Potential BSC Impacts of the European Transparency Regulation

Meeting Name	Imbalance Settlement Group
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Purpose of paper	For Information
Summary	A Commission Regulation on "submission and publication of data in electricity markets" is currently in comitology, and is expected to enter into force in Q2 2013. There will then be an eighteen-month implementation period, after which GB market participants will be obliged to provide data for publication on a new European transparency platform (to replace the current entsoe.net website). This paper shares our current thinking on options for implementing these new reporting requirements, and their potential impact on the Balancing and Settlement Code (BSC) and other GB industry codes (if a Code-based implementation option is adopted)[1].

1. Background

1.1 In July 2011, the European Commission consulted on legally-binding Guidelines on Fundamental Electricity Data. On 17 December 2012, an amended version was presented to the Electricity cross-border committee as a draft Regulation on "submission and publication of data in electricity markets". Following a 'positive opinion' from the committee we understand that the Regulation is being laid before the European Parliament and Council for their consideration, and is likely to be approved in Q2 2013.

1.2 The Regulation will enter into force on the twentieth day following that of its publication in the Official Journal of the European Union. The obligations on data owners to submit data to the new platform will come into effect eighteen months later. We therefore believe that these legally binding obligations (on GB Generators, Transmission System Operators (TSOs), Distribution System Operators (DSOs) and large consumers) are likely to come into effect in Q4 2014.

1.3 Responsibility for delivering the new central platform lies with the European Network of Transmission System Operators for Electricity (ENTSOE-E). ENTSO-E held a public workshop on 31 January 2013 to inform stakeholders of progress, and seek input on the implementation process. There were presentations from the Commission and the Agency for Cooperation of Energy Regulators (ACER) as well as ENTSO-E, all of which are available from the ENTSO-E website. This was followed in the afternoon by the first meeting of an expert group that ENTSO-E has established to advise on development of the Manual of Procedures (see paragraph 2.3 below).

[1] By 'Code-based implementation option' we mean an approach in which processes that GB market participants are expected to follow in order to meet their obligations under the Regulation are incorporated into existing GB industry codes. Paragraph 2.2 below explains why we believe this to be the best approach. However, other approaches are possible, and if one of these were adopted the impact on the BSC could be much smaller (e.g. limited to allowing BMRS to act as primary data owner for imbalance prices and other BSC-related data items).

2. Summary of the Proposed Regulation

2.1 Article 3 of the Regulation requires ENTSO-E to establish a central information platform, available to the public free of charge through the internet. Plans and costs for delivering and operating the platform must be provided to ACER within four months of the Regulation coming into force. We understand from the workshop on 31 January 2013 workshop that ENTSO-E already has a project in place and is working to define the detailed requirements for the platform.

2.2 Article 4 of the Regulation covers submission of data. One of the changes made to the text (since the version consulted on in 2011) is clarification that primary data owners[2] (such as Generators and DSOs) will not be submitting data directly to the central platform. They must submit data to the TSO or to a qualified data provider who will submit it on their behalf (although Article 4 does oblige the primary data owners to ensure that the data is of the required quality and provided in a manner such that ENTSO-E is able to meet its obligations under the regulation). We believe this has some implications for the implementation of the Regulation in GB:

- It means there will need to be mandatory processes and data flows for passing information from GB market participants to the TSO (or data provider). Given that these are to be specified at the local rather than European level, and that existing GB industry codes (such as the Grid Code and BSC) already include similar processes, we believe that this is probably best achieved through modifications to these existing codes (rather than, for example, creating a new code, or leaving the obligations un-codified)[3]; and
- It raises the question of whether National Grid (as GB System Operator) should submit all the required data to the new platform, or whether an alternative data provider would be better placed to submit some or all of it. Section 6 below discusses this issue further.

2.3 Article 5 of the Regulation requires ENTSO-E to develop a Manual of Procedures, covering:

- Details and formats for submission of data to the central platform;
- Standardised methods for submission of data to the new platform; and
- Technical and operational criteria that data providers will be required to meet.

2.4 ELEXON is participating in the expert group established by ENTSO-E to advise on the Manual of Procedures, in order to provide information on current GB arrangements, and to better understand what could be required to implement the Regulation in GB.

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[2] The Regulation uses the term 'primary data owner' for the entity that creates the data.

