## REQUEST FOR AMENDMENT BY THE IRELAND-NORTHERN IRELAND REGULATORY AUTHORITIES

TO

# THE SYNCHRONOUS AREA OPERATIONAL AGREEMENT OF IRELAND AND NORTHERN IRELAND AND THE LOAD FREQUENCY CONTROL BLOCK OPERATIONAL AGREEMENT OF IRELAND AND NORTHERN IRELAND

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## 1 Introduction

This document provides detail on the agreement of the Commission for Utility Regulation (CRU) and the Utility Regulator of Northern Ireland (UR) to request amendments to the Synchronous Area Operational Agreement of Ireland and Northern Ireland, and to the Load Frequency Control Block Operational Agreement.

In accordance with Article 118 of the EU Regulation 2017/1485 of 2<sup>nd</sup> August 2017 establishing a guideline on electricity transmission system operation (System Operation Guideline or **SOGL**) all TSOs of a synchronous area are required to jointly develop common proposals for synchronous area operations that have to be contained within a Synchronous Area operational agreement (**SAOA**). In accordance with Article 119 of SOGL all TSOs of each load-frequency control block (**LFC block**) have to jointly develop common proposals for LFC block operations that have to be contained within an LFC Block operational agreement (**LFCBOA**).

The Transmission System Operators (**TSOs**) of Ireland and Northern Ireland, EirGrid and SONI respectively, submitted their joint proposals for the <u>SAOA</u> and the <u>LFCBOA</u> on the 21<sup>st</sup> December 2018, to the Regulatory Authorities (CRU and UR) in line with Article 6 (3) of SOGL. As required under Article 6(3) (d) and (e), only a subset of the common proposals contained within an SAOA and an LFCBOA are subject to regulatory approval. The SAOA document contains two main sections, Title 2 which contains the proposals subject to regulatory approval, and Title 3 which contains the proposal required within the SAOA but not subject to regulatory approval. The submitted LFCBOA follows the same structure, where Title 2 contains the proposals subject to regulatory approval and Title 3 contains the proposals not subject to regulatory approval.

The Regulatory Authorities (CRU and UR) have engaged intensively with the TSOs since the submission of the two proposals in December 2018, and this document outlines the areas we wish to see amended within the SAOA and LFCBOA by the TSOs.

The SAOA and LFCBOA offer important insight into the processes and practices of the TSOs in scheduling and dispatching plant, providing greater transparency to market participants while maintaining a high level of operational security. In addition these documents lay the groundwork for the wider integration of SEM into pan-EU markets and, in particular the new balancing platforms, provided for under the Guideline on Electricity Balancing.

## 2 Legal context

#### 2.1 SOGL

The System Operation guideline (SOGL) is a European regulation that provides detailed guidelines to safeguard operational security, frequency quality and efficient use of the interconnected system and resources. In particular, the guidelines focus on;

(a)requirements and principles concerning operational security;

- (b)rules and responsibilities for the coordination and data exchange between TSOs, between TSOs and DSOs, and between TSOs or DSOs and SGUs, in operational planning and in close to real-time operation;
- (c) rules for training and certification of system operator employees;
- (d)requirements on outage coordination;
- (e)requirements for scheduling between the TSOs' control areas; and
- (f) rules aiming at the establishment of a Union framework for load-frequency control and reserves.

The SOGL interacts with numerous other EU Network Codes/Guidelines;

- Capacity Allocation and congestion management (CACM) EU Regulation 2015/1222
- Requirements for Generators (RfG) Code EU Regulation 2016/631
- Demand Connection Code (DCC) EU Regulation 2016/1388
- HVDC Connection Code (HVDC) EU Regulation 2016/1447
- Electricity Balancing Guideline (EBGL) EU Regulation 2017/2195
- Emergency Restoration Code (ER) EU Regulation 2017/2196

The SOGL applies (as per Article 2) to all transmission system and distribution system operators, interconnectors and regional security coordinators, and the following grid users;

(a)existing and new power generating modules that are, or would be, classified as type B, C and D in accordance with the criteria set out in Article 5 of Commission Regulation (EU) 2016/631 (Requirements for Generators (RfG))<sup>1</sup>

(b) existing and new transmission-connected demand facilities;

(c) existing and new transmission-connected closed distribution systems;

- Type B units include units from 0.1MW (100kW) to < 5 MW
- Type C units range from 5MW to < 10 MW</li>
   Type D units are ≥ 10MW.

All generation connected at 110 kV or higher is automatically considered as Type D.

<sup>&</sup>lt;sup>1</sup> in Ireland and Northern Ireland these are outlined below:

- (d)existing and new demand facilities, closed distribution systems and third parties if they provide demand response directly to the TSO in accordance with the criteria in Article 27 of Commission Regulation (EU) 2016/1388 (Demand Connections (DCC))
- (e)providers of re-dispatching of power generating modules or demand facilities by means of aggregation and providers of active power reserve in accordance with Title 8 of Part IV of SOGL Regulation; and
- (f) existing and new high voltage direct current ('HVDC') systems in accordance with the criteria in Article 3(1) of Commission Regulation (EU) 2016/1447 (HVDC) (5).

## 2.2 SAOA requirements

As per article 118 of the SOGL the following common proposals shall be developed jointly by all TSOs of each synchronous area for:

- (a) the dimensioning rules for FCR in accordance with Article 153;
- (b) additional properties of FCR in accordance with Article 154(2);
- (c) the frequency quality defining parameters and the frequency quality target parameters in accordance with Article 127;
- (d) for the Continental Europe ('CE') and Nordic synchronous areas, the frequency restoration control error target parameters for each LFC block in accordance with Article 128;
- (e)the methodology to assess the risk and the evolution of the risk of exhaustion of FCR of the synchronous area in accordance with Article 131(2);
- (f) the synchronous area monitor in accordance with Article 133;
- (g)the calculation of the control program from the netted area AC position with a common ramping period for ACE calculation for a synchronous area with more than one LFC area in accordance with Article 136;
- (h)if applicable, restrictions for the active power output of HVDC interconnectors between synchronous areas in accordance with Article 137;
- (i) the LFC structure in accordance with Article 139;
- (j)if applicable, the methodology to reduce the electrical time deviation in accordance with Article 181;
- (k)whenever the synchronous area is operated by more than one TSO, the specific allocation of responsibilities between TSOs in accordance with Article 141;
- (I) operational procedures in case of exhausted FCR in accordance with Article 152(7);
- (m) for the GB and IE/NI synchronous areas, measures to ensure the recovery of energy reservoirs in accordance with to Article 156(6)(b);

