

Clean Energy Package – Electricity Market Design Overview v1.0

30/09/2019



Foreword

Working for you on European matters

As the Electricity System Operator (ESO) for Great Britain we have many important responsibilities in respect of markets, networks and operations. At the heart of the energy system we play a key role for stakeholders in many areas, one of which relates to working for you on European matters.

As many of you know, over recent years we have played a significant role in the implementation of the Third Energy Package and in parallel we have been working to positively influence the direction of the Clean Energy Package since it was announced in November 2016. We haven't been doing either of these things in isolation and we recognise the guidance, support and constructive challenge which has been provided by key stakeholders, including with Elexon (as BSSCo) and via the Joint European Stakeholder Group. We also recognise the important role our involvement in ENTSO-E has played in improving these outcomes for consumers in both the United Kingdom and throughout Europe.

In our recent [ESO Forward Plan 2019-2021](#) we committed to publish a high-level impact assessment related to the Clean Energy Package and in doing so I hope we provide you with a useful overview of some of (what we feel are) the key elements of the package. I hope we also encourage dialogue with us on our role in the implementation of this important piece of European legislation, which is helping to facilitate the energy transition and seeking to drive better outcomes for consumers.



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Acting Head of Future Markets
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Introduction

The Clean energy for all Europeans package, or 'Clean Energy Package' is a suite of European legislation which entered into force over the course of 2018 and 2019 with the aim of decarbonising energy and facilitating better consumer outcomes.

The [Clean Energy Package](#) is made up of several pieces of legislation covering the following areas.

- **Energy Performance in Buildings**
- **Renewable Energy**
- **Energy Efficiency**
- **Governance of the Energy Union**
- **Electricity Market Design**

The Electricity Market Design legislation is the most relevant for us as the ESO and it entered into force on 5th July 2019. Electricity Market Design contains a recast [Electricity Regulation](#), a recast [Electricity Directive](#) and a [Risk Preparedness Regulation](#). Also of relevance for governance is the recast **ACER Regulation** given its role in relation to the regulation of the internal energy market.

In our [ESO Forward Plan 2019-2021](#) we committed to publish a high-level impact assessment in respect of the Clean Energy Package. This document aims to do this for Electricity Market Design as it is the most recently ratified element of the Clean Energy Package and it could have potentially significant impacts on the ESO and our key stakeholders.

The Electricity Directive is addressed to Member States and sets out the goals that the Member States have to achieve and the timetable for the Member States to decide how to transpose these goals into national law. It is a recast of, and replaces, from 1st January 2021, the existing electricity directive though some provisions could apply earlier than this date. The Regulations are both now in force and apply in the same way as domestic law directly in the Member States. Whilst the regulations are in force, provisions in these Regulations take effect at different points in time from the date of entry in force.

The result is a complex programme of work for Member States, the ESO and market participants to ensure compliance with those provisions (or seek exemptions or derogations, if appropriate) in due course. For example, whilst the Electricity Regulation is in force it applies generally from 1st January 2020 but some Articles apply earlier, such as Article 14, and others later, such as Article 6(12).

Due to both the scale and scope of Electricity Market Design this document is not comprehensive, and does not seek to be. Instead, we have focused on some of the key areas for the ESO and our stakeholders to provide an overview of the content and an update on our thinking and progress.

The implementation of Electricity Market Design is further complicated by EU Exit as depending on the date and circumstances of the UK exiting the EU it remains to be seen which of the rights and obligations contained in Electricity Market Design will continue to apply once the UK ceases to be a Member State. For the purpose of this document we consider what implementation might mean without considering the potential impact of EU Exit on implementation.

We will aim to provide further insights and updates and refresh this document as our thinking evolves and based on stakeholder feedback.



1

Electricity Regulation

Electricity Regulation Overview

The recast [Electricity Regulation](#) came into force on 5th July 2019 and applies directly in each of the Member States. The Articles within it generally apply from 1st January 2020 although there are Articles which apply from both earlier and later dates.

We have set out some of the Articles from the Electricity Regulation as below and our understanding of the implications of these Articles as well as an update on implementation, where available. If you feel that we have overlooked or misinterpreted any of the key elements, or if you would like to discuss other areas of the Electricity Regulation then please get in touch at your convenience.

Article 5(1): Balance responsibility

'All market participants shall be responsible for the imbalances they cause in the system ('balance responsibility'). To that end, market participants shall either be balance responsible parties or shall contractually delegate their responsibility to a balance responsible party of their choice. Each balance responsible party shall be financially responsible for its imbalances and shall strive to be balanced or shall help the electricity system to be balanced.'

