective (e), for the reasons outlined by the Workgroup in section 8 of this paper. The Panel added that they believe Applicable BSC Objective (d) is also better facilitated by the P344 Alternative solution.

Proposed vs Alternative

The Panel by **majority** voted that the **P344 Proposed Modification (customer consent) is better than the P344 Alternative Modification (mandatory)** and therefore recommends that the P344 **Proposed** Modification be **approved** and the P344 **Alternative** Modification **rejected**. Two Panel members voted that the Alternative Modification is better than the Proposed.

The Panel voted that the Proposed Modification should be approved and the Alternative Modification rejected as the benefits of customer consent and subsequent impacts on competition would outweigh the dis-benefits that could be realised from a mandatory provision of sharing HH delivered volumes.

Therefore, the Panel disagreed with the Workgroup's view that the P344 Alternative solution is better than the P344 Proposed solution.

Panel's initial views on draft legal text

The Panel initially **unanimously** agreed that the draft legal text as outlined in Attachments A and B for the Proposed and Alternative P344 Modifications respectively deliver the intentions of P344.

Panel's initial views on the proposed Implementation Date

The Panel initially **unanimously** agreed the proposed Implementation Date for P344 (Proposed or Alternative solution) of 28 February 2019 as part of the February 2019 BSC Release.

Panel's initial views on Self-Governance

The Panel initially **unanimously** agreed with the Workgroup that P344 does not meet the Self-Governance criteria due to a material effect on competition, and the potential for discrimination between different classes of Parties.

9 Report Phase Consultation Responses

This section summarises the responses to the Panel's Report Phase Consultation on its initial recommendations. You can find the full responses in Attachment H.

Summary of P344 Report Phase Consultation Responses				
Question	Yes	No	Neutral/ No Comment	Other
Do you agree with the Panel's initial unanimous view that the P344 Proposed Modification better facilitates the Applicable BSC Objectives in comparison to the current baseline?	12	0	0	0
Do you agree with the Panel's initial majority view that the P344 Alternative Modification better facilitates the Applicable BSC Objectives in comparison to the current baseline?	12	0	0	0
Do you agree with the Panel's initial majority view that the P344 Proposed Modification better facilitates the Applicable BSC Objectives in comparison to the P344 Alternative Modification and should therefore be approved?	4	8	0	0
Do you agree with the Panel that the redlined changes to the BSC deliver the intention of P344?	9	0	3	0
Do you agree with the Panel's recommended Implementation Date?	11	0	1	0
Do you agree with the Panel's initial view that P344 should not be treated as a Self-Governance Modification?	12	0	0	0
Do you have any further comments on P344?	6	6	-	-

Do you agree with the Panel's initial unanimous view that the P344 Proposed Modification better facilitates the Applicable BSC Objectives in comparison to the current baseline?

Consultation respondents unanimously agreed that the Proposed Modification better facilitates the Applicable BSC Objectives compared to the baseline. They agreed that Applicable BSC Objectives (c) and (e) would be better facilitated by the Proposed Modification for the reasons outlined by the P344 Workgroup and BSC Panel.

Four respondents explicitly noted that Applicable BSC Objective (b) would also be better facilitated due to reduced system balancing costs. Increased competition and the cross border sharing of energy would promote the efficient, economic and co-ordinated operation of the national electricity Transmission System.

One respondent questioned whether the solution would better facilitate Applicable BSC Objectives (b) and (d) due to the increased complexity that TERRE will introduce in

addition to the existing market arrangements. Another respondent noted a belief that Applicable BSC Objective (d) would be better facilitated by the P344 Proposed Modification. Whilst the Modification will increase complexity of the overall arrangements, the respondent noted that the Modification will implement the solution in an efficient manner.

One respondent noted that the solution would clearly better facilitate Applicable BSC Objective (e), but that the better facilitation of other Objectives was uncertain due to competition concerns, uncertainties surrounding the operational live environment running of the TERRE product and the cost-benefits being unclear in relation to higher than anticipated implementation costs.

Do you agree with the Panel's initial majority view that the P344 Alternative Modification better facilitates the Applicable BSC Objectives in comparison to the current baseline?

Consultation respondents unanimously agreed that the Alternative Modification better facilitates the Applicable BSC Objectives compared to the baseline. They agreed that Applicable BSC Objectives (c), (d) and (e) would be better facilitated by the Alternative Modification for the reasons outlined by the P344 Workgroup and BSC Panel.

Three respondents noted that the Alternative Modification would also better facilitate Applicable BSC Objective (b) in comparison to the current baseline due to increased liquidity in the market and hence decreased Transmission System balancing costs.

One respondent outlined support for the Alternative Modification, noting a perception that the BSC Panel is too concerned to be seen not to be putting up barriers to new entrants. The respondent provided this view in support of Suppliers receiving HH delivered volume data on a mandatory basis for the benefit of customer billing.

Do you agree with the Panel's initial majority view that the P344 Proposed Modification better facilitates the Applicable BSC Objectives in comparison to the P344 Alternative Modification and should therefore be approved?

Four consultation respondents agreed with the Panel's initial view that the P344 Proposed Modification better facilitates the Applicable BSC Objectives in comparison to the P344 Alternative Modification, primarily due to the potential negative impacts on competition whereby Suppliers would gain competitive advantage from the disclosure of HH delivered volumes. One respondent noted that, whilst Suppliers would not be able to breach overarching competition law, it could be possible to heavily incentivise customers to provide Balancing Services through the Supplier rather than through an Independent Aggregator.