[3] It could be argued that, at least in principle, there is no need to codify these GB-specific data submission processes. For example, National Grid (as TSO) could simply publish processes and data flows on their website, and inform primary data owners that using these processes and data flows is required in order to meet the Article 4 requirement to provide data "*in a manner that allows TSOs or data providers to process and deliver the data to the ENTSO for Electricity*". However, we believe that such an approach would lead to risk and uncertainty both for National Grid (as primary data owners might not accept that they are required to use National Grid processes), and for primary data owners (as the National Grid processes would lie wholly outside of industry change processes).

2.5 Articles 6 to 17 specify twelve distinct categories of data which the new platform will report. Appendix 1 to this paper provides a summary of each of the twelve categories, with some initial suggestions on how (where appropriate) the necessary processes could be implemented in GB codes.

2.6 A detailed analysis of all twelve categories is outside the scope of this paper. However, the initial analysis in Appendix 1 suggests that it may be appropriate to include processes to support some of the new requirements (e.g. Articles 6-8 and 14-17) in GB codes. Sections 3 to 5 below provide some more detailed commentary on Article 6 (*Information on Total Load*), Article 15 (*Information relating to the unavailability of generation and production units*) and Article 17 (*Balancing*).

3. Requirements relating to Total Load (Article 6)

3.1 This section looks at Article 6 in some detail, as it provides an example of the issues that arise when the Regulation requires reporting of data similar to (but not the same as) that already reported under current GB processes.

3.2 The Regulation defines total load as "*a load equal to generation and any imports deducting any exports and power used for energy storage*". Article 6 requires the relevant TSO for each control area[4] to provide the following data for each bidding zone[5]:

- The out-turn total load per market time unit (published no later than one hour after the end of the operating period)[6];
- A day-ahead forecast of the total load per market time unit (published no later than two hours before the gate closure of the day-ahead market in that bidding zone, and updated when significant changes occur);
- A week-ahead forecast of the maximum and minimum total load for each day of the following week (published each Friday, no later than two hours before the gate closure of the day-ahead market in that bidding zone, and updated when significant changes occur); and
- Month-ahead and year-ahead forecasts of the maximum and minimum total load for each week of the following month and year.

3.3 The GB Grid Code and BSC already require the Transmission Company to prepare forecasts of National Demand, and publish them on the Balancing Mechanism Reporting Service (BMRS). However, these

[4] A **control area** is defined as "*a coherent part of the interconnected system, operated by a single system operator*". We interpret this as meaning that the GB Transmission System and connected offshore systems form a single control area for which NGET (as GB System Operator) will be required to calculate total load.

[5] A **bidding zone** is defined as "*the largest geographical area within which market participants are able to exchange energy without capacity allocation*". We interpret this as meaning that Great Britain currently forms a single bidding zone (although this is potentially subject to review in accordance with the procedures in the Network Code for Capacity Allocation and Congestion Management).

[6] In this context we interpret the terms **market time unit** and **operating period** as both equating to BSC Settlement Period.

existing GB forecasts differ in a number of respects from the new requirements summarised in paragraph 3.2:

- The timing and granularity of the required data is different;
- The Regulation requires forecasts of minimum and maximum load, while current GB month-ahead and year-ahead forecast cover maximum only; and
- Perhaps most fundamentally, we believe the Transparency Regulation's definition of 'total load' includes demand satisfied by embedded generation, whereas GB codes define National Demand[7] as excluding demand supplied by Embedded Small and Medium Power stations. We therefore believe that (unless the Regulation can be amended during the comitology process to include a threshold beneath which generation can be excluded from the calculation of total load) National Grid will be required to produce forecasts of total load (and estimates of out-turn total load) that include all embedded generation (at least on an estimated basis).

3.4 The impact of including embedded generation in total load will depend significantly on the detail of the rules in the Manual of Procedures:

- At one extreme, if the Manual of Procedures were to require that the out-turn data published an hour after the event had to include actual data for all embedded generators, there could be a requirement for all embedded generators (however small) to install operational metering. We asked ENTSO-E for clarification on this point at the expert group on 31 January 2013, and were assured that this was not the intention.
- Interpretation of definitions lies with the Commission (and Member States at the national level). Nonetheless, we believe that ENTSO-E is likely to adopt definitions of total load that require National Grid to include embedded generation in total load data (albeit on an estimated basis). A previous draft of the regulation contained provisions that allowed TSOs to forecast 'vertical load' rather than 'total load' (at least on an interim basis), but these have been removed from the latest version.

