

**Integrated Single Electricity Market
(I-SEM)
Capacity Remuneration Mechanism
Detailed Design
Consultation Paper
SEM-15-044**

**Aughinish Alumina Ltd
Response
17 August 2015**

Table of Contents

1. Background	3
2. Primary Comment relation to I-SEM Capacity	3
Trading sites	3
3. CAPACITY REQUIREMENT	4
Security standard	4
Method	4
Location.....	4
4. PRODUCT DESIGN	5
Strike price	5
Market Reference Price (MRP)	5
Load following obligation.....	5
5. ELIGIBILITY.....	6
TRADING SITE PARTICIPATION & DEMAND SIDE UNIT	6
Supported units eligibility	7
Non-Firm Transmission Access	7
Mandatory versus discretionary bidding for eligible generators	7
De-rating	7
6. SUPPLIER ARRANGEMENTS.....	8
7. INSTITUTIONAL FRAMEWORK.....	8

Mr Brian Mulhern
Utility Regulator
Queens House
14 Queen Street
Belfast
BT1 6ED

Mr Thomas Quinn
Commission for Energy Regulation
The Exchange
Belgard Square North
Tallaght
Dublin 24

This response is non-confidential

1. Background

Aughinish Alumina Ltd (Aughinish) operates an Alumina Plant in West Limerick; the Alumina Plant is a Large Energy User with a 45MW baseload demand. The two generating units Sealrock 3 (SK3) and Sealrock 4 (SK4) were built following deregulation of the electricity market in Ireland; they operate within a trading site to satisfy the onsite power needs and substitute the steam needs of the onsite Alumina plant. They produce 80% efficient power and are certified as High Efficiency Combined Heat and Power (CHP) plants. The site can generate 160MW and consumes 45MW of power; excess power generation is exported to the grid by way of the 130MW Maximum Export Capacity.

Despite the ability of the site to enter into ‘islanding mode’, Aughinish rely on a secure grid and recognise the historic efforts of the Regulatory Authorities (RAs) in maintaining Capacity Adequacy. The I-SEM design is yet another challenge for the RAs in maintaining adequacy of supply whilst also addressing the other assessment criteria.

We trust the RA will find our response useful.

2. Primary Comment relation to I-SEM Capacity

Trading sites

Trading site treatment has been consulted upon in detail by Aughinish as part SEM/15/011 the Building Blocks Consultation Paper response and in SEM/15/026 the Trading Arrangements Detailed Design Markets Consultation Paper response. From the outset the Regulators have held to the principle that participants should not be disadvantaged in the move from SEM to I-SEM. Today the SEM nets generation volume and demand volume from trading sites. Our primary concern with the CRM design is:

Net settlement of trading sites is necessary to ensure Aughinish is not disadvantaged in the I-SEM compared with the current net settlement.

Below please find our detailed response to this consultation, it is predicated on the presumption that Aughinish as a single site trading site will not be disadvantaged in the I-SEM design.

3. CAPACITY REQUIREMENT

Security standard

The I-SEM market design should not aim to have Irish citizens less secure than neighbouring countries. For economic prosperity Ireland needs to continue to attract foreign direct investment. We should aim to have a reliability and adequacy of electrical supply equivalent or better than competing economies and definitely not inferior.

On a small island system such as the Island of Ireland the indivisibility of generation means that as capacity is reduced to close to the security standard there is a disproportionately high risk to system security, closure of one generator could put the system in crisis. Were such an event to occur, resulting in a positive market signal for investment, it might take many years to deliver a project. The intervening period would result in damaging loss of load events on the island.

As a grid connected power consumer Aughinish support the RAs historic interventions in the market to increase capacity long before the system neared its security standard. For Aughinish to remain viable on the world alumina market we must make production targets every day. A risk to power supply is a risk to the viability of any manufacturing plant. The minded position to maintain the 8hr LOLE is not consistent with the RA historic actions and if adopted without opportunity to intervene would jeopardise the affected economies.

Considering the island nature of the I-SEM it would appear that 8hr LOLE is not appropriate, perhaps the LOLE model is more suitable for a system with multiple interconnection or with smaller individual generators relative the market size.

Method

Indivisibility

Indivisibility is a key issue not mentioned in the consultation under 'Method'. As mentioned above the risk of a closure of a single generator in the SEM could singlehandedly flip the market from a secure position to a loss of load situation with multiple year build time to recover security. Irrespective of what LOLE decision is made there should be a method of valuing the risk of a single large exit from the market when determining capacity adequacy. This is not dissimilar to the TSO constraint to hold 100% reserve for the single biggest infeed.