On the other hand, eight respondents believe that the Alternative Modification better facilitates the Applicable BSC Objectives compared to the Proposed Modification. The primary argument presented by consultation respondents related to the requirement for the Supplier to receive HH delivered volumes for the purposes of accurate customer billing. One respondent noted that concerns regarding competition are unfounded as there could be consequences if Suppliers take advantage of alleged soft power or a breach in competition law. Further, a respondent noted that the Alternative solution will require fewer contractual changes to customer contracts. The respondent noted that, should the

Proposed Modification be approved, the process for the customer providing consent should be user friendly with information promptly shared with the Supplier.

Do you agree with the Panel that the redlined changes to the BSC deliver the intention of P344?

Nine respondents agreed that the draft legal text delivers the intention of P344.

Three respondents did not provide a view on the draft legal text, generally sighting they did not review it in detail. One respondent noted that the solution is extremely complicated and it is therefore likely the solution will contain anomalies discovered during implementation that will require further corrective Modifications in advance of TERRE product go-live. ELEXON acknowledges this perspective, highlighting it has conducted numerous quality reviews, but accepts the risk remains given the complexity and scope of the Modification.

Do you agree with the Panel's recommended Implementation Date?

The majority of respondents (11) agreed with the Panel's initial recommended Implementation Date of 28 February 2019 for the reasons outlined in section 6 of this paper.

One respondent noted there will likely be high system development costs to meet the challenging implementation timescales, ultimately socialised through a wider customer group than those that will access the TERRE product.

One respondent suggested that National Grid and ELEXON should facilitate access to the BM in advance of TERRE product go-live in the interests of better competition. ELEXON notes that the BSC Central System development required in order to deliver BM access will not be completed in a manner that will enable BM access in advance of the TERRE product go-live date, due to the complexity of system changes required.

The respondent that outlined a neutral response also highlighted ambitious implementation timescales due to the complexity of the Modification, but acknowledged that participation in the TERRE product is optional and hence individual market participant developments can be bespoke to appropriate timescales related to their strategy.

Do you agree with the Panel's initial view that P344 should not be treated as a Self-Governance Modification?

All 12 consultation respondents agreed that P344 should not be treated as a Self-Governance Modification due to impacts on competition and the reasons outlined by the Workgroup and BSC Panel in this Draft Modification Report.

Do you have any further comments on P344?

One respondent questioned the regularity at which a Secondary BM Unit can amend its composition. ELEXON noted that this will be possible on a daily basis due to the P344 Workgroup wishing that the current SVA Registration arrangements be mirrored, whereby the composition of BM Units can be amended on a daily basis. This process reduces complexity and impact of the solution for both ELEXON and the wider industry.

The respondent also questioned whether the same asset can be part of a Secondary BM Unit alongside participating in non-BM products such as STOR. ELEXON notes from a BSC perspective, there are no restrictions on participation between the TERRE product and STOR, other than an SVA Metering System must only be providing balancing services through one BM Unit (Primary or Secondary) at any particular time. However, this does not take into consideration limiting factors which may be present in the market outside the BSC arrangements. Further, existing BSC Parties that wish to Register Secondary BM Units will be able to do so if they register in the role of a Virtual Lead Party, since a Virtual Lead Party is the only participation capacity that will be able to register Secondary BM Units.

Two respondents highlighted support of the alternative baselining methodology and asset level metering Issue groups that will be held to discuss improvements to the TERRE product in the GB market. Respondents highlighted the importance of these discussions increasing competition and market participation in the TERRE product.

One respondent noted ongoing uncertainties regarding the TERRE central platform development and potential inconsistencies between the approach taken for the GB solution in comparison to other European TSO areas. The respondent noted that flexibility may need to be built into system development to account for any potential central TERRE project changes that arise during development. ELEXON notes that it will continue to monitor the development of the central TERRE platform and will take the necessary steps, should they arise, to ensure competitive GB market participation in the TERRE product from a Settlements perspective.

ELEXON Legal Text Amendments

During the Report Phase Consultation, ELEXON conducted a further quality review of the P344 legal text, given the scale of changes required in order to deliver the P344 solution. As part of this review, minor amendments were made to ensure that the intent behind the Modification will be delivered.

As a result of these amendments, and through further discussions with Workgroup members, the P344 Business Requirements have also been updated to add clarity to the existing text.

A summary of legal text amendments is listed below:

BSC Section S – Proposed & Alternative Modification

- Housekeeping changes to paragraph 2.6 'Provision of Data' - BSCP01 title reference was incorrect

BSC Section T – Proposed & Alternative Modification

- Amended 4.4 'Determination of Energy Imbalance Prices (SBP_j and SSP_j)' to correctly account for TERRE Activation volumes
- Amended 4.10 'Determination of Residual Cashflow Allocations' to correctly account for TERRE Activation volumes
- Clarified Annex T-:1 Part 1 – 'Derivation of Final Ranked Set of System Actions' by adding reference to Quarter Hour Replacement Reserve Activation Price to the appropriate System Action and Replacement Reserve Aggregated Unpriced System Actions price of zero

Panel's discussion on P344

At its meeting on 14 June 2018, the BSC Panel was invited to provide its final views on the P344 Proposed and Alternative Modifications.

