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Northern Ireland Utility Regulator  
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Date: 3<sup>rd</sup> August 2016

**RE: Measures to promote liquidity in the I-SEM Forward Market**

Dear Sirs,

Brookfield Renewable welcome the opportunity to provide feedback on the Measures to promote liquidity in the I-SEM Forward Market consultation published by the SEM Committee, who comprise of both the Northern Ireland Utility Regulator and the Commission for Energy Regulation (the RAs).

Brookfield Renewable Ireland is part of Brookfield Renewable Partners L.P., one of the largest publicly-traded pure-play renewable power platforms globally with over 7,300 MW of hydroelectric and wind capacity across 14 power markets and in excess of 460 MW of operating wind capacity with a 200 MW wind development pipeline in Ireland. Our power operating platform employs over 1,500 people globally, including full operating, development, construction oversight, and wholesale power marketing capabilities. In addition to operating a wind portfolio in the Single Electricity Market, Brookfield Renewable also actively trade power across the interconnectors between SEM and BETTA.

Brookfield Renewable welcome the work to date on the Forwards and Liquidity workstream, including the organisation of the I-SEM Forward & Liquidity Market Participant Working Group which Brookfield Renewable participated in. The promotion of liquidity in the Forward market timeframe is of huge important of all participants, a fact which is brought to light with the move to I-SEM and the possibility of more volatile Day-Ahead prices.

In addition to the Forward market, the Working Group Terms of Reference stated that liquidity in the Intraday market was to be addressed during the Working Group meetings and in this consultations. This has not been the case and concerns about liquidity in the Intraday market have been ignored. Brookfield Renewable therefore strongly urge the regulators to address the industry's concerns on illiquidity in the Intraday market. If these Intraday liquidity concerns prove well founded Brookfield

Renewable request that liquidity monitoring and promotion measures are developed and implemented to address the issue.

This response addresses Brookfield Renewable's view on the consultation, the participation of wind generators in the Forward market, and the issue of liquidity in the Intraday market.

## **Proposed Options to Promote Liquidity in the Forward Market**

Brookfield Renewable support the proposal to remove trading barriers through the provision of central services and agree that this should be done as a minimum. As highlighted in the working groups and the consultation paper, Brookfield agree that the current market design imposes barriers to trading to many participants due to the need to post collateral with individual counterparties, limiting smaller participants to only being able to trade with a small number of counterparties. The central counterparty service combined with the central collateral provider service should decrease the complexity and costs around the participation in the Forward market, allowing more participants and increasing liquidity.

Brookfield Renewable also support the provision of a central trading platform, however believe that in order for a central trading platform to be effective in concentrating liquidity it would have to be the exclusive route to the Forward market for baseload, mid-merit and peaking products. In addition, Brookfield Renewable support the proposal to integrate central services through all market timeframe provided that it is achievable in the current I-SEM timeline.

In terms of Options 2, 3, 4 and 5, Brookfield Renewable support any option that promotes liquidity in the Forward market. As such, Brookfield Renewable do not have a strong preference between Options 2, 3, 4 and 5, provided that there is a balance between the risk and costs of the obligations across all market participants and the benefits of additional liquidity provision. With this in mind, on balance Brookfield Renewable are of the view that Option 5 offers the best solution for both the improvement of liquidity in the Forward market and the risks faces by individual participants. The FCSO should concentrate liquidity to auctions timeframes and the MMO should ensure that there is a number of constant products being offered. In addition, Option 5 appears to reduce the risks on generators with a FCSO and participants facing a MMO.

The consultation proposes the removal of ESB's ring-fencing arrangements, along with the increase in their FCSO and reallocation of Electric Ireland's DCs, as a way to promote liquidity in the Forward market. Brookfield Renewable are concerned with the ability of a large vertically integrated company, such as ESB/EI, to push up FCSO prices at auction. To date, this has not been the case with NDCs, however Brookfield Renewable believe that there is a clear Market Power risk in I-SEM and that there

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is a balance between the removal of ring-fencing in the short term to increase liquidity and the retention of suitable Market Power mitigation in the medium term until market shares reduce. As such, it is prudent for Market Power monitoring to continue and that there is the ring-fencing were to be removed there should be regulation put in place around EI's participation in the FCSO auction, such as a cap on the amount of FCSOs that EI can hold, to ensure that it will never be the case.

## Wind in the Forward Market

One of the reoccurring issues in this workstream has been the assumption that wind generators would not be willing or able to participate in the Forward market timeframe. Brookfield Renewable does not believe that this is the case because wind generators are also exposed to risks that could be hedged. As stated in the consultation, participation of wind farms generating under REFIT would not be likely – however merchant wind farms (that so not receive support) would be able to participate in the Forward Market in order to hedge against volatile Day-Ahead pricing. Furthermore, the amount of wind farms seeking Forward hedges will continue to grow in Ireland as more wind farms come off supports and seek price certainty.