- (n)operational procedures to reduce the system frequency deviation to restore the system state to normal state and to limit the risk of entering into the emergency state in accordance with Article 152(10);
- (o)the roles and responsibilities of the TSOs implementing an imbalance netting process, a crossborder FRR activation process or a cross-border RR activation process in accordance with Article 149(2);
- (p)requirements concerning the availability, reliability and redundancy of the technical infrastructure in accordance with Article 151(2);
- (q)common rules for the operation in normal state and alert state in accordance with Article 152(6) and the actions referred to in Article 152(15);
- (r) for the CE and Nordic synchronous areas, the minimum activation period to be ensured by FCR providers in accordance with Article 156(10);
- (s) for the CE and Nordic synchronous areas, the assumptions and methodology for a cost-benefit analysis in accordance with Article 156(11);
- (t)if applicable, for synchronous areas other than CE, limits for the exchange of FCR between the TSOs in accordance with Article 163(2);
- (u)the roles and responsibilities of the reserve connecting TSO, the reserve receiving TSO and the affected TSO as regards the exchange of FRR and RR defined in accordance with Article 165(1);
- (v)the roles and responsibilities of the control capability providing TSO, the control capability receiving TSO and the affected TSO for the sharing of FRR and RR defined in accordance with Article 166(1);
- (w)the roles and responsibilities of the reserve connecting TSO, the reserve receiving TSO and the affected TSO for the exchange of reserves between synchronous areas, and of the control capability providing TSO, the control capability receiving TSO and the affected TSO for the sharing of reserves between synchronous areas defined in accordance with Article 171(2);
- (x)the methodology to determine limits on the amount of sharing of FCR between synchronous areas defined in accordance with Article 174(2);
- (y) for the GB and IE/NI synchronous areas, the methodology to determine the minimum provision of reserve capacity on FCR in accordance with Article 174(2)(b);
- (z)the methodology to determine limits on the amount of exchange of FRR between synchronous areas defined in accordance with Article 176(1) and the methodology to determine limits on the amount of sharing of FRR between synchronous areas defined in accordance with Article 177(1); and
- (aa)the methodology to determine limits on the amount of exchange of RR between synchronous areas defined in accordance with Article 178(1) and the methodology to determine limits on the amount of sharing of RR between synchronous areas defined in accordance with Article 179(1).

2. All TSOs of each synchronous area shall submit the methodologies and conditions listed in Article 6(3)(d) for approval by all the regulatory authorities of the concerned synchronous area. Within 1 month after the approval of these methodologies and conditions, all TSOs of each synchronous area shall conclude a synchronous area operational agreement which shall enter into force within 3 months after the approval of the methodologies and conditions.

#### Article 6 (3) (d) outlines the sections in the SAOA that require regulatory approval:

- (i) the frequency quality defining parameters and the frequency quality target parameter in accordance with Article 127;
- (ii) the dimensioning rules for FCR in accordance with Article 153;
- (iii) the additional properties of the FCR in accordance with Article 154(2);
- (iv) for the GB and IE/NI synchronous areas, the measures to ensure the recovery of energy reservoirs in accordance with Article 156(6)(b);
- (v) for the CE and Nordic synchronous areas, the minimum activation period to be ensured by FCR providers in accordance with Article 156(10);
- (vi) for the CE and Nordic synchronous areas, the assumptions and methodology for a costbenefit analysis in accordance with Article 156(11);
- (vii) for synchronous areas other than CE and if applicable, the limits for the exchange of FCR between TSOs in accordance with Article 163(2);
- (viii) for the GB and IE/NI synchronous areas, the methodology to determine the minimum provision of reserve capacity on FCR between synchronous areas, defined in accordance with Article 174(2)(b);
- (ix) limits on the amount of exchange of FRR between synchronous areas defined in accordance with Article 176(1) and limits on the amount of sharing of FRR between synchronous areas defined in accordance with Article 177(1);
- (x) limits on the amount of exchange of RR between synchronous areas defined in accordance with Article 178(1) and limits on the amount of sharing of RR between synchronous areas defined in accordance with Article 179(1);

Under Article 118 of the SOGL, the TSOs were obliged to develop the proposals by the 14<sup>th</sup> September 2018. Following engagement with the Regulatory Authorities prior to submission it was felt there was insufficient detail at that point and that further development was required. Under Article 11 of the SOGL, the TSOs are required to consult stakeholders on the draft proposals for a period of not less than 1 month. The TSOs conducted a consultation on the SAOA between the 8<sup>th</sup> October 2018 and the 8<sup>th</sup> November 2018. There were no responses to the consultation.

The TSOs submitted the final version of the SAOA to the CRU and UR on the 21st December 2018.