A Panel member noted that the importance of the Supplier hub structure, including the importance of the Supplier having oversight of its customers' actions had been further highlighted through responses to the P344 Report Phase Consultation. The Panel member noted that the detrimental impacts on competition from the mandatory sharing of HH delivered volumes with the customers' Supplier did not appear as significant as initially envisaged.

Another Panel member noted the relative size and power of an Independent Aggregator is much less than that of a Supplier. Therefore, the final decision regarding customer consent could have a larger proportionate impact on independent aggregators. For instance, an independent aggregator dedicates resource to the customer and due to the size of its business, losing such customer and associated resource could have significant impacts on the independent aggregator's business.

A Panel member noted that predatory behaviour from Suppliers would be possible from the mandatory sharing of HH delivered volumes with the customers' Supplier, but does not believe this would cause independent aggregators issues.

One Panel member noted that the arguments both for and against customer consent are strong and noted difficulty in determining which would be best for the market as a whole due to the positive and negative arguments for both.

The Citizens Advice representative also noted difficulty in determining whether the Proposed or Alternative solution should be approved. The representative noted that both the P344 Proposed and Alternate solutions enable the Supplier's Imbalance position to be adjusted in light of TERRE delivery, and if the customer wishes to have a more accurate bill, they will inevitably provide consent for their HH delivered volumes to be shared with the Supplier. The Citizens Advice representative also noted that studies have indicated that flexible markets are more efficient and therefore, these should be encouraged, which encompasses the Proposed (customer consent) solution.

A Panel member questioned whether the issues between customer consent and mandatory data sharing were a reflection of a new industry market in comparison to one that is established. Another Panel member acknowledged this view, but noted that should the market further develop in the future, the arrangements could be amended by means of further Modification in a similar manner to existing arrangements.

The Transmission Company representative noted that some issues discussed by the Panel members in terms of competition and accurate billing are already present within the wider market, but aren't under the BSC. A Panel member noted that whilst these issues may not be under the BSC arrangements currently, other industry Codes are seeking to tackle these issues and the BSC should be mindful of this.

Panel's final views against the Applicable BSC Objectives

The BSC Panel commented that both the Proposed and Alternative solutions would better facilitate the Applicable BSC Objectives compared to the current baseline.

Proposed vs current baseline

Ten Panel members provided their final views against the Applicable BSC Objectives for the P344 Proposed Modification:

- Applicable BSC Objective (c) – The Panel **unanimously** believes P344 Proposed better facilitates;
- Applicable BSC Objective (e) – The Panel **unanimously** believes P344 Proposed better facilitates; and
- Applicable BSC Objectives (a), (b), (d), (f) and (g) – The Panel **unanimously** believes P344 Proposed is neutral.

The Panel therefore unanimously **agrees** with the Workgroup's majority view that the P344 Proposed solution **better facilitates** Applicable BSC Objective (c), and was unanimous that the P344 Proposed solution better facilitates Applicable BSC Objective (e) compared to the current baseline, for the reasons outlined by the Workgroup in section 8 of this paper.

Alternative vs current baseline

Ten Panel members provided their final views against the Applicable BSC Objectives for the P344 Alternative Modification:

- Applicable BSC Objective (c) – The Panel **unanimously** believes P344 Alternative better facilitates;
- Applicable BSC Objective (d) – The Panel by **majority** believes P344 Alternative better facilitates;
- Applicable BSC Objective (e) – The Panel **unanimously** believes P344 Alternative better facilitates; and
- Applicable BSC Objectives (a), (b), (f) and (g) – The Panel **unanimously** believes P344 is neutral.

The **Panel** therefore unanimously **agrees** with the Workgroup's majority view that the P344 Proposed solution **better facilitates** Applicable BSC Objective (c) and was unanimous that the P344 Proposed solution better facilitates Applicable BSC Objective (e), for the reasons outlined by the Workgroup in section 8 of this paper. The Panel confirmed by a majority that they believe Applicable BSC Objective (d) is also better facilitated by the P344 Alternative solution.

Proposed vs Alternative

A Panel member noted that, in light of further discussions, they had changed their view such that their preference would be for mandatory sharing of HH delivered volumes with the customers' Supplier. The Panel member noted they couldn't determine between the Proposed and Alternative in relation to Applicable BSC Objective (c).

Another Panel member provided a contrary view that the Proposed Modification is better than the Alternative Modification in relation to Applicable BSC Objective (c) due to impacts on competition between classes of market participant.

The Panel by **majority** (six) voted that the **P344 Alternative Modification (mandatory data sharing) is better than the P344 Proposed Modification (customer consent)** and therefore recommends that the P344 **Alternative** Modification be **approved** and the P344 **Proposed** Modification **rejected**. Four Panel members voted that the Proposed Modification is better than the Proposed.

Therefore, the Panel's final recommendation to the Authority agreed with the Workgroup's view that the P344 Alternative solution is better than the P344 Proposed solution.

Why have Panel members' views changed?

The Panel members noted that the Report Phase consultation responses further highlighted the differing views across market participants regarding the sharing of HH delivered volumes with a customer's Supplier on a mandatory or customer consent basis. The Panel noted that their change in view on whether the Proposed or Alternative solution should be approved is a reflection of the delicate balance of arguments presented in relation to competition. However, on reflection and based on further discussions during its meeting, the Panel determined it would be beneficial for Suppliers to receive customer's HH delivered volume data on a mandatory basis.

