

# **Charging for interconnector capacity allocated intra-day in SEM**

**A joint consultation paper by Moyle  
Interconnector Limited and EirGrid  
Interconnector Limited**

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## 1.0 Introduction

The existing Single Electricity Market (“SEM”) design does not provide market participants with opportunities to access and utilise unused interconnector capacity following the current single day-ahead market gate closure. This is not aligned with Regulation (EC) 714/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the network for cross-border exchanges in electricity including Annex 1 (“Congestion Management Guidelines or CMGs”). These regulations state that “*successive intra-day allocations of available transmission capacity for day D shall take place on days D-1 and D, after the issuing of the indicated or actual day-ahead production schedules*”. A SEM modification proposal, submitted in March 2010, has been developed by industry stakeholders to introduce intraday trading (“IDT”) into the SEM, facilitating access to interconnector capacity not utilised at SEM’s first day-ahead gate closure and therefore addressing the CMG requirements. The modification has been recommended for approval by the Modifications Committee and IDT is due to be implemented in SEM in Q3 2012.

Currently SEM has a single gate closure. IDT will introduce two additional gate closures. At the initial day-ahead gate closure (EA1), only participants who have purchased interconnector capacity will be able to submit interconnector offers into the SEM, as is the case at present. At the second day-ahead gate closure (EA2), all interconnector units may submit offers into the SEM and interconnector capacity (to the extent that it is available following the EA1 Market Scheduling and Pricing (“MSP”) software run) will be implicitly allocated to those offers scheduled by the SEM. In other words, energy trades across the interconnectors will be allocated jointly (or implicitly) with the capacity required to make those trades. Holdings of explicit capacity will no longer be a requisite for trading on interconnectors in the SEM. This process will be repeated for the third gate closure (WD1) which is intra-day but only considers scheduling for the last 12 hours of the trading day. Full details of IDT can be found at <http://www.sem-o.com/MarketDevelopment/IDT/Pages/Home.aspx>.

### 1.1 Purpose of this paper

The regulatory authorities directed Moyle and East West to develop methodologies for intra-day charging when approving their access rules in September 2011. Whilst the SEM IDT modification considers the detail of delivering IDT in the SEM, it does not consider how participants may be charged for implicitly allocated interconnector capacity.<sup>1</sup> The party responsible for administering and collecting such charges is the interconnector owner, therefore Moyle Interconnector Ltd and EirGrid Interconnector Ltd (as East West interconnector owner) are hereby consulting on the options for how such charges might be applied<sup>2</sup>. Issues to be considered include:

- whether to apply Use-it-or-lose-it (“UIOLI”) or Use-it-or-sell-it (“UIOSI”) to unused capacity made available for implicit allocation ;
- how to determine whether congestion has occurred; and

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<sup>1</sup> The detail of how participants are charged for implicitly allocated interconnector capacity will be updated in the Moyle and East West access rules following the outcome of this consultation.

<sup>2</sup> Please note that while this is a joint consultation, the respective interconnector owners will be separately responsible for administering any charges due for use of their interconnector.

- how to calculate a charge for implicitly allocated capacity;

## 1.2 Outcomes

The approved charging methodology will need to be reflected in both the Moyle and East West interconnectors' access rules. Under the respective interconnector licences any changes to the access rules are subject to regulatory approval so, following this consultation, Moyle and East West will propose a recommended solution to the regulatory authorities NIAUR, CER and OFGEM in order that a final decision can be made.

## 2.0 UIOSI and UIOLI

The CMGs referenced above state that *“Long and medium term capacity rights.....shall be subject to the use-it-or-lose-it or use-it-or-sell-it principles at the time of nomination.”*

- UIOLI (Use It or Lose It): UIOLI is the process of re-auctioning unused (i.e. non-nominated) capacity without return of the proceeds to the previous owner.
- UIOSI (Use It or Sell It): UIOSI is the process of re-auctioning unused (i.e. non-nominated) capacity with proceeds being returned to the previous owner.

As per the Moyle and East West access rules, UIOSI is applied ahead of the daily explicit auctions for non-nominated capacity with proceeds of daily auctions being returned to the previous owner. The price paid is the clearing price in the day-ahead auction. This is in line with other interconnectors in the FUI region i.e. BritNed and IFA.

A charge for implicitly allocated capacity is required to ensure that market participants pay the appropriate economic value for use of the interconnector intraday. However, the question is whether revenue generated by such charges should be paid to the original capacity holder.