In our view, under the domestic framework, all market participants (including consumers) are either balance responsible parties or contractually delegate their responsibility to a balance responsible party in respect of imbalances, including via the Balancing and Settlement Code. On this basis, we don't believe immediate action is required to ensure compliance.

Article 6(2): Balancing market

'The price of balancing energy shall not be pre-determined in contracts for balancing capacity. Procurement processes shall be transparent in accordance with Article 40(4) of Directive (EU) 2019/944, while protecting the confidentiality of commercially sensitive information.'

At present, there are some contracts for balancing capacity in Great Britain which could be argued do pre-determine the price of balancing energy; however, we believe that the current arrangements are more economic and so we plan to seek a derogation under Article 6(14). As the same obligation is present under the existing network codes we are already in the process of seeking a derogation from Ofgem, although it may need to be extended to encompass the recast Electricity Regulation.

Article 6(4): Balancing market

'The settlement of balancing energy for standard balancing products and specific balancing products shall be based on marginal pricing (pay-as-cleared) unless all regulatory authorities approve an alternative pricing method on the basis of a joint proposal by all transmission system operators following an analysis demonstrating that that alternative pricing method is more efficient. Market participants shall be allowed to bid as close to real time as possible, and balancing energy gate closure times shall not be before the intraday cross-zonal gate closure time.'

Whilst there are elements of the market in Great Britain which are currently on a pay-as-cleared basis (such as the Capacity Market and the standard balancing products) the Balancing Mechanism and many of the other specific balancing products are currently on a pay-as-bid basis. Therefore, this provision has the potential for significant change to our domestic market. However, our working position is that this change would not be in the interest of consumers and so we are working on a derogation proposal in accordance with Article 6(4) and/or Article 6(14) with the aim of submitting this request to Ofgem in October 2019 for their consideration and with the aim of securing a derogation by 1st January 2020.

Article 6(9): Balancing market

'...Contracts for balancing capacity shall not be concluded more than one day before the provision of the balancing capacity and the contracting period shall be no longer than one day, unless and to the extent that the regulatory authority has approved the earlier contracting or longer contracting periods to ensure the security of supply or to improve economic efficiency. Where a derogation is granted, for at least 40 % of the standard balancing products and a minimum of 30 % of all products used for balancing capacity, contracts for the balancing capacity shall be concluded for no more than one day before the provision of the balancing capacity and the contracting period shall be no longer than one day. The contracting of the remaining part of the balancing capacity shall be performed for a maximum of one month in advance of the provision of balancing capacity and shall have a maximum contractual period of one month.'

At this point it time there are arguably contracts for balancing capacity (e.g. STOR or Fast Reserve) which are concluded more than one day before the provision of balancing capacity and for a contract period of longer than one day; we are assessing the situation to consider the scope of a derogation. Once we have concluded our analysis the aim is to submit a derogation request to Ofgem in October 2019 for their consideration and with the aim of securing a derogation by 1st January 2020.

Article 8(4): Trade on day-ahead and intraday markets

'By 1 January 2021, the imbalance settlement period shall be 15 minutes in all scheduling areas, unless regulatory authorities have granted a derogation or an exemption. Derogations may be granted only until 31 December 2024.'

'From 1 January 2025, the imbalance settlement period shall not exceed 30 minutes where an exemption has been granted by all the regulatory authorities within a synchronous area.'

As the current imbalance settlement period within Great Britain is 30 minutes a move to a harmonised imbalance settlement period (at 15 minutes) would be a significant and costly change. Whilst there are both costs and benefits associated with such a change, we do not believe the change is in the interest of consumers. As the same obligation is present under the existing network codes Ofgem is currently in the process of exploring an exemption to allow the market in Great Britain to remain at 30 minutes. As and when exempted, Great Britain can then continue to remain exempted at 30 minutes beyond 1st January 2025 so long as (as envisaged in network codes) there is both a supporting cost-benefit analysis and support from Ofgem, as the regulatory authority within the synchronous area for Great Britain. We expect this to remain the case but a review at that time would be required.

Article 14(5): Bidding zone review

'By 5 October 2019 all relevant transmission system operators shall submit a proposal for the methodology and assumptions that are to be used in the bidding zone review process and for the alternative bidding zone configurations to be considered to the relevant regulatory authorities for approval. The relevant regulatory authorities shall take a unanimous decision on the proposal within 3 months of submission of the proposal.'