Panel's final views on draft legal text

The Panel **unanimously** agreed that the draft legal text as outlined in Attachments A and B for the Proposed and Alternative P344 Modifications respectively deliver the intentions of P344.

Panel's final views on the proposed Implementation Date

The Panel **unanimously** agreed the proposed Implementation Date for P344 (Proposed or Alternative solution) of 28 February 2019 as part of the February 2019 BSC Release.

Panel's final views on Self-Governance

The Panel **unanimously** agreed with the Workgroup that P344 does not meet the Self-Governance criteria due to a material effect on competition, and the potential for discrimination between different classes of Parties.

11 Recommendations

The BSC Panel recommends to the Authority:

- That the P344 Alternative Modification should be **approved** and that the P344 Proposed Modification should be **rejected**;
- An Implementation Date for the P344 Alternative or Proposed Modification of:
 - 28 February 2019; and
- The BSC legal text for the P344 Alternative and Proposed Modification.

This section has been formed to answer frequently asked questions that ELEXON has been asked during the course of the P344 solution development.

How long will it take me to accede to the BSC and what will the Qualification processes look like?

There are no defined timescales for the time it takes to accede to the BSC. It really depends on the speed at which the market participant completes the necessary process steps such as the completion of documents and testing of systems in accordance with the role type that they are signing up to.

Existing Qualification processes for SVA (and CVA Meter Operator Agents) are defined in

- BSC Section J 'Party Agents and Qualification Under the Code'
- BSCP537 'Qualification Process for SVA Parties, SVA Party Agents and CVA Meter Operators'
- BSCP537 Appendix 1 'Self Assessment document (SAD)
- BSCP537 Appendix 2 'Testing Requirements'
- BSCP537 Appendix 3 'Guidance Notes on Completing the SAD'

Existing CVA Qualification processes are outlined in

- BSC Section O 'Communications Under the Code'
- BSCP71 'Submission of ECVNs and MVRNs'
- Communication Requirements Document.

However, the processes for accession relevant to the new Virtual Lead Party participation capacity are yet to be defined, and will be done so over the forthcoming months through industry working groups. It is expected that these will be in a similar form to existing Qualification steps, but may vary due to the specific role of Virtual Lead Parties in the market.

How can I register a Secondary BM Unit?

Secondary BM Units can only be registered by a market participant that is registered as a Virtual Lead Party under the BSC arrangements.

The processes for registering a Secondary BM Unit, relevant only to the new Virtual Lead Party participation capacity are yet to be defined, and will be devised over the forthcoming months through industry working groups. However, it is expected that the processes will broadly follow the existing processes for registering existing BM Units (which will be termed 'Primary BM Units' upon P344 implementation) as defined in:

- BSC Section K 'Classification and Registration of Metering Systems and BM Units'
- BSCP15 'BM Unit Registration'

How can I participate in TERRE?

There are a number of ways which you can participate in TERRE through the BSC framework, outlined below:

- A Virtual Lead Party may register Secondary BM Units for the purposes of bidding into the TERRE product. One function of Secondary BM Units is to allow Virtual Lead Parties to aggregate a number of sites across multiple Suppliers in order to provide balancing services. Therefore, Secondary BM Units may be a single site, or a collection of sites whereby the minimum generation level exceeds 1MW. As a result of the provisions being introduced through P344, Secondary BM Units will also be able to be bid into the Balancing Mechanism by the Virtual Lead Party
- A Supplier may use its existing BM Units for the purposes of bidding into the TERRE product, alongside bidding into the Balancing Mechanism as per the current arrangements. Further, current arrangements within the BSC allow a Supplier to aggregate a number of sites, so long as these sites are all within that Supplier's portfolio. This is commonly known as a Supplier aggregator function. Should a Supplier wish to aggregate a number of sites that have different Suppliers, it will need to register as a Virtual Lead Party and hence participate in TERRE through Secondary BM Units in these instances.
- A Trading Party that is not a Supplier may use its existing BM Units for the purposes of bidding into the TERRE product, alongside bidding into the Balancing Mechanism as per the current arrangements. However, a Trading Party that is not a Supplier cannot aggregate sites. Should a Trading Party that is not a Supplier wish to aggregate sites, they would have to register as a Virtual Lead Party.

Can I participate in both the TERRE product and STOR?

As a general overview, the P344 solution has been developed in a manner that, wherever possible, allows market participants freedom to participate in a number of balancing service products simultaneously.

By registering an SVA Metering System in a Secondary BM Unit, you are allocating the volumes from that Metering System to measure Balancing Services provided by that Secondary BM Unit. Therefore the SVA Metering System volumes should not be measured against Balancing Services in the Primary BM Unit as this would result in duplicate payments.

The P344 solution does not impose restriction on what markets a single BM Unit can enter, however it does ensure that an unfair advantage cannot be gained by any particular class of participant on the grounds of duplication of volumes causing over/under payments.

Therefore, if a SVA Metering System is registered solely in a Primary BM Unit then from a BSC perspective they can operate in any Balancing Service Market they wish. If the SVA Metering System is subsequently registered in a Secondary BM Unit then it cannot be used for providing Balancing Services from the Primary BM Unit (it is assumed that Suppliers would use additional BM Units to enter these Balancing Services and would simply remove the SVA Metering System from the additional BM Unit).