3.5 Article 6 does not specify generation thresholds[8] below which estimation may be used, or details of which estimation techniques are permitted. This makes it harder to assess with any certainty the impact of estimating total load supplied by embedded generation. Nonetheless, we believe that in order to estimate embedded generation, National Grid is likely to require information that it does not currently receive. According to Article 6, responsibility for providing this information to the TSO is as follows:

- Generators shall provide data required to calculate the out-turn (i.e. metered or estimated) total load; and

[7] The BSC defines **National Demand** as having the meaning given to the term **GB National Demand** in the Grid Code. The BSC definition is now out of date (because the Grid Code has renamed **GB National Demand** to **National Demand**). However, it is clear from the Grid Code definition that National Demand includes demand supplied by Embedded Large Power Stations, but not that supplied by other Embedded Power Stations.

[8] Such thresholds could relate to individual production units (like the 1 MW threshold for inclusion of production units in Article 14(1)(a) generation forecasts) or to generation types (like the 1% threshold for solar and wind forecasts in Article 14(1)(d)).

- DSOs shall provide data required to calculate the forecast total load. This could include both relatively static data (e.g. installed generation capacity), and more dynamic data (e.g. metering data and/or forecast data).

3.6 We believe that (for the reasons explained in paragraph 2.2 above) these new requirements on Generators and DSOs to provide data to National Grid would most appropriately be implemented by incorporating them into the Grid Code. This is an established mechanism that would provide clarity to all parties on how the new requirements are being implemented in GB (and an industry process for proposing changes if required). This approach would need to be progressed through normal Grid Code Modification processes.

3.7 Additional changes that may be appropriate (but which would again have to be progressed through normal Modification processes) are as follows:

- Including a definition of total load in the Grid Code and/or BSC, to provide clarity on how the term is being interpreted in GB (e.g. which embedded generators are required to have operational metering, and which have their output estimated by the Transmission Company). This would also give clarity on how total load relates to similar existing data items (such as Transmission System Demand and National Demand); and/or
- Amending the BSC to allow the BMRS to publish total load to GB market participants (alongside existing forecasts of Transmission System Demand and National Demand).

3.8 There is also the related question of who should be the 'data provider' submitting total load data to the ENTSO-E platform: National Grid (who calculate it) or BMRS (who is the current publisher of load forecast data to the market). Section 6 of the paper discusses this issue.

4. Requirements relating to generator unavailability (Article 15)

4.1 This section looks at Article 15 in some detail, as it is an example of the potential interaction between the Transparency Regulation and the Regulation on wholesale energy market integrity and transparency (REMIT):

- Article 15 requires generators to provide the TSO with details of changes in actual availability of 100MW or more[9] (where the change relates to a single generating unit, or a single power station with a capacity of 200MW or more). The TSO must then pass this information on to the central platform for publication.
- Such changes in actual availability are likely to be inside information (as defined by REMIT), in which case the generator will also be required to report them to the market prior to trading out their position.

[9] Generators are already required (by the GB Grid Code) to notify the TSO of changes in actual availability by re-declaring their Maximum Export Limit (MEL). But Article 15 requires additional data that is not currently provided, such as the reason for the unavailability.

4.2 It should be noted that there is no necessary connection between the Transparency Regulation and REMIT. It would be entirely possible to implement completely separate solutions to the two requirements. However, there are parallels between the requirements and some of the data that would be reported under each Regulation. We also understand (from the 31 January 2013 stakeholder meeting) that generators have consistently argued against 'double reporting', and in favour of a single solution that meets both requirements. In order to facilitate this, we understand that ENTSO-E intends to ensure that data submitted to the central platform under the Transparency Regulation is published in a manner that also meets REMIT disclosure requirements. One of the presenters at the workshop also suggested that the scope of the platform could be extended to include publication of urgent market messages beyond those required by the Transparency Regulation (in order to provide a 'one stop shop' for publication of REMIT inside information).

4.3 Assuming that GB generators share the desire to avoid 'double reporting', a single mechanism will be required to collect changes[10] in actual availability (for purposes of compliance with the Transparency Regulation) and inside information (for purposes of compliance with REMIT). This may need to be considered by the Workgroup assessing Modification Proposal P291 ('*REMIT Inside Information Reporting Platform for GB Electricity*'). In particular, if P291 were approved, and if GB generators wished to avoid double reporting, details collected and published by BMRS for purposes of REMIT would also need to be passed on to ENTSO-E for purposes of the Transparency Regulation. The interface from BMRS to ENTSO-E could be direct or via National Grid, depending on whether BMRS was acting as a data provider for purposes of the Transparency Regulation (see section 6 below).