## 2.3 LFCBOA requirements

Article 119 of SOGL outlines the requirements placed on TSOs of an LFC block in relation to the proposals required within the LFCBOA;

- 1. By 12 months after entry into force of this Regulation, all TSOs of each LFC block shall jointly develop common proposals for:
- (a) where the LFC block consists of more than one LFC area, FRCE target parameters for each LFC area defined in accordance with Article 128(4);
- (b) LFC block monitor in accordance with Article 134(1);
- (c) ramping restrictions for active power output in accordance with Article 137(3) and (4);
- (d) where the LFC block is operated by more than one TSO, the specific allocation of responsibilities between TSOs within the LFC block in accordance with Article 141(9);
- (e) if applicable, appointment of the TSO responsible for the tasks in Article 145(6);
- (f) additional requirements for the availability, reliability and redundancy of technical infrastructure defined in accordance with Article 151(3);
- (g) operational procedures in case of exhausted FRR or RR in accordance with Article 152(8);
- (h) the FRR dimensioning rules defined in accordance with Article 157(1);
- (i) the RR dimensioning rules defined in accordance with Article 160(2);
- (j) where the LFC block is operated by more than one TSO, the specific allocation of responsibilities defined in accordance with Article 157(3), and, if applicable, the specific allocation of responsibilities defined in accordance Article 160(6);
- (k) the escalation procedure defined in accordance with Article 157(4) and, if applicable, the escalation procedure defined in accordance with Article 160(7);
- (I) the FRR availability requirements, the requirements on the control quality defined in accordance with Article 158(2), and if applicable, the RR availability requirements and the requirements on the control quality defined in accordance with Article 161(2);
- (m)if applicable, any limits on the exchange of FCR between the LFC areas of the different LFC blocks within the CE synchronous area and the exchange of FRR or RR between the LFC areas of an LFC block of a synchronous area consisting of more than one LFC block defined in accordance with Article 163(2), Article 167 and Article 169(2);
- (n) the roles and the responsibilities of the reserve connecting TSO, the reserve receiving TSO and of the affected TSO for the exchange of FRR and/or RR with TSOs of other LFC blocks defined in accordance with Article 165(6);
- (o) the roles and the responsibilities of the control capability providing TSO, the control capability receiving TSO and of the affected TSO for the sharing of FRR and RR defined in accordance with Article 166(7);
- (p) roles and the responsibilities of the control capability providing TSO, the control capability receiving TSO and of the affected TSO for the sharing of FRR and RR between synchronous areas in accordance with Article 175(2);
- (q) coordination actions aiming to reduce the FRCE as defined in Article 152(14); and

(r)measures to reduce the FRCE by requiring changes in the active power production or consumption of power generating modules and demand units in accordance with Article 152(16).

2. All TSOs of each LFC block shall submit the methodologies and conditions listed in Article 6(3)(e) for approval by all the regulatory authorities of the concerned LFC block. Within 1 month after the approval of these methodologies and conditions, all TSOs of each LFC block shall conclude an LFC block operational agreement which shall enter into force within 3 months after the approval of the methodologies and conditions.

Article 6 (3) (e) of the SOGL outlines the articles that are subject to regulatory approval;

- (i) ramping restrictions for active power output in accordance with Article 137(3) and (4);
- (ii) coordination actions aiming to reduce FRCE as defined in Article 152(14);
- (iii) measures to reduce FRCE by requiring changes in the active power production or consumption of power generating modules and demand units in accordance with Article 152(16);
- (iv) the FRR dimensioning rules in accordance with Article 157(1);

Under Article 119 of the SOGL, the TSOs were obliged to develop the proposals by the 14<sup>th</sup> September 2018. Following engagement with the Regulatory Authorities prior to submission, it was felt there was insufficient detail at that point and that further development was required. Under Article 11 of the SOGL, the TSOs are required to consult stakeholders on the draft proposals for a period of not less than 1 month. The TSOs conducted a consultation on the LFCBOA between the 8<sup>th</sup> October 2018 and the 8<sup>th</sup> November 2018. There were no responses to the consultation.

The TSOs submitted the final version of the LFCBOA to the CRU and UR on the 21st December 2018.

## 2.4 Role of the Regulatory Authorities

As outlined in Article 6 of the SOGL, the CRU and UR have an explicit role in the approval of terms and conditions or methodologies developed by TSOs as required by the SOGL.. Where the approval of the terms and conditions or methodologies requires a decision by more than one regulatory authority the relevant authorities shall consult and closely cooperate and coordinate with each other to reach agreement. Regulatory Authorities are required to take decisions within 6 months of receipt of the relevant submission.

Under Article 7(1) of SOGL there is a facility to request required amendments to submitted methodologies. Where such a request for amendment is made the TSO(s) have to submit the amended proposal within 2 months of the request from the Regulatory Authorities. The Regulatory Authorities have then a further 2 months to review the amended proposals and make a decision. If the Regulatory Authorities cannot reach an agreement within the 2 months, or upon joint request to **ACER** (Agency for the Cooperation of Energy Regulators), ACER will make a decision within a subsequent 6 months.

The CRU and UR are (as are the system operators) bound by Article 4(2) and the following principles when applying the requirements of the SOGL:

- (a) apply the principles of proportionality and non-discrimination;
- (b) ensure transparency;
- (c) apply the principle of optimisation between the highest overall efficiency and lowest total costs for all parties involved;
- (d)ensure TSOs make use of market-based mechanisms as far as possible, to ensure network security and stability;
- (e) respect the responsibility assigned to the relevant TSO in order to ensure system security, including as required by national legislation;
- (f) consult with relevant DSOs and take account of potential impacts on their system; and
- (g)take into consideration agreed European standards and technical specifications

As required by the Articles outlined above the CRU and UR have closely collaborated and coordinated during their review of the submitted proposals, and are now requesting several amendments to facilitate approval of the SAOA and the LFCBOA.

## 3 Relevant Documents

The following are documents that are related to the SAOA and LFCBOA proposals and provide background to this document. Interested stakeholders are advised that it may be helpful to be aware of the content of these documents to fully understand the amendments requested by the Regulatory Authorities in relation to the proposed SAOA and LFC BOA. While not all of these documents set out requirements on the TSOs, such as the Balancing Market Principles Statement, these have fed into the Regulatory Authorities considerations of the submitted documents.