This means that, from a BSC perspective, there are no restrictions on participation between the TERRE product and STOR, other than an SVA Metering System must only be providing balancing services through one BM Unit (Primary or Secondary) at any particular time.

What will it cost me to be part of the BSC arrangements?

As part of the BSC accession process, there is a £500 fee that covers the general administration costs of signing up to our arrangements. This fee is payable upfront at the start of the accession process. Once you've completed the accession processes, you will need to start paying the applicable Base Monthly Charge.

The current Base Monthly Charge for all BSC Parties £250. If you accede to the BSC in any of the existing participation capacities, the £250 monthly charge will continue to apply. However, if you accede under the new Virtual Lead Party role only, you will be required to pay only the Base Virtual Lead Party Monthly Charge once accession has completed. The level of this charge will be set by the BSC Panel following the approval of P344, and is expected to be appropriate to the role that Virtual Lead Parties will have within the market.

Further, existing arrangements include an Additional BM Unit Monthly Charge, payable by Trading Parties that register Additional BM Units at a rate of £100 per month. Under the new Virtual Lead Party role, there will be a monthly charge, the Secondary BM Unit Monthly Charge, which will be set by the BSC Panel following P344 approval.

Will a Virtual Lead Party be able to raise a Modification?

Yes, a Virtual Lead Party will be able to raise BSC Changes, including Modifications, Change Proposals and Issues once it has acceded to the BSC and hence become a BSC Party as per BSC Section F 'Modification Procedures' and BSCP40 'Change Management'.

Will a Virtual Lead Party be able to vote in BSC Panel elections?

In order to vote in the BSC Panel elections, you must be classed as a Trading Party as per BSC Section B 'The Panel'. If a market participant solely signs up to the BSC framework as a Virtual Lead Party and does not explicitly request Energy Accounts, they will not be classed as a Trading Party.

Therefore, Trading Parties that participate in the TERRE product will continue to be able to vote in the BSC Panel elections. However, Virtual Lead Parties, participating in the TERRE product and/or the Balancing Mechanism without holding Energy Accounts, will not be eligible to vote in BSC Panel elections.

When will I know about the processes and associated timescales for my participation in TERRE?

ELEXON, the P344 Workgroup and Modification Proposer appreciate that market participants have not yet been provided with the full suite of processes which would enable market participants to comply with the overarching obligations as outlined within the BSC itself due to the challenging timescales required by the Modification. In respect of this, a number of industry working group sessions will be facilitated by ELEXON between the approval of P344 (subject to Ofgem determination) and the Implementation Date of February 2019. At a high level, these working groups are expected to cover the following procedural items, and will be communicated through the usual BSC Change communication channels.

- Registration processes
- Half Hourly Data Aggregator Processes
- Virtual Lead Party Processes
- Performance Assurance Framework (PAF)
- Allocation of Supplier Volume Allocation (SVA) Metering System Identifier (MSID) to Secondary BM Units

These processes will be implemented as part of the P344 solution in February 2019.

Should you wish to register your interest to receive communications about these sessions, or to put your name forward to take part, please email bsc.change@elexon.co.uk.

What Performance Assurance Techniques will there be for Virtual Lead Parties?

During the development of the P344 solution, the Workgroup and Modification Proposer noted a wish that there be Performance Assurance Techniques (PATs) in place to ensure that Virtual Lead Parties adhere to the appropriate BSC provisions and do not impact the integrity of Settlement. As such, it was determined that an appropriate Performance Assurance Framework (PAF) should be implemented in order to provide assurance to the wider market that BSC provisions are being followed in a similar manner that assurance is provided under the current arrangements.

For example, the BSC legal text developed to deliver the P344 solution has included provisions to mandate that Virtual Lead Parties submit accurate data in a timely manner in relation to their participation role within the market.

The working group sessions to be held over the forthcoming months in advance of P344 implementation will include discussions regarding an appropriate PAF and associated processes.

When will relevant data be published?

The P344 solution includes provisions for TERRE data (relating to balancing service providers in GB) to be published on the BMRS:

- Following Gate Closure for each auction period, National Grid will send details of Replacement Reserve Bids to BMRA, who will publish them on the BMRS. The legal text allows up to fifteen minutes for National Grid to provide this data.
- By thirty minutes after Gate Closure for each auction period, National Grid will send the results of the auction (as received from the LIBRA platform) to BMRA, who will publish them on the BMRS. These results include price and MW level data for all the Replacement Reserve Activations issued to GB balancing service providers; the Level of GB Need Met; and flows scheduled by LIBRA on Interconnectors.
- BMRA will also include the results of the auction in the indicative imbalance prices, published (as currently) within 45 minutes of the end of the Settlement Period

Will a Party hold both a Virtual Balancing Account and Energy Accounts in a period of transition until Settlement activity has ceased in the Energy Accounts?

Where a Trading Party wishes to surrender its Energy Accounts and become solely a Virtual Lead Party, it will need to inform ELEXON of this through a process to be devised in advance of the P344 Implementation Date

The removal of Energy Accounts can only take place where there is no future dated Energy Contract Volume Notification (ECVN) or Metered Volume Reallocation Notification (MVRN) and whereby the Party has terminated all Energy Contract Volume Notification Agent (ECVNA) Authorisations and Metered Volume Reallocation Notification Agent (MVRNA) Authorisations made under its authority.