5. Requirements relating to balancing (Article 17)

5.1 This section looks at Article 17, because of its close relationship with existing BSC processes, and because the BMRS already provides some balancing data to the entsoe.net platform[11].

5.2 Some of the requirements in Article 17 should be relatively straightforward to implement. For example, Article 17(1)(g) and 17(1)(h) require publication of imbalance prices and total imbalance volume (i.e. Net Imbalance Volume). These data items are already calculated by BMRS and provided to entsoe.net. It should therefore be relatively straightforward for BMRS to provide these data items to the new platform (either directly or via National Grid, depending on whether BMRS is acting as a data provider – see section 6 below).

5.3 Other requirements will be considerably more challenging to implement, because they potentially require a combined view across all 'balancing markets', broken down by 'type of reserve' (e.g. Frequency

[10] The reason that mechanisms would be needed to collect data at the national or regional level before passing it on to ENTSO-E is that the central transparency platform is not being designed to interface directly with all the primary data owners in Europe (see paragraph 2.2 above).

[11] BMRS started providing data to the ETSOVista reporting system (since renamed entsoe.net) when Change Proposal CP1246 ('*A New Interface from BMRS to the ETSOVista Reporting System*') was implemented in the November 2008 BSC Systems Release.

Containment Reserve, Frequency Restoration Reserve or Replacement Reserve[12]). For example, Article 17(1)(e) requires the amount of activated balancing energy (MW) per Settlement Period and type of balancing reserve to be published within thirty minutes. New processes will be required to calculate this:

- For balancing energy activated through the Balancing Mechanism, the BMRS calculates the volume of energy, but will not necessarily know the reserve type to which each Acceptance relates; and
- For balancing energy activated outside the Balancing Mechanism (e.g. automatic frequency control) the volumes of data may not currently be calculated or reported in the required timescales.

6. Who should act as data provider for GB?

6.1 As explained in paragraph 2.2 above, the Transparency Regulation envisages that data will be submitted to the central transparency platform either by the TSO, or by a data provider (with the prior agreement of the TSO, and subject to them meeting technical and operational criteria specified in the Manual of Procedures).

6.2 One of the reasons for allowing data providers to submit data is to benefit from the investment already made in national and regional transparency platforms. Examples of such existing platforms include the EEX Transparency Platform (which publishes data for Germany and Austria), and also potentially the BMRS (which publishes data for GB).

6.3 The BMRS is established by Section V of the BSC, and its purpose (as described in Section V2.1.2) is as "*a service for reporting to Parties and others and publishing:*

- *data relating to the Transmission System (and established pursuant to the Grid Code) or relating to the arrangements provided for or referred to in Section Q, provided by (or converted from data provided by) the Transmission Company;*
- *data (derived in whole or part from the data referred to in paragraph (a)) established by the BMRS pursuant to paragraph 2.6;*
- *certain other data as provided or referred to in paragraph 2.7 or elsewhere in the Code*".

6.4 The decision on what extent (if any) the BMRS should act as a data provider will need to be made through appropriate modifications to the BSC and/or associated configurable items. Broadly speaking there would seem to be three options:

- **Option 1** – BMRS does not act as a data provider. Where BMRS calculates or collates data that is required to be reported, it would pass this data to National Grid for transmission to ENTSO-E. Examples of such data would include Bid Offer Acceptance volumes, imbalance prices, Net Imbalance Volume and (if P291 were to be approved) details of generator outages and other inside information. From a BSC viewpoint this is the nearest feasible thing to a 'do nothing' option – the

[12] For definitions of these terms see the draft Network Code on Load-Frequency Control and Reserves (LFCR), available from the ENTSO-E website.

only required changes would be switching off the existing interface to entsoe.net (as introduced by CP1246), and ensuring that appropriate arrangements are in place to allow National Grid to forward to the new platform certain data items received by them from BMRS.