- The SAOA <u>proposals</u> submitted by EirGrid/SONI
- The LFCBOA proposals submitted by EirGrid/SONI
- CRU Decision and UR Decision on the Determination of the Load Frequency Control Block
- The EU Regulation 2016/1485 on system Operation SOGL <u>Guideline</u>
- Balancing Market Principles <u>Statement</u>
- SEMO Note on inter- area flow constraint
- Operational Constraints document monthly update (most recent <u>version</u> at time of writing)
- Operational Constraints document -weekly update (updates located here
- System Operator <u>Agreement</u> between SONI and EirGrid
- The EirGrid TSO licence
- The SONI TSO <u>licence</u>

## 4 Overarching concerns regarding the SAOA and LFCBOA

## 4.1 Assessment of areas requiring amendment

The Regulatory Authorities assessment is detailed at two levels – this section contains a summary of our high-level concerns with both the submitted documents. The more specific comments to the individual articles in Title 2 of the SAOA are detailed in Section 5 and Appendix A, along with informal comments to the Title 3 articles of the SAOA in Section 5. The specific comments to the Title 2 Articles of the LFCBOA are detailed in Section 6 and Appendix B, with informal comments on the Title 3 articles contained with Section 6.

## 4.2 Grid Code versus SOGL primacy

The TSOs refer to the Grid Code in many instances as the primary document for compliance with the requirements of the SOGL. The Regulatory Authorities highlight that EU Network Codes are primary legislation, and therefore the Grid Code and Distribution Codes have to align with (and refer to as necessary) the requirements of the SOGL. The SOGL (unlike other EU Network Codes) specifically does not facilitate derogations from the requirements- therefore it must be implemented in full. The SAOA and LFCBOA will have to be amended to ensure that the SOGL requirements are given primacy and that the Grid Code and other relevant documents ensure compliance with the SOGL requirements at all times.

## 4.3 Grid code references

The TSOs in several sections refer directly to the Grid Code for relevant parameters, however accurate references are not given, with references sometimes only to the "Grid Code" or to a high-level section of the Grid Code, without reference to the specific section of the Grid Code or other relevant documents. This could mean that future changes to the Grid Code create non-compliant standards with the SOGL requirements, with no referral back to the Regulatory Authorities in terms of SOGL compliance. The SAOA and LFCBOA therefore will have to include exact and specific references to relevant elements of the Grid Code, or other relevant documents, and ensure that there are processes established to ensure cross checking of compliance requirements against EU regulation and national legislation. Accordingly, the TSOs should engage separately with the Grid Code teams of the RAs to confirm that the TSOs have established appropriate cross-check procedures.

# 4.4 Ensuring cohesion between the requirements of SOGL, EBGL and the Connection Network Codes

During the development of the SAOA and LFCBOA it has become apparent that there is not a comprehensive and cohesive approach being taken by the TSOs in their implementation of the interlinked areas of SOGL implementation, EBGL implementation, CACM implementation and the requirements of the three connection Network Codes (RfG, DCC, HVDC).

It will be essential that the TSOs develop SAOA and LFCBOA processes and implement the requirements of all the separate codes in a cohesive manner, to ensure compliance with the requirements of Article 4(2) of SOGL (as outlined in Section 2.4) and the overarching principles

outlined in Recital 3 of SOGL (facilitating Union-wide trading of electricity, ensuring system security and availability of the necessary data and information exchange, facilitation of renewable energy integration and allowing more efficient use of the network, and increasing competition for consumers).

## 4.5 Interaction with existing System Operator Agreement

There has been a System Operator <u>Agreement</u> in force between EirGrid and SONI since 2007 that covers a range of cross-jurisdictional processes and responsibilities. The TSOs have not provided sufficient information on what sections of the existing agreement will need to be replaced or updated following the development of the SAOA. It will be essential that the TSOs map out their view of where the SAOA and LFCBOA will sit in relation to existing legal agreements between the TSOs (including the System Operator Agreement), and detail what sections of the System Operator Agreement (and other relevant existing legal agreements) that will need updating or will be replaced by the SAOA and LFCBOA in their amended SAOA and LFCBOA submissions.

## 4.6 Implementation and cohesion with existing markets

The Regulatory Authorities have also noted that there are gaps in cohesion between current operations in SEM and the requirements of the SAOA and LFCBOA. The requirements of the SOGL will require changes to many facets of current SEM operations- for example

- Balancing market actions (covered by the Balancing market principles statement),
- Operational constraint processes (operational reserve dimensioning),
- Interconnector operations (Interconnector Operating protocols),
- DS3 System service development, procurement and dimensioning of reserve products and utilisation in system operations

The Regulatory Authorities request that the final versions of the SAOA and LFCBOA accurately reflect the interactions with the various, different processes and operations within their current remit. An explanatory document with further detail and an outline of the timelines and processes needed to ensure compliance across all relevant practices will be required as part of the final submission.

## 4.7 Consideration of distribution connected, non-synchronous generation and non-SEM units

The TSOs' proposals in many instances refer only to market-facing units, and transmission connected units (SEM units, units subject to grid code etc). In line with Article 183 of SOGL the Regulatory Authorities consider that the TSOs should in their amended resubmissions provide further context on how their proposals can accommodate distribution connected generation units, non-synchronous generation and demand side participants. This will be important not only for the implementation of cost-effective reserve provision and scheduling, cost-efficient dispatch costs but also will be further required as part of the implementation of the Clean Energy Package legal requirements.

## 5 SAOA proposals

The TSOs submitted their <u>SAOA proposals</u> on the 21<sup>st</sup> December 2018. The Regulatory Authorities have been engaging intensively with the TSOs since that date. We have highlighted our overarching concerns in Section 4 of this paper, and provide more detailed specific requests for amendment to the Title 2 proposals in Section 5.1 and our informal comments to Title 3 proposals of the SAOA in Section 5.2 of this paper.

# 5.1 Amendments required by the Regulatory Authorities to the Title 2 Articles of the SAOA.

Given the specific nature of the proposals and the detailed nature of our responses we have listed the comments in a tabular format. The majority of the required amendments arise from concerns related to the over-reliance on existing processes and arrangements which do not address the full scope of obligations under SOGL, or ensure consistency with other Network Code developments.

