

# Chapter 3: Participation

## *Industry Guide to the I-SEM*

# 3. Participation

Due to differences between the current SEM and the I-SEM arrangements in the markets, types of units and participant roles, all existing participants are urged to familiarise themselves with the transitional registration requirements (see Chapter 2, Section 2.8) and consult with the Transitional Registration Team<sup>18</sup> on their particular circumstances.

For descriptions of market operator roles, refer to the relevant topics for each market in Chapter 4.

## 3.1 Participant roles

Participants can have a portfolio of resources, but, with some exceptions, participation in the I-SEM is at a unit level.

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## Generator

Generators supply energy to the transmission system. They can register Generator Units that are either dispatchable, non-dispatchable but controllable, or non-dispatchable and non-controllable. The following subtypes of Generator Units are available in the I-SEM:

- Wind Power Unit
- Energy Limited Generator Unit
- Pumped Storage Unit
- Battery Storage Unit
- Demand Side Unit
- Aggregated Generator Unit
- Trading Unit
- Assetless Unit (see *Assetless Trader* below)
- Dual Rated Generator Unit

## Supplier

Suppliers purchase energy from the market for consumption. They register Supplier Units, which represent non-dispatchable demand (e.g. a distribution network or industrial load).

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## Assetless Trader

Assetless Traders take positions in the ex ante markets but have no physical assets. They register Assetless Units, which can be used to buy and sell energy. Assetless trading increases the level of trade in the ex ante markets, thereby increasing liquidity and reducing the potential for price separation between markets due to a lack of competition.

## Interconnector Owner

Interconnector owners (ICOs) operate the interconnectors that transport energy across borders. They register Capacity Market Units. They do not trade in energy markets, but they may have exposure in settlement through interconnector error units registered by the TSOs. They are responsible for facilitating the sale and settlement of transmission rights on the interconnector's capacity, facilitating cross-border trade in the ex ante markets, and facilitating balancing. The Harmonised Allocation Rules (HAR), which are a requirement of the FCA, define the contractual arrangements for cross-zonal capacity allocation in the long-term time frame.

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## Agent of Last Resort

SEMO provides an Agent of Last Resort (AOLR) service, which is available to below de minimis generators of any fuel type and renewable generators of any size. The AOLR is an automated data processing service provided through the market systems. Generators wanting to use the AOLR must register for the service with SEMO and be registered with SEMOpx for participation in the ex ante markets. It must have its own trading account and it is responsible for its own credit. The market operator levies an AOLR fee on the participating generators, which is subject to regulatory oversight.

## 3.2 Participant requirements

### 3.2.1 Generators

Generators are not required to participate in the ex ante markets, but there are links to other markets that might result in the participant being financially exposed if they do not. Participation in the balancing and capacity markets depends on the characteristics of the generator unit, as described below.

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## Dispatchable unit

A unit is “dispatchable” if it can follow (maintain) MW set-point instructions issued by the TSO. A dispatchable unit with a capacity exceeding the de minimis threshold of 10 MW is required to participate in the balancing and capacity markets. Units below the de minimis threshold can also participate if they meet dispatchability requirements of the relevant Grid Code.

## Non-dispatchable but controllable unit

A unit is “non-dispatchable but controllable” if the unit can limit its output to MW set-point instructions issued by the TSO. A non-dispatchable but controllable unit with a capacity exceeding the de minimis threshold is required to participate in the balancing and capacity markets.

## Non-dispatchable and non-controllable unit

A “non-dispatchable and non-controllable” unit is any unit that cannot follow a MW set-point instruction from the TSO. A non-dispatchable and non-controllable unit cannot participate in the balancing market.

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## Priority dispatch unit

Priority dispatch units have special status, whereby the TSO is obliged to take energy from these units ahead of other generators, subject to system security considerations. Priority dispatch units participate in the I-SEM markets like any other units, but they receive special treatment in system balancing.

### 3.2.2 Suppliers

Suppliers are not required to participate in the ex ante markets, but there are links to other markets that might result in the participant being financially exposed if they do not. Suppliers do not actively participate in the balancing market (they are non-dispatchable) but are nevertheless involved in settlement. Suppliers do not trade capacity in the capacity market but are involved in the funding arrangements.

### 3.2.3 Interconnectors

All interconnectors are required to participate in the balancing market and the capacity market.

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## 3.3 Trading Site

The connection point of a Generator Unit or group of Generator Units is represented by a Trading Site. Usually, the Trading Site maps to the connection agreement, but the Grid Code allows sites to be subdivided. A Trading Site has two particular purposes under I-SEM:

- to flag an autoproducer setup and thereby enable net trading through a Trading Unit, and
- to flag firm access at the connection point (not the Generator Unit).



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## 3.4 Constraints and curtailment

Market participants are required to submit physically feasible physical notifications (PNs) to the TSOs based on the outcome, or expected outcome, of the ex ante markets. “Physically feasible” means that it is within the participant’s own plant technical capability. However the PNs do not have to be feasible from a power system perspective, i.e. they do not have to respect transmission line powerflow limits nor are they required to allow for the provision of reserve headroom. Also, PNs may not reflect the optimal dispatch for facilitating priority dispatch plant nor a feasible dispatch for facilitating maximum interconnector transfers. Addressing these other “constraints” is the core function of the scheduling and dispatch process.

Constraints can broadly be categorised into three groups: security, priority dispatch and statutory requirements. In general, the treatment of constraints is not directly affected by the I-SEM market arrangements although the new market arrangements may impact on the extent to which constraints bind and the underlying cost of constraints.

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At times, the TSO has a requirement to reduce the output of controllable wind units to maintain system security. If a reduction in the output of priority dispatch wind units is required for a system wide reason, for example if the System Non-Synchronous Penetration (SNSP) limit is reached, then this is referred to as “curtailment”. If the TSO needs to reduce the output of one or a specific group of wind units to manage a local issue, such as a transmission network constraint, and only a select wind unit or a select group of wind units can alleviate the issue, this is also referred to as a “constraint”. The output of the selected wind units is limited until the constraint or curtailment has been relaxed or removed by the TSO.

### 3.5 Firm and non-firm access

A Trading Site can have firm access to the transmission system, or be considered partially firm. If a Trading Site is partially firm then any units on that site have firm access up to a defined MW with non-firm access applying beyond that. Firm access has no influence on clearing offers in the ex ante markets, but is given special treatment in imbalance settlement.

# References

18. mailto: [I-SEMregistration@sem-o.com](mailto:I-SEMregistration@sem-o.com)