- **Option 2** – BMRS acts as a data provider for data items closely related to existing BSC and Grid Code provisions (e.g. those required by Articles 6-8 and 14-17), but not for other data items (e.g. those required by Articles 9-13, which relate to transmission infrastructure or capacity allocation on interconnectors). This would require changes to the detailed definitions of data items provided to and reported by BMRS (under Sections Q and V of the BSC), but would not imply any fundamental expansion of the scope of BSC reporting. Under this option both BMRS and National Grid would act as GB data providers.
- **Option 3** – BMRS acts as the sole GB data provider, forwarding to ENTSO-E all data that National Grid is required by the Transparency Regulation to provide. This would require an extension to the set of data items provided to and reported by BMRS (under Sections Q and V of the BSC), but could lead to overall efficiency savings (particularly if the software and processes required to submit data to the new platform prove to be complex).

6.5 Ultimately the decision on which of these options to implement will need to be taken through BSC modification processes. In the meantime, ELEXON intends to work with ENTSO-E to better understand the proposed mechanisms for submission of data to the new platform.

6.6 The choice between the three options may also be affected by the extent to which BSC Parties want the data reported to the European platform also to be available on BMRS. For example, if Parties wish total load data to be made available on BMRS (alongside Transmission System Demand and National Demand) that implies that BMRS will receive this data, which may strengthen the case for BMRS reporting it to the central platform (i.e. option 2 or option 3). If Parties have no requirement for total load to be reported via BMRS (because they don't need it, or prefer to download it from the ENTSO-E platform) that may strengthen the case for BMRS not reporting data to the central platform (i.e. option 1).

7. Next Steps

7.1 Ultimately, any decision on changing the BSC (and other GB industry codes) to reflect the requirements of the Transparency Regulation will need to be made through normal Code modification processes, and it is likely to be difficult to assess such a modification until the Regulation is approved (in Q2 2013). In the meantime, in order to facilitate the future assessment of such a Modification Proposal, ELEXON intends to continue:

- Participating in the expert group established by ENTSO-E to advise on the Manual of Procedures;
- Discussing with interested parties the form that such a Modification might take;
- Working with ENTSO-E to understand the proposed mechanisms for submission of data to the new platform; and
- Updating relevant Panel Committees (e.g. ISG and JESG) where appropriate.

8. Recommendations

8.1 We invite you to:

a) **NOTE** that (subject to the outcome of the current comitology process) the Transparency Regulation will place new obligations on GB market participants (such as Generators, DSOs and large consumers) to provide data (via the TSO or an agreed data provider) to a new European transparency platform operated by ENTSO-E;

b) **NOTE** that (subject to the outcome of the current comitology process) these new obligations are expected to come into effect towards the end of 2014;

c) **NOTE** that (in ELEXON's view, and for reasons explained in paragraph 2.2) there are strong arguments for including some of these new obligations (e.g. those relating to Articles 6-8 and 14-17) in GB industry codes (such as the Grid Code and BSC);

d) **NOTE** that making these changes to GB industry codes would require Modification Proposals to be raised by a Party to those codes (or other person permitted to raise such changes); and

e) **NOTE** that (in ELEXON's view) any such BSC Modification Proposal should also clarify:

- To what extent (if any) data provided to the new ENTSO-E platform should also be reported to GB parties via BMRS; and
- To what extent (if any) it is appropriate for the BMRS to act as a data provider to the new platform (see section 6 above).

List of Appendices:

Appendix 1 – Potential impacts of Transparency Regulation on GB industry codes

List of Attachments:

None

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Appendix 1 – Potential impact of Transparency Regulation on GB industry codes

The following table lists all the data items to be reported under the current draft of the Regulation, and gives an initial view on potential changes to GB industry codes (if a Code-based approach to implementing the Regulation in GB is adopted). Such changes would need to be progressed through normal Code modification processes. The Assessment Procedure that forms part of that modification process will provide the opportunity for a much more detailed look at the required code changes.

Note that the potential code changes identified in this table are those required to support the calculation of each data item. Additional changes would be required to BSC configurable items (and potentially to the BSC itself) if BMRS was to submit the data to the new platform – see section 6 above for discussion of this.