Art	Compliance, comments, questions and gaps	Request for amendment
2	Definitions and Interpretations  This article aims to provide an interpretation of the terms used by SOGL against current terminology used by the TSOs. However, a lot of the interpretations do not provide clear mapping to comply with SOGL requirements. For example, there is a lack of cohesion in terms of the mapping of products to align with the EU wide definitions of FCR, FRR and RR, between the interpretations provided by the TSOs in the SAOA and those under development in EBGL underway on EBGL implementation are different.	Provide accurate mapping to existing products and identify where existing products need to change to align with EU Network Code requirements.
2	The Regulatory Authorities query the interpretation of Demand unit as solely equivalent to a Demand Side unit as there are obligations on demand customers under SOGL, not just DSUs.  There is not enough clarity on how the definitions of PGM and demand unit might apply to distribution connected plant	Consider the inclusion of a demand facility definition.  Provide accurate mapping to distribution and transmission connected plant (generation, consumption, DSUs, etc.)
2	References to DS3 System Services (DS3 SS) in terms of the definition of FCR, FRR and RR	The TSOs need to provide absolute clarity as to what defines an FCR,

Art	Compliance, comments, questions and gaps	Request for amendment
	providing units needs to be reviewed. Can the TSOs confirm that there is no explicit link between contracted DS3 SS units and scheduling and dispatch of plant? Is a providing unit someone who is grid code compliant in terms of POR, SOR, TOR, TOR1 etc provision, or is it a unit that is not subject to Grid code requirements but meets DS3 technical definitions or holds a DS3 contract?	FRR, RR providing unit as utilized by the control centre when scheduling FCR, FRR or RR to meet the dimensioned requirements.
2	The interpretation of cross border sharing and exchange of reserves categories requires alignment with SOGL and not just referrals to the Interconnector Operator protocols (IOP)- i.e. it is likely the IOPs will have to change to comply with SOGL and EBGL.	Align with the requirements of the SOGL
3	Dimensioning Rules for FCR – Art 153 of SOGL  The article does not describe the required 'dimensioning rules' (SOGL article 153(2)), but only refers to results in the Operational Constraints Update: 'All Island Requirement (%Largest In-Feed)' and minimum amounts for IE and NI. These minimum amounts are the outputs of TSO dimensioning. What is needed here is detail on the inputs and processes the TSOs use to determine the minimum values of FCR. More focus is needed on any distinctions between positive and negative FCR.  The dimensioning rules also need to ensure that the contribution of microgeneration, distribution connected (non-market participants) and market participants are captured in determining the required amounts of FCR.	Describe 'dimensioning rules', i.e. explain how the results are being determined; the inputs and processes involved. Distinct dimensioning rules for positive and negative FCR provision is required.  Please include detail as to how the TSOs account for microgeneration effects on system needs.  Distribution connected plant that are not market participants also need to be accounted for.  In a separate explanatory document please detail any changes that need to be incorporated into current processes as a result of the SAOA requirements.
3	There is a need also to be aligned with the FCR type products as required by SOGL and EBGL.	In addition to our comments on Article 2.2 above, please ensure the focus on FCR products aligns with the properties outlined in Annex V, and EBGL developments. It is important to ensure consistency

Art	Compliance, comments, questions and gaps	Request for amendment
		across the interpretations of the entirety of the EU Network Codes requirements.
3	The background to the dimensioning of separate minimum shares of FCR in IE and NI needs to be made clear.	Please detail the background inputs used to determine minimum shares of FCR for each TSO as their initial obligations in alignment align with 153 (2) (d).
		Please outline how the inter-area flow constraints document interacts with the statements in the SAOA.
3	The operational constraint documents highlight that the minimum values of POR need to be sourced from regulating sources, thereby excluding batteries and renewable generation, or any inverter connected technology.	Detail why only regulating sources are eligible for provision of minimum levels of POR- this has to be feature of the dimensioning rules and therefore needs to be described in this article.  References to the operational constraints document are valid, but only in that the outputs of the dimensioning process are contained within the Operational Constraints document. Pointing to the location where the regularly updated Operational constraints documents are held is required- for both TSOs.
4	Additional properties of FCR Art 154 (2)  The TSOs point to the Grid Code and reserve contracts for the additional properties of FCR. in SOGL article 154(2). This is not sufficient as any properties of FCR that are required by the TSOs have to be listed explicitly here. The additional properties they currently require from FCR providers (over and above the requirements of FCR as laid out in Annex V of SOGL) are not listed here, however from a review of the operational constraints documents, the properties of POR and SOR (likely to be mapped to FCR) in the Grid Code	List out the properties of FCR as required by the TSOs in full, and map out where the TSOs mandate requirements that are additional to the properties outlined in Annex V of SOGL.  All additional properties in terms of eligible FCR providing units (e.g. synchronous units only), locational requirements, technical parameters of FCR provision and any other additional requirements of the TSOs

Art	Compliance, comments, questions and gaps	Request for amendment
	and the requirements for only a subset of possible providers to provide POR, it is clear the TSOs do require additional properties.  Furthermore, it may be important to check with the Network Code on Requirements for grid connection of Generators (RfG). For example, article 15(2)(d)(iii) of the RfG specifies that FCR providers shall be able to ramp at least linearly. If a faster response would be required, this shall be specified here.	on FCR providers. These additional properties need to be listed in the SAOA under this Article.
5	Frequency quality defining parameters and frequency quality target parameters Art 127 of SOGL	Provide mapping in an explanatory document as to where these parameters are currently in use in
	The tables as represented in the SAOA are compliant. What is not clear is where these parameters map to existing parameters in use in IE/NI, to provide transparency on compliance.	IE/NI.  Provide a statement regarding  Article 127(7) and (8).
	Additionally given that Article 127 (7) and (8) of SOGL allows the TSOs of IE/NI to propose different values the Regulatory Authorities require a statement from the TSOs as to whether they have considered any different values and whether they have decided to remain with the existing values following such consideration.	
6	Measures to ensure recovery of energy limited reservoirs Article 156 (13) of SOGL  SOGL article 156(13) requires that the SAOA shall include methods that shall be used by the FCR provider to ensure the recovery of the energy reservoirs. The text provided by the TSO addresses scheduling and operation by the TSOs, and does not provide clarity for FCR providing units.	SEM has moved towards elements of a more self-dispatch model with the ability for market units to change their Final physical notification 30 minutes from real time, and therefore, unless for system security, the TSO should not intervene in the management of the recovery of limited energy reservoir reserve providers.  The TSO needs to outline here what methods an FCR provider with an energy limited reservoir needs to follow to ensure recovery (if any).

## Compliance, comments, questions and gaps **Request for amendment** 7 Limits for the exchange of FCR between TSOs Please include a statement on the of a synchronous area -SOGL article 163(2). current lack of exchange of FCR between IE and NI. This requirement seeks to ensure that if the TSOs of a synchronous area need to place limits on the The geographical limits of FCR and exchange of energy (as specified in the table in minimum holding of FCR in each Annex VI of SOGL) to monitoring area need to be explained here or in another article, avoid internal congestions, and background to the volumes ensure an even distribution of FCR in case held – with reference to the FCR of network splitting, dimensioning processes, the inter avoid impacting operational security area flow constraints etc. that the limits are specified in the SAOA. The Regulatory Authorities understand that there is no exchange of FCR between NI and IE as EirGrid and SONI act as one TSO within a single LFC Block, single LFC area and single Synchronous Area, and that there is no exchange of reserves. However due to a current system constraint (tielines) minimum reserve levels are maintained for each jurisdiction. There are therefore no limits to be specified if there is no exchange. Methodology to determine the minimum Include a methodology that provision (TSO text refers to limits) of reserve determines the minimum provision capacity on FCR between Synchronous areasof FCR on the island, i.e. what is the Art 174 (2)(b) volume/ % of FCR that must be sourced in SEM before accounting The title of this Article is not in line with 174 (2) (b) for FCR provision from another as this article is meant to cover the methodology synchronous area. to determine the minimum provision of reserve capacity of FCR in the synchronous area. The determination of the limits for FCR sharing are to be detailed in Article 25 Title 3 of the SAOA. This text provided in this article does not include a methodology to determine the minimum provision of FCR in the synchronous area of IE/NI. **Comments for Article 25 Determining the limits** on the amount of sharing of FCR between synchronous areas Article 174 (2) This article does not provide a methodology but

only describes that 'FCR sharing with the GB

Art	Compliance, comments, questions and gaps	Request for amendment
	synchronous area shall also be included within this optimisation process' (paragraph 1) and provides factors to be considered are listed in paragraph 2. The TSOs state the optimisation process calculates the most economic allocation of FCR. This would suggest that if FCR is cheaper in another synchronous area that is scheduled instead of units in SEM, Can the TSO confirm that this is their understanding of an accurate representation of the methodology, and if not justify this?  An accurate representation of the methodology to be used should be included in the amended version	
9	Methodology to determine limits on the amount of exchange of FRR between Synchronous Areas and methodology to determine limits on sharing of FRR between Synchronous Areas Article 176,177  This article does not contain a methodology that determines the limits to FRR sharing or exchange with other synchronous areas.	Detail a methodology that determines the limits for exchange and sharing of FRR with other synchronous areas. Referring to contractual limits in the existing contractual agreements with the GB TSO is not sufficient. This article has to lay the groundwork for pan EU platforms for FRR exchange i.e. MARI.
10	Methodology to determine limits on the amount of exchange of FRR between Synchronous Areas and methodology to determine limits on sharing of RR between Synchronous Areas- Article 178, 179	Detail a methodology that determines the limits for exchange and sharing of RR with other synchronous areas. Referring to contractual limits in the existing contractual agreements with the GB TSO is not sufficient. This article has to lay the groundwork for pan EU platforms for FRR exchange i.e. TERRE

#### 5.2 Informal comments to the Title 3 articles of the SAOA

The Regulatory Authorities do not have an explicit role in the approval of the Title 3 Articles of the SAOA, but did receive them as part of the formal submission by the TSOs under Article 6(3)(d) of SOGL. Given the interactions between some of the Articles of Title 2 and Title 3 we have reviewed these and engaged with the TSOs since receiving the formal submissions in December 2018. We consider that the detail provided in the Title 3 proposals is of benefit to stakeholders and so provide informal comments below.

## 5.2.1 Assessing the risk and the evolution of exhaustion of FCR in IE/NI (Article 11 of SAOA)

While the TSO has not published the proposed Methodology by March 29<sup>th</sup> 2019, as stated in the submitted paper, the Regulatory Authorities have seen a draft of this proposal. The Regulatory Authorities highlight that Article 131(2) of SOGL requires an annual assessment of risk, using at least the historical instantaneous system frequency data of at least 12 months. The Regulatory Authorities are of the view it is important that the final methodology provides a holistic assessment approach taking account of future expected changes to levels of non-synchronous generation, the ability of demand side response to provide FCR response and the integration of fast acting providers of reserve services. The annual assessment should not only focus on plants subject to grid code requirements, but also FCR provision from plant that is subject to distribution code requirements. This may be considered in future iterations of the documents.

#### 5.2.2 Ramp rate restrictions on Interconnectors

The TSOs have included detail on the ramping restrictions as part of Article 3 of the LFCBOA. The Regulatory Authorities welcome the statement in Article 13 of the SAOA that this ramp rate restriction shall not apply to imbalance netting, frequency coupling as well as cross border activation of FCR. However, it is important to note that Article 137(3) also states that these restrictions shall not apply for FRR and RR cross border activation over HVDC interconnectors. The Regulatory Authorities also propose that further detail on the technical design of the frequency coupling process that enables linked frequency response with other synchronous areas in line with the requirements of Article 172 be provided. Reference to established commercial arrangements and contractual agreements with the GB TSO will not be sufficient to ensure transparency for market participants.

## **5.2.3** Allocation of responsibilities

The Regulatory Authorities agree that while the TSOs co-operate closely in the operation of the system there is a requirement to identify lead TSOs for some roles, as specified in Article 141 and 149(2) of SOGL. Indeed, the proposals that the TSOs have made in relation to Article 7 of the LFCBOA and Article 12 of the SAOA, have been helpful in recognising the equal capability of EirGrid and SONI but nominating one TSO as the lead monitor with the other TSO available to assume the role if the initial TSO cannot fulfil the role.

It is important to note that under many SOGL Articles the roles and responsibilities requiring allocation are split not jurisdictionally, but on a monitoring area, LFC area, LFC block and Synchronous Area.

In relation to Article 19 of the SAOA the TSOs state that the SAOA does not preclude any arrangements with TSOs in other synchronous areas. The RAs do not share this view, considering the primacy of the SOGL, and the requirements of Article 149(2) to specify the roles and responsibilities of TSOs providing cross border frequency reserve services.

For all cross-border interactions related to FCR, FRR and RR, it is important that clear roles and responsibilities for all the TSOs involved are documented in the relevant Articles of the SAOA.

# 5.2.4 Operational procedures in the case of exhausted FCR and restoration to normal state Articles 17 and 18 of the SAOA

The Regulatory Authorities welcome the proposals, and suggest the TSOs consider whether the issuing of alerts (aligned with Article 18 of SOGL) would occur during such events. The TSOs may also wish to consider if there are additional measures they could take to restore FCR that could be listed here, which may be different from the measures to be identified under Article 152 (8) of SOGL in the LFCBOA. It will be helpful if the TSOs address in Article 18 whether they include the need to deviate from Article 143(1) of SOGL during these operational procedures. To ensure transparency to market participants regarding the operation of cross border frequency activations that will facilitate the establishment of the pan EU platforms for reserve products under EBGL, the Regulatory Authorities consider it will be important to outline the roles and responsibilities of the TSOs involved, disaggregated for FRR and RR.

In relation to SOGL Article 171(2) and Article 24 of the SAOA further detailing of the roles and responsibilities of all the TSOs involved in cross border exchange/sharing of for each product type of FCR, FRR and RR would provide transparency.

#### 5.2.5 Technical infrastructure availability, reliability and redundancy

The Regulatory Authorities assume the TSOs will publish the details of their proposals in the format outlined in Article 151(2) of SOGL.

## 6 LFCBOA proposals

The TSOs submitted their <u>LFCBOA proposals</u> on the 21<sup>st</sup> December 2018. The Regulatory Authorities have been engaging intensively with the TSOs since that date. We have highlighted our overarching concerns in Section 4 of this paper, and provide more detailed specific requests for amendment to the Title 2 proposals in Section 6.1 and our informal comments to Title 3 proposals of the LFCBOOA in Section 6.2 of this paper.

## 6.1 Amendments required by the Regulatory Authorities

Given the specific nature of the proposals and the detailed nature of the Regulatory Authorities' responses we have listed the comments in a tabular format. The majority of the required amendments arise from concerns related to the over-reliance on existing processes and arrangements which do not address the full scope of obligations under SOGL, or ensure consistency with other Network Code developments.

Article No.		Compliance, comments, questions and gaps	Mitigation			
TITLE 1 General Provisions						
2		Definitions and Interpretations				
		This article aims to provide an interpretation of the terms used by SOGL against current terminology used by the TSOs. However, a lot of the interpretations do not provide clear mapping to comply with SOGL requirements. For example, there is a lack of cohesion in terms of the mapping of products to align with the EU wide definitions of FCR, FRR and RR, between the interpretations provided by the TSOs in the SAOA and those under development in EBGL implementation.	Provide accurate mapping to existing products and identify where existing products need to change to align with EU Network Code requirements.			
2		The interpretation of aFRR – Automatic Frequency Restoration Reserves requires more explanation. The document needs to recognise that AGC is an explicit Grid Code requirement, however throughout discussions on SOGL and EBGL implementation the TSOs have indicated that this functionality is not switched on or utilised in IE/NI.	The TSOs need to clarify if AGC functionality is utilised, or not within scheduling and dispatch and provision of reserves. The presence of AGC on a unit does not define the utilisation of procurement and activation of aFRR. A clear definition that maps products utilised by the TSOs and how these align with FRR products as defined in SOGL and EBGL is required.			
2		The interpretation of PGM - Power Generating Module only refers to units subject to the Grid Code	If relevant, add reference to the Distribution Code generation units			

Article	Compliar	nce, comments, questions and	Mitigation	
No.	gaps			
2	interpreta equivalen are obliga demand DSUs. There is definition	julatory Authorities query the ation of Demand unit as solely it to a Demand Side unit as there ations on transmission connected customers under SOGL, not just not enough clarity on how the s of PGM and demand unit might distribution connected plant	Consider the inclusion of a demand facility definition.  Provide accurate mapping to distribution and transmission connected plant (generation, demand, DSUs, etc.)	
2	and exc requires a referrals protocols	pretation of Cross border sharing hange of reserves categories alignment with SOGL and not just to the Interconnector Operator (IOP)- i.e. it is likely the IOPs will change to comply with SOGL and	Align fully with the requirements of the SOGL- and outline what cross border sharing and exchange procedures exist currently	
References to DS3 System Services (DS3 SS) in terms of the definition of FCR, FRR and RR providing units needs to be reviewed. Can the TSO's confirm that there is no explicit link between contracted DS3 SS units and scheduling and dispatch of plant? Is a		The TSOs need to provide absolute clarity as to what defines an FCR, FRR, RR providing unit as utilized by the control centre when scheduling FCR, FRR or RR to meet the dimensioned requirements.		
TITLE 2 M	thodologies, Cond	ditions and Values jointly develop	ped by EirGrid and SONI to satisfy	
the needs approval	of the SOGL within	n the LFCBOA for IE/NI, which are	subject to regulatory authority	
3.1	output of (3) and (4) The prop Constrain ramping	restrictions for active power HVDC interconnector Article 137 ) of SOGL posal refers to the Operational ts Update and includes the restriction 'at the time of writing' as an aggregated value.	Include the ramping restriction in MW/min values, both as a total for all interconnectors (10 MW/min) and a split across Interconnectors, and without referring to 'at the time of writing'.	

Article No.	Compliance, comments, questions and gaps	Mitigation
3	CRU considers that a change in the ramping restrictions requires a change of the LFC BOA and accordingly NRA approval. It is not acceptable that the ramping restrictions are modified by the TSOs without NRA approval. In case that the TSO at the other end of the interconnector sets a tighter limit, that limit may apply in practice, but shall not change the ramping restriction from the Irish perspective.	Delete all rules that would allow the TSOs to change the ramping restrictions as specified in this article without NRA approval.
3.3	Each time that ramp rates are restricted 'in order to prevent the IE/NI LFC Block from entering into or remaining in an emergency state', the reasons for this shall be transparent.	Add that the reasons of restricting the ramp rates shall be made transparent.
3.4	The TSOs have not addressed specifically the fact that Article 137 (3) states that these restricted ramp rates shall not apply for imbalance netting, frequency coupling as well as cross border activation of FRR and RR over HVDC interconnectors.	Add detail on how the ramp rates do not apply for frequency coupling, and cross border activation of specific FRR and RR products over the ICS, and provide detail on the ramp rates applicable to these activations
4	Dimensioning rules for FRR, Article 157(1) of SOGL.  This article does not include dimensioning rules for FRR, it only specifies who is responsible.	Include dimensioning rules in accordance with SOGL Article 157(1), i.e. explain how the results are being determined. The article shall at least address the issues in the paragraphs of SOGL Article 157(2) applicable to IE/NI. The article must explicitly address upward and downward FRR, automatic and manual FRR, the FRR dimensioning rules and geographic limitations, either quantitatively or by providing a methodology that is applied to quantify how the values will be determined.

Article No.	Compliance, comments, questions and gaps	Mitigation
5.1	Coordination Actions aiming to reduce the Frequency control error Article 152(14) of SOGL  This article includes a list of actions, without explicitly mentioning the level 2 FRCE range as required, and does not provide sufficient detail on the actions to be coordinated	Refer to the specific parameters for a level 2 FRCE range for IE/NI Include more detail on the actions to be coordinated, and detail the sequence of procedures to be followed to initiate coordinated actions noting that EirGrid is the appointed LFC Block monitor as per Article 7 of the submitted LFCBOA
6.1 6.2	Measures to reduce the FRCE in accordance with Article 152 (16)  The function of the reference to the Licence and the System Operator and the Grid Code are not clear. The SOGL is the primary piece of legislation that the TSOs need to reflect in the measures to be listed in this section.	Remove the reference to the Grid Code, SOA, and Licence and explain in further detail the measures that will be utilised to reduce the FRCE by both TSOs in line with article 152(16)

## 6.2 Informal comments to the Title 3 Articles of the LFCBOA

The Regulatory Authorities do not have an explicit role in the approval of the Title 3 Articles of the LFCBOA, but did receive them as part of the formal submission by the TSOs under Article 6(3)(e) of SOGL. Given the interactions between some of the Articles of Title 2 and Title 3 we have reviewed these and engaged with the TSOs since receiving the formal submissions in December 2018. We consider that the detail provided in the Title 3 proposals is of benefit to stakeholders and so provide informal comments below. Many of our observations are captured by the informal comments made to the SAOA in Section 5.2 above.

# 6.2.1 Additional requirements to availability, reliability and redundancy of technical infrastructure – Article 9 of the LFCBOA

The detail provided here is not relevant to any additional requirements above those outlined in Article 20 of the SAOA, as is required under Article 151 (3) of SOGL.

# 6.2.2 Operational procedures to be applied in the case of exhausted FRR and RR- Article 10 of the LFCBOA

This was not published in March 2019, however the Regulatory Authorities have seen drafts of the proposed methodology. The TSOs should consider the differentiation between the methodologies provided under this article for exhausted FRR and RR and the Article 11 of the SAOA.

## 6.2.3 RR dimensioning rules in accordance with Article 160 of SOGL- Article 11 of LFCBOA

The TSOs have provided a very simple statement for this Article, but this does not reflect the detail required under Article 160. A great degree of detail and mapping to existing RR dimensioning processes, highlighting where changes need to be made to comply with SOGL is what is required to comply with the obligations of the SOGL.

#### 6.2.4 Allocation of TSO responsibilities – Articles 12, 15,16,17 of the LFCBOA

Similar to our comments on the SAOA, we understand that the SOGL requires the clear and unambiguous allocation of roles and responsibilities for a range of topics and procedures. The TSOs should include detail on these roles and responsibilities in their final versions of the LFCBOA.

# 6.2.5 Allocation of responsibilities between TSOs of an LFC Area operational agreement regarding the obligations Article 141 (8) SOGL

This requirement has not been addressed by the TSOs in the LFCBOA document submitted. As per the requirements of SOGL a separate LFC Area operational agreement has to detail the allocation of responsibilities amongst the TSOs of an LFC area for the tasks laid out in Article 141 (4). These tasks are different to those required for the LFC Block operational agreement. The island of Ireland is one LFC Area and one LFC Block. The TSOs have not developed a sperate LFC Area Operational agreement, nor included these requirements in the submitted LFCBOA so it is not clear how they intend to comply with the requirements of Article 141 (4).

The Regulatory Authorities do not see particular value in creating a new LFC Area agreement to cover the requirements of only one Article, and so request that the TSOs include the processes and responsibilities required in Article 141(4) and 141(8) of SOGL in the LFCBOA in Title 3.

## 7 Next steps

As outlined in Section 2.4 above and in Article 7 of SOGL, once the Regulatory Authorities have issued their requests for amendment the relevant TSOs have to resubmit their amended proposals to the relevant Regulatory Authorities within two months. As facilitated under Article 7(4) of SOGL and as the level of amendments required is considerable the Regulatory Authorities agree that a further consultation by the TSOs is applicable and would aid decision making. The Regulatory Authorities therefore request that EirGrid and SONI hold a consultation on the amended versions of the SAOA and

LFCBOA and resubmit the final amended versions (taking into account stakeholder views) to the Regulatory Authorities within the two months permitted. The Regulatory Authorities subsequently have a further two months to agree and issue a decision on the amended methodologies.

It is hoped that one of the regular All-Island Stakeholder Fora will be held during the consultation phase which would allow industry the opportunity to ask the TSOs and Regulatory Authorities on the SAOA and LFCBOA proposals.