Further to the periodic bidding zone review process established under the Third Energy Package the recast Electricity Regulation requires TSOs to submit proposals for their methodology and assumptions to be used in a bidding zone review process to relevant national regulatory authorities by 5th October 2019. We are working with ENTSO-E and the other TSOs on this topic, as well as engaging with Ofgem. At this point in time we foresee the submission of our current bidding zone configuration without potential alternative configurations for Great Britain. The reason being the current bidding zone does not contain structural congestion (as defined in the Electricity Regulation) and there is no impact on neighbouring bidding zones. If this remains the case, Great Britain would not progress the one-off bidding zone review process further under Article 14.

Article 16(8): General principles of capacity allocation and congestion management

‘Transmission system operators shall not limit the volume of interconnection capacity to be made available to market participants as a means of solving congestion inside their own bidding zone or as a means of managing flows resulting from transactions internal to bidding zones. Without prejudice to the application of the derogations under paragraphs 3 and 9 of this Article and to the application of Article 15(2), this paragraph shall be considered to be complied with where the following minimum levels of available capacity for cross-zonal trade are reached:

(a) for borders using a coordinated net transmission capacity approach, the minimum capacity shall be 70 % of the transmission capacity respecting operational security limits after deduction of contingencies, as determined in accordance with the capacity allocation and congestion management guideline adopted on the basis of Article 18(5) of Regulation (EC) No 714/2009;’

At present the provisions related to Great Britain are being developed on the basis of a coordinated net transmission capacity approach and whilst this is unchanged as a result of Article 16(8) the calculation for cross-zonal trade is expected to interact with an [ACER Recommendation](#). This has recently been published and we are in the process of reviewing and understanding the impact on Great Britain. However, our expectation is that Great Britain will be compliant with the minimum threshold without the need for a derogation against that threshold to maintain operational security, as is possible in certain circumstances as per Article 16(9).

Article 18(9): Charging for access to networks, use of networks and reinforcement

‘By 5 October 2019 in order to mitigate the risk of market fragmentation ACER shall provide a best practice report on transmission and distribution tariff methodologies while taking account of national specificities.’

We welcome such a best practice report being made available and we will review it upon publication to consider best practice in relation to our domestic tariff methodologies.

Article 23(3): European resource adequacy assessment

'By 5 January 2020, the ENTSO for Electricity shall submit to the Electricity Coordination Group set up under Article 1 of Commission Decision of 15 November 2012 and ACER a draft methodology for the European resource adequacy assessment based on the principles provided for in paragraph 5 of this Article.'

The Electricity Regulation introduces a new concept of a European resource adequacy assessment and this will be conducted by ENTSO-E to identify resource adequacy concerns. It will be conducted on an annual basis and will (where they exist) support national regional adequacy assessments, such as the one which we undertake in respect of the Capacity Market in Great Britain. ENTSO-E are currently in the process of developing a draft methodology for a European resource adequacy assessment for submission to ACER. ENTSO-E are also developing the new methodologies as per Article 23(6) relating to 'the value of lost load', 'the cost of new entry for generation, or demand response', and 'the reliability standard' in the same timescales. As these developments have potential to interact with our domestic processes we are involved in and closely monitoring the development of these methodologies to advocate that they are complementary and work together in an efficient manner with our national processes.

Article 26(2) and Article 26(3): Cross-border participation in capacity mechanisms

'Member States shall ensure that foreign capacity capable of providing equivalent technical performance to domestic capacities has the opportunity to participate in the same competitive process as domestic capacity. In the case of capacity mechanisms in operation on 4 July 2019, Member States may allow interconnectors to participate directly in the same competitive process as foreign capacity for a maximum of four years from 4 July 2019 or two years after the date of approval of the methodologies referred to in paragraph 11, whichever is earlier.'