Once these conditions have been met the Energy Accounts will be end-dated, so that (from that point onwards) the Party has a Virtual Balancing Account rather than Energy Accounts (and is no longer able to submit Energy Contract Volume Notifications). However the Energy Accounts will still be used for reconciliation of previous Settlement Days (prior to the date on which the Trading Party surrendered them). There will therefore be a transitional period of fourteen months (or longer, if there is a requirement to settle Trading Disputes) in which the Party no longer holds Energy Accounts, but they are still being used for purposes of Reconciliation of historic Settlement Days.

Appendix 2: Workgroup Details

Workgroup's Terms of Reference

As part of its considerations during the development of the solution to Modification P344, and as answered above as part of the P344 solution, the Workgroup covered the following areas set out in the table below:

Specific areas set by the BSC Panel in the P344 Terms of Reference for stage 2 of the Assessment Procedure

- The extent to which TERRE-related BSC processes should operate in euros.
- What assumptions need to be made to progress P344?
- What will the impact be on Gate Closure?
- What are the specific Settlement impacts? How will non-BM parties be treated under these rules?
- What accession, registration and BSC charges are needed for non-BM parties?
- What financial processes are needed (e.g. invoicing, credit and payment rules)? How will non-BM parties be treated under these rules?
- What non-delivery rules are needed (e.g. covering volumes and payments)? How will non-BM parties be treated under these rules?
- What are the failure scenarios?
- What are the reporting requirements?
- The consumer impacts from P344.

P344 timetable

The table below depicts the full timetable for P344.

P344 Assessment Timetable

Event	Date
Panel submits P344 to Assessment Procedure	9 June 2016
Workgroup Meetings 1 - 4	5 July 2016 – 22 September 2016
P344 Assessment Procedure Interim Report	13 October 2016
Workgroup Meetings 5 - 12	19 October 2016 – 8 February 2017
First Assessment Procedure Consultation	23 February 2017 - 14 March 2017
Workgroup Meetings 13 – 24	22 March 2017 - 12 December 2017
Second Assessment Procedure Consultation	10 January 2018 – 30 January 2018
Workgroup Meetings 25 - 28	7 February 2018 – 22 March 2018
Panel considers Workgroup's Assessment Report	10 May 2018
Report Phase Consultation	11 May 2018 – 1 June 2018
Panel considers Draft Modification Report	14 June 2018

P344
Final Modification Report

19 June 2018

Version 1.0

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P344 Assessment Timetable

Event	Date
Ofgem considers Final Modification Report for decision on approval	18 June 2018 – 31 July 2018

Workgroup membership and attendance

P344 Workgroup Attendance			
Name	Organisation	Number of Workgroups attended (out of 28)	Attendance %
Members (current)			
Douglas Alexander	ELEXON (Chair)	26	92.9
Elliott Harper	ELEXON (Lead Analyst)	24	85.7
Sophie Tilley	National Grid (Proposer)	21	75.0
Greg Heavens	National Grid (Alternate)	3	10.7
Andy Colley	SSE	24	85.7
Phil Hewitt	EnAppSys Ltd	15	53.6
Liz Johnstone	NRB Interconnectors	0	0.0
Paul Jones	Uniper	20	71.4
Martin Mate	EDF	28	100.0
Bill Reed	RWE	27	96.4
Simon Reid	Scottish Power	24	85.7
Saskia Barker	Flexitricity	16	57.1
Steve Taylor	Quorum Development	22	78.6
Helen Stack	Centrica	10	35.7
Attendees (current and past)			
David Kemp	ELEXON (Chair)	1	3.6
Royston Black	ELEXON (Lead Analyst)	1	3.6
Simon Fox-Mella	ELEXON (Lead Analyst)	4	14.3
Francesca Scucces	National Grid (Proposer)	6	21.4
Richard Woodward	National Grid (Alternate)	13	46.4
John Lucas	ELEXON (Design Authority)	25	89.3
Matthew Roper	ELEXON (Design Authority)	11	39.3
Damian Clough	ELEXON (Design Authority)	3	10.7
Elliott Hall	ELEXON (Design Authority)	11	39.3
Heather Milne	ELEXON (Design Authority)	4	14.3
Steve Wilkin	ELEXON (European Coordination)	9	32.1

Tina Wirth	ELEXON (Legal)	8	28.6
Nicholas Brown	ELEXON (Legal)	1	3.6
Victoria Riley	ELEXON	1	3.6
Ed Morris	ELEXON	2	7.1
Sarah Ross	ELEXON	1	3.6
Iain Nicoll	ELEXON	1	3.6
Harry Parsons	ELEXON	3	10.7
Rob Greenoak	ELEXON	1	3.6
Caroline Wright	National Grid	6	21.4
Heena Chauhan	National Grid	1	3.6
Taran Heir	National Grid	4	14.3
Teresa Thompson	National Grid	2	7.1
Adelle Wainwright	National Grid	3	10.7
Alex Haffner	National Grid	1	3.6
Andy Paton	National Grid	1	3.6
Andrew Craig	National Grid	1	3.6
Andrew Deeley	National Grid	0	0.0
Chris Fox	National Grid	3	10.7
Haarith Dhorat	National Grid	1	3.6
John Mansi	National Grid	4	14.3
Nazar Ivasyuk	National Grid	4	14.3
Pradeep Ninan	National Grid	1	3.6
Ryan Place	National Grid	2	7.1
Adam Sims	National Grid	1	3.6
Vicci Walsh	National Grid	1	3.6
Tim Truscott	National Grid	1	3.6
Michael Coldwell	National Grid	2	7.1
Harvinder Viridi	National Grid	2	7.1
Pete Underhill	National Grid	1	3.6
John Kelly	National Grid	1	3.6
Julian Dyer	National Grid	1	3.6
Pavinder Babra	National Grid	1	3.6

