

---

# **Annex 7: Justification of configurations of the Bidding zone review region “Single Electricity Market Ireland” which are to be considered in the bidding zone review process**

Bidding Zone Review Region "SEM Ireland"

18 February 2020

---

## 1.1 Argumentation for SEM status quo configuration

### Summary

Ireland and Northern Ireland introduced a new, fully integrated Single Electricity Market (SEM) on 1<sup>st</sup> October 2018 comprising a single bidding zone for the island. With regard to Article 14 of Regulation (EU) 2019/943 and Article 32 of Commission Regulation (EU) 2015/1222 it is proposed to maintain the current bidding zone configuration for SEM for the following reasons:

- The SEM is a new market that needs time to settle down and the data required to support any potential case for diverging from the status quo is not yet in place;
- SEM does not have direct links to its European neighbouring countries and is only connected to GB via two HVDC links; GB in turn is also only connected to the European continent via a number of HVDC links;
- ACER’s Annual Report 2017 confirms that there are no issues with the provision of cross-zonal capacity or remedial actions for SEM. It also highlights that NTC and tradable SEM-GB capacities have been increasing;
- The Ireland-UK (IU) Capacity Calculation Methodology was approved by the relevant NRAs on 23 July 2018 and provides that the maximum available capacity will be offered to the market and also that TSOs will make available non-costly and costly remedial actions.
- The expected social welfare gains from SEM joining the Single Day-ahead Market Coupling can now be realized following the introduction of the new SEM in 2018. This is particularly the case when one considers that 95% of the SEM traded volume is in the Day-ahead Market (DAM).
- The latest figures from the SEM Committee indicate that the interconnectors are working efficiently with flows overwhelmingly in the correct direction.

### Cross-zonal Capacity

There is no direct HVDC link from the island of Ireland to the European continent. The transmission system in Ireland and Northern Ireland is only interconnected with other European countries via Great Britain by means of two offshore HVDC links – Moyle connecting Northern Ireland at Ballycronan More to Scotland at Auchencrosh and the East West Interconnector connecting Ireland at Woodland to Wales at Deeside. However, our system is operated in such a way that the cross-border flows are not constrained on the HVDC interconnectors in real-time (see Figure 1).

Figure 1: Real-time (ICS) for the period 2015-2017



Source: ENTSO-E Bidding Zone Configuration Technical Report 2018

HVDC interconnectors are virtually unaffected by the factors that impact available cross-zonal capacity on HVAC interconnectors. ACER noted in its “Annual Report on the Results of Monitoring the Internal Electricity and Gas Markets in 2016” that the share of the benchmark capacity made available for trading was much higher (over 85% on average) for High-Voltage Direct Current (HVDC) interconnectors. As a result, ACER determined in its 2017 Annual Report that the countries connected to the rest of Europe with HVDC interconnectors only (i.e. United Kingdom and Ireland) did not need to be analysed, as they perform considerably better than average.

The amount of cross zonal capacity made available to the market in SEM has been increasing in recent years (see Figure 2)<sup>1</sup>.

The objective of the current capacity calculation process is to give the market with the highest possible capacity for energy trading taking into account the available interconnector capacity, secure and efficient operation of the power systems on both sides of the Interconnector and the possibility of faults on either network. The Capacity Calculation Methodology in Article 20(2) of Commission Regulation (EU) 2015/1222 has been approved by the National Regulatory Authorities in Ireland and UK and provides that the cross-zonal capacity shall be equal to the Maximum Permanent Technical Capacity (MPTC) value unless a specific planned or unplanned outage with significant impact on the interconnector exists in one of the bidding zones to which that interconnector is connected or an alternative lower firm capacity value is stated in a connection agreement between an interconnector owner and a connecting TSO. In addition, TSOs will make available all non-costly remedial actions and costly remedial actions that are deemed to be reasonable, efficient and proportionate. The negligible impact of the SEM HVDC interconnections to neighbouring European countries, the availability of the maximum available

---

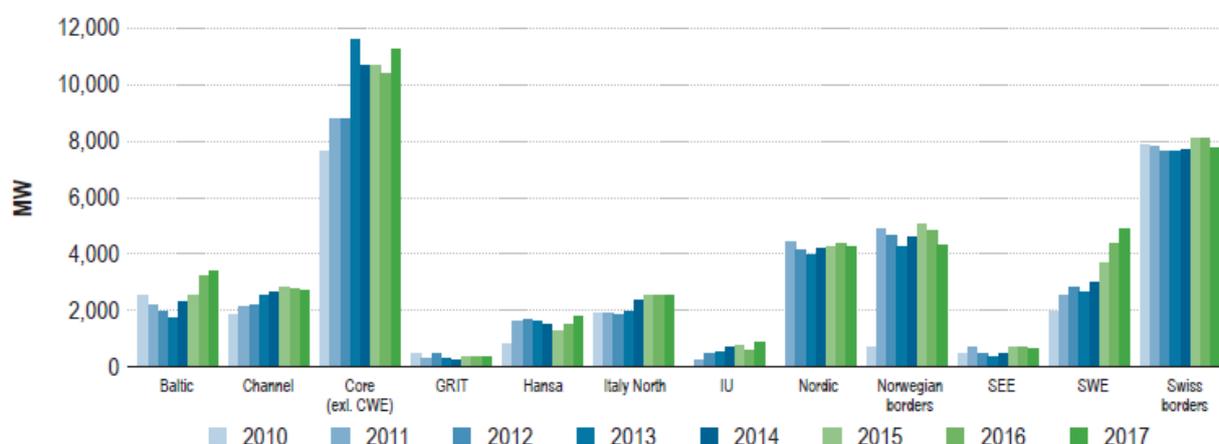
<sup>1</sup> Capacity decreased in the second half of 2016 (and at the beginning of 2017), following an interconnector fault on the East West interconnector (EWIC).

cross-zonal capacity to the market and availability of non-costly and costly remedial actions all contribute to the achievement of the terms set out in Article 14 of Regulation (EU) 2019/943.

The initial list of CNECs to be considered in the cross-zonal capacity calculation for the IU region, are listed below and can be found in Annex 1 of the IU Capacity Calculation Methodology.

- CNECs relating to Moyle Interconnector in SONI control area
- CNECs relating to Moyle Interconnector in National Grid control area
- CNECs relating to East West Interconnector in EirGrid control area

Figure 2: NTC averages of both directions on cross-zonal borders, aggregated per CCR – 2010–2017 (MW)



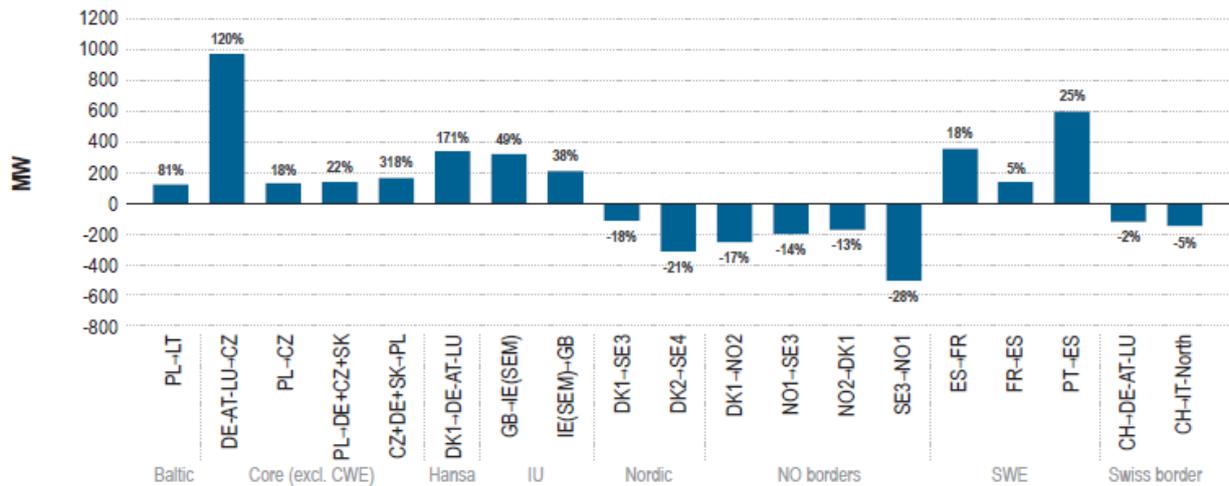
Source: ACER/CEER - Annual Report on the Results of Monitoring the Internal Electricity and Natural Gas Markets in 2017 – Electricity Wholesale Markets Volume

Overall, ACER concludes in its Annual Report 2017 that improvements should be investigated in the IU Capacity Calculation Region, due to the relatively high costs of remedial actions arising from internal exchanges in the GB bidding zone; however, it notes these internal congestions do not seem to lead to discrimination of cross-zonal exchanges. Importantly, there is no corrective action to be taken in the SEM bidding zone on cross-zonal capacity or remedial actions.

### Efficient Cross-Zonal Trade

ACER also identifies in its Annual Report 2017 that cross-zonal trade between the SEM and GB markets has significantly increased in 2017 (see Figure 3).

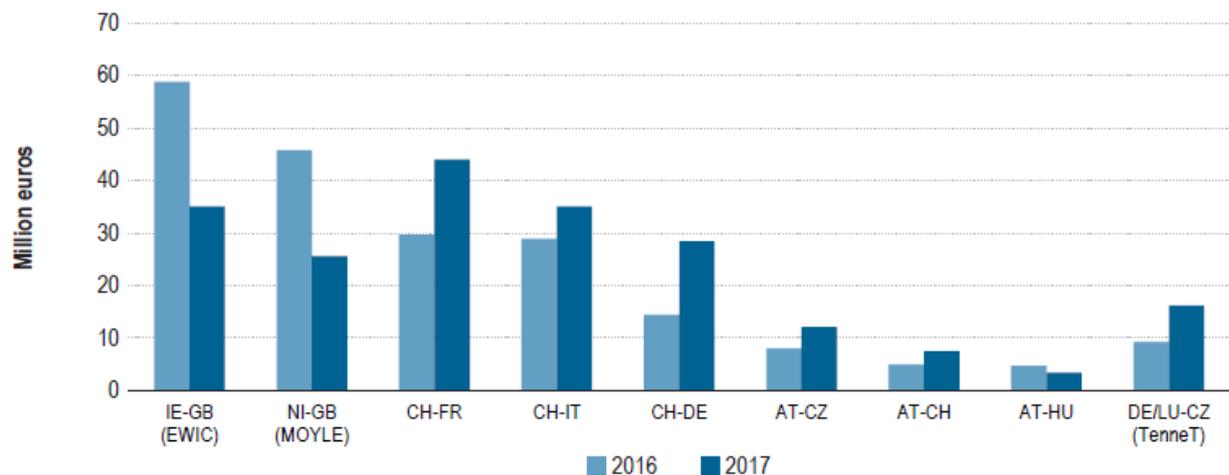
Figure 3: Changes in tradable capacities (NTC) in Europe



Source: ACER/CEER - Annual Report on the Results of Monitoring the Internal Electricity and Natural Gas Markets in 2017 – Electricity Wholesale Markets Volume

As the SEM was only introduced in October 2018, products pursuant to Commission Regulation (EU) 2015/1222 were not tradable prior to this and could not therefore be included for the reporting year. ACER highlighted in its Annual Report 2017 that significant social welfare gains were still to be made for the SEM-GB bidding zone border (see Figure 4). SEM is now part of the Single Day-ahead Market Coupling, which will lead to increased market efficiencies and social welfare gains for electricity consumers going forward.

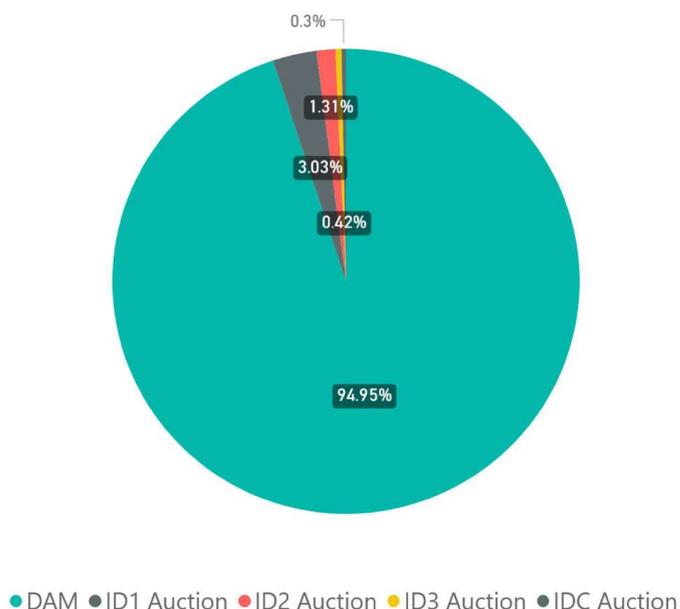
Figure 4: Estimated social welfare gains still to be obtained from further extending DA market coupling per border (€millions)



Source: ACER/CEER - Annual Report on the Results of Monitoring the Internal Electricity and Natural Gas Markets in 2017 – Electricity Wholesale Markets Volume

The SEM Committee, the decision making authority for the Single Electricity Market on the island of Ireland, published its report on “Single Electricity Market Performance 1 April 2019 – 30 June 2019 (SEM-19-035)” on 8<sup>th</sup> August 2019. The key findings from the report indicate that prices in the day-ahead market are 19% lower than in the equivalent period last year; that the day-ahead market is highly liquid with over 95% of volumes traded (see Figure 5); and that the interconnectors between the SEM and GB bidding zones continue to flow efficiently (see Figure 6).

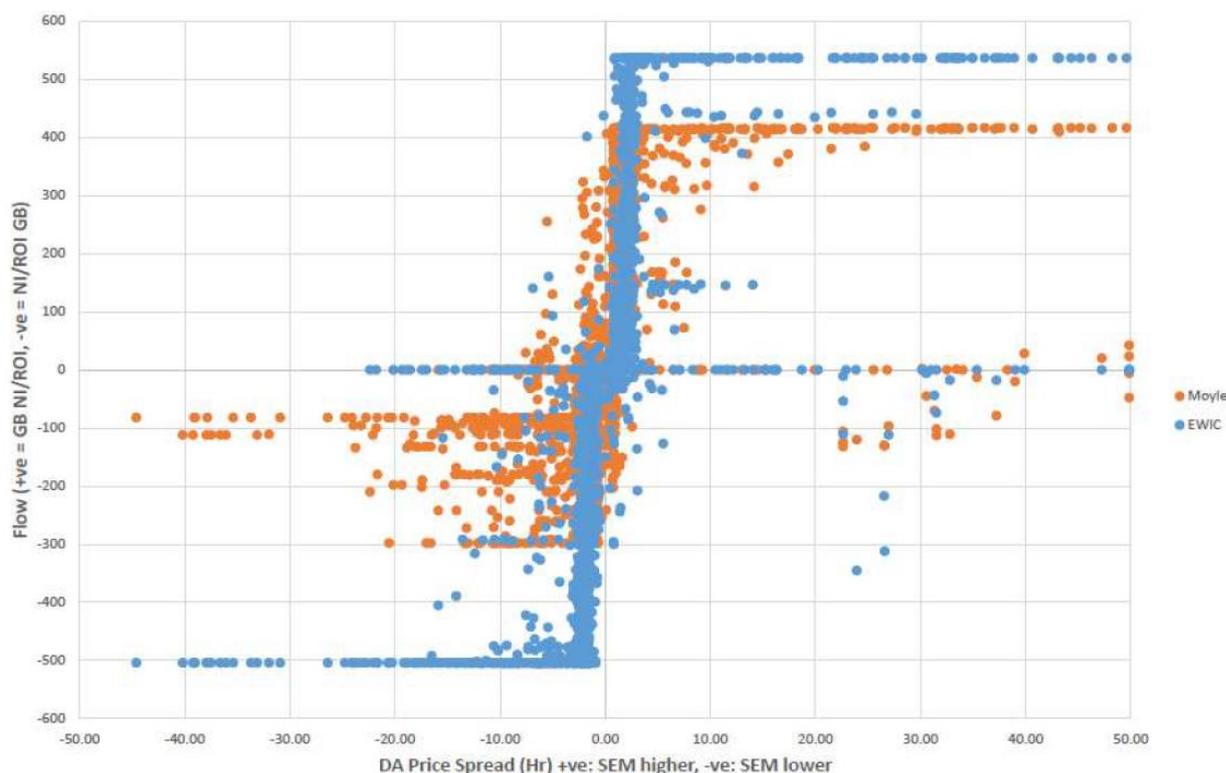
Figure 5: Market share by volume



Source: Single Electricity Market Performance 1 April 2019 – 30 June 2019 (SEM-19-035), 8 August 2019.

In the new SEM, physical flows on Moyle and EWIC Interconnectors are linked to the SEM Day Ahead market and the price difference between it and the DAM price in GB. The X axis shows the difference in DAM prices between the SEM and GB so that the positive price difference on the right of the graph is when the SEM price is higher than the GB price and the Interconnector should be importing. The negative values on the left of the graph are when the SEM price is lower and the interconnectors should be exporting. The Y-axis shows the volume of the flow and its direction so that in the upper half of the graph, in which values are positive, the Interconnectors are importing into the SEM from GB. In the lower half the negative values indicate an export.

Figure 6: Interconnector efficiency



Source: Single Electricity Market Performance 1 April 2019 – 30 June 2019 (SEM-19-035), 8 August 2019.

For there to be evidence of efficient trading the scatter graph should show the periods of flow in the upper right of the graph and bottom left. In the upper right quadrant the SEM price is higher than the GB price and the Interconnectors are importing. In the bottom left quadrant the SEM price is lower than the GB price and the interconnectors are exporting. The flows on Moyle and EWIC are overwhelmingly in the correct direction. However a few exceptions in the lower right quadrant can be observed. These can be attributed to the market coupling error which occurred at the beginning of 7<sup>th</sup> June due to a technical issue experienced by EPEX. The issue was caused by the submission of a corrupt order, not one placed from a SEM participant, nor an issue with the market coupling algorithm. As per the fall back procedure, local auctions were held for each national market area. This resulted in no GB price being available to provide the market price spread for this period.