



Aughinish Alumina Limited

Response

**Integrated Single Electricity Market
(I-SEM)**

**Energy Trading Arrangements Detailed Design
Building Blocks Consultation Paper**

SEM-15-011

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This response is non-confidential

Aughinish Alumina Ltd. (“Aughinish”) welcomes the opportunity to respond to the Energy Trading Arrangements Detailed Design - Building Blocks Consultation Paper” (SEM-15-011) and note that this consultation is part of the overall development process for a decision on the detailed design of the trading arrangements for I-SEM.

Aughinish Alumina CHP Plant

Aughinish is a large alumina manufacturing refinery based in West Limerick since 1983, employing almost 600 people. Aughinish is one of the largest users of energy in Ireland (circa 850MW) and one of the largest users of power in the SEM, consuming 45MW of power 363 days of the year. Alumina produced in Aughinish is exported into a world market where we must compete against plant with more favourable input costs. Aughinish is a viable business today because we have year-on-year improved efficiencies to where we are one of the most energy efficient plants in the world.

In 2003 Aughinish invested over US \$130M in a 160MW High Efficiency combined heat and power (“CHP”) plant to meet the power and heat needs of the alumina refinery. Since commercial operation in 2006, the CHP plant has played a major role decarbonising the refinery’s production process and plays a significant part in contributing to Ireland reaching its energy efficiency targets and reducing emissions, accounting for an average saving of approx. 330,000 tonnes of CO₂ per annum. Under Irish law the threshold for high efficiency CHP is 10% primary energy saving (PES), Aughinish has been certified by the CER at twice this threshold. The CHP plant is designated as Priority Dispatch and operates as a price taker priority dispatch plant in the SEM.

Through such investments Aughinish have moved from a 100% HFO consumer in 2005 to a 100% natural gas consumer in 2014. As well as improving energy efficiencies this has reduced Irish carbon emissions by over 500,000 tonnes per annum.

In the event that the CHP could not export power the ability of the alumina plant to operate would be fundamentally restricted. Turning off the CHP would also have an immediate impact on the national CO₂ emission levels as a significant amount of CO₂ would have to be produced from other less efficient sources. The ability therefore of the CHP to continue to export its power to the grid is critical not only to the uninterrupted operation of the alumina manufacturing facility (meeting its continuous heat demand) but also to Ireland achieving its emission targets.

We are pleased that the Regulatory Authorities (“RAs”) have addressed many of the issues discussed at the Rules Liaison Group (“RLG”) meetings within the consultation. We ask however that the RAs note the importance of the following points to ensure a successful transition for the continued operation of the Aughinish CHP plant in the I-SEM and as long as these points are reflected in the I-SEM trading arrangements we support the consultation proposals subject to the comments presented in our detailed response below.

Our key points we specifically require to be implemented within the I-SEM are:

1. Treatment of Trading Sites:

Our concerns around trading site arrangements were raised in the RLG meetings and in our subsequent correspondence with the SEMC. The consultation paper does not address Trading Sites and we assume this is not an oversight or intended omission by the RAs as we note in the consultation comments under Section 2.2 that

“There are a number of topics that were discussed in the briefing papers and workshops but are not included in this consultation..... it was considered that these are better covered as part of the detailed markets design.”

We seek assurances from the RAs that the treatment of Trading Sites within the I-SEM will be included within the detailed market design and the following issues are addressed:

- a) Net Settlement: Net portfolio participation for trading is necessary to ensure Aughinish is not disadvantaged in the I-SEM compared with the current net settlement, made possible in the SEM due to the ex-post nature. Under the current SEM T&SC the CHP plant is dispatched on a unit basis but settled on a Net portfolio basis
Aughinish propose that we can submit net portfolio bid/offers to DAM/IDM otherwise we are effectively being forced to sell up to 160MW to the market and purchase back our on-site demand (up to 45MW) from the market with the risk that we would be settled on a unit basis after TLAf and other charges are applied. Net portfolio bidding would ensure that Aughinish can sell surplus electricity to the market whilst maintaining the supply to its on-site demand and retain its embedded benefits i.e. self-supply.

Note, this proposal is not to be confused with portfolio participation of large vertically integrated participants with generation and demand assets in different site locations which has been dismissed in the High Level Design (HLD). Aughinish is a single site with a very predictable net export of electricity.

- b) Steam security: The TSO has effectively dispatch control over the steam generation required by the on-site alumina plant through variations to the Dispatch Instructions issued. This exposure of steam production security on site would be reduced if Aughinish only offered our net exported power to the market and thus our Physical Nominations would be on a net portfolio dispatch basis.

However Aughinish recognise that this raises concerns for the grid security and the TSO would prefer unit dispatch of each generating unit. Aughinish can accept this position subject to the market design recognising ‘the need to ensure continuity in heat supply’ of our alumina plant within the Trading Site when dispatching the Aughinish generators. Aughinish propose that some form of de-minimis level in which the CHP cannot be switched off should apply i.e. the higher of Minimum Stable Generation (“MSG”) or the minimum useful heat requirements of the alumina plant. This is the Aughinish interpretation of Part 6 of SI no. 426 of 2014 for the implementation of the Energy Efficiency Directive (2012/27/EU) in Ireland.

2. Priority Dispatch and Constraints

Aughinish support the SEM committee proposed treatment of Priority Dispatch (“PD”) in the I-SEM, the use of Physical Nominations appears to be technology neutral but can act as PD flag to TSO in producing their schedules. However Aughinish has concerns that any significant

constraint down (or off) of any of the gas turbine generating units could necessitate the start-up of HFO boilers. This has genuine time restrictions, start-up costs, running costs and adverse environmental effects which must be taken into account before dispatching down our priority dispatched CHP plant within the Trading Sites. Aughinish propose that treatment of constraints regarding priority dispatched CHP within a Trading Site be restricted to the MSG of each generating unit to protect steam security at the site.

The SEM Committee decision to adhere to an 'absolute' interpretation of PD whereby economic factors are only taken account of in exceptional situations (whilst delivering renewables targets and mandatory priority dispatch as required under EU Directives) is still applicable under the I-SEM. Aughinish do not see the application of Absolute Priority Dispatch as an issue subject to the market monitoring rules applying to suppliers operating as BSPs and the TSO operating the system securely and safely with all parties recognising the Energy Efficiency Directive (2012/27/EU) requirements for efficient dispatch and energy efficient consumption of electricity.

Detailed Response to the Consultation

Treatment of Transmission Losses

Aughinish are of the view that the existing policy agreed under SEM-12-049 is not effective and an independent group should be set-up to evaluate how losses should be accounted for in this market.

- The TLAF system has failed as a location signal. This can be attributed to the indivisibility issue suffered in Ireland with relatively large generators in a small market. If a prospective generator follows the TLAF signal on where to locate they solve the problem and suffer the resulting poor TLAF recalculation. This was the Aughinish experience having invested and built in a location signalled to need reinforcement.
- Other generators experience a windfall with no investment or tracking of locational signals.
- Unequal generation and demand TLAFs may be a market design complication for I-SEM
- Generators will have to recalculate bids/INC/DECs from day, night and from month to month.
- The current TLAFs hinder investment. Investment decisions are all based on the worst TLAF not the average TLAF.

Aughinish would support further consideration of the suggestion that a central body, maybe Eirgrid, enters the DAM to buy the volume of expected losses for each day. The cost of losses would still be borne by consumers but through a more transparent method.. Aughinish understand that there is market precedent in Europe for this method.

- Day Ahead and intraday losses: In principle Aughinish can support the proposed treatment of generator losses in the DAM and IDM subject to assurances that power consumed and produced within Trading Sites continue to be settled on a net basis.
- Balancing Market: treatment should be consistent with the DA & IDM to reduce confusion.
- Interconnector Losses: Aughinish agree with the SEMC that the best approach for I-SEM is to represent the two interconnectors in market systems with their own loss factors and not to employ an aggregate loss factor. Losses should be consistent with other generators i.e. not variant on volume flow, unless the TLAF methodology is being revisited.

Treatment of Constraints

Aughinish agrees with the SEMC proposed high-level treatment of constraints i.e. to remain the same in I-SEM as in the current SEM within the context of changing from ex-post to an ex-ante market. There are concerns about the potential manipulation of the market and we would like to have more information regarding what measures will be implemented within the I-SEM to mitigate any market dominance possibilities especially regarding price submissions, large block bid volumes, long start up times, excessive minimum income constraints etc. as these submissions could all be used to keep smaller in-merit plant out of the market.

In addition, Aughinish propose that Trading Sites with on-site heat demand operating high efficiency priority dispatched CHP should have the security of maintaining the heat supply considered by the TSO, when constraints are necessary. Aughinish has concerns that any significant constraint down (or off) of any of the gas turbine generating units could necessitate the start-up of HFO boilers. This has genuine time restrictions, start-up costs, running costs and adverse environmental effects which

must be taken into account before dispatching down our priority dispatched CHP plant within the Trading Sites.

Aughinish propose that treatment of constraints regarding priority dispatched CHP within a Trading Site be restricted to the higher of MSG of each generating unit or the useful heat site demand to maintain security of heat supply.

Treatment of Firm Access

Aughinish believe that generators or any market participant should be free to determine what level of electricity they wish to sell or purchase in the DAM and IDM hence generators with non-firm access should have the opportunity to participate in the DAM/IDM at a level above their firm access quantity. The reasons for non-firm status should not be a determining factor in designing an efficient market.

Settlement of any difference between dispatch quantity/metered output and the ex-ante forward contract position will be settled at the balancing market price i.e. generators can contract ex-ante in excess of FAQ, but are financially responsible if unable to deliver, and are settled at the balancing market price. We support Option A.

Treatment of Priority Dispatch

Aughinish agree that the Balancing Market and Imbalance Settlement are the timeframes where the implementation of priority dispatch is important and we support the proposed treatment of Priority Dispatch plant in the Consultation paper.

Aughinish in its written response to the RAs after the RLG meetings of 26th November 2014 explained why this type of approach was necessary for Priority Dispatched CHP plant operating within a Trading Site as this will allow Aughinish (and other priority dispatched plant) to provide balancing and other DS3 type services to the market without jeopardising the security and continuity of maintaining the useful heat supply to the on-site customer.

The proposal to allow Priority Dispatched plant to simultaneously elect a quantity of its output to be price making and a quantity to be price taking should address our concerns raised in previous correspondence with the RAs subject to the following observations:

1. For the reason outlined above it is vital that Physical Notifications are fully de-linked from market contract position
2. For Dispatch Instructions the heat load of a CHP plant is taken into consideration e.g. the lowest level the TSO can dispatch a PD unit is it's Physical Notification less any elective decremental volume unless system security is a concern, in which case the CHP unit can be dispatched down to MSG.
3. Priority Dispatched plant should be allowed to update their physical notifications up to real time.
4. Our concerns around Trading Site net settlement and potentially net dispatch need to be addressed as part of the treatment of Priority Dispatch within the detailed market design.

5. Absolute Priority Dispatch interpretation by the TSO should allow suppliers to submit offers to the balancing market, BM, and act as Balance Service Provider, BSPs. The Aughinish net volume of the decremental volume offered to the market could vary from zero to 80MW depending on the alumina plant heat requirements.

Aughinish do not see the application of Absolute Priority Dispatch as an issue subject to the market monitoring rules applying to suppliers operating as BSPs and the TSO operating the system securely and safely with all parties recognising the Energy Efficiency Directive (2012/27/EU) requirements for efficient dispatch and energy efficient consumption of electricity.

Curtailment

Aughinish in principle believes, the operation of an efficient market is to pay generators for performing as per their Physical Nomination and deviations from this due to instructions from the TSO should be compensated and therefore (subject to more information being published by the SEMC) we support Mandated Bidding Behaviour.

The treatment of curtailment post-2018 should apply differently to DAM and IDM trades than to BM and imbalance settlement output.

De Minimis Level

Despite listing the benefits to suppliers of netting contracts and noting the resulting higher charges to participants, the SEMC have stated that the current arrangement is fit for purpose and will remain. Aughinish believe there is no advantage to losing additional liquidity by increasing the de minimis level.

The high level design consultations identified liquidity as key requirement in the market design, on these grounds there is merit in aligning the de minimis threshold with that of the Grid Code at 5MW. However there would have to be generation aggregators available in the market to minimise the financial and administrative burden to smaller participants.

Currency

Aughinish agree with the SEMCs proposals that:

- The I-SEM should operate on the basis of dual currency as the SEM does now; and
- Currency costs should be projected ex-ante and charged to suppliers as a tariff.

Market Information

Aughinish recognise how too much information could impair competitiveness however our view has not changed from previous correspondence with the RAs namely:

- Transparency has served the SEM well; in as much as possible the same information should be available in the I-SEM.
 - Publishing bids D+1 would be consistent with current policy
 - Published bids should not be anonymous

- A monthly market report would be useful identifying market movements and the reasoning behind them. Covering items such as SMP, wind generation, fuel mix, spark and dark spreads, interconnector flow, TSO counter trades, curtailment levels, significant market events, constraint costs. Some such items used to be discussed in the monthly MOUG (Market Operator User Group) meetings.
- Wind forecasts should be made available by the TSO
 - This would help small participants
 - This would allow market participants to solve energy issues before TSO do it in BM
- Mandatory outage declarations as might be required by EU legislation needs to have de-minimis level. Not all outages would be material and this is an administrative burden on smaller participants.
- Type 2, market participant interface (MPI) is functional but not suitable for market analysis. We believe there should be economies of scale in centralising the development of a modern user interface for I-SEM.
- Type 3 interface should be facilitated with best practice IT solutions.

Aughinish would be happy to meet and clarify any of the points made above to the SEM Committee or other interested parties.

With regards,

Best regards,

Thomas O’Sullivan

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