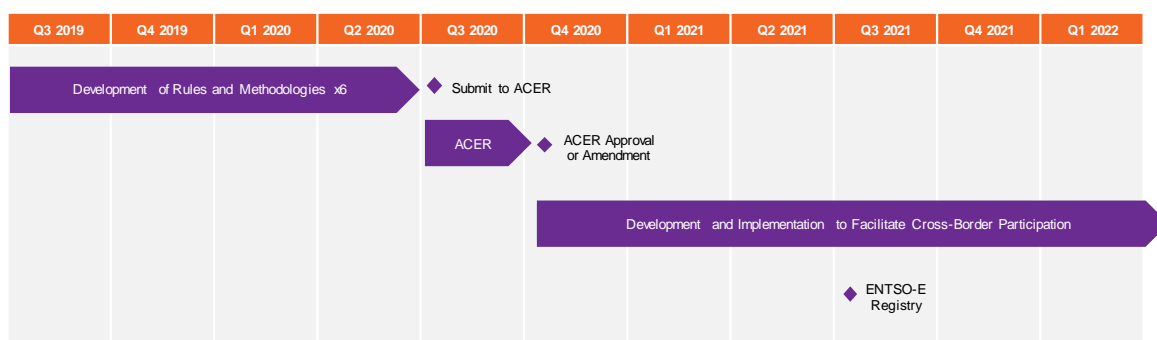
Member States may require foreign capacity to be located in a Member State that has a direct network connection with the Member State applying the mechanism.

Member States shall not prevent capacity which is located in their territory from participating in capacity mechanisms of other Member States.'

In around three to four years it appears that interconnector participation in the Capacity Market in Great Britain will be replaced by foreign direct participation, at least from those Member States with a direct network connection to Great Britain.

Additionally, domestic market participants will become eligible to participate in Capacity Markets in at least some of the other Member States. ENTSO-E is currently in the process of developing six separate components related to this change, such as a methodology for calculating the maximum capacity for cross-border participation and the terms of the operation of a new registry within ENTSO-E to record eligible participants. These components are to be submitted by ENTSO-E to ACER by 5th July 2020 and as a TSO we will be monitoring the development of these methodologies and considering our role in a future Capacity Market where there is the expectation of foreign direct participation. Figure 1 - at a high-level - illustrates the timetable for the above as follows.

Figure 1



Article 35(1): Establishment and mission of regional coordination centres

'By 5 July 2020, all transmission system operators of a system operation region shall submit a proposal for the establishment of regional coordination centres to the regulatory authorities concerned in accordance with the criteria set out in this Chapter. The regulatory authorities of the system operation region shall review and approve the proposal.'

We are currently a shareholder and active participant within a Regional Security Coordinator (RSC), i.e. CORESO. By 5th July 2020 TSOs within a system operation region, which will be identified as per Article 36 below, shall submit a proposal for the establishment of Regional Coordination Centres (RCCs) to the relevant regulatory authorities. This proposal will include all organisational, financial and operational arrangements for the RCCs, the rules and statutes, the implementation plans (etc) and this then commences the process to transition all RSCs to RCCs by 1st July 2022.

Therefore, as a shareholder and active participant within CORESO we will be significantly involved in the development and implementation of the RCC for our system operation region, which we expect to be fulfilled by an enhanced version of CORESO. At present under the Third Energy Package an RSC is expected to perform certain tasks, whereas an RCC will be expected to perform additional tasks in future. Figure 2 - at a high-level - illustrates the transition from RSCs to RCCs in respect of their key tasks; full details of the key tasks can be found in Article 37 and Annex 1.

Figure 2

Current RSC Tasks	Additional RCC Tasks
Operational security analysis	Role is sizing and procurement of reserves
Short-term adequacy analysis	Further emergency and restoration tasks
Outage coordination	Additional risk preparedness tasks
Coordinated capacity calculation	Training and certification activities
Common Grid Model	Identification of capacity needs
Supporting Emergency and Restoration plans	-

Whilst there is a notable increase in the role and responsibilities of the RCCs, including through the introduction of ‘co-ordinated actions’ to TSOs for some tasks in future, TSOs remain responsible for the real-time operation of their Transmission Systems. However, additional processes between TSOs and RCCs, as well as between the RCCs will likely need to be developed in due course.

Article 36(1): Geographical scope for regional coordination centres

‘By 5 January 2020 the ENTSO for Electricity shall submit to ACER a proposal specifying which transmission system operators, bidding zones, bidding zone borders, capacity calculation regions and outage coordination regions are covered by each of the system operation regions. The proposal shall take into account the grid topology, including the degree of interconnection and of interdependency of the electricity system in terms of flows and the size of the region which shall cover at least one capacity calculation region.’