### 2.1 What happens on other Interconnectors?

To comply with the CMGs coordination/alignment of access rules is required between the interconnector owners in the France-UK-Ireland (FUI) region and this is a factor to be considered when determining a methodology for intraday charging on the SEM interconnectors. The following table is a summary of the UIOSI/UIOLI arrangements on the other interconnectors connecting to Great Britain:

	<b>IFA</b>	<b>BritNed</b>	<b>Moyle/EWIC</b>
<b>What happens to long term capacity that has not been nominated?</b>	Entered into daily explicit auction	Entered into daily implicit auction	Entered into daily explicit auction
<b>UIOSI/UIOLI (Daily auction)</b>	UIOSI	UIOSI	UIOSI

<b>How is charge for daily capacity determined?</b>	Clearing price in explicit auction	100% of the price difference between the GB and Dutch markets <sup>3</sup>	Clearing price in explicit auction
<b>What happens to daily capacity that has not been nominated?<sup>4</sup></b>	Entered into intraday explicit auction	Entered into intraday explicit auction	Made available for implicit allocation intraday in SEM
<b>UIOSI/UIOLI (Intraday auction)</b>	UIOLI	UIOLI	TBC – options set out below
<b>How is charge for intraday capacity determined?</b>	Clearing price in explicit auction	Clearing price in explicit auction	TBC – options set out below

In considering arrangements for our nearest borders, it is important to note the differences in the markets and their nominations processes. Due to the characteristics of SEM, capacity nomination by a SEM interconnector user indicates an intention to submit an offer into SEM, the user does not necessarily know if this offer will result in being scheduled in the SEM and the interconnector capacity used. The other interconnectors linked to GB operate in self-dispatch markets. This means that when their users submit a nomination, the nomination will be scheduled on the interconnector and the capacity will be used. The key difference here is that capacity holders decide when their capacity will be used, whereas in the SEM this is determined by the market scheduling process.

## 2.2 Options around UIOSI and UIOLI

The following are options under consideration for implementing UIOSI and/or UIOLI for IDT in the SEM:

1. UIOLI: If not scheduled in EA1, capacity is lost and the user does not receive payment for the capacity. The interconnector owner retains any charges billed to those parties who avail of the newly available capacity and have been scheduled in EA2 and WD1. This would apply UIOLI to capacity for the whole trading day.
2. UIOSI (a): If not scheduled in EA1 in the SEM, any charges for scheduled flows in EA2 directly made possible by unused and previously allocated capacity are attributed to capacity holders at the EA1 gate closure. The interconnector owner would bill parties who have been scheduled in the EA2 market schedule and would pass the revenues collected on to the original capacity holders. Any charges for additional scheduled flows at WD1 would be

<sup>3</sup> Adjusted for losses

<sup>4</sup> On the SEM interconnectors “not nominated” in this case refers to capacity that is not scheduled in SEM

retained by the interconnector owner. With this option, the first 12 hours of the trading day would be subject only to UIOSI in EA2, while the last 12 hours would have UIOSI in EA2 followed by UIOLI in WD1.

3. UIOSI (b): If not scheduled in EA1 in the SEM, any charges for scheduled flows in EA2 and WD1 directly made possible by unused and previously allocated capacity are attributed to capacity holders at the EA1 gate closure. The interconnector owner would bill parties who have been scheduled in the EA2 and WD1 market schedule and would pass the revenues collected on to the original capacity holders.

The impacts of each approach are explored in the following table:

## Impacts of UIOLI/UIOSI at the intraday stage

	<b>UIOLI (Use it or Lose it)</b>	<b>UIOSI (Use it or Sell it) (a)</b>	<b>UIOSI (b)</b>
<b>Co-ordination with FUI region</b>	UIOLI improves regional coordination with IFA and BritNed as both apply UIOLI intraday.	Not in line with IFA/BritNed as both apply UIOLI intraday.	Not in line with IFA/BritNed as both apply UIOLI intraday. Also, UIOSI in WD1 after EA2 is inconsistent with other UIOSI and voluntary resale situations. In other auctions, participants put capacity into an auction and if the auction is uncongested the value of the capacity is zero and the capacity is lost. With UIOSI in EA2 and WD1, the first auction may not be congested, but the same capacity could be resold again in WD1 and the capacity holder may gain value the second time.
<b>Availability of Capacity</b>	Capacity not planned to be used in SEM is more likely to be made available for the day ahead explicit capacity auction on AMP through UIOSI (and not held for speculative reasons). It should increase the amount of capacity in the day-ahead explicit auctions as this would be the last opportunity for UIOSI.	There is less incentive for traders to free up available capacity and attempt to sell it ahead of gate closure if they do not intend to use it. Instead they may receive revenue through UIOSI if they retain the capacity right up to the intraday stage.	There is less incentive for traders to free up available capacity and attempt to sell it ahead of gate closure if they do not intend to use it. Instead they may receive revenue through UIOSI if they retain the capacity right up to the intraday stage.
<b>Trading opportunities</b>	UIOLI removes any incentive for capacity holders to submit a speculative offer in EA1 to test the market followed by a "true" offer in EA2. The market schedule is therefore more likely to be stable from EA1 to EA2.	Interconnector capacity holders can bid into EA1 at an advantage compared to other participants. Their EA1 bid can be a high bid to test the market, with their EA2 bid submitted as a best and final offer, based on their analysis of the EA1 results.	Interconnector capacity holders can bid into EA1 and EA2 at an advantage compared to other participants. Their EA1 bid can be a high bid to test the market, with their EA2 bid (or WD1 bid) submitted as a best and final offer, based on their analysis of the EA1 (or EA2) results.
		Creates potential for speculative "capacity only" trade. Traders can buy capacity in the long term explicit auctions and can hold it until EA2 where they may attain revenue from energy trades conducted by other	Creates potential for speculative "capacity only" trade. Traders can buy capacity in the long term explicit auctions and can hold it until EA2 (and possibly WD1) where they may attain revenue from energy trades

		parties.	conducted by other parties.
<b>Systems Implementation</b>	The systems implementation of UIOLI is less complex so should be less expensive than a UIOSI option.	The systems implementation of UIOSI would be more complex and therefore may be more expensive than a UIOLI option.	The systems implementation of UIOSI for both intraday gates would be more complex and therefore may be the most expensive option.
<b>Value</b>	The value of long term capacity may be eroded due to there being additional opportunities to acquire capacity intra-day without compensation to explicit capacity holders.	Has the potential to increase the value of long term capacity. Capacity holders may perceive there to be more value in selling their capacity intraday rather than in the day-ahead explicit auction.	Has the potential to increase the value of long term capacity. Capacity holders may perceive there to be more value in selling their capacity intraday rather than in the day-ahead explicit auction.
	The interconnector owner would effectively be paid twice for any reallocated capacity. If a capacity holder is outbid in EA1, and successfully bids again at a later gate closure they would pay twice for capacity.	If a capacity holder is outbid in EA1, they can bid again at EA2 and not have to pay again for the capacity as under UIOSI they would pay but be compensated the same amount.	If a capacity holder is outbid in EA1, they can bid again at EA2 and WD1 and not have to pay again for the capacity as under UIOSI they would pay but be compensated the same amount.

### Consultation question 1:

**What are your views on each option and issues arising in relation to implementing UIOSI/UIOLI on the SEM interconnectors?**

### 2.3 Superposition

Superposition is a mechanism which nets trades on an interconnector in order to enable trading in excess of the capacity of the interconnector in each direction whilst still respecting the physical capacity of the interconnector. For example, if an interconnector's capacity is 500MW in each direction and 200MW were scheduled in a particular direction in the EA1 market schedule, use of superposition would mean that 700MW would be available for trade in the opposite direction at the next gate closure.

For the avoidance of doubt, if there are any charges due to be collected for flows made possible by superposition, these charges would be due to the interconnector owner and would not be payable to EA1 capacity holders under any UIOSI arrangements.

### 3.0 Calculating when congestion occurs

The CMGs state that "*Congestion management procedures associated with a pre-specified timeframe may generate revenue only in the event of congestion which arises for that timeframe*". This means that interconnector owners can only charge for capacity when the demand for capacity exceeds supply. In an explicit auction, this is determined by whether the total bids for capacity exceed the volume of capacity offered in that particular auction.

A methodology to apply similar logic to implicitly allocated capacity in the SEM needs to be developed, in order to determine when a charge is due. Any such methodology will have to be applied for every half-hour trading period to determine if congestion has occurred.

### 3.1 Options for determining congestion

The interconnector owners have considered various options for determining whether congestion has occurred and present a preferred option as follows:

*Sum all the interconnector offers<sup>5</sup> at a gate closure and if this total is greater than the available capacity<sup>6</sup> in the relevant direction at that gate closure, then congestion has occurred.* This considers whether demand for capacity has exceeded supply

Another option which was considered but not deemed optimal:

Sum all the *in merit* interconnector offers at a gate closure and if this total is more than the available capacity at that gate closure then congestion would have occurred. This option imposes the

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<sup>5</sup> For Import this would be the sum of the Maximum Interconnector Unit Import Capacity values submitted as part of the Commercial Offer Data for Interconnector Units in the relevant SEM Gate. Similarly the sum of Maximum Interconnector Unit Export Capacity for Export. *Note:* Definition of terms as per the SEM T&SC.

<sup>6</sup> Available Transfer Capacity (ENTSO-E definition) for Import or Export as appropriate.

additional constraint of offers having to be in merit in the SEM in order to be used to determine congestion so it would be influenced by additional market factors rather than simply whether demand for capacity exceeded supply.

Recommendation: The key determinant of whether an interconnector auction is congested should be whether demand for capacity exceeds supply; therefore our preferred option is the most clear and accurate of the options considered.

**Consultation question 2:**

**What is your preferred option for determining congestion intraday on the SEM interconnectors as described above? Suggestions other than those outlined above are welcome.**

**4.0 Calculating the congestion charge**

As stated previously, a congestion charge can only be applied in trading periods where an interconnector is deemed to be congested (using whichever methodology is implemented). If congestion does not occur in a trading period, participants scheduled in the EA2 and WD1 market schedules for that trading period are not required to pay interconnector charges and no payment will be due to either the interconnector owners or capacity holders who were not scheduled in EA1.

On other European interconnectors (such as on BritNed) the charge for implicitly allocated capacity is derived from the market spread, based on the prices for the respective markets as quoted on a power exchange. This is the standard practice in markets that are coupled i.e. interconnector flows are determined by whether there is a difference in the connected markets respective prices as quoted on a power exchange. Where there is such a difference in respective prices, power will flow from the low price market to the higher price market as long as the price difference is sufficient for the flow to be economic when losses etc are accounted.

Currently, the SEM is not coupled with GB and its power is not traded on power exchanges; this approach is therefore not available in the SEM. However, this established practice has influenced the thinking of the interconnector owners in developing options for calculating the congestion charge. The interconnector owners believe that such a charge should be derived from the spread between the ex-ante SMP in the SEM and the participant's interconnector offer, as the latter should be a reasonable proxy for the GB price at the relevant time.

In simple terms, imports to SEM would attract a charge which would be a function of (ex-ante SMP-offer price) while exports from SEM would attract a charge which would be a function of (offer price-ex-ante SMP) such that the calculation would never result in a negative charge.

#### 4.1 Options for calculating the congestion charge

The interconnector owners have considered the following options in respect of the calculation of the congestion charge:

1. **Adopt a marginal pricing approach.** For imports, this would entail identifying the highest scheduled interconnector offer in each trading period. The price to be paid by all users which are implicitly allocated capacity in that trading period would then be the difference between the highest scheduled interconnector offer and the ex-ante SMP in the SEM. This would mean that all interconnector users except the user with the highest scheduled offer would receive an infra-marginal rent.
2. **Adopt something more akin to a “pay as bid” approach.** For each interconnector user, this would mean the congestion charge would be the difference between their accepted interconnector offer and the SEM SMP multiplied by a pre-defined percentage (e.g. 50%). This would mean the infra-marginal rent is shared between the interconnector user and the interconnector owner/previous capacity holder.
3. **Use a Betta price in place of interconnector offers.** The methodology would be broadly the same as option 2 but would take into account the difference between the GB/Betta price and the SEM SMP in a particular trading period. The calculation would also need to take the SEM capacity charge into account, since the Betta price is “all-in-one” (i.e. capacity and commodity elements are not separated out). This would be the most complicated option to implement, as a suitable Betta price would also need to be selected and whichever index was chosen would not necessarily reflect the price that all interconnector users are paying for their electricity in the Betta market at the relevant time. This would require further thought regarding what BETTA and SEM price would be used.

The interconnector owners are of the opinion that option 1 is the most suitable, as the marginal pricing approach most closely resembles both the arrangements implemented on other borders and the interconnector owners’ explicit auction approach.

#### Consultation question 3:

**What is your preferred option for calculating congestion charges for implicitly allocated capacity on the SEM interconnectors? Suggestions other than those outlined above are welcome.**

## Responses

Queries relating to this consultation or responses to this consultation should be sent preferably in electronic form to both:

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Responses to the consultation should be received by close of business on **14th March 2012**.

As well as responses to the specific questions asked in this paper we would welcome views on any other pertinent issues that these do not address.

The interconnector owners will publish all responses received on their respective websites unless otherwise requested by respondents. Respondents who wish their response to remain confidential should clearly mark their response to this effect and include reasons for confidentiality. All responses, including those marked as confidential, may be forwarded to the regulatory authorities for review.