Bernie Dolan	National Grid	8	28.6
Grendon Thompson	Ofgem	8	28.6
Leonardo Costa	Ofgem	12	42.9
Dominic Scott	Ofgem	1	3.6
Shai Hassid	Ofgem	3	10.7
Marcelo Torres	Ofgem	2	7.1
Alan McFadden	SSE	1	3.6
Steve Atkins	SSE	1	3.6
Alex Howison	SSE	1	3.6
Tim Ellingham	RWE	1	3.6
Craig Taylor	Engie	3	10.7
Chris Fisher	Centrica/Limejump	6	21.4
Samantha Pinder	Centrica	1	3.6
Christopher Proudfoot	Centrica	4	14.3
Mari Toda	EDF	1	3.6
Anthony Waite	Upside Energy	2	7.1
Richard Hardy	KiWi Power	2	7.1
Yoav Zingher	KiWi Power	1	3.6
Jonathan Ainley	KiWi Power	1	3.6
Andrew Heygate-Browne	Welsh Water	1	3.6
Andrew Dodson	City Holdings	1	3.6
Mark Symes	Green Frog Power	2	7.1
Graz Macdonald	Green Frog Power	2	7.1
Jonathan Graham	The ADE	2	7.1
William Caldwell	The ADE	4	14.3
Rick Parfett	The ADE	6	21.4
Philip Pearson	Energy Pool EU	1	3.6
Matthew Tucker	Welsh Power	2	7.1
Ryan Goddard	Welsh Power	4	14.3
Paul Sanders	New Stream Renewables	2	7.1
Colin Prestwich	Smartest Energy	12	42.9
Simon White	Smartest Energy	2	7.1

Dago Cedillos	Open Energi	2	7.1
Sebastian Blake	Open Energi	1	3.6
Hannah Robertson	Origami Energy	2	7.1
Matthew Berry	Origami Energy	1	3.6
Arthur Probert	Ameresco	1	3.6
Vandad Hamidi	Dong Energy	1	3.6
Ian Tanner	UK Power Reserve	2	7.1
Aditi Tulpule	Nabarro	2	7.1
Sam Botterill	Independent	9	32.1
Tom Edwards	Cornwall Energy	2	7.1
Romain Benquey	Restore	1	3.6
Sam Do	UKPN	1	3.6
Nick Sillito	Peakgen	1	3.6
Mark Meyrick	Ecotricity	1	3.6
Carolina Escudero	UK Power Networks	2	7.1
Lisa Waters	Waters Wye	1	3.6
Simon Wannop	REG Power Management	1	3.6
Elliott Hall	E2M - Energy Trading Ltd	1	3.6
Paul Troughton	EnerNOC	1	3.6

Appendix 3: Glossary & References

Acronyms

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

Acronyms	
Acronym	Definition
ACER	Agency for the Cooperation of Energy Regulators
ADE	Association for Decentralised Energy
AEI	Actual Energy Indebtedness
ALFCO	Adjusted Load Following Capacity
BEDP	Balancing Energy Deviation Price
BM	Balancing Mechanism
BMRA	Balancing Mechanism Reporting Agent (BSC Agent)
BMRS	Balancing Mechanism Reporting Service
BM Unit	Balancing Mechanism Units
BOA	Bid-Offer Acceptance
BR	Business Requirement
BSC	Balancing and Settlement Code
BSCCo	Balancing and Settlement Code Company
BSCP	Balancing and Settlement Code Procedure
BSP	Balancing Service Providers
CfD	Contracts for Difference
CEI	Credit Assessment Energy Indebtedness
CMO	common merit order
CRA	Central Registration Agent
CSD	Code Subsidiary Document
CVA	Central Volume Allocation
DECC	Department for Energy and Climate Change
DSP	Deemed Standard Product
DTC	Data Transfer Catalogue
EB GL	European Electricity Balancing Guideline
ECJ	European Court of Justice
ECVN	Energy Contract Volume Notification
EMFIP	Electricity Market Fundamental Information Platform
EMR	Electricity Market Reform
EMRS	Electricity Market Reform Settlement
ENC	European Network Codes