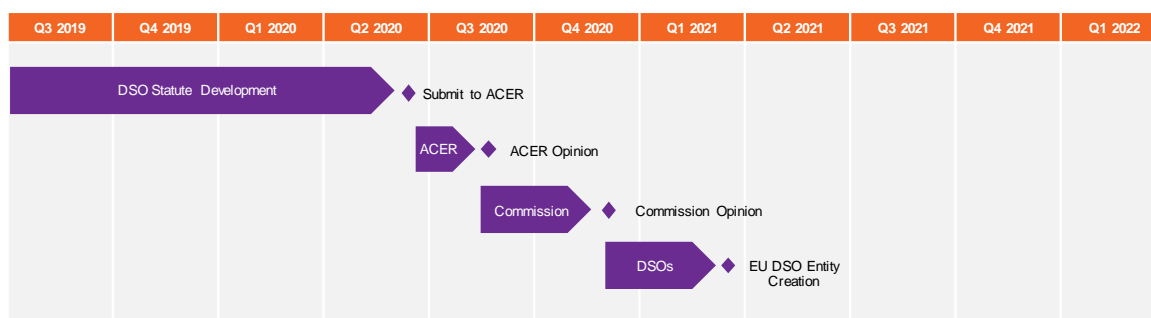
We, alongside other TSOs and ENTSO-E, are currently developing options in respect of the scope of system operation regions as per Article 36. Once initial proposals have been sanctioned through the current ENTSO-E governance arrangements a public consultation is expected to be released by ENTSO-E. This consultation is currently planned for circa October 2019 and it will facilitate the submission of an ENTSO-E proposal to ACER by the 5th January 2020 deadline. The finalisation of these system operation regions will then inform the transition of RCSs to RCCs as per Article 35.

Article 53(2): Establishment of the EU DSO entity

'By 5 July 2020, the distribution system operators shall submit to the Commission and to ACER, the draft statutes, in accordance with Article 54, including a code of conduct, a list of registered members, the draft rules of procedure, including the rules of procedures on the consultation with the ENTSO for Electricity and other stakeholders and the financing rules, of the EU DSO entity to be established. The draft rules of procedure of the EU DSO entity shall ensure balanced representation of all participating distribution system operators.'

As a result of Article 53, the DSOs are in the process of creating a new entity to undertake a similar role for DSOs to that which ENTSO-E currently undertakes for TSOs in Europe. We expect that with the changing dynamics of the electricity system this entity will play an increasingly important role in future and it will need to work closely with its stakeholders, especially ENTSO-E. As such we have recently nominated one of our whole system subject-matter experts within ESO to sit on a new steering group within ENTSO-E which has been created to support the development of a sustainable TSO-DSO interface. Figure 3 - at a high-level - illustrates the timetable for the above as follows.

Figure 3





2

Electricity Directive

Electricity Directive Overview

The Electricity Directive is addressed to Member States and sets out the goals that the Member States have to achieve and the timetable for the Member States to decide how to transpose these goals into national law. It is a recast of, and replaces, from 1st January 2021, the existing electricity directive though some provisions could apply earlier than this date. In many cases the aims of the Directive are already aligned with ongoing programmes in Great Britain, such as the domestic smart metering programme or the Faster Switching Significant Code Review, whereas in other cases the Directive potentially introduces aims which could introduce new obligations related to market participants in Great Britain.

For example, under Article 4 the Directive states that ‘all customers are free to have more than one electricity supply contract at the same time, provided that the required connection and metering points are established’ and depending in interpretation this could require domestic change in future. More specifically, depending on interpretation this could potentially provide consumers with the right to have more than one supply contract with any given energy supplier, or it could potentially provide consumers with the right to have multiple supply contracts with multiple energy suppliers.

As well as there being many provisions in relation to consumers, the retail market and the concept of ‘citizen energy communities’, there are also provisions relating to the roles and responsibilities of Transmission System Operators, Distribution System Operators and National Regulatory Authorities e.g. a prohibition on both TSOs and DSOs owning storage except in limited circumstances. Therefore, we will continue to monitor the implementation of the Directive within Great Britain.