Plant unreliability

Aughinish agree with the SEMC's justification to use a de-rated approach.

Location

Aughinish agree that the CRM should be for a single zone as long as the energy market is a single zone market.

4. PRODUCT DESIGN

Strike price

The CAP05 (CADA) contract is effectively a RO without which Aughinish would not have been able to bring the benefits of High Efficient CHP to the Irish system. This has given the market reliable, efficient power, it has reduced Ireland's carbon emissions and it has made Aughinish viable in a competitive world alumina market. This contract is effectively a Reliability Option, the strike price is a floating price centred around a gas generators variable costs. It has served Ireland and Aughinish well.

In the I-SEM CRM a very high strike price based on the marginal peaking plant would offer little risk to unreliable generators and offer little Performance Incentive to in-merit generators. With such a low risk CRM the auction clearing price is likely to be low and therefore unlikely to offer an incentive to new entrants. Additionally a very high strike price offers little protection to suppliers.

The RA could consider offering multiple CRM products in separate auctions e.g. peaker, mid-merit and baseload RO contracts? The reference prices could be set by short run marginal costs for a Best New Entrant (BNE) under each classification. Such a system might better satisfy the assessment criteria, solve the missing money issue, appropriately incentivise performance, encourage new entrants and offer an exit signal if necessary.

Suppliers and generators would have better price predictability allowing new market technologies and entrants to make investment decisions.

Market Reference Price (MRP)

A baseload or mid-merit CRM contract could use the Day-Ahead Market (DAM) as the MRP. This would incentivise long term supply security.

A peaker CRM would need to use the Balancing Market (BM) as the MRP. As discussed in the consultation this might reduce liquidity from the DAM if it were the only CRM option.

The consultation summary of market price provided a good overview of the options for a single strike price CRM. Option 4b Split Market Price would appear to be the closest matching solution to the Aughinish comments above. It removes the risk from participants in the DAM and also allows peaker units exposure to the BM price which should be allowed to reflect the true market price during a scarcity event.

Aughinish could also support Option 3, 100% DAM price, as the reference market which would ensure generators are available to generate at the day-ahead stage. This would ensure long term security of the system and empower the TSO to ensure security in near-time.

Load following obligation

The consultation paper examples show the merits and potential adverse supplier exposure of incorporating load following obligations. In principle Aughinish support load following obligation as outlined in the consultation paper, but decisions around ineligibility should be mindful of supplier exposures.

5. ELIGIBILITY

TRADING SITE PARTICIPATION & DEMAND SIDE UNIT

Aughinish operates a large alumina refinery in West Limerick. Alumina refining is an energy intensive industry; the plant was designed to use HFO to provide useful heat and to use 45MW of imported electrical power from the grid. In an effort to remain competitive in the world commodity market a High Efficient CHP plant was built to satisfy the electrical load and to supplement the useful heat demand. The excess power generated is exported to the electricity grid.

Uniquely in the Irish system Aughinish has three metering points on site, consumption meters in Castlefarm and two generating meters in Sealrock. The SEM as part of its post-event capacity settlement, nets the self-supplied load against the generation volume to determine the capacity volume Aughinish offered to the system.