Article	Description	Potential GB Code Changes
Article 6 - Information on total load		
6(1)(a)	Actual (out-turn) total load	• Obligations on Generators and DSOs to provide additional data to National Grid (in order that National Grid can meet its obligation to forecast and estimate total load) • Define total load in GB codes (including details of how the term is interpreted in GB e.g. which generation has operational metering and which is estimated) • Possible requirement to publish to GB market participants via BMRS
6(1)(b)-(e)	Day-ahead, week-ahead, month-ahead and year-ahead forecasts of total load	
Article 7 - Information relating to the unavailability of consumption units		
7(1)(a)	Planned unavailability of consumption units (above 100 MW)	• Process that allows large consumers to notify data to TSO or data provider • Possible requirement to publish to GB market participants via BMRS
7(1)(b)	Changes in actual availability of consumption units (above 100 MW)	
Article 8 – Year-ahead forecast margin		

8(1)	Year-ahead forecast margin i.e. the difference between the yearly forecast of available generation capacity and the yearly forecast of maximum total load taking into account the forecast of total generation capacity, the forecast of availability of generation and the forecast of reserves contracted for system services.	• Define this version of margin in GB codes (as it differs from existing GB data items e.g. in the treatment of embedded generation) • Possible requirement to publish to GB market participants via BMRS
Article 9 – Transmission infrastructure		
9(1)	Details on future changes to transmission system and interconnectors, where these have an impact of 100MW or more on cross-zonal capacity or profiles	• Not clear whether the process for collating this data needs to be codified? Presumably it will require some exchange of information between the System Operator, Transmission Owners and interconnector operators. • Possible requirement to publish to GB market participants via BMRS
Article 10 – Information relating to the unavailability of transmission infrastructure		
10(1)(a)	Details of planned unavailability of interconnections and transmission elements, where these reduce cross-zonal capacity by 100MW or more	• Not clear whether the process for collating this data needs to be codified? Presumably it will require some exchange of information between the System Operator, Transmission Owners and interconnector operators. • Possible requirement to publish to GB market participants via BMRS
10(1)(b)	Details of actual unavailability of interconnections and transmission elements, where these reduce cross-zonal capacity by 100MW or more	
10(1)(c)	Details of actual unavailability of off-shore grid infrastructure that reduce wind power feed-in by 100MW or more	
Article 11 – Information relating to the estimation and offer of cross zonal capacities		
11(1)	Information on cross-zonal capacities: • Forecast and offered capacity (MW) per direction between bidding zones (where net capacity based capacity allocation is used); or • Flow based parameters (where flow based capacity allocation is used)	These requirements relate to the new processes for capacity allocation introduced by the Network Code on Capacity Allocation and Congestion Management (CACM) - see ISG137/02. We have not looked at these requirements in detail, on the basis that capacity allocation processes are not currently

		codified, and appropriate arrangements for submission of data can presumably be put in place as part of the process of implementing the CACM network code.
Article 12 – Information relating to the use of cross zonal capacities		
12(1)(a)	For explicit allocations: the capacity requested by the market, the capacity allocated to the market, the price of the capacity, and the auction revenue per border.	Processes for calculation of physical flows between bidding zones are already codified in the Grid Code and BSC (with data reported to the market via BMRS). In order to meet the other requirements new processes will be needed for transmission capacity allocators (as defined in the CACM Network Code) and power exchanges to provide data to the TSO. Such processes do not appear to fall naturally within the scope of any of the existing GB industry codes, and for the purposes of this paper we have not investigated the pros and cons of codifying them. As far as we are aware point (h) is not currently relevant to GB, as we will not be operating capacity allocation processes with any non-Member states.
12(1)(b)	Total nominated capacity between bidding zones.	
12(1)(c)	Prior to each capacity allocation, the total capacity already allocated through previous allocation procedures.	
12(1)(d)	Day-ahead prices in each bidding zone.	
12(1)(e)	For implicit allocations: the net positions of each bidding zone (MW) and the congestion income.	
12(1)(f)	Scheduled day-ahead commercial exchanges between bidding zones (in aggregated form).	
12(1)(g)	Physical flows between bidding zones, as close as possible to real time (and no later than one hour after the event).	
12(1)(h)	Cross zonal capacities allocated between Member States and third countries.	
Article 13 – Information relating to congestion management measures		
13(1)(a)	Information (per Settlement Period) relating to re-dispatching: action taken, network elements concerned, reason, and affected capacity.	The Transmission Company will presumably have this information – so not clear that it needs to be codified?
13(1)(b)	Information (per Settlement Period) relating to countertrading: action taken, bidding zones concerned, reason, and affected capacity.	
Article 14 – Forecast generation		
14(1)(a)	Sum of generation capacities for all existing production units (i.e. power stations) with	• Obligation on small embedded generators to provide required