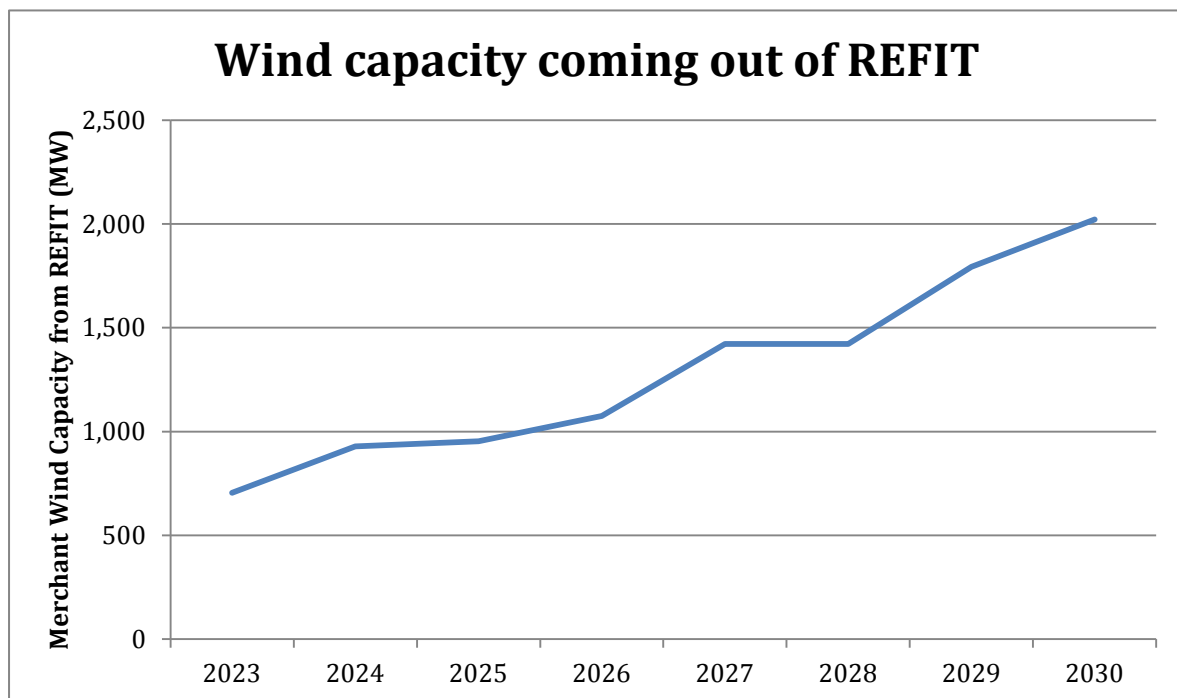


Figure 1: Wind capacity coming out of REFIT. Source: Statutory Instruments published on the Public Service Obligations.

Based on the latest Statutory Instrument publication of the PSO, there will be about 1,400 MW of additional merchant in the Republic of Ireland by 2027, with REFIT 1 ending, and an additional 640

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MW on the system by 2032, with the REFIT 2 ending<sup>1</sup>. These figures just include currently operating REFIT projects, and therefore should be considered an underestimate of the amount of wind that would become merchant at the end of the REFIT support schemes. In addition, there will be more wind projects becoming merchant over the same period from the AER and NIROC support schemes. Figure 1, above, shows the growth of merchant wind capacity from wind farms coming out of the REFIT schemes.

Wind's participation in the Forward Market can help to mitigate pressure on conventional generators, that face obligations in three proposed options in the consultation. However, the variable nature of wind generation does not fit into the current suite of baseload / mid-merit / peak product range and as such dis-incentivises wind generators' participation. Products are now being developed in other markets that enable wind to offer volumes in the Forward Market and allow both wind generators and conventional generators to hedge their volume and price risk. One such product is the Nasdaq Wind Futures Index in Germany<sup>2</sup>.

Nasdaq's Wind Futures Index is a new futures product which gives wind generators, conventional generators, and other market participants the opportunity to mitigate their price and volume risks that result from variable wind production levels. The product uses synthetically modelled wind power generation, comprised of wind speed data, individual power curves, capacities and hub heights for points around the grid. This information is used to create the NAREX WIDE (NAsdaq REnewable Index WInd Germany (DE)) index, which is the percentage utilisation of the total wind power capability. Wind Futures contracts are then traded in EUR/WPH (Wind Production Hour) as cash futures on an exchange, linked to the NAREX WIDE index.

Brookfield Renewable believe that innovative forward products such as this will play an important role in the Futures market, As such, they should be no barriers to the introduction in the I-SEM Forwards market to allow wind generators to participate and other participants to seek hedges against fluctuating wind production. Brookfield Renewable believe that these products will require the prerequisite of a properly functioning Forward market with a robust reference price such as Day-Ahead.

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<sup>1</sup> S.I. No. 556/2015 – Electricity Regulation Act 1999 (Public Service Obligations) (Amendment) Order 2015. [http://www.irishstatutebook.ie/eli/2015/si/556/made/en/print?q=refit&search\\_type=all](http://www.irishstatutebook.ie/eli/2015/si/556/made/en/print?q=refit&search_type=all)

<sup>2</sup> Nasdaq Renewables Wind Index Germany (DE).

<http://www.nasdaqomx.com/transactions/markets/commodities/markets/renewables>

## **Intraday Market Liquidity**

In addition to the liquidity in the Forward market, Brookfield Renewable are very concerned that there will be inadequate liquidity among both buyers and sellers in the Interim Intraday market to deliver cost reflective price formation. Further, we believe that this issue requires further consideration by the RAs as it is fundamental to the operation of the I-SEM market due to the introduction of balance responsibility and the scale of renewable that will be faced with the need to manage forecast error or else face a punitive imbalance price in the Balancing Market. This need for “Consideration of liquidity in the spot markets” was highlighted in the regulators’ Term of Reference for the Working Group and was originