Integrated Single Electricity Market (I-SEM)

Energy Trading Arrangements Detailed Design

Discussion Paper 1.3

SEM-14-101

07 November 2014

1 INTRODUCTION

1.1 THE ETA DETAILED DESIGN PHASE

1.1.1 The Energy Trading Arrangements (ETA) Detailed Design Phase is the first stage of Phase 3, the 'Detailed Design and Implementation Phase', of the I-SEM project. The objective of the ETA Detailed Design Phase is to develop a set of detailed energy trading market rules that are consistent with the High Level Design of the I-SEM. This set of market rules must be sufficiently detailed, consistent and clear so as to allow the TSOs to go to market to procure the necessary systems to run the I-SEM.

1.1.2 The I-SEM ETA Detailed Design Phase will be split into a number of distinct workstreams. These workstreams are linked but are distinct and important enough in and of themselves to require discussion at separate meetings. The splitting of the detailed design into separate workstreams should also allow for more efficient working arrangements within the project.

1.1.3 The focus is on areas that must be included in the system specifications that the TSOs will be bringing to market in order to procure the market systems for I-SEM. The workstreams explicitly exclude the Capacity Remuneration Mechanism (CRM), the Market Power Mitigation Strategy and any Liquidity Promoting Measures that are to be developed. These will form separate workstreams.

1.2 CONSULTATION AND DECISION PAPERS

1.2.1 The ultimate deliverables from this project phase will be three SEM Committee Decision Papers that collectively form a complete detailed design of the ETA for I-SEM. The two main Decision Papers will be on "Building Blocks" and "Markets". The "Building Blocks" Decision Paper will contain decisions on policy issues such as treatment of losses and priority dispatch. The "Markets" Decision Paper will contain decisions on the detailed design of the Day Ahead, Intraday and balancing markets.

1.2.2 There will be earlier deliverables of two Consultation Papers which will be published for public consultation in order to seek stakeholder views on the key elements of the I-SEM Detailed Design.

1.2.3 There will also be two Consultation Papers and a Decision Paper on the Aggregator of Last Resort. The first Consultation Paper will consider the high level framework for the aggregator of last resort and the second consultation paper will consider its detailed operation. The Decision Paper will then include overall decisions on the aggregator.

1.2.4 The SEM Committee aims to publish the following Consultation and Decision Papers:

2nd February 2015	"Building Blocks" Consultation Paper
4th June 2015	"Building Blocks" Decision Paper
1st April 2015	"Markets" Consultation Paper
7th August 2015	"Markets" Decision Paper
1st December 2015	"Aggregator of Last Resort Framework" Consultation Paper
1st April 2015	"Aggregator of Last Resort Operation" Consultation Paper
7th August 2015	"Aggregator of Last Resort" Decision Paper

1.3 DESCRIPTION OF WORKING ARRANGEMENTS

1.3.1 The Detailed Design Phase will be led by the Regulatory Authorities (RAs). An RA project team will be responsible for delivering the detailed market design, and will be supported by the I-SEM Project Team in the TSOs. The RA project team will also be assisted by consultancy support.

1.3.2 Given their important position as Transmission System Operators and Market Operator, EirGrid and SONI will be involved in supporting the RAs in this project phase. This support will include the presentation of material on specific subjects and the presentation of relevant topics at the Rules Liaison Group (RLG) meetings (discussed further below). The TSOs will cooperate with the RAs through governance arrangements and working arrangements for the I-SEM project.

1.3.3 The RAs will hold six working group meetings between October 2014 and February 2015. These working groups will be known as the Rules Liaison Group (RLG). The RLG will be made up of nominated members from participant groups, including the Interconnector Owners, and interested parties.

1.3.4 There will be three RLG meetings on topics relating to the "Building Blocks" consultation and three RLG meetings on topics relating to the "Markets" consultation.

The provisional dates for the Rules Liaison Group meetings are set out below.

	Date	Venue
"Building Blocks" Workshop 1.1	15/10/14	Dublin
"Building Blocks" Workshop 1.2	29/10/14	Belfast
"Building Blocks" Workshop 1.3	13/11/14	Dublin

"Markets" Workshop 2.1	21/01/15	Belfast
"Markets" Workshop 2.2	04/02/15	Dublin
"Markets" Workshop 2.3	18/02/15	Belfast

1.3.5 A separate Discussion Paper will be published in the week before each Workshop, outlining the topics to be covered by the RLG. After "Building Blocks" Workshop 1.3 and "Markets" Workshop 2.3, the RAs will call for the submission of views from the RLG members on the topics covered. These views will help inform the relevant Consultation Papers.

1.3.6 The Rules Liaison Group will be an advisory and information sharing body, made up of nominated members from participant groups and interested parties. The group will be chaired by the Regulatory Authorities.

1.3.7 Given the various different subjects that will be discussed at different meetings the RAs expect that participants may wish to send different staff members as their representatives to different meetings. However, representation at any one RLG meeting will be limited to one person per participant organisation.

1.3.8 The final RLG members will be representative of the various industry sectors and shall be used exclusively for the I-SEM ETA Detailed Design Rules Liaison Group (RLG).

1.4 OUTLINE OF THE TOPICS TO BE COVERED IN THE SIX "BUILDING BLOCKS" AND "MARKETS" WORKSHOPS

The topics to be covered in the six "Building Blocks" and "Markets" Workshops include, inter alia:

Workshop 1.1	Introduction of topics Treatment of Transmission Losses Treatment of Firm Access
Workshop 1.2	Constraints Curtailment Priority Dispatch De Minimis level
Workshop 1.3	Currency Participant Registration Clearing and Settlement Credit Risk Requirements Treatment of VAT Billing and Funds Transfer Shipping (Financial)

	Market Information
Workshop 2.1	Day Ahead Market and EUPHEMIA Units under Test Fallback Procedures Intraday Market Participant Nomination Process
Workshop 2.2	Shipping (Physical) Reaching a Feasible Dispatch Balancing Market
Workshop 2.3	Imbalance Settlement Metering Global Aggregation Instruction Profiling Tagging and Flagging Classes of Non-Energy Actions Local Market Power considerations Reserves

1.5 LIST OF TOPICS TO BE COVERED IN WORKSHOP 1.3

The next section outlines the topics to be covered in Workshop 1.3.
These topics are:

- Currency
- Participant Registration
- Clearing and Settlement (incorporating Billing and Funds Transfer)
- Credit Risk Requirements
- Treatment of VAT
- Shipping (Financial)
- Market Information

Note that this Discussion paper contains the thoughts of the I-SEM ETA Project Team and may not represent the definitive views of the SEM Committee.

2 TOPICS TO BE COVERED IN WORKSHOP 1.3

2.1 CURRENCY

Description of the Issue

The SEM covers two currency areas with trading in both euro and pounds sterling. In the current SEM, there is no discrimination between participants on the basis of currency. In practice this means that participants submit offers into the market in their local currency and cost changes between the time of trading and financial settlement are socialised across the entire market.

Current Policy Implementation

The SEM has always operated on the basis of two currencies. Paragraph 6.4 of the Trading and Settlement Code (TSC) recognises that payments and charges are made based on the currency that applies in the jurisdiction of the participant's trading unit. However, paragraph 6.3 recognises that all internal calculations are based in euro, thereby creating a currency cost (or benefit).

NI participants submit offers in pounds sterling and ROI participants submit offers in euro. Before the start of each Trading Day SEMO publish a Trading Day Exchange Rate between euro and pounds sterling. This Exchange Rate is used to convert pound sterling offers into euro offers. All Settlement information and cash flows are calculated in euro. Payments to NI participants are then converted back to pound sterling after the Trading Day using the Trading Day Exchange Rate published for the Trading Day in question. The Trading Day Exchange Rate is also applied to the Fixed and Variable Market Operator Charges.

The Annual Capacity Payment Sum and Capacity Period Payment Sums are calculated in euro. An Annual Capacity Exchange Rate is published before the start of the calendar year and this is used for the conversion of capacity payments and capacity charges into pound sterling. The Annual Capacity Exchange Rate is also used for the conversion between pound sterling and euro of any Accession Fee or Participation Fee.

A surplus or shortfall of payments in over payments out is then likely to arise due to changes in the actual exchange rates between the time when offers are submitted on D-1 and the time when settlement occurs.

This surplus or shortfall determines the cost for each payment and charge for each trading period in domestic currency using the trading day exchange rate (the rate applicable when the trade happened), and then again using the invoice day exchange rate (the rate applicable when the bills are calculated) and determines the difference for each line item. These are then summed to come up with the total currency cost. This calculation is done on both euro and sterling values (which results in a zero cost for all euro values). In a separate process, the total market trade is calculated and

each participant is allocated their share of the cost based on their trade expressed against the total trade.

This calculation is repeated on M+4 and M+13 resettlement and is also applied to the Capacity Payment Mechanism.

Questions for Detailed Design

In the context of I-SEM, the first question is whether the current policy can be continued or whether it needs to be revised.

In principle, market participants could hedge against exchange rate changes on an ongoing basis. However this would not be practical with respect to the Energy Trading Arrangements and would add significant trading expertise requirements on participants.

The EU cross border market places will operate and be settled in euro[1]. However it should still be possible to accommodate more than one currency in I-SEM. For example, the GB markets allow participants to submit offers and to be paid in pound sterling while the power exchanges carry out the intermediate conversions between pound sterling and euro. The balancing market and imbalance settlement should be capable of accommodating two currencies as they do today.

The implementation of the two currency solution should consider the lessons of the SEM and aim to find as simple a solution as possible. It should take cognisance of one key factor:

- Currency risk arises when payments cross the jurisdictional border within the I-SEM for a non-spot transaction (i.e. the transaction is committed to at one point in time and settlement takes place later, when the exchange rate may have changed).

This occurs when energy flows on the North-South tie-line and when a participant reallocates payments between jurisdictions (using Settlement Reallocation Agreements). Both of these events in the current SEM are finalised within D+4 of the Trading Day. As a result, it is worth considering if there is a need to recalculate currency cost at M+4 and M+13 for energy amounts in the I-SEM.

In terms of implementation, the Day Ahead and Intraday markets are likely to have quick settlement turnaround. There is also no revision of these markets (that is, no M+4/M+13/etc.). As such, the currency risk in these is small as it represents the

[1] Article 47.1 of ENTSOE's Final Draft Network Code on Capacity Allocation and Congestion Management states "All Nominated Electricity Market Operators shall ensure that Orders submitted to the Price Coupling Algorithm shall be expressed in terms of Euros and make reference to Market Time."

movement of the exchange rate across a short period. This will represent a significantly smaller exposure than in the current SEM arrangements.

Currency risk in the Day Ahead market can be determined by calculating an Ireland/Northern Ireland market surplus position. This is not dependent on actual metering (which will be used in the balancing market) but on market positions. Therefore, if the aggregate market result shows 400MW surplus generation in Ireland, this means that in the market 400MW of load in Northern Ireland was served by this generation and it was therefore exported from Ireland to Northern Ireland, thereby incurring a currency risk.

Although it would potentially involve a more complex implementation, a similar approach could be implemented in the Intraday market and balancing arrangements. This will depend somewhat on the design of the Intraday market which is ongoing at EU level. The EU Intraday market will need to cater for a number of currencies.

In terms of socialising currency costs, rather than the current policy of invoicing a single line item socialised across all players, there is a possibility to consider treating currency risk in a similar manner to Dispatch Balancing Costs (DBC) in the current SEM. The appropriate party would determine a forecast of the currency risk ahead of time in a transparent manner and incorporate this in a tariff. Any difference between revenues collected using the tariff and the actuals realised would be carried forward as a correction factor into the calculation of the tariff for the next year.

If the I-SEM is a dual currency market then arrangements for managing and socialising currency fluctuations will need to be clarified. There are a number of options available to manage currency fluctuations in any of the Day Ahead, Intraday or balancing markets. These options include:

- Recovery and payment of the actual currency imbalances as part of the regular billing period process;
- Forecasting currency costs annually (or monthly) and charging an up-front payment to suppliers at the start of every year (or month, etc) to establish a “currency fund”, from which producers would be refunded any currency losses;
- Forecasting currency costs annually (or monthly) and incorporating this in a tariff; and
- A combination of the above options.

Summary Questions

- Are there any reasons why the I-SEM should not continue to be a dual currency market?
    - Specifically, are there any problems with the current approach?
    - Are there any reasons why treatment needs to be different in I-SEM?

- If the currency costs are to be borne by the market as a whole is this better managed through ex-ante forecasting and annual reconciliation or ex-post calculation?

2.2 PARTICIPANT REGISTRATION

Description of the Issue

The process for party registration (for accession to the I-SEM) and the process for unit registration (for participation in the Day Ahead, Intraday and balancing markets) will have to be established for I-SEM. The registration and deregistration process is very important as it is the route to market entry and market exit. The process must be as streamlined as possible for participants but must also be sufficiently robust to give confidence to the market as a whole that all participants have met the necessary requirements. This should also set out the process for market exit, including suspension from trading.

Current Policy Implementation

Agreed Procedure 1 (AP1) of the Trading and Settlement Code (TSC) sets out the Participant and Unit Registration and Deregistration processes, administered by the Market Operator, and with which Parties to the TSC must comply. In particular, AP1 is a definition of procedural steps to be followed by the Market Operator and Participants setting out the detail of the registration and deregistration process. The registration process also includes necessary interactions between the market operator and the TSOs and meter data providers.

Accession to the code is allowed at a Party (company) level. Companies are obliged to complete the Party Registration process as outlined in AP1. In summary, the party submits a signed deed agreeing to the terms of the code (Accession Deed) and once this is verified by SEMO's legal representative the Party is registered and may register units.

Units are registered in the SEM. Units register as either generators (including demand side units and interconnector units) or suppliers using the process as set out in AP1. Prior to registering the unit must provide sufficient technical details, setup an appropriate bank account and credit cover and must pass testing in relation to communication with market systems. Meetings/discussions take place during the process between SEMO, the applicant and the TSO. All parties agree a date on which the unit will become effective. The unit is then obligated to provide any required data (e.g. bids) ahead of gate closure for their effective date.

Party registration and unit registration can occur at the same time but Party registration must be completed before the unit can be registered in the SEM. Party registration essentially binds the legal entity to the TSC.

Parties may deregister units from the market at their discretion by completing the necessary process. There are also conditions under which Parties can be suspended from the market, for example where their credit cover is insufficient and this has not been addressed by the participant or where a licence is revoked.

If there is a change in ownership of a unit then said unit must be deregistered and then reregistered in the market. The unit is given an entirely new Unit ID as part of this process.

Questions for Detailed Design

The detail of the registration process will need to be established for the I-SEM. In terms of the registration process there are likely two potential high level options:

- A single all-encompassing unit registration and deregistration process for all market timeframes (Day Ahead, Intraday and balancing); or
- A separate unit registration and deregistration process for each individual market timeframe.

Participants will be required to participate in a Day Ahead, Intraday and balancing market. Each of these markets may be operated by a single entity or by separate entities. As all markets will require some level of common information, synergies that can be derived by allowing for a single registration process should be considered. Synergies could reduce the time to market for new entrants. This could be of particular relevance to smaller participants.

If employing a single registration process, the registration requirement should likely be based on the needs of the balancing market arrangements. This is because participation in the balancing/imbalance arrangements is mandatory and, therefore, will include all market participants while only a subset may participate at Day Ahead or Intraday.

The level of technical information currently required of units will not be necessary for registration in the Day Ahead and Intraday markets as technical characteristics are not reflected in these markets. Additionally, some of the fall back procedures (e.g. Supplier of Last Resort) will not be required as these are based on matched Day Ahead bids which require full collateralisation. These items would still be required for registration in the balancing market.

There is the potential that the entity or entities that operate the Day Ahead, Intraday and balancing markets will be different to the entity performing clearing and settlement for those markets. This would need to be considered in the context of achieving a single point for registration.

While policy regarding registration is largely fit for purpose, the current system implementation is not. As registration is both internally (other market systems) and externally (participants) a primary interface, ample consideration must be given to the implementation of these systems. It is insufficient to have fit for purpose policy with poor participant interfacing.

Summary Questions

In considering the optimum registration and deregistration process for the I-SEM it is instructive to take the registration process for the current SEM into account. The current process has been in place since 2007 and has undergone a number of reviews including the recent Mod_30_12 Unit Registration Process Improvement. A number of questions are therefore pertinent:

- Is it desirable to have a single central point for registration for the Day Ahead, Intraday and balancing markets?
    - Could registration for the Capacity Remuneration Mechanism (CRM) also be included here?
- Should consideration be given to having separate registration processes for all market timeframes given the information requirement disparity between markets?
- Are there concepts and processes for registration in the current SEM (AP1) which should be carried forward to the I-SEM?
- Are there changes which should be considered regarding the current process that would lead to improvements?
- Should the change of ownership process for units be streamlined?
- Should it be the aim of the I-SEM detailed design to make the registration process for small players simpler and more straightforward than for larger players?

2.3 CLEARING AND SETTLEMENT (INCORPORATING BILLING AND FUNDS TRANSFER)

Description of the Issue

The Central Counter Party is a role established in the CACM Network Code and is performed by the NEMO.

All trades in the Day Ahead and Intraday markets are matched anonymously. The Central Counter Party receives anonymised details of Executed Orders from the Market Coupling Operator. It identifies the Market Participants associated with each Executed Order and notifies the relevant participant of the details of each Executed Order. The process by which the Central Counter Party will link the anonymised Executed Orders to the relevant Market Participants and notify them of the details needs to be established.

The Central Counter Party also ensures the clearing and settlement of all Executed Orders in the Day Ahead and Intraday markets in a timely manner. It acts as the Central Counter Party to Market Participants for all their trades with regard to the financial rights and obligations arising from these trades.

Current Policy Implementation

A policy as such has not been set but a summary of the relevant sections of the TSC was set out as follows at the start of SEM.

SEMO will establish all required clearing accounts in a designated SEM bank. There will be a euro and sterling account in all cases where a SEMO account is required. SEMO will administer the settlement and clearing function through use of the central market systems and all relevant SEM bank accounts.

SEMO shall produce invoices for Trading on a weekly basis and Capacity on a monthly basis. SEMO shall invoice Participants for the Variable Market Operator charge weekly and for the Fixed Market Operator Charge monthly. Resettlement will take place at M+4 and M+13. SEMO will produce and issue all invoices directly. All invoices in relation to trading and capacity will have a 3 working day (WD)/4WD payment/remittance timelines while those relating to MO charges will have a 5WD/6WD timeline.

Statements of payments and charges for both Trading and Capacity are covered by section 6 of the TSC while the calculation of the variables used is outlined in sections 4 and 5. Calculated amounts are based on the ex-post schedule, ex-post price and ex-post metering. This activity takes place on working days only. The defined Settlement Day starts at 00:00 and ending at 24:00 (this is distinct from the Trading Day which is 06:00 to 06:00).

Settlement Reallocation Agreements (SRAs) are used to transfer amounts between Participants (or between the same Participant) in order to manage credit cover requirements and reduce cash flows. The rules governing this are set out in sections 6.235 to 6.246 of the TSC and Agreed Procedure 10 (AP 10). In short a Participant may transfer amounts relating to payments (trading or capacity) in order to reduce a charge (trading or capacity) of another Participant (or themselves). SRAs may not be submitted in relation to Suppliers. SRAs may not exceed the payments in relation to the Generator in question. SRAs are submitted between the date of statement and the date of invoice in order to reduce invoiced amounts.

Invoicing/billing is covered by section 6 and Appendix G of the TSC. Billing for trading is done for a settlement week (beginning Sunday at 00:00) and is invoiced weekly. Billing for capacity is done by calendar month (beginning 00:00 on the first day of the month) and is invoiced monthly. All invoices and self-billing invoices (SBIs) are handled through the relevant clearing account (trading or capacity) in the SEM bank. Invoices are paid to the account within 3 WD and SBIs are paid from the account within 4 WD. Both capacity and trading are invoiced for any differences as part of M+4 and M+13 resettlement. SEMO invoices for a variable market operator charge (VMOC) at the same time as trading invoices according to annual tariffs. Additionally, once a month an invoice is issued for a fixed market operator charge (FMOC) based on an annual tariff. Invoices for MO charges must be paid to the relevant account within 5 working days of the invoice; SBIs for such charges are paid within 6 WD of the invoice. All invoices are issued via paper invoices as well as through the central market systems (CMS).

Questions for Detailed Design

European arrangements are based on Central Counter Party clearing whereas the current SEM arrangements for financial settlement are based on trust arrangements. In the SEM, there is no central counterparty and any risk with respect to payments and charges not covered by collateral holdings is recovered via bad debt smearing across generators. The requirement to have a central counterparty represents a change from the current arrangements and a key question is whether the I-SEM arrangements will retain the current approach to credit risk and bad debt or whether it is necessary to consider other approaches to managing central counterparty risk such as putting in place clearing house arrangements (see Annex B for the structure of the a typical European clearing house). No such arrangements are in place in the current market as SEMO does not act as a central counter party but it may ultimately be required as part of the integration with EU arrangements.

Current policies are based around working day only clearing and settlement happening weekly with a large delay between the generation and consumption of electricity and related payment.

The required methodology will likely need to involve daily (working day) settlement and daily clearing/invoicing at least for Day Ahead and Intraday markets.

As price formation will take place ex-ante rather than ex-post there will likely be a shift in the timing of clearing and settlement relative to the generation itself, i.e. a move from an energy based timeframe to a trade based timeframe. This should be reflected in policy.

Typically preliminary values (e.g. indicative settlement) as implemented in the current SEM arrangements will not be required for the Day Ahead and Intraday markets as Participant obligations will be based on their matched trades rather than ex-post metering.

The settlement in the I-SEM will be required on a unit basis rather than a portfolio basis. This adds complexity in comparison to the clearing and settlement performed by many power exchanges/clearing houses currently. It may also add an extra level of complexity in relation to netting as current VAT rules prohibit the direct netting of payables and receivables in one invoice. This has led to the implementation of the "account" concept in the SEM to ensure invoices and self-billing invoices are not directly netted. Consideration must be given to how best to implement netting in the new market to reduce Participant exposure.

The chosen method for and timing of clearing and settlement should align with the typical approach taken in Price Coupling of Regions (PCR) countries to avoid cash flow timing issues being imposed on I-SEM Market Participants, e.g. coupling actions leading to an I-SEM player having a payment which is due on Day X but not received until Day X+5 due to weekly as opposed to daily billing. Reduced timeframe lengths would also reduce the working capital requirements of generators and credit cover requirements of suppliers.

The following will have to be defined for the I-SEM Day Ahead, Intraday and balancing markets:

- A detailed timetable outlining all the timeframes from the start of the first trading period up to the time when payment is due, covering billing period, invoice issue time and payment terms;
- Whether, and to what extent, can differing invoicing timeframes be used in separate market timeframes;
- Whether, and to what extent, can improvements to credit risk management can be derived by compressing the billing cycle; and
- Whether improvements can be instituted, e.g. pooling of invoices, to the current policy implementation.

The process for funds transfer in I-SEM will have to be established. This will include:

- Monitoring of payment receipts from Market Participants;
- Outlining the rules for collateral drawdowns where Market Participants are allowed pay small invoices with lodged collateral;
- Whether participants will be allowed to use accounts for multiple marketplaces or if separate accounts are required;
- Outlining how payment instructions are prepared, assessed, checked and approved.

2.4 CREDIT RISK REQUIREMENTS

Description of the Issue

Credit risk requirements define how markets protect against default risk. This is to ensure that creditors are suitably insured against non-payment from debtors. In pool or auction type markets, this means that suppliers (the debtors) are required to post sufficient collaterals to ensure that a payment default does not impact on the creditors (generators). In bilateral markets where significant trade can be outside of the arranged market places, Markets Participants' credit risk arrangements are their own responsibility with these central credit risk requirements reduced as they focus only on the imbalance volumes.

Current Policy Implementation

There is a policy of 100% collateralisation of risk in the SEM with credit ratings not being acceptable. This means that all risk exposures need to be covered by collateral and that a strong credit rating is not acceptable.

This policy, while widely accepted, does not appear in the SEM HLD.

The cost of any bad debts are socialised across all generators. The SEM is an ex-post pool based on gross positions and is billed weekly with money moving in some cases over two weeks after trades have taken place. This means that a supplier company's risk exposure to the market at time of money due can be up to two and a half weeks of "known" trades. There is still the "unknown" exposure which results from the amount of time for which a supplier company continues to accrue debt after a default, before all their customers are transferred and they can be suspended from the market.

The credit risk calculation in the SEM follows three parts:

- "Known knowns" – invoiced, not paid. This is based on invoices issued for which monies are not yet due;
- "Known unknowns" – settled, not invoiced. This is based on known trades, mostly settled but still not final; and
- "Unknown unknowns" – time to remedy. This is an estimate figure based on the time it takes to wind up a defaulting supply company and is based on a 95th percentile analysis of historical trades.

Credit risk calculations were updated as part of the Intraday Trading (IDT) modification in 2012. As part of this, additional rules were applied to interconnector trading participants. Rather than assessing their credit requirements against their traded positions, the modifications assessed submitted trades against posted credit cover. In other words, participants are only allowed trade up to the collateral position. For interconnector units where a bid is made to the market which causes an exposure above their Available Credit Cover, that bid will be excluded and not considered valid.

Collaterals in the SEM take two forms –

- Letter of Credit (LOC), and/or
- Cash collateral account.

Under the LOC, a participant deposits a letter from an approved bank with SEMO. In the event of default, SEMO can issue instructions to the bank to draw down on the LOC, ensuring any payment shortfall is covered.

Under the cash collateral account, participants lodge cash in a collateral account held in trust by SEMO in the SEM bank. Participants cannot withdraw from this account without permission of SEMO. In the event of default by a participant, SEMO can withdraw the necessary funds to secure any shortfall.

Questions for Detailed Design

The policy of full collateralisation can continue to be used in the I-SEM. However, as the timelines related to clearing and settlement of trades will likely change significantly, the implementation (calculation of exposure etc.) of this policy should be reviewed.

Typically in other EU markets, bad debts are borne by the central clearing party (CCP) and it is the responsibility of the CCP to mitigate this risk and bear any costs. Currently, the costs of bad debts in the SEM are socialised amongst generators. This may not work in a European coupled market.

It will need to be established how settlement reallocation or its equivalent will be incorporated into the I-SEM design. Unit-based bidding will be used in the Day Ahead, Intraday and balancing markets. It will have to be decided how Market Participants are treated in the clearing process so as to allow the netting of trading positions for vertically integrated Market Participants and to allow the posting of net collateral by vertically integrated Market Participants rather than gross.

It will also have to be investigated whether there should a single Central Counter Party with a single collateralisation mechanism across the Day Ahead, Intraday and balancing markets. It may be possible to achieve this without a single counterparty once there are cooperation mechanisms in place. If Market Participants are entering into the different markets for different volumes each day then it may be onerous to require collateral for each market separately. A single collateralisation mechanism across all markets could significantly lessen the burden for Market Participants, both in terms of monetary magnitude and administration. Related to this, it will also have to be established precisely how the exposure of each Market Participant is determined, either in each market separately or through a single mechanism across all markets.

The Detailed Design Phase also has to:

- Define the forms of acceptable collateral and the frequency of reviews of the collateral posted by Market Participants to ensure it is appropriate.
- Establish rules and procedures for the restriction, suspension and/or termination from trading of Market Participants who fall in breach of the credit policy of the I-SEM.
- Is a single collateralisation across all markets feasible? If a single collateralisation is not possible, are there are there any other opportunities to derive synergies between markets for example through information sharing?
- How is credit risk for the balancing market to be determined? If a participant fails to bid at Day Ahead or Intraday, this means their entire volume spills into balancing. If they've participated normally up to this point, then this will represent a spike in their credit requirement that the current approach will not see.
- How will the ability for participants to dynamically switch between Buy and Sell orders be managed in required credit cover calculation? This scenario could occur where a generator sells in the Day Ahead market but has to buy back for reasons of an outage in the Intraday. Similarly, how will the exposure of negative priced bids be accounted for?
- Is the current implementation with respect to cross border trades in the intraday auctions suitable for consideration for trading in the Day Ahead and Intraday markets for the I-SEM?

2.5 TREATMENT OF VAT

Description of the Issue

The purchase and sale of goods and services is subject to VAT in both Ireland and Northern Ireland and is governed by both EU legislation and legislation in individual Member States. Special rules apply to the export of goods and services whilst there are various particular regimes, including for example "reverse charging" and "terminal markets" that have been agreed by revenue authorities to apply to certain situations, which may or may not be applicable to the existing SEM and/or the I-SEM. Moreover, because both the existing SEM and I-SEM span two jurisdictions, each with differences in rates and in the detailed regulations, the existing SEM and the I-SEM have to satisfy the requirements of the revenue authorities in both jurisdictions.

Current Policy Implementation

An agreement[2] with the revenue authorities - the Office of the Revenue Commissioners in Ireland and HMRC in the UK – requires SEMO to provide each participant in the SEM with a settlement document which includes the amount of VAT to be applied. The rate of VAT applied will depend on the jurisdiction in which the participant's units are registered, and the amount of VAT will also take account of estimated cross-border flows.

As we further understand it, a "reverse charging" mechanism has recently been introduced in the UK for wholesale trading in electricity and gas. These means that VAT is not charged on wholesale transaction by the seller whilst the buyer must account for the sellers output tax (but may reclaim the same amount as input tax). In GB, this regime applies: to charges through the GB Balancing & Settlement Code, i.e. the GB balancing mechanism, to trades made ahead of gate closure, whether these are traded on exchanges or bilaterally; and to a various network and balancing use of system charges and constraint contracts. This has also been implemented in the SEM in respect of participants in Northern Ireland.

Questions for the Detailed Design

VAT treatment under the I-SEM detailed design phase will have to consider:

- how the introduction of a Central Counter Party for the Day Ahead market and possibly also the balancing market changes the nature of transactions in each of the various markets and what the implications are for VAT treatments in the two jurisdictions;
- the extent to which VAT treatment, at least for the Day Ahead and Intraday markets, will be defined by existing market coupling practice elsewhere;

[2] "Statement of Agreed Treatment of VAT under the SEM", Office of the Revenue Commissioners, 18 July 2007.

- whether VAT treatment under I-SEM is an issue of minimising the administrative burden or whether there could be other, possibly even more material, considerations;
- whether there are any other mechanisms that could improve VAT treatment for Market Participants;
- whether any change will be needed, or is desirable, to the VAT treatment of market operator charges; and
- whether any changes are likely to VAT treatment in Ireland, corresponding to recent changes in the UK.

It is envisaged that, as part of the I-SEM detailed design phase, we will engage with the revenue authorities as early as possible to ascertain how they are likely to treat the arrangements for VAT and to initiate any special agreement that may be appropriate in order to make the arrangements efficient from a VAT perspective.

2.6 SHIPPING (FINANCIAL)

Description of the Issue

The role of the Shipping Agent in CACM is to transfer Net Positions between different Central Counter Parties.

The Shipping Agent may act as a Central Counter Party between different Central Counter Parties for the exchange of the energy, subject to agreement between the concerned parties or, should no agreement be found, subject to decision between the relevant NRAs. The Central Counter Party or Shipping Agent collects congestion incomes arising from trades in the Day Ahead and Intraday markets and provides them to the TSO, who is responsible for the distribution of congestion incomes.

Rules and processes have to be developed for the above issues. This includes identifying who carries out the shipping function. The purpose of this section is to outline the requirements of financial shipping. This does not include the congestion income distribution rules.

Current Policy Implementation

In the current SEM, cross border trade is managed through the use of interconnector units. These are virtual entities that represent traders from either side of the SEM-GB border. All SEM financial transactions are settled with the interconnector unit within the SEM. The trader registered as the interconnector unit is then responsible for managing their own financial transactions on the GB side of the SEM-GB border.

This means that a trader operating an interconnector unit in the SEM must have a similar trading entity in the GB markets. This requires registration on one of the Power Exchanges active in GB as well as the registration of a Balancing Market Unit with Elexon. This ensures that any position achieved in the SEM is reflected within the GB arrangements.

The I-SEM moves towards an implicit market design which will not include the concept of an interconnector unit. Instead, the Day Ahead and Intraday markets will be resolved and result in cross border flows. These flows appear as a market surplus or deficit. In the new arrangements, the Central Counter Party will be required to take responsibility for the shipping of the energy and financial settlement with the Central Counter Party in the adjoining market.

Considerations for Detailed Design

The Shipping Agent is not strictly required under CACM, and instead Central Counter Parties can settle directly with each other for the energy exchanges between bidding zones. The cross-border clearing and settlement arrangements (including the shipping agent where relevant) are subject to approval by the relevant regulatory authorities.

The role of shipping between bidding zones is not a market-facing function and therefore should not impact on participants' day-to-day workings. However, it is important that the function is carried out in the most efficient manner possible. Therefore the pertinent question is how the shipping role can be developed in a way that is best suited to the overall market.

2.7 MARKET INFORMATION

Description of the Issue

The publication of market information plays an important role in facilitating efficient market operation and transparency. As a general principle, the more information that is made available the more it helps Market Participants to make informed decisions on investment and their interactions with the market. The publication of market information may also provide part of a check on price manipulation through particular bidding strategies, primarily as it provides for the wider scrutiny of market behaviour, and consequent reporting to the market monitor.

Current Policy Implementation

The publication of market data in the SEM is governed by Appendix E of the Trading and Settlement Code and Agreed Procedure 6 (AP6). Appendix E outlines the obligations on SEMO including timelines while AP6 outlines the method by which data is published.

To encourage investment and competition, the SEM has adopted high levels of transparency of market information. However, the release of market information must be balanced with the possibility that the publication of commercially sensitive information may actually impair competitiveness. Moreover, the publication of information can, on the one hand, potentially provide opportunities for collusion or market manipulation while, on the other, greater transparency may conversely make such manipulation easier to detect.

The SEM includes the concept of private and public reports. Private reports cover information that is deemed confidential and is shared only with the participant to which it relates. Private information is retrieved through the central market systems. Public reports are made available on the SEMO website and also through the central market systems and in some cases a dedicated FTP server. Any interested parties may submit data queries through the market helpdesk and, subject to commercial sensitivity, SEMO will make the requested information available through this avenue. Finally, certain market communications, e.g. use of the alternate solver, are notified to participants through market messages on the SEMO website and related email alerts.

Annex D of this paper sets out the public data publication and private data reports made available by SEMO.

Questions for Detailed Design

It will have to be determined what information will be made publicly available and where it is more appropriate for some data items to be restricted to the individual participant to which they relate. It will also be necessary to outline associated timescales for the publication of public information – this being an area where the balance between providing up to date information so that participants can respond

commercially to market signals, and concerns over potential manipulation of market power or gaming, will need to be balanced. Further, categories of market data currently published should be examined and it should be decided whether or not these will be made available on a public website or provided to Market Participants only through market reports via registered interfaces.

EU Market Timeframes

Trading arrangements at the Day Ahead and Intraday timeframes will be largely determined at a European level, with I-SEM representation on the decision making bodies. However, this is not to say that local arrangements for issues such as data publication cannot be determined at a jurisdictional level so long as they are Network Code compliant.

The SEM market publishes significant volumes of information (both public and private market participant data) including commercial offer data soon after the trading day. This is published on a unit by unit basis. In other power exchanges individual offers and bids tend not to be published but an aggregate bid curve is published for the Day Ahead market. Only concluded deals tend to be reported for the Intraday market.

Given that there will be local arrangements for the NEMO in I-SEM it should be possible to seek to have all commercial offers and bids and associated data published or at least to have the systems available to do so. However, the offers and bids in cross border markets will likely not be available to I-SEM participants.

Balancing Market

The design of the balancing market is largely within the discretion of the Member State. Therefore, it is anticipated that there should be nothing precluding the continuation of the current levels of data publication.

In this context it will also be necessary to consider what additional public information is required to support participants in being balance responsible.

- For example, it may be that the market wishes to see more information published on the aggregate nominations and TSO demand forecasts which could be used as an indicator of whether the system will be long or short. This should give suppliers a better indication of their own likely position.
- Market Participants in their responses to HLD consultations have suggested that greater information should be published by the TSO in relation to wind forecasts.

Additional Publication Requirements

With the implementation of I-SEM and other EU initiatives such as REMIT and MAD II it will be necessary to consider what other information should be made available to

participants and to the public. Additionally, elements of the I-SEM design may require consideration of regulations which are not currently applicable, e.g. provisions of FTRs may be covered by MiFID II. Opportunities for a holistic and synergistic approach to market information should be considered in the detailed design.

In this context, other markets have, for example, a facility for making the market aware of any significant issues such as a loss of plant, etc. Such a facility could see participants as well as the TSO publish information to the market, for example if a participant knew that one of its units was on forced outage it would post this information to a market noticeboard immediately.

Summary Questions

From a Spec Ready Rules point of view it may be best to allow for publication of the maximum amount of data but allow for changes to be made as market rules are defined and as the Market Power workstream progresses. However, the following points should be considered:

- Is the current policy on market information fit-for-purpose for the I-SEM?
- Is the current principle of making high levels of information publically available fully reflective of participant needs?
- Do the current provisions allow for sufficient transparency to avoid market power issues or are revisions required?
- Will the current arrangements provide information to the market appropriately for timely participation in all I-SEM market timeframes?
- Do the current arrangements provide sufficient information to allow Participants to efficiently participate in all market timeframes?
- Do the current provisions publish information sufficient for Participants to efficiently perform their obligations as balance responsible parties?

Annex A. ***Overview of current European implementation for Clearing & Settlement***

Typically, trading in Day Ahead and Intraday markets is cleared daily with invoices (or their equivalent) produced daily on working days. In OMIE, draft invoices are produced on non-working days and the due dates of invoices are aligned such that a billing week of Monday to Sunday exists and Participants experience one due date for all invoices in a week. Nord Pool issues invoices daily on working days with a different due date timeline for Day Ahead and Intraday market trades. EPEX Spot outsource this function to their clearing house ECC, ECC produce payment orders and reports daily with an accounting cut-off of 16:00 but only produces a single final invoice monthly covering all markets and fees on a monthly basis ex post.

Typically, e.g. Nord Pool and ECC, netting of positions is provided by the clearing house. This allows for the most efficient collateral position and therefore the most efficient use of capital by Market Participants.

A number of approaches are taken throughout Europe. In OMIE, clearing is performed through a clearing account owned and operated by the Market Operator through a wholly owned subsidiary. Payment of invoices is aligned such that there is in effect a weekly billing period of Monday to Sunday and money is transferred weekly as a result.

Nord Pool handles its clearing through Nord Pool Spot as central clearing party. Clearing is performed daily on working days. Currency costs are handled through the clearing mechanism.

EPEX Spot uses a wholly owned subsidiary ECC as the central clearing party. Similarly, money is transferred daily by the clearing house on working days.

APX similarly is the central clearing party for all markets in which they operate (Belgium, GB, Netherlands (NL) etc.). This obligation is realised through the wholly owned subsidiary company APX Clearing B.V. for Belgium and NL but through the same company (APX Commodities Ltd.) in GB.

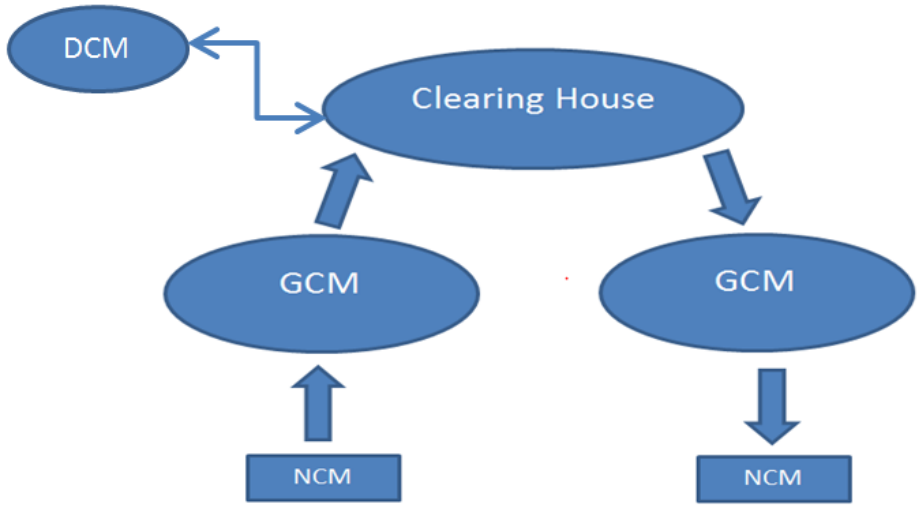
Commonly in Europe, clearing is performed by a company separate to the MO legally. This moves the liability away from the market operations function of the business; however, this can be a distinct entity or a wholly owned subsidiary. It would be required for the designated NEMO to incorporate arrangements for this into their business architecture. This is not, however, a requirement and is a question of business strategy.

Annex B. ***Typical Structure for a European Clearing and Settlement System***

In a centrally cleared marketplace one entity acts as the clearing house and performs clearing and settlement activities for the market. The clearing house acts as the Central Counter Party for all transactions. In order to participate, organisations must register with the clearing house. Broadly speaking, there are three main categories of membership offered by clearing houses, as outlined in the following table:

Participant	**Role**
General Clearing Member (GCM)	A general clearing member is permitted to transact with the clearing house and with non-clearing members. The GCM acts as guarantor for all transactions between NCMs and the clearing house; in this way, the clearing house is exposed to default of the GCM and the GCM is exposed to default of the NCM.
Non Clearing Member (NCM)	A non-clearing member is a party who is not permitted to directly settle with the clearing house but has entered a tri-lateral agreement with a clearing member and the clearing house to perform transactions on their behalf. Typically, these would be traders, Generators or Suppliers.
Direct Clearing Member (DCM)	A direct clearing member is permitted to perform transactions directly with the clearing house but cannot transact with non-clearing members.

All transactions are novated such that the clearing house takes part in the transaction i.e. buys from sellers and sells to buyers. An illustrative diagram is provided below.



This places significant risk on the clearing house as if the buyer defaults the clearing house is still liable for the payment to the seller. As such there are typically strict limits in terms of collateral and equity placed on direct or general clearing membership. This means, as general clearing members are liable for defaults of their non-clearing members, that the clearing house is only exposed to the defaults of

large and highly collateralized institutions which are less likely to default. In European energy markets, general clearing functions are usually provided by banks or other large financial institutions. Large energy companies have direct membership or non-clearing membership and small energy companies which cannot meet the requirements for general clearing membership are of such a size that non-clearing membership is the only available option. In all cases, registration with the clearing house is mandatory before participation in related markets, e.g. Day Ahead market.
As the clearing house is party to all transactions, netting of payment obligations is performed and this reduces the exposure of the clearing house and collateral requirements of members.

Annex C. *Shipping Arrangements for GB/EU interconnectors*

In the absence of a Shipping Agent, the convention for CWE and GB-France is that the exporting country's Central Counter Party is responsible for the physical transfer and will receive the congestion income.

The position in GB was unusual because of the existence of two Power Exchanges as well as their contractual arrangements with the relevant interconnectors. This led to the creation of a "Virtual Hub" and a "Special Purpose Vehicle" to manage the shipping and settlement. The following summarises the GB arrangements:

- BritNed acts a Shipping Agent for exchanges between GB and the Netherlands;
- GB-FR exchanges are settled directly between N2EX and EPEX clearing houses without a Shipping Agent;
- The 'Special Purpose Vehicle' (SPV) was created to act a Shipping Agent for intra-GB exchanges between N2EX and APX; and
- As of October 2014, Nord Pool Spot has taken over responsibility from Nasdaq OMX for N2EX clearing operations, and we understand this has removed the need for the SPV.

Borders / Interconnectors	Capacity Holders	PX	CCP	Shipping Agent
GB-FR / IFA cable	NGIC, RTE	GB1 : N2EX FR : EPEX	GB1 : NOMX FR : ECC	
GB-NL / BritNed Cable	BritNed	NL : APX NL GB2 : APX UK	NL : APX CCP NL GB2 : APX CCP UK	BritNed
Intra GB Virtual Interconnector	-	GB1 : N2EX GB2 : APX UK	GB1: NOMX GB2: APX CCP UK	SPV

The 'Virtual Hub' refers to a set of operating agreements that facilitate the participation of incumbent and new GB interconnector operators within the European price coupling process. National Grid Interconnectors (NGIC) tendered for a service provider to develop and operate the GB Virtual Hub and Nord Pool Spot (NPS) was appointed by NGIC to this role in 2012.
NPS roles include:

- Setting and publishing the euro/GBP FX rate to be used by both GB power exchanges;
- Submitting the (infinite) capacity between the two GB exchange hubs to Euphemia; and
- Facilitating the cross clearing and settlement arrangements for the GB-FR border (IFA interconnector) on behalf of NGIC.

The development of the complex legal structure for the Virtual Hub proved challenging as multiple contracts were required with a variety of parties including the TSO and competing exchanges and clearing houses.

Annex D. Data Publications and Data reports issued by SEM as per AP 6

DATA PUBLICATIONS

The following list identifies each Data Publication that is published to the general public via the MO Website and whether it is also reported to Participants via the MPI. When a report of the same name as set out in Appendix E is updated, and the information contained within those reports is generated by Market Operators Isolated Market System, the previously Published report of the same name will be overwritten by the new Publication.

Publication / Data Report Name	Class	Timing	Subscript	Published via Market Operator Website	Available via MPI	Confidentiality	Validity
The Code including Agreed Procedures	A	As defined in the Code	-	Y		Public Data	
Modification Proposal	A	As defined in the Code	-	Y		Public Data	
Public Consultation on Modification Proposal	A	As defined in the Code	-	Y		Public Data	
Responses to Public Consultation on Modification Proposal	A	As defined in the Code	-	Y		Public Data	
Further Information on Modification Proposal	A	As defined in the Code	-	Y		Public Data	
Final Recommendation Report	A	As defined in the Code	-	Y		Public Data	
Regulatory Authority decision on Final Modification Recommendation	A	As defined in the Code	-	Y		Public Data	
List of Parties, Participants and each of their Generator Units and Supplier Units	A	As defined in the Code	-	Y		Public Data	
Making or Lifting of a Suspension Order	A	As defined in the Code	-	Y		Public Data	
Termination Order	A	As defined in the Code	-	Y		Public Data	
Generator Unit Under Test Notice	A	As defined in the Code	-	Y		Public Data	
Proposed Market Operator Isolated Market System Testing Schedule	A	As defined in the Code	-	Y		Public Data	

Publication / Data Report Name	Class	Timing	Subscript	Published via Market Operator Website	Available via MPI	Confidentiality	Validity
Details of the Accession Fees and Participation Fees	A	As defined in the Code	-	Y		Public Data	
Date of the next meeting of the Modifications Committee	A	As defined in the Code	-	Y		Public Data	
Supplier Suspension Delay Period	A	As defined in the Code	-	Y		Public Data	
Members and chairperson of the Modification Committee	A	As defined in the Code	-	Y		Public Data	
Calculations and methodology used by the Market Operator during Administered Settlement	A	As defined in the Code	-	Y		Public Data	
Registered Capacity	A	As defined in the Code	-	Y		Public Data	
Forecast of Ex-Post Loss of Load Probability for each Trading Period in the forthcoming 31 Trading Days	A	By 16:30 on the day prior to the Trading Day	h	Y	Y	Public Data	
Annual Capacity Exchange Rate	B	As defined in the Code	y	Y		Public Data	
Annual Load Forecast	B	As defined in the Code	y	Y		Public Data	
Annual Capacity Payment Sum	B	As defined in the Code	y	Y		Public Data	
Market Price Cap	B	As defined in the Code	y	Y		Public Data	
Market Price Floor	B	As defined in the Code	y	Y		Public Data	
Residual Meter Volume Interval Proportion	B	As defined in the Code	v	Y		Public Data	
Value of Lost Load	B	As defined in the Code	y	Y		Public Data	
Value of Uplift Alpha	B	As defined in the Code	-	Y		Public Data	
Value of Uplift Beta	B	As defined in the Code	-	Y		Public Data	
Value of Uplift Delta	B	As defined in the Code	-	Y		Public Data	
Fixed Market Operator Charge (Supplier Unit)	B	As defined in the Code	vy	Y		Public Data	
Fixed Market Operator Charge (Generator Unit)	B	As defined in the Code	uy	Y		Public Data	

Publication / Data Report Name	Class	Timing	Subscript	Published via Market Operator Website	Available via MPI	Confidentiality	Validity
Variable Market Operator Price	B	As defined in the Code	y	Y		Public Data	
Capacity Period Payment Sum	B	As defined in the Code	c	Y		Public Data	
Fixed Capacity Payment Proportion	B	As defined in the Code	y	Y		Public Data	
Ex-Post Capacity Payment Proportion	B	As defined in the Code	y	Y		Public Data	
Engineering Tolerance	B	As defined in the Code		Y		Public Data	
MW Tolerance	B	As defined in the Code	t	Y		Public Data	
System per Unit Regulation Parameter	B	As defined in the Code		Y		Public Data	
Discount for Over Generation	B	As defined in the Code	uh	Y		Public Data	
Premium for Under Generation	B	As defined in the Code	uh	Y		Public Data	
Fixed Capacity Payments Weighting Factor for each Trading Period in the relevant Year	B	As defined in the Code	h	Y		Public Data	
Terms of Reference for Market Operator Audit	B	As defined in the Code	-	Y		Public Data	
Audit Report	B	As defined in the Code	-	Y		Public Data	
Transmission Loss Adjustment Factors	B	As defined in the Code	uh	Y		Public Data	
Distribution Loss Adjustment Factors	B	As defined in the Code	uh	Y		Public Data	
Combined Loss Adjustment Factors	B	As defined in the Code	uh	Y		Public Data	
Imperfections Price	B	As defined in the Code	y	Y		Public Data	
Imperfections Charge Factor	B	As defined in the Code		Y		Public Data	
Testing Tariff	B	As defined in the Code	uh	Y		Public Data	
Settlement Calendar	B	As defined in the Code	-	Y		Public Data	
Schedule of Testing Tariffs	B	As defined in the Code		Y		Public Data	

Publication / Data Report Name	Class	Timing	Subscript	Published via Market Operator Website	Available via MPI	Confidentiality	Validity
Fixed Credit Requirement, in respect of Supplier Units	B	As defined in the Code	y	Y		Public Data	
Fixed Credit Requirement, in respect of Generator Units	B	As defined in the Code	y	Y		Public Data	
Historical Assessment Period for the Billing Period	B	As defined in the Code	-	Y		Public Data	
Historical Assessment Period for the Capacity Period	B	As defined in the Code	-	Y		Public Data	
Analysis Percentile Parameter	B	As defined in the Code	-	Y		Public Data	
Credit Cover Adjustment Trigger	B	As defined in the Code	-	Y		Public Data	
Default level of the Warning Limit	B	As defined in the Code	-	Y		Public Data	
Annual Maintenance Schedule - Transmission Line Outages	B	As defined in the Code	-	Y		Public Data	
Two Year Maintenance Schedule - Generator Outages Schedule	B	As defined in the Code	-	Y		Public Data	
Flattening Power Factor	B	As defined in the Code	-	Y		Public Data	
Loss of Load Probability Table	B	As defined in the Code	-	Y		Public Data	
Market Operator Performance Report (paragraph 2.144)	C	As defined in the Code	-	Y		Public Data	
Monthly Maintenance Schedule – Generator Unit outages	C	As defined in the Code	-	Y		Public Data	
Monthly Maintenance Schedule – Transmission System line outages	C	As defined in the Code	-	Y		Public Data	
Monthly Load Forecast and Assumptions	C	By 10:00, at least one Working Day before start of Month	-	Y	Y	Public Data	
Loss of Load Probability for each Trading Period in the relevant Month	C	By 10:00, at least five Working Days before start of Month	h	Y	Y	Public Data	

Publication / Data Report Name	Class	Timing	Subscript	Published via Market Operator Website	Available via MPI	Confidentiality	Validity
Variable Capacity Payments Weighting Factor for each Trading Period in the relevant Month	C	At 10:00, at least five Working Days before start of Month	h	Y		Public Data	
Reports on progress and status of Modification Proposals	C	At least once every four Months	-	Y		Public Data	
Trading Day Exchange Rate between euro (€) and pounds sterling (£)	D	By 17:00 on the day prior to the EA1 Gate Window Closure	-	Y	Y	Public Data	
Available Transfer Capacity	D	By 09:30 on the day prior to the Trading Day	lh	Y	Y	Public Data	
Four Day Load Forecast	D	By 09:30 on the day prior to the Trading Day	-	Y	Y	Public Data	
Any important updates to Maintenance Schedule Data Transaction	D	As defined in the Code	-	Y		Public Data	
Two Day Rolling Wind Power Unit Forecast aggregated by Jurisdiction	D	By 09:30 on the day prior to the Trading Day, plus as updated	-	Y	Y	Public Data	
Ex-Ante One Market Schedule Summary	E	By 11:00 on the day prior to the Trading Day	uh	Y	Y		
Modified Interconnector Unit Nominations	E	By 11:00 on the day prior to the Trading Day	uh	Y	Y	Member Private	
Ex-Ante One System Marginal Prices	E	By 11:00 on the day prior to the Trading Day	h	Y	Y	Public Data	
Ex-Ante One Shadow Prices	E	By 11:00 on the day prior to the Trading Day	h	Y	Y	Public Data	
Ex-Ante Two Market Schedule Summary	F	By 13:00 on the day	uh	Y	Y	Public Data	

Publication / Data Report Name	Class	Timing	Subscript	Published via Market Operator Website	Available via MPI	Confidentiality	Validity
		prior to the Trading Day					
Modified Interconnector Unit Nominations	F	Daily by 13:00 on the day prior to the Trading Day	uh	Y	Y	Member Private	
Ex-Ante Two System Marginal Prices	F	By 13:00 on the day prior to the Trading Day	h	Y	Y	Public Data	
Ex-Ante Two Shadow Prices	F	By 13:00 on the day prior to the Trading Day	h	Y	Y	Public Data	
Ex-Ante Two Interconnector Implicit Auction Offered Interconnector Capacity	E	By 11:00 on the day prior to the Trading Day	Ih	Y	Y	Public Data	
Within Day One Interconnector Implicit Auction Offered Interconnector Capacity	F	By 13:00 on the day prior to the Trading Day	Ih	Y	Y	Public Data	
Within Day One Market Schedule Summary	G	By 09:30 on the Trading Day	uh	Y	Y	Public Data	
Modified Interconnector Unit Nominations	G	Daily by 09:30 on the Trading Day	uh	Y	Y	Member Private	
Within Day One System Marginal Prices	G	By 09:30 on the Trading Day	h	Y	Y	Public Data	
Within Day One Shadow Prices	G	By 09:30 on the Trading Day	h	Y	Y	Public Data	
Demand Control Data Transaction (Appendix K)	H	One day after Trading Day by 14:00	-	Y	Y	Public Data	
Technical Offer Data Accepted within the EA1 Gate Window (Appendix I)	H	One day after Trading Day, by 14:00	uh	Y	Y	Public Data	

Publication / Data Report Name	Class	Timing	Subscript	Published via Market Operator Website	Available via MPI	Confidentiality	Validity
Technical Offer Data Accepted within the EA2 Gate Window (Appendix I)	H	One day after Trading Day, by 14:00	uh	Y	Y	Public Data	
Technical Offer Data Accepted within the WD1 Gate Window (Appendix I)	H	One day after Trading Day, by 14:00	uh	Y	Y	Public Data	
Commercial Offer Data Accepted within the EA1 Gate Window (Appendix I)	H	One day after Trading Day, by 14:00	uh	Y	Y	Public Data	
Commercial Offer Data Accepted within the EA2 Gate Window (Appendix I)	H	One day after Trading Day, by 14:00	uh	Y	Y	Public Data	
Commercial Offer Data Accepted within the WD1 Gate Window (Appendix I)	H	One day after Trading Day, by 14:00	uh	Y	Y	Public Data	
Ex-Ante One Market Schedule	H	One day after Trading Day, by 15:00	uh	Y	Y	Public Data	
Ex-Ante Two Market Schedule	H	One day after Trading Day, by 15:00	uh	Y	Y	Public Data	
Within Day One Market Schedule	H	One day after Trading Day, by 15:00	uh	Y	Y	Public Data	
Modified Interconnector Unit Nominations	H	One day after Trading Day, by 15:00	uh	Y	Y	Public Data	
Active Interconnector Unit Export Capacity Holding	H	One day after Trading Day, by 15:00	-	Y	Y	Public Data	

Publication / Data Report Name	Class	Timing	Subscript	Published via Market Operator Website	Available via MPI	Confidentiality	Validity
Active Interconnector Unit Import Capacity Holding	H	One day after Trading Day, by 15:00	-	Y	Y	Public Data	
Ex-Ante Indicative Operations Schedule	H	Day after Trading Day, by 16:00	-	Y	Y	Public Data	
Dispatch Instructions	H	Day after Trading Day, by 16:00	-	Y	Y	Public Data	
SO Interconnector Trades	H	Day after Trading Day, by 16:00	lh	Y	Y	Public Data	
All Price-affecting Metered Data, excluding Trading Site Supplier Units for Trading Sites with Non-firm Access for all available Trading Periods	H	Day after Trading Day, by 15:00	uh	Y	Y	Public Data	
Generator Unit Technical Characteristics Data Transaction (Appendix K)	H	Day after Trading Day, by 16:00	-	Y	Y	Public Data	
Energy Limited Generator Unit Technical Characteristics Data Transaction (Appendix K)	H	Day after Trading Day, by 16:00	-	Y	Y	Public Data	
Ex-Post Indicative Market Schedule Quantity	H	Day after Trading Day, by 16:00	uh	Y	Y	Public Data	Valid only until Ex-Post Initial Market Schedule published on D+4
Ex-Post Indicative System Marginal Prices	H	Day after Trading Day, by 16:00	h	Y	Y	Public Data	Valid only until Ex-Post Initial Market Schedule published on D+4

Publication / Data Report Name	Class	Timing	Subscript	Published via Market Operator Website	Available via MPI	Confidentiality	Validity
Ex-Post Indicative Shadow Prices	H	Day after Trading Day, by 16:00	h	Y	Y	Public Data	Valid only until Ex-Post Initial Market Schedule published on D+4
Daily Actual Load Summary (D+1)	H	One day after Trading Day at 16:00	-	Y	Y	Public Data	
Nominal System Frequency	H	One Working Day after Trading Day, by 17:00	h	Y	Y	Public Data	
Average System Frequency	H	One Working Day after Trading Day, by 17:00	h	Y	Y	Public Data	
Net Inter Jurisdictional Import for all available Trading Periods	H	One Working Day after Trading Day, by 17:00, and as updated	eh	Y	Y	Public Data	
Metered Generation	H	One Working Day after Trading Day, by 17:00	uh	Y	Y	Public Data	
Credit Assessment Price for the Undefined Exposure Period for Billing Periods	H	Each Working Day by 17:00	-	Y		Public Data	
Estimated Capacity Price for the Undefined Exposure Period for Capacity Periods	H	Each Working Day, by 17:00	θ	Y		Public Data	
Ex-Post Indicative Dispatch Offer Price	H	Two Working Days after Trading Day, by 17:00	uh	Y	Y	Public Data	
Ex-Post Indicative Tolerance for Over Generation	H	Two Working Days after Trading Day, by 17:00	uh	Y	Y	Public Data	

Publication / Data Report Name	Class	Timing	Subscript	Published via Market Operator Website	Available via MPI	Confidentiality	Validity
Ex-Post Indicative Tolerance for Under Generation	H	Two Working Days after Trading Day, by 17:00	uh	Y	Y	Public Data	
Ex-Post Indicative Energy Payments to Generator Units	H	Two Working Days after Trading Day, by 17:00	h	Y	Y	Public Data	
Ex-Post Indicative Loss-Adjusted Residual Error Volume	H	Two Working Days after the Trading Day, by 17:00	eh	Y	Y	Public Data	
Ex-Post Indicative Aggregated Interval Net Demand	H	As defined in the Code	eh	Y		Public Data	
Ex-Post Indicative Aggregated Non Interval Net Demand	H	As defined in the Code	eh	Y		Public Data	
Daily Actual Load Summary (D+4)	H	Four days after Trading Day at 17:00	-	Y	Y	Public Data	
Ex-Post Initial Market Schedule Quantity	H	Four days after Trading Day, by 17:00	uh	Y	Y	Public Data	
Ex-Post Initial System Marginal Prices	H	Four days after Trading Day, by 17:00	h	Y	Y	Public Data	
Ex-Post Initial Shadow Prices	H	Four days after Trading Day, by 17:00	h	Y	Y	Public Data	
Ex-Post Initial Dispatch Offer Price	H	Five Working Days after Trading Day, by 17:00	uh	Y	Y	Public Data	
Ex-Post Initial Tolerance for Over Generation	H	Five Working Days after Trading Day at 17:00	uh	Y	Y	Public Data	
Ex-Post Initial Tolerance for Under Generation	H	Five Working Days after Trading Day at 17:00	uh	Y	Y	Public Data	

Publication / Data Report Name	Class	Timing	Subscript	Published via Market Operator Website	Available via MPI	Confidentiality	Validity
Ex-Post Initial Energy Payments to Generator Units	H	Five Working Days after Trading Day, by 17:00, and as updated at 17:00 the day of recalculation	h	Y	Y	Public Data	
Ex-Post Initial Loss-Adjusted Residual Error Volume	H	Five Working Days after the Trading Day, by 17:00	eh	Y	Y	Public Data	
Ex-Post Initial Aggregated Interval Net Demand	H	As defined in the Code	eh	Y		Public Data	
Ex-Post Initial Aggregated Non Interval Net Demand	H	As defined in the Code	eh	Y		Public Data	
Loss-Adjusted Net Demand for Error Supplier Units	H	15 Days after the Trading Day by 17:00	h	Y	Y	Public Data	
Aggregated Loss-Adjusted Settlement Net Demand ∑(SNDLF) for all Supplier Units in Ireland (ROI and NI)	I	Three Working Days after end of Capacity Period, by 17:00	eh	Y	Y	Public Data	
Aggregated Loss-Adjusted Settlement Net Demand ∑(SNDLF) for all Supplier Units in Ireland (ROI and NI)	I	Seven Working Days after end of Capacity Period, by 12:00	eh	Y	Y	Public Data	
Aggregated Loss-Adjusted Settlement Net Demand ∑(SNDLF) for all Supplier Units in Ireland (ROI and NI)	I	In the fourth month after Initial Capacity settlement	eh	Y	Y	Public Data	
Aggregated Loss-Adjusted Settlement Net demand ∑(SNDLF) for all Supplier Units in Ireland (ROI and NI)	I	In the thirteenth month after Initial capacity	eh	Y	Y	Public Data	

Publication / Data Report Name	Class	Timing	Subscript	Published via Market Operator Website	Available via MPI	Confidentiality	Validity
		settlement					
Aggregated Loss-Adjusted net demand ∑(NDLF) for all Supplier Units in Ireland and Northern Ireland	I	Three Working Days after end of Capacity Period, by 17:00	-	Y	Y	Public Data	Valid only until the Revised NDLF for all supplier units in Ireland is received on TD+4WD
Aggregated Loss-Adjusted net demand ∑(NDLF) for all Supplier Units in Ireland and Northern Ireland	I	Seven Working Days after end of Capacity Period, by 12:00	-	Y	Y	Public Data	Valid only until the revised NDLF for all supplier units in Ireland is received four months later or on an ad hoc rerun
Aggregated Loss-Adjusted net demand ∑(NDLF) for all Supplier Units in Ireland and Northern Ireland	I	In the fourth month after Initial Capacity settlement	-	Y	Y	Public Data	Valid only until the revised NDLF for all supplier units in Ireland is received thirteen months later or on an ad hoc rerun
Aggregated Loss-Adjusted net demand ∑(NDLF) for all Supplier Units in Ireland and Northern Ireland	I	In the thirteenth month after Initial capacity settlement	-	Y	Y	Public Data	Valid only until the revised NDLF for all supplier units in Ireland is received on an ad hoc rerun
Loss-Adjusted Net Demand ∑(NDLF) for all Supplier Units in Ireland and Northern Ireland	I	Ad hoc	-	Y	Y	Public Data	Valid only until the revised