	capacity 1MW or more, published on an annual basis.	information to National Grid • Possible requirement to publish to GB market participants via BMRS
14(1)(b)	Information about production units (existing and planned) with generation capacity 100MW or above	Required data probably already provided to Transmission Company under the Grid Code.
14(1)(c)	A day-ahead estimate of the total scheduled generation per bidding zone per Settlement Period	For larger generators the Transmission Company already has Physical Notifications. But there's no indication this requirement is restricted to larger generators. Potential changes therefore include: • Obligations on smaller generators to provide the required data to the Transmission Company • Possible requirement to publish to GB market participants via BMRS
14(1)(d)	A day ahead forecast of wind and solar generation per bidding zone per Settlement Period Requirement only applies to states with 1% of that energy i.e. solar unlikely to apply.	The Transmission Company already forecasts wind generation, but to meet this requirement will have to extend forecast to smaller embedded wind farms. Potential changes therefore include: • Obligations on smaller embedded wind farms to provide data to the Transmission Company • Possible requirement to publish new type of wind forecast to GB market participants via BMRS
Article 15 – Information relating to the unavailability of generation and production units		
15(1)(a),(c)	Planned unavailability of large generating units and power stations	Data on planned and unplanned unavailability is already collected under the Grid Code, but this does not necessarily include all the required data items (e.g. reason for unavailability), and is not necessarily collected in the required timescales. Potential changes therefore include: • New or amended processes for Generators to notify planned and unplanned unavailability
15(1)(b),(d)	Actual unavailability of large generating units and power stations	

		• Possible requirement to publish to GB market participants via BMRS See section 4 for further discussion of the interaction between REMIT and notification of unplanned availability.
Article 16 – Actual generation		
16(1)(a)	Actual generation per generation unit (100 MW and above)	Generating units of this size will typically have both operational and settlement metering. Given that data is not required for five days, either could potentially be used to meet this requirement.
16(1)(b)	Aggregated generation output per production type	The Transmission Company already has operational metering for large power stations, and publishes generation by fuel type within the required timescales. But there is no size threshold on the new requirement, so additional (actual or estimated) output data for smaller embedded generators may be required. Potential changes therefore include: • Obligations on smaller generators to provide the required data to the Transmission Company • Possible requirement to publish aggregate data to GB market participants via BMRS
16(1)(c)	Actual or estimated wind generation	
Article 17 – Balancing		
17(1)(a)	Rules on balancing.	There will presumably be a requirement to update the central platform with details of approved Modifications – this could either be written into the text of GB codes, or into Code Administrators' local working instructions.
17(1)(b)	Amount of balancing reserves under contract (MW) by the TSO, specifying source of reserve (generation or load), type of reserve and time period for which the reserves are contracted.	As discussed in paragraph 5.3 it may be quite challenging to pull together a view of this data covering all types of balancing reserve within the required timescales.
17(1)(c)	Prices paid by TSO per type of reserve and per	Submissions potentially need to include a

	procurement period.	variety of different products, descriptions of which are currently spread across the BSC (for the Balancing Mechanism), the CUSC, and potentially bilateral contracts. Potential code changes include: • Codifying the way that existing balancing products are treated for purposes of the Regulation • Possible requirement to publish data to GB market participants via the BMRS
17(1)(d)	Accepted aggregated offers per Settlement Period per type of balancing reserve.	
17(1)(e)	Amount of activated balancing energy per Settlement Period per type of balancing reserve.	
17(1)(f)	Prices paid by TSO for activated balancing energy per Settlement Period per type of balancing reserve.	
17(1)(g)	Imbalance prices for each Settlement Period	Already codified in the BSC and reported via BMRS. No code change required (except to allow BMRS to continue acting as data provider, if required – see section 6).
17(1)(h)	Total imbalance volume per Settlement Period	
17(1)(i)	Monthly financial balance of the control area i.e. expenses incurred by TSO procuring and activating reserves, and income from imbalance	Expenses incurred should be available already under CUSC governance (from the BSUoS calculation)? Under the current BSC, imbalance income does not accrue to the TSO. But data is available from SAA if required.
17(1)(j)	If applicable, data relating to Cross Control Area Balancing.	Data should be available to Transmission Company. Some already published on BMRS. Possible requirement to publish additional data to GB market participants via the BMRS