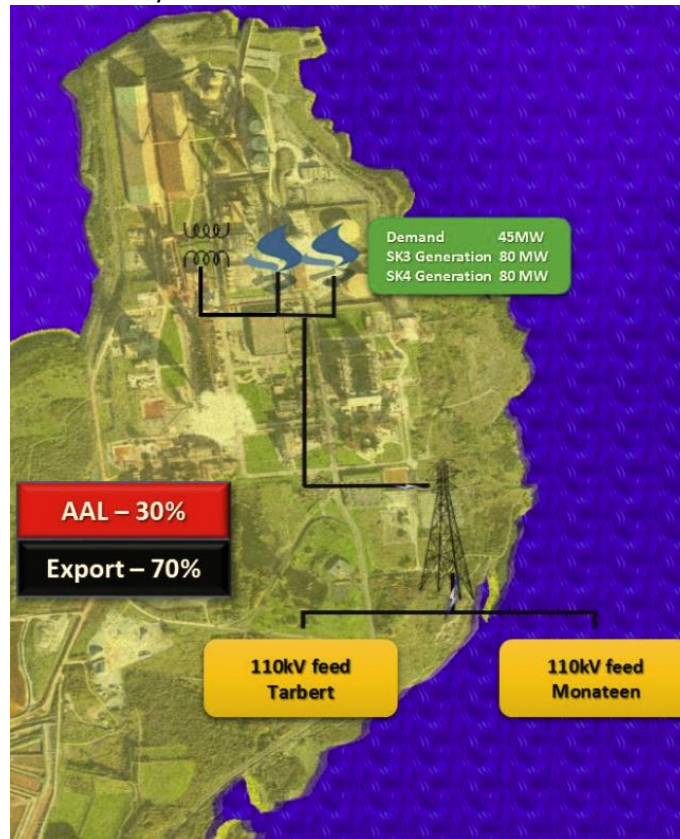


Figure 1 Aughinish Island Grid Connection

The Regulators have confirmed that participants' treatment will not be disadvantaged unnecessarily in the migration to I-SEM.

Aughinish would welcome the SEM Committees proposals on how Aughinish or trading sites/Auto-producers in general will be treated in the I-SEM Reliability Option (RO) auction.

Some observations:

- The RO auction entity must be matched with an entity in the energy market. Therefore the treatment of Aughinish site must be considered in both markets.
- Aughinish should not be forced to sell its full generation volume of 160MW in a RO auction and then expected to buy back 45MW under a RO supplier hedge.
 - The site only has a MEC of 130MW, therefore 160MW of capacity is only achievable if the alumina plant is operating i.e. consuming power.
 - The site self-supplies 45MW and exports the remaining 115MW
 - The site has a facility to enter 45MW islanding mode should there be technical reasons. It would appear counterintuitive if 45MW not connected to the grid were eligible for capacity.
 - This would not necessarily conflict with the TSOs requirement to maintain dispatch control of individual units on site. However as outlined in the Aughinish SEM-15-026 response there needs to be a de-minimis dispatch control to avoid a demand side response which is not offered to the market.

Demand Side Participation

Aughinish require clarity of the rules of trading site, as outlined above. We are both a demand side unit and a generation plant. Aughinish would support option 3 (DSUs do not receive a new energy payment for foregone consumption, but are exempt from RO difference payments) for DSU participation, it is appropriate that a DSU receive a capacity payment to be available to solve stress events.

Supported units eligibility

Option 3 All market participant should be eligible to participation subject to they being able to meet their obligations.

As a matter of principle no party should receive double capacity payment.

Non-Firm Transmission Access

Option 1: Eligible to bid and have the same de-rating factors as participants with firm access. This allows a generator to take on the delivery risk if they so wish.

Mandatory versus discretionary bidding for eligible generators

Aughinish as a low carbon thermal trading site generator might deem the CRM conditions too risky for our Alumina plant, enforced mandatory bidding would be classified as increased regulatory risk to doing business in Ireland. Aughinish recognise that market manipulation needs to be addressed but would ask the SEM committee to be mindful of unintended consequences.

De-rating

Aughinish as the only large CHP and Auto-producer in the SEM has much higher reliability than the applicable UK rating factor identified in the consultation. Aughinish would support participant specific de-rating factors for the existing fleet.

If a generator has proved to offer more capacity than its nameplate during historic stress events would the RA consider a re-rating factor greater than 100%?

6. SUPPLIER ARRANGEMENTS

The existing arrangements neglected to mention anything about the trading site arrangements in the SEM. Aughinish seek clarification from the SEM Committee on trading site arrangements.

CRM recovery should represent a higher weighting in times of likely stress events. Aughinish consumes power from the market 2-days every year; we schedule this for the second Tuesday in May. This demand side management to avoid stress events should be rewarded with lower CRM exposure.

Centralised netting of all markets and across all time frames should be used to minimise unnecessary credit cover requirements.

It would seem appropriate that all I-SEM participants are treated equally and therefore exchange rate risk should not be borne by any one sub-set of participants. Perhaps this socialising of the exchange rate costs should not extend to cross boarder participants trading on the interconnectors.

7. INSTITUTIONAL FRAMEWORK

Business separation to allow Eirgrid to act as the Delivery body for the CRM and to bid in the EWIC capacity is unlikely to provide much reassurance to the market and could result in an unnecessary cost to the public. Clear bidding rules and independent verification of the EWIC de-rating subject to CER overview might be sufficient.

As always Aughinish is at your disposal if further clarification is needed.

Best Regards,
Thomas O'Sullivan
Sr Business Analyst | Rusal Aughinish Alumina Ltd.