3

Risk Preparedness Regulation

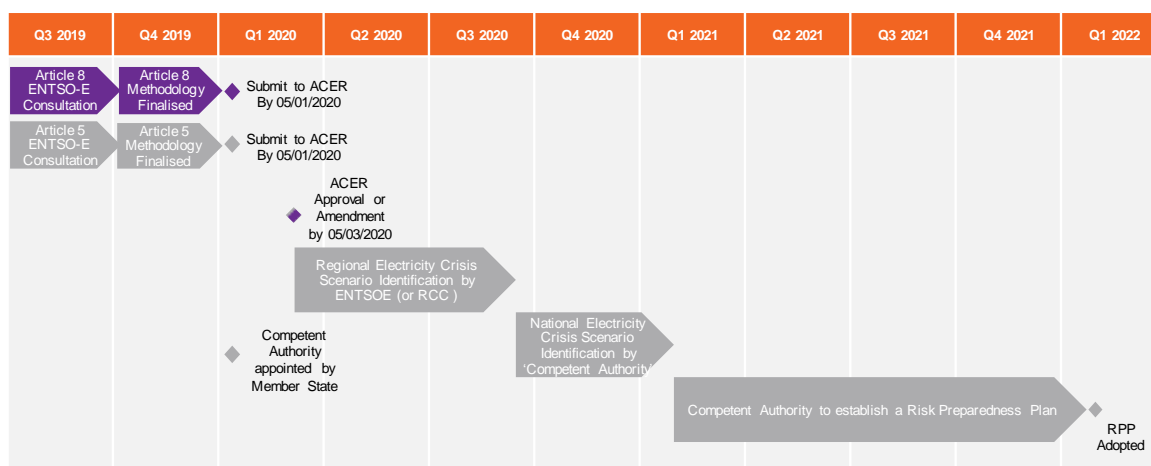
Risk Preparedness Regulation Overview

Commission Regulations (EU) 2017/1485 and (EU) 2017/2196 provide detailed technical rules on how TSOs and other relevant stakeholders should ensure system security through how they act and co-operate effectively at an operational level. The Risk Preparedness Regulation focuses on crises which have a larger scale and impact by facilitating identification of regional and national electricity crisis scenarios and developing national and regional Risk Preparedness Plans to cover such scenarios e.g. as a result of extreme weather, fuel shortages or cyberattacks.

ENTSO-E are developing a 'Methodology for identifying regional electricity crisis scenarios' and a 'Methodology for short-term and seasonal adequacy assessments' under Article 5 and Article 8 respectively and both are to be submitted to ACER for consideration no later than 5th January 2020. On 8th July 2019 ENTSO-E launched [industry consultations](#) on these draft methodologies and the closing date for responses is 8th October 2019. Once ENTSO-E have finalised and submitted the proposed methodologies, ACER will then have until 5th March 2020 to approve or amend prior to ENTSO-E identification (in consultation with stakeholders) of regional electricity crisis scenarios within the following six months. There are provisions for this to potentially be delegated to RCCs. Once scenarios have been developed each 'Competent Authority' (which is expected to be BEIS) will develop their own national electricity crisis scenarios in consultation with their stakeholders (including other competent authorities) within the following four months. These will become the basis of the new Risk Preparedness Plans in respect of regional electricity crisis scenarios which will subsequently be developed and adopted no later than 5th January 2022.

ENTSO-E (or the RCCs) will then carry out seasonal adequacy assessments / seasonal outlooks based on these methodologies, and TSOs will do the same in respect of week ahead to at least day ahead adequacy forecasts. Figure 4 - at a high-level - illustrates this timeline.

Figure 4





4

Conclusion and Next Steps

Conclusion and Next Steps

In conclusion, the new Clean Energy Package legislation related to Electricity Market Design results in both actual and potential changes to the domestic electricity market in Great Britain in future. As a result, it is important for all parties (including the ESO) to understand the impacts and timescales to ensure economic, efficient and co-ordinated implementation programme.

Therefore, we will continue to assess the impacts of Electricity Market Design on the ESO and by extension our stakeholders. We will continue to engage with our stakeholders as and where appropriate, and continue to work towards implementation, or exemption/derogation as the case may be, where we believe this to be in consumers' interests.

As Electricity Market Design has broader content than that which is of direct relevance to the ESO we would also encourage stakeholders to consider the potential impacts of Electricity Market Design on their own businesses, although we imagine many will have already done so.

We will continue to periodically attend the Joint European Stakeholder Group to provide updates and discuss content with our stakeholders. We plan to attend on 8th October 2019 to provide an overview of (and to debate) this high-level impact assessment publication. If there is subsequent interest in a further workshop or webinar to explore in greater detail this can also be arranged at the appropriate time. We will also continue to discuss bilaterally where our stakeholders would prefer a more tailored discussion both now and in future.

If you would like to discuss any of the content of this document, or if you have any questions, please contact Mike Oxenham in our Future Markets team at Michael.Oxenham1@nationalgrideso.com.



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