Publication / Data Report Name	Class	Timing	Subscript	Published via Market Operator Website	Available via MPI	Confidentiality	Validity
							NDLF for all supplier units in Ireland is received on the next rerun
Ex-Post Indicative Capacity Payments to each Generator Unit,	I	Four Working Days after end of Capacity Period, by 17:00	uh	Y	Y	Public Data	
Ex-Post Initial Capacity Payments to each Generator Unit,	I	Seven Working Days after end of Capacity Period, by 17:00	uh	Y	Y	Public Data	
Ex-Post Indicative Capacity Payments Weighting Factor	I	Three Working Days after end of Capacity Period, by 17:00	h	Y	Y	Public Data	
Ex-Post Initial Capacity Payments Weighting Factor	I	Seven Working Days after end of Capacity Period, by 12:00	h	Y	Y	Public Data	
Ex-Post Indicative values of Eligible Availability	I	Four Working Days after Capacity Period, by 17:00	uh	Y	Y	Public Data	
Ex-Post Initial values of Eligible Availability	I	Seven Working Days after Capacity Period, by 17:00	uh	Y	Y	Public Data	
Ex-Post Initial Ex-Post Margin	I	Seven Working Days after end of Capacity Period, by 17:00	h	Y	Y	Public Data	
Ex-Post Initial Loss of Load Probability	I	Seven Working Days after end of Capacity Period, at 17:00	h	Y	Y	Public Data	

Publication / Data Report Name	Class	Timing	Subscript	Published via Market Operator Website	Available via MPI	Confidentiality	Validity
MSP Software Run Cancellation Report	J	Ad hoc, within 10 minutes of any MSP Software Run Cancellation		Y	Y	Public Data	

DATA REPORTS

The following list identifies each Data Report produced as scheduled reports exclusively for Participants via the MPI.

Publication / Data Report Name	Class	Timing	Subscript	Available via MPI	Confidentiality	Validity
List of Active Units	A	As updated	-	Y	Member Public	
List of Active Market Participants	A	As updated (within two days of a successful application)	-	Y	Member Public	
List of Active Market Participants and Units	A	As updated (within two days of a successful application)	-	Y	Member Public	
List of Suspended/Terminated Market Participants	A	As updated (at least within two days of issue)	-	Y	Member Public	
Daily Load Forecast Summary	D	Daily, by the EA1 Gate Window Closure, plus as updated		Y	Member Public	
Available Credit Cover	E	Following successful completion of each Ex-Ante One MSP Software Run	pr	Y	Member Private	Valid until the next Available Credit Cover Report is produced
Excluded Bids Report	E	Immediately following the EA1 Gate Window Closure		Y	Member Private	
Ex-Ante One Market Schedule Detail	E	Daily, by 11:00 on the day prior to the Trading Day	-	Y	Member Private	
Interconnector Unit Nominations	E	By 11:00 on the day prior to the Trading Day	uh	Y	Member Private	
Available Credit Cover	F	Following successful completion of each Ex-Ante Two MSP Software Run	pr	Y	Member Private	Valid until the next Available Credit Cover Report is produced
Excluded Bids Report	F	Immediately following the EA2 Gate Window Closure		Y	Member Private	

Publication / Data Report Name	Class	Timing	Subscript	Available via MPI	Confidentiality	Validity
Ex-Ante Two Market Schedule Detail	F	Daily, by 13:00 on the day prior to the Trading Day	-	Y	Member Private	
Interconnector Unit Nominations	F	Daily, by 13:00 on the day prior to the Trading Day	uh	Y	Member Private	
Required Credit Cover	F	Each Working Day, by 14:30	pr	Y	Member Private	Valid until the next Required Cover Report is produced
Cancelled Settlement Reallocation Agreements	F	Each Working Day, by 14:30	-	Y	Member Private	Valid until the next report containing cancelled Settlement Reallocation Agreements is produced
Ex-Ante Indicative Actual Schedule	F	Daily, post EA1 Gate Window Closure and before Trading Day by 16:00	-	Y	Member Private	
Excluded Bids Report	G	Immediately following the WD1 Gate Window Closure		Y	Member Private	
Available Credit Cover	G	Following successful completion of each Within Day One MSP Software Run	pr	Y	Member Private	Valid until the next Available Credit Cover Report is produced
Within Day One Market Schedule Detail	G	Daily, by 09:30 on the Trading Day	-	Y	Member Private	
Interconnector Unit Nominations	G	Daily, by 09:30 on the Trading Day	uh	Y	Member Private	
Daily Ex-Post Indicative Market Schedule Summary	H	One day after Trading day, by 16:00	-	Y	Member Public	

Publication / Data Report Name	Class	Timing	Subscript	Available via MPI	Confidentiality	Validity
Daily Ex-Post Initial Market Schedule Summary	H	Four days after Trading Day, by 17:00	-	Y	Member Public	
Indicative Interconnector Flows and Residual Capacity	H	One day after Trading Day, by 16:00	-	Y	Member Public	
Initial Interconnector Flows and Residual Capacity	H	Four days after Trading Day, by 17:00	-	Y	Member Public	
Ex-Post Indicative Energy Payments to Generator Units	H	One Working Day after Trading Day, at 17:00	uh	Y	Member Private	Valid only until Initial invoice is created at 12:00 four days after Billing Period
Indicative Energy Charges to Supplier Units	H	One Working Day after Settlement Day at 17:00	vh	Y	Member Private	Valid only until Initial invoice is created at 12:00 four days after Billing Period
Settlement Reallocation Data Transaction	H	Five Working Days after end of Billing Period, at 12:00	p	Y	Member Private	Valid only until Initial invoice is created at 12:00 four days after Billing Period
Ex-Post Initial Energy Payments to Generator Units	H	Five Working Days after Settlement Day, by 12:00	uh	Y	Member Private	Valid only until revised invoice is created at four Months and thirteen Months after Billing Period
Daily Dispatch Instructions	H	Day after Trading Day, by 16:00	-	Y		

Publication / Data Report Name	Class	Timing	Subscript	Available via MPI	Confidentiality	Validity
Initial Energy Charges to Supplier Units	H	Five Working Days after Settlement Day, by 12:00	-	Y	Member Private	Valid only until revised Invoice is created at four Months and thirteen Months after Billing Period
Daily Ex-Post Indicative Market Schedule by Market Participant	H	One day after Trading Day by 16:00		Y	Member Private	Valid only until Ex-Post Initial Market Schedule published by 17:00 four days after Trading Day
Daily Ex-Post Initial Market Schedule by Market Participant	H	Four days after Trading Day by 17:00		Y	Member Private	
Daily Meter Data Detail D+1 (Price Effecting)	H	One day after Trading day by 17:00		Y	Member Private	
Daily Meter Data Detail D+3 (Price Effecting)	H	Three days after Trading day by 17:00		Y	Member Private	
Daily Ex-Post Indicative Interconnector Nominations	H	One day after Trading day by 16:00		Y	Member Private	
Daily Ex-Post Initial Interconnector Nominations	H	Four days after Trading Day by 16:00		Y	Member Private	
Daily Revised Interconnector Modified Nominations	H	One day after Trading Day by 16:00. Updated as available		Y	Member Private	
Available Credit Cover	H	Following successful completion of each Ex-Post Indicative MSP Software Run and Ex-Post Initial MSP Software Run	pr	Y	Member Private	Valid until next Available Credit Cover Report is produced
Ex-Post Indicative Capacity Payments Weighting Factor	I	Three Working Days after end of Capacity Period, at 17:00	h	Y	Member Private	Valid only until the initial is available, five Working Days after the end of each Capacity Period

Publication / Data Report Name	Class	Timing	Subscript	Available via MPI	Confidentiality	Validity
Ex-Post Indicative Capacity Payments to each Generator Unit	I	Three Working Days after end of Capacity Period, at 17:00	uh	Y	Member Private	Valid only until the Initial Invoices are produced five Working Days after the end of each capacity period at 12:00.
Initial Capacity Payments to each Generator Unit	I	Seven Working Days after end of Capacity Period, at 17:00	uh	Y	Member Private	Valid only until the Revised Invoices are produced four and thirteen Months after the end of each Capacity Period
Initial Capacity Charge to Supplier Units	I	Seven Working Days after end of Capacity Period, at 17:00	vh	Y	Member Private	Valid only until the Revised Invoices are produced four and thirteen Months after the end of each Capacity Period
Ex-Post Indicative Capacity Payments to Supplier Units	I	Three Working Days after end of Capacity Period, at 17:00	vh	Y	Member Private	Valid only until the Initial Invoices are produced five Working Days after the end of each Capacity Period at 12:00
Initial Ex-Post Capacity Payments Weighting Factor	I	Seven Working Days after end of Capacity Period, at 17:00	h	Y	Member Private	
Daily Market Operations Notifications	J	Daily, within day and ad-hoc	-	Y	Member Public	
Energy Resettlement Meter Data	J	Four months after end of Billing Period	-	Y	Member Private	
Resettlement Payments to Price Taker	J	Four months after end of Billing	-	Y	Member Private	

Publication / Data Report Name	Class	Timing	Subscript	Available via MPI	Confidentiality	Validity
Generator Units		Period				
Resettlement Charges to Supplier Units	J	Four months after end of Billing Period	-	Y	Member Private	