Acronyms	
Acronym	Definition
ENTSO	European Network of Transmission System Operators for Electricity
EU	European Union
EUR	Euro
FAA	The Funds Administration Agent
FPN	Final Physical Notification
FTP	File Transfer Protocol
GB	Great Britain
GBP	Pound Sterling
GC	Grid Code
GSP	Grid Supply Point
HH	Half Hourly
HHDA	Half Hourly Data Aggregators
II	Interim Information Run
LIBRA	The central TERRE platform
MEI	Metered Energy Indebtedness
MSID	Metering System Identifiers
MW	Megawatt
NETA	New Electricity Trading Arrangements
NETS	National Electricity Transmission System
NIV	Net Imbalance Volume
PAF	Performance Assurance Framework
PAT	Performance Assurance Technique
PN	Physical Notification
R1	First Reconciliation Settlement Run
R2	2 nd Reconciliation Run
RF	Final Reconciliation Run
RR	Replacement Reserve
RRA	Replacement Reserve Activation
RRI	Replacement Reserve Instruction
RRS	Replacement Reserve Schedule
SAA	Settlement Administration Agent (BSC Agent)
SCR	Significant Code Review
SF	Initial Settlement (Settlement Run)
SO	System Operator
STOR	Short Term Operating Reserve

Acronyms	
Acronym	Definition
SVA	Supplier Volume Allocation
SVAA	Supplier Volume Allocation Agent (BSC Agent)
TERRE	Trans-European Replacement Reserves Exchange
TSO	Transmission System Operators
UK	United Kingdom
URS	User Requirements Specification
WACM	Workgroup Alternative Code Modifications
XB	cross border
ACER	Agency for the Cooperation of Energy Regulators
ADE	Association for Decentralised Energy
AEI	Actual Energy Indebtedness
BEDP	Balancing Energy Deviation Price
BM	Balancing Mechanism
BMRA	Balancing Mechanism Reporting Agent (BSC Agent)
BMRS	Balancing Mechanism Reporting Service
BM Unit	Balancing Mechanism Units
BOA	Bid-Offer Acceptance
BR	Business Requirement
BSC	Balancing and Settlement Code
BSCCo	Balancing and Settlement Code Company
BSCP	Balancing and Settlement Code Procedure
BSP	Balancing Service Providers
CEI	Credit Assessment Energy Indebtedness
CMO	common merit order
CRA	Central Registration Agent
CSD	Code Subsidiary Document
CVA	Central Volume Allocation
DECC	Department for Energy and Climate Change
DTC	Data Transfer Catalogue
EB GL	European Electricity Balancing Guideline
ECVN	Energy Contract Volume Notification
EMFIP	Electricity Market Fundamental Information Platform
EMR	Electricity Market Reform
ENC	European Network Codes
ENTSO	European Network of Transmission System Operators for Electricity

Acronyms	
Acronym	Definition
EU	European Union
EUR	Euro
FAA	The Funds Administration Agent
FPN	Final Physical Notification
FRR	Frequency Restoration Reserve
FTP	File Transfer Protocol
GB	Great Britain
GBP	Pound Sterling
GC	Grid Code
GSP	Grid Supply Point
HH	Half Hourly
HHDA	Half Hourly Data Aggregators
LIBRA	The central TERRE platform
MEI	Metered Energy Indebtedness
MSID	Metering System Identifiers
MW	Megawatt
NETA	New Electricity Trading Arrangements
NETS	National Electricity Transmission System
NIV	Net Imbalance Volume
RR	Replacement Reserve
SAA	Settlement Administration Agent (BSC Agent)
SCR	Significant Code Review
SF	Initial Settlement (Settlement Run)
SO	System Operator
STOR	Short Term Operating Reserve
SVA	Supplier Volume Allocation
SVAA	Supplier Volume Allocation Agent (BSC Agent)
TERRE	Trans-European Replacement Reserves Exchange
TSO	Transmission System Operators
UK	United Kingdom
URS	User Requirements Specification
WACM	Workgroup Alternative Code Modifications
XB	cross border

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
3,10,12	GC0097 'Grid Code Processes Supporting TERRE'	https://www.nationalgrid.com/uk/electricity/codes/grid-code/modifications/gc0097-grid-code-processes-supporting-terre
5	Issue 60 'Interfaces between the European Balancing Project TERRE and the current GB market arrangements'	https://www.elexon.co.uk/smg-issue/issue-60/
5, 18	P344 Project TERRE implementation into GB market arrangements'	https://www.elexon.co.uk/mod-proposal/p344
8	P114 'Entitlement of Licence Exemptible Generators (LEGs) and other Non-trading Parties to BSC Membership Without Evidence of Trading'	https://www.elexon.co.uk/mod-proposal/p114-entitlement-of-licence-exemptible-generators-legs-and-other-non-trading-parties-to-bsc-membership-without-evidence-of-trading/
8	Further information on data flows	https://www.elexon.co.uk/about/other-services/data-flows/
8	Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation	http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R1485&from=EN
9	Balancing Mechanism Reporting System website	https://www.bmreports.com/bmrs/
9	P295 'Submission and publication of Transparency regulation data via the BMRS'	https://www.elexon.co.uk/mod-proposal/p295/
39	P355 'Introduction of a BM Lite Balancing Mechanism	https://www.elexon.co.uk/mod-proposal/p355/
41	BSC Panel Meeting 270	https://www.elexon.co.uk/meeting/bsc-panel-270-2/
41	BSC Panel Meeting 275	https://www.elexon.co.uk/meeting/panel-meeting-275/
42	BSC Panel Meeting 277	https://www.elexon.co.uk/meeting/bsc-panel-meeting-277/
47	European Commission notice to stakeholders – withdrawal of the United Kingdom and the internal energy market	https://ec.europa.eu/info/sites/info/files/notice_to_stakeholders_brexit_energy_market_final.pdf