



## **Single Electricity Market (SEM)**

### **Information Paper on Balance Responsibility in the SEM**

**SEM-20-027**

**27 April 2020**

## EXECUTIVE SUMMARY

In 2018 and 2019, the EU adopted a series of legislative acts known as the Clean Energy for all Europeans Package (CEP). A primary aim of the CEP is to facilitate a 40% reduction in EU greenhouse gas emissions levels by 2030 compared to 1990 levels. One of the eight legislative files in the CEP, of key relevance to the SEM, is the recast Electricity Regulation (EU) 2019/943, which entered into force in July 2019 with the majority of its articles applying from January 2020.

The Regulatory Authorities (the Commission for the Regulation of Utilities (CRU) and Utility Regulator (UR), hereafter, the RAs) conducted a review of the Regulation in the second half of 2019 to identify any articles which would require action to be taken by the SEM Committee to provide for SEM compliance with the legislation. Six key areas were identified from this review for work in 2020 in order to progress compliance. These areas were outlined in the SEM Committee's Roadmap to CEP Implementation in December 2019 (SEM-19-073).

One of the six areas relate to the topic of balance responsibility which is highlighted in Article 5 of the Regulation. This article updates the requirements on what is expected of market participants to be considered balance responsible in European wholesale electricity markets, including the SEM. It requires that *all* market participants, including those delegated to act on behalf of another market participant, should be financially responsible for any imbalances they cause to the system and should strive to ensure a balanced system. Similar concepts of balance responsibility are also conveyed in the Electricity Balancing Guideline under Articles 17 and 18.

Initial interpretations of Article 5 envisaged amending the current SEM market arrangements to increase the level of obligations for smaller market participants, such that the *de minimis* threshold for balance responsibility would be lowered from the current 10 MW level to 400 kW (by reference to Article 5's requirements). This would increase the number of units required to register and submit data under the SEM Trading and Settlement Code. A public consultation outlining options on this matter was expected, as per the Roadmap (SEM-19-073).

However, further to a recent RA review and discussions with the TSOs and SEMO, the current market arrangements in the SEM can be considered to be already compliant with the CEP requirements on balance responsibility. This is due to the fact that there is a market participant responsible in some way for all electricity generated in the SEM, whether it be directly or through delegation of responsibility through contractual arrangements, as further explained in the main body of this paper. This has led to the RAs' current view that the SEM is compliant

with concept of balance responsibility in the Regulation, such that no changes are needed to the SEM for the purposes of Article 5.

That said, additional considerations around the participation of Intermediaries and the role of the aggregation in the SEM are warranted in light of other aspects of the CEP (especially Articles 6 and 7 of the Regulation). As a result, the RAs will conduct a further review around the topic of aggregation in the SEM and will issue a Consultation Paper on this topic later in Q2 2020.

Finally, while this is an Information Paper, any comments or views regarding the RAs' interpretation of SEM compliance with Article 5 would be welcome and may be provided to Heather Pandich ([hpandich@cru.ie](mailto:hpandich@cru.ie)) or Ian McClelland ([Ian.McClelland@uregni.gov.uk](mailto:Ian.McClelland@uregni.gov.uk)).

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# 1. INTRODUCTION

## 1.1 BACKGROUND

In 2018 and 2019 the EU adopted a series of legislative acts known as the Clean Energy for All Europeans package which aims at facilitating a 40% reduction in EU greenhouse gas emissions by 2030 compared to 1990 levels. The Clean Energy Package (CEP) consists of eight legislative files, one of which being a recast Electricity Regulation (EU) 2019/943 (hereafter, the Regulation)<sup>1</sup>. The Regulation amends aspects of European wholesale electricity markets, progresses electricity market integration, and facilitates the transition to renewable energy. Having entered into force in July 2019, the majority of the articles in the Regulation applied from January 2020.

A high-level review was conducted by the Regulatory Authorities (RAs – the Commission for the Regulation of Utilities (CRU) and Utility Regulator (UR)) following the publication of the Regulation in 2019 to identify the areas of the legislation which could require actions to be taken by the SEM Committee with respect to the all-island SEM. The review found that the revised SEM, which went live on the 1 October 2018, is already compliant with many of the articles of the Regulation. However, the RAs' review identified six key outstanding areas which required further review and possible action to be taken by the SEM Committee to provide for the implementation of the Regulation. Information on these six key areas was published by the SEM Committee in a Roadmap to CEP Implementation<sup>2</sup>, providing a high-level plan for implementation of the Regulation, in December 2019.

This Information Paper seeks to expand upon the information provided in the Roadmap to highlight the further review and analysis undertaken by the RAs with respect to balance responsibility and outline the RAs' interpretation of the legislation with regards to the existing market arrangements in the SEM.

The RAs envisaged a public Consultation on the matter in Quarter 1 2020, as mentioned in the Roadmap (SEM-19-073); however, the conclusion of the recent further review taken by the RAs has resulted in an interpretation of compliance with the requirements of balance responsibility in the CEP, particularly with Article 5 of the Regulation. The remainder of this Information Paper is aimed at outlining the requirements of the legislation, the current arrangements in the SEM and the reasoning behind the RAs' conclusion of compliance, such that no further action will be taken by the SEM to update the regulatory framework with regards

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<sup>1</sup> [Regulation \(EU\) 2019/943 on the internal market for electricity \(recast\)](#)

<sup>2</sup> [SEM-19-073](#) Roadmap to Clean Energy Package Implementation

to balance responsibility. The Information Paper also highlights that additional considerations around the participation of Intermediaries and the role of the aggregation in the SEM are warranted in light of other aspects of the CEP (especially Articles 6 and 7 of the Regulation). This is expected to lead to a separate SEM public consultation later in Quarter 2 2020.

## 1.2 LEGISLATIVE BASIS

The development of this Information Paper is primarily driven by the requirements in Article 5 of the Regulation on balance responsibility. The Article updates the requirements to be adhered to by balance responsible parties (BRPs) throughout the electricity markets. A BRP is defined in the legislation as ‘*a market participant or its chosen representative responsible for imbalances they cause in the market*<sup>3</sup>,’ indicating that a BRP can either be the individual unit or someone acting on behalf of the participant who must take responsibility.

Article 5 expands on these responsibilities to further identify who is to be considered a BRP and what actions should be taken to be considered balance responsible. The article states:

1. *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.*
  
2. *Member States may provide derogations from balance responsibility only for:*
  - (a) *demonstration projects for innovative technologies, subject to approval by the regulatory authority, provided that those derogations are limited to the time and extent necessary for achieving the demonstration purposes;*
  - (b) *power-generating facilities using renewable energy sources with an installed electricity capacity of less than 400 kW;*
  - (c) *installations benefitting from support approved by the Commission under Union State aid rules pursuant to Articles 107, 108 and 109 TFEU, and commissioned before 4 July 2019.*

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<sup>3</sup> [Article 2\(14\)](#) Definitions of Regulation (EU) 2019/943

*Member States may, without prejudice to Articles 107 and 108 TFEU, provide incentives to market participants which are fully or partly exempted from balancing responsibility to accept full balancing responsibility.*

3. *When a Member State provides a derogation in accordance with paragraph 2, it shall ensure that the financial responsibility for imbalances is fulfilled by another market participant.*
4. *For power-generating facilities commissioned from 1 January 2026, point (b) of paragraph 2 shall apply only to generating installations using renewable energy sources with an installed electricity capacity of less than 200 kW.*

It is the RAs view that to be a BRP, the participant must be financially responsible for their imbalances and participate in a way that they are striving to be balanced. This can either be through direct participation by a generator or supplier unit or facilitated through delegation of responsibility to another market participant.

The provisions required by Article 5 are complementary to requirements outlined in the Electricity Balancing Guideline (EBGL) which was developed with the aim to create a market which enables resources to be shared and exchanged between TSOs in system balancing timescales.

The EBGL defines BRPs in a related way to the CEP, such that a BRP *'means a market participant or its chosen representative responsible for its imbalances<sup>4</sup>.'* Articles 17 and 18 of the EBGL provide particular focus to BRPs, such that Article 17 outlines the role of BRPs and Article 18 provides requirements pertaining to the terms and conditions related to balancing to be applied to BRPs.

Specifically, similar to the requirements under Article 5 of the CEP, Article 17 of the EBGL contains the following text;

1. *In real time, each balance responsible party shall strive to be balanced or help the power system be balanced. The detailed requirements concerning this obligation shall be defined in the proposal for terms and conditions related to balancing set up pursuant to Article 18.*
2. *Each balance responsible party shall be financially responsible for the imbalances to be settled with the connecting TSO.*

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<sup>4</sup> [Article 2\(7\)](#) Definitions of Electricity Balancing Guideline

Again, these provisions can be summarised that a BRP or its delegated party is to be financially responsible for any imbalances and shall participate in such a manner that they strive to be balanced in the system.

The contents for the terms and conditions to be applied to BRPs are outlined in Article 18 of the EBGL and highlight the expectations of BRPs to be considered balance responsible, mainly, the following terms and conditions are to be outlined in some manner to be applied to BRPs;

6. *The terms and conditions for balance responsible parties shall contain:*

(b) *The requirements for becoming a balance responsible party;*

(c) *The requirement that all balance responsible parties shall be financially responsible for their imbalances, and that the imbalances shall be settled with the connecting TSO;*

(d) *The requirements on data and information to be delivered to the connecting TSO to calculate the imbalances;*

The TSOs are in the process of developing a proposal for the terms and conditions with respect to BRPs under Article 18 which is to be approved by the relevant RAs. This has the potential to update the requirements on information to be submitted by BRPs to the TSOs for the purpose of settling their imbalances following future market adjustments and further implementation of other aspects of the EBGL.

In addition, the RAs have recently engaged with the TSOs to identify if there is a need for additional information to be submitted for settling imbalances with regards to Article 5 of the Regulation. Given the current dispatch arrangements, the TSOs have confirmed that there is not a need for additional data to be provided by BRPs other than what is currently required under the TSC for the purpose of being balance responsible with respect to the CEP.

The initial interpretation of these pieces of legislation envisaged updates to the current market arrangements in the SEM to fulfil the requirements such that *all* market participants would have heightened responsibilities with regards to their financial imbalances and the submission of data to the TSOs for the purpose of settling imbalances. This led to the initial consideration that the *de minimis* threshold level for balance responsibility in the SEM should be lowered from the current 10 MW to require direct participation by all market participants above the level of installed capacity which could be provided a derogation (400 kW, and 200 kW by 2026). A



public consultation outlining options in this space was expected for Quarter 1, as per the Roadmap (SEM-19-073).

Further reviews conducted by the RAs, following engagement with the TSOs, showed that generator units under the 10 MW *de minimis* threshold do have the ability to either participate directly or contract with another market participant specifically for the purpose of settling imbalances caused by generation. The contracted market participant (whether it be a supplier, DSU, AGU or assetless trader is then responsible for ensuring the imbalances are covered for the non-participating units.

For generator units who are not directly participating and do not have contractual arrangements, such as those outlined in the previous paragraph, they are still required to enter into connection agreements with the DSO or the TSO. In both Ireland and Northern Ireland, the standard connection agreements have clauses which require the generator to enter into a Supply Agreement with a licensed supplier<sup>5</sup>. The Supply Agreement ensures that any electricity which is generated at these sites and passed onto the grid is accounted for by a licenced supplier who is registered to participate in the SEM.

These various current market arrangements highlight the fact that for all generated electricity in Ireland and Northern Ireland, there are accountable registered market participants, who can be considered BRPs and are responsible for any imbalances caused to the market, which indicates that the SEM is compliant with the requirements of balance responsibility under Article 5 of the Regulation. . As a result, the RAs are not suggesting any changes to the SEM with regards to balance responsibility under Article 5 of the Regulation.

### 1.3 PURPOSE OF THIS INFORMATION PAPER

Based upon the RAs interpretation of the updated requirements pertaining to balance responsibility in Article 5 of the CEP, the RAs are considering the following definition of balance responsibility to be applicable in the SEM, such that, to be balance responsible means a market participant, or a registered party acting on behalf of the individual unit, is

- (a) financially responsible for the imbalances they cause to the system; and
- (b) striving to ensure they are contributing to a balanced system through the submission of relevant information as required by the TSOs to calculate imbalances.

As noted, the RAs have considered that the current market arrangements of the SEM are compliant with the Article 5 of the Regulation due to the ability for individual units to participate

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<sup>5</sup> [ESB Standard Connection Agreement](#)  
[NIE Standard Connection Terms and Conditions](#)

directly in the electricity market, or to designate another market participant to act on their behalf for the purpose of being financially responsible and covering imbalances in the SEM.

The purpose of this Information Paper is to provide reasoning and evidence for this conclusion, and to highlight the RAs expectation of market participants in the SEM with respect to balance responsibility. The following section provides an overview on the current participation requirements in the SEM by different types of entities and outlines the various ways that the participants are already responsible for their imbalances leading to compliance with the CEP.

## 2. CURRENT MARKET ARRANGEMENTS

As outlined in the previous section, to be balance responsible in the SEM means that a market participant is financially responsible for differences between its trade volumes and its actual generation or consumption, at a price which represents the cost of keeping the system balanced. Current market participants who participate in the SEM Balancing Market include generators, suppliers, assetless traders, demand side units and interconnectors.

The following scenarios represent actions taken by market participants to become balanced in the market:

- If a unit has traded a certain amount for output (or consumption), it must deliver (or consume) no more than this amount, otherwise it will have to pay for someone else to provide the output (or provide it to them), most likely at a higher price than it received from the trade; or
- If a unit has generated more (or consumed less) than its traded amounts, then the difference is likely to be paid to them at a lower price than if that extra generation or less consumption had been incorporated into the traded amounts in the first place.

These actions are taken in the balancing market and settled during the imbalance settlement period for which their generation (or consumption) is realised. It is required that imbalances be settled by everyone participating in the market, whether it be by the actual generator or a party acting on behalf of an individual unit.

Participation in the SEM is open to various types of market participants, each of which are expected to fulfil some notion of balance responsibility with respect to the markets in which they are participating.

Generator units can be further subcategorised due to the type of energy source they are generating. The breakdown of these units is highlighted in the table below.

Generator	Description	SEM Market Participation Expectations
<b>Dispatchable Generator</b>	A generation unit which can follow MW set-point instructions issued by the TSO. Example: hydro, peat, coal, etc.	Participation is expected in all SEM markets, and they are required to submit physical notifications (PNs) Technical Offer Data (TOD) and Commercial Offer Data (COD) to the TSOs.
<b>Controllable/ non-dispatchable Generator</b>	A unit which can limit its output to MW set-point instructions issued by the TSO. Example: wind, solar.	Participation is expected in all SEM markets, however, submission of PNs is optional and TOD and COD is not required.
<b>Non-controllable/ non-dispatchable Generator</b>	A unit which cannot follow a MW set-point instruction issued by the TSO. Example: wind, solar.	These units have the potential to participate in the <i>ex-ante</i> markets, but do not submit balancing market bids. They have the option to submit a PN and are not required to submit TOD or COD.
<b>Demand Side Unit (DSU)</b>	A unit which may contract individual demand sites and aggregate them together to operate as a single DSU, who is then responsible for the coordination of the reduction from the individual demand sites.	DSUs are considered to be dispatchable generators and as such they may participate in the <i>ex-ante</i> markets, however they are required to submit PNs, TOD and COD in a similar fashion to dispatchable generators.
<b>Aggregated Generator Unit (AGU)</b>	An aggregated collection of <i>de minimis</i> generator units which acts similar to a DSU but is comprised only of on-site generation.	AGUs have the potential to participate in the <i>ex-ante</i> markets, however data submission requirements for imbalance settlements depends on the maximum export capacity of all the aggregated units and the configuration of the unit.

Table 1: Generator Units in the SEM

Currently, it is expected that any generation facility operating at or above the 10 MW maximum export capacity *de minimis* threshold as stated in the Trading and Settlement Code (TSC) will participate directly in the SEM. This implies that any generation unit with capacity at or above this threshold must register with the TSC and fulfil their obligations directly for balance responsibility.

With regards to registration data, generator units (and others, such as supplier units and intermediaries, etc.) must register with SEMO as a Party to the TSC to participate in the SEM. Registration requirements are set out in the TSC, but at a minimum to participate in the balancing market, parties must pay the accession fee, submit a Party Application Form,

provide proof of company register, and provide several other submissions to complete registration with SEMO. The registration process can take a minimum of 60 days to complete.

In addition to the registration process, the Party must submit a Participation Notice which contains information on the individual unit(s) for which it is registering. This information includes, inter alia, whether the unit is a generator unit or a supplier unit, the details of the trading site to which the unit shall be registered, if applicable, the Currency Zone of the unit, whether the unit concerned will be traded on the day-ahead and intra-day markets, and whether the unit is registered with the Capacity Market Code. When submitting a Participation Notice, the Party must also pay the Participation fees for *each* generation and/or supply unit they are registering.

To participate in the ex-ante markets, further registration data and fees are required. For example, a participant seeking to trade the day-ahead and intraday markets must have user access to the trading platforms. This is the ETS platform for the day-ahead and intraday markets and the M7 for the intraday continuous market. Market participants must apply for access to both systems and pay the fees associated if they wish to have additional user profiles for each of the systems.

This means that in order to register to participate in the SEM, an individual party must first pay the accession fee, and subsequently pay the participation fee for each unit which will be participating in the balancing market. Furthermore, if the unit is seeking to participate in the ex-ante markets, they are required to pay the fees associated with participation in these markets as well. These are updated annually and published by SEMO as required by the TSC<sup>6</sup>. The following table outlines a few of the participation and registration fees which are currently applicable in the SEM.

Market	Fee	Amount
Day-ahead, Intraday, Intraday Continuous	Once off Entry Fee	€5000 (£4,538)
Day-ahead, Intraday, Intraday Continuous	Annual Subscription Fee	€5000 (£4,538)
Day-ahead, Intraday, Intraday Continuous	Variable trading fee (per MWh)	€0.044 (£0.040)
Day-ahead and Intraday	ETS Systems (per additional user)	€550 (£499.18)
Intraday Continuous	M7 Systems (per additional user)	€550 (£499.18)

<sup>6</sup> [MO Tariffs](#) & Charges and Imperfections Charge 01 October 2019 - 30 September 2020

Balancing	Accession Fee	€1,044 (£934)
Balancing	Participation Fee (per unit being registered)	€2,610 (£2,335)

*Table 2: Examples of current SEM Registration Fees*

In addition to these fees, participants could incur trading fees, costs associated with the collection of data gathering and processing, and processing imbalance settlements. At a minimum, however, an individual unit seeking to register to participate in both the ex-ante markets and the balancing market could end up paying a minimum of €8,564 (£7,807). It can be noted that participation in the ex-ante markets is voluntary but recommended as it allows units to hedge against the imbalances incurred in the balancing market.

An alternative arrangement to participating in the SEM directly is for a unit to enter into an Intermediary Arrangement. This enables the unit to delegate responsibilities associated with participation in the SEM to another market participant. When entering into an Intermediary Arrangement, units are required to submit a Form of Authority which is to be approved by the RAs, which would then grant authority to the Intermediary to register with the TSC and participate on behalf of the generator unit.

For generation units below the *de minimis* threshold of 10 MW maximum export capacity (hereafter referred to as *de minimis* generation) participation in the SEM is voluntary and they are not required to register with the TSC. If they do not participate, they instead have options to either;

- (a) set up an intermediary arrangement with an outside party (through the same process outlined above), or
- (b) contract with a supplier through a PPA arrangement, such that their generation is netted off the supplier's demand and their imbalances are covered under the supplier's consumption, or
- (c) set up their own supply company (as some REFIT supported generation in Ireland have done) which again leads to generation being netted off of the supplier's demand.

The figure on the next page provides the routes to being balance responsible for generation units participating in the SEM.

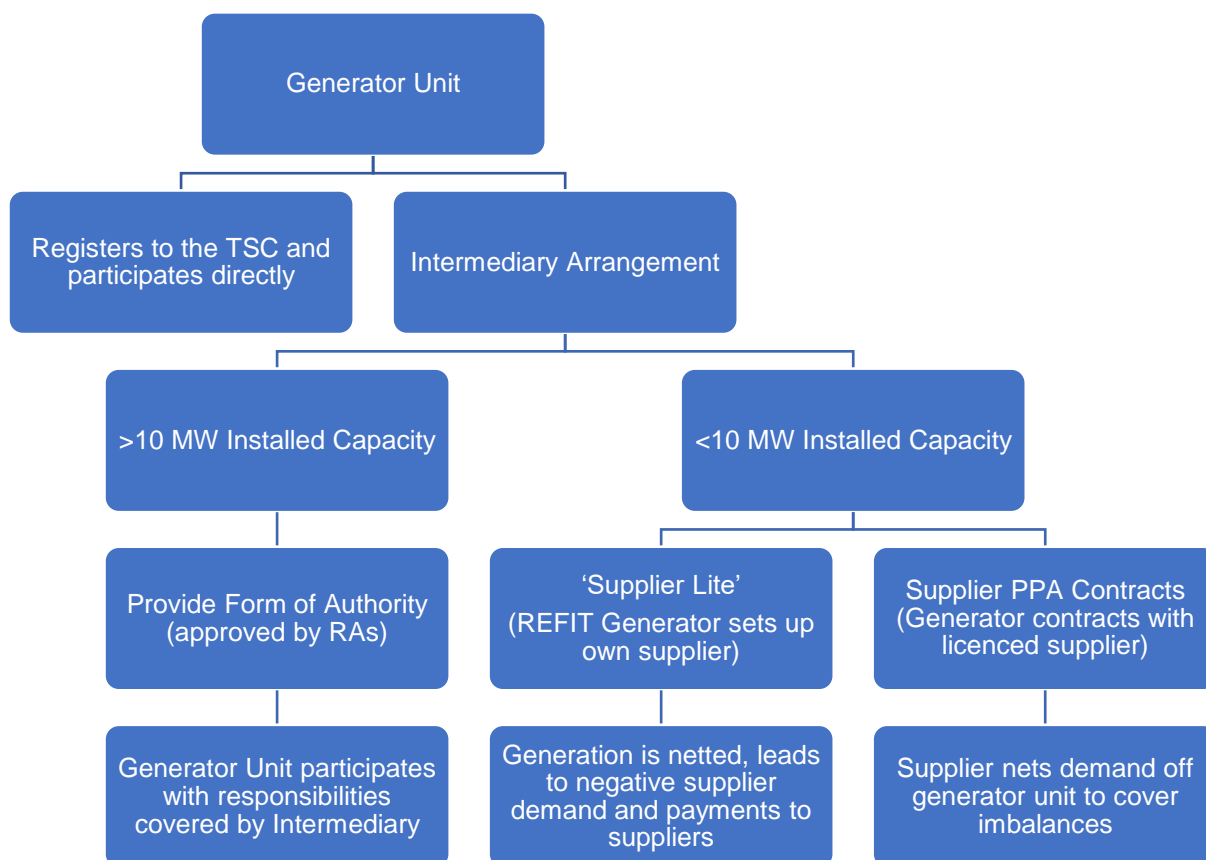


Figure 1: Participation Routes in the SEM

In addition to generator units, there are also additional entities which are participating in the SEM. These are highlighted in the table below.

Unit Type	Description	SEM Market Participation
<b>Supplier Units (incl. Aggregated and Trading Site Supplier Units)</b>	A unit which is a collection of Demand from either retail, commercial or industrial sources.	Supplier units are expected to participate in all SEM markets, however the submission of PNs is optional and they are not required to submit any information on TOD or COD.
<b>Assetless Units</b>	Unit which allows a trader without a generation or supplier unit to take positions in the ex-ante markets with the subsequent settlement of any imbalances under the TSC.	Assetless units are expected to participate in the ex-ante markets, however they are not required to submit PNs, TOD or CODs as they do not have any physical assets.
<b>Trading Units</b>	A generator unit to facilitate net trading in ex-ante markets and imbalance settlement in respect of an Autoproducer Site only.	Trading units are expected to participate in the ex-ante markets; however, they are not required to submit any information on PNs, TOD or COD.

<b>Interconnector Units</b>	Interconnectors offer capacity in the Capacity Markets, but they do not trade in the SEM. They can have imbalances, however, for differences between dispatched and delivered positions.	Interconnectors do not submit PNs, but instead submit operating data to the TSOs, which are used as inputs to an Interconnector Reference Program used to give visibility on the expected flows of interconnectors.
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*Table 3: Additional SEM Participants*

*De minimis* generation can seek intermediary arrangements with supplier units, assetless units, or even DSUs or AGUs for the purpose of settling their imbalances in the market. These units then pool the *de minimis* generation loads (if there is more than one *de minimis* generator in contract with the unit) in order to determine the position, they will be taking in the ex-ante and balancing markets.

Where a generator unit does not enter into a PPA or a contract specifically designed to settle imbalances, their generation is still accounted for by a registered licensed supplier (i.e. a market participant acting on behalf of the individual generator unit) through the connection agreement. Each valid connection point for a generation facility must be accompanied by a Supply Agreement, such that the generator has a contract with a supplier, and the generation which is passed onto the grid from that connection point is accounted for in the suppliers' consumption log, leading to any imbalances being covered in the market.

Where there is not a valid Supply Agreement, the relevant DSO has the authority to disconnect the generation facility from the grid, thus ensuring that there should be no instances of unaccounted electricity being passed onto the grid.

Where generators specifically contract with other market participants for the purpose of settling imbalances, their behaviours could be considered a form of aggregation; however, they are not specifically denoted as aggregators and actually are provided a Supply Licence for the purpose of becoming a regulated entity which can participate in the SEM. These licences may not necessarily reflect the electricity undertakings of these participants due to the conditions being applicable to a commercial supplier rather than an aggregator.

Other Articles in the Regulation, however, call for the non-discriminatory participation of aggregators in the balancing market<sup>7</sup> and the ex-ante markets<sup>8</sup>. As a result, the RAs will be reviewing participation in the SEM with respect to aggregators and will issue a Consultation Paper on this topic later in Quarter 2 2020.

<sup>7</sup> [Article 6\(1\)](#) Balancing market of Regulation (EU) 2019/943

<sup>8</sup> [Article 7\(1\)](#) Day-ahead and intraday markets Regulation (EU) 2019/943

With respect to Article 5 of the Regulation, the RAs consider that because these additional market participants exist and can fulfil the balance responsibility of *de minimis* generation not registered to the TSC, the current SEM market arrangements are compliant with this aspect of the Regulation, and therefore no changes are needed in the SEM regarding balance responsibility from the perspective of Article 5 of the Regulation.

### 3. CONCLUSION

As explained in this Information Paper, the RAs' view that the SEM is currently compliant with balance responsibility in Article 5 of the Regulation. This is because, as outlined in Section 2 of this paper, all generator and supplier units in the SEM have means to be a balance responsible party, either directly, through the use of an intermediary, or through contractual arrangements with other market participants.

As a result, the RAs are *not* proposing to lower the *de minimis* threshold in the SEM from the current 10 MW level to 400 kW (by reference to Article 5's requirements) or to propose any amendments to the TSC, at least not for the purposes of Article 5. However, the RAs will progress the topic of the role of aggregators, with respect to Articles 6 and 7 of the Regulation, and their participation in the SEM, starting with a public consultation in Quarter 2 2020.

Finally, while this is an Information Paper, any comments or views regarding the RAs' interpretation would be welcome and may be provided to Heather Pandich ([hpandich@cru.ie](mailto:hpandich@cru.ie)) or Ian McClelland ([Ian.McClelland@uregni.gov.uk](mailto:Ian.McClelland@uregni.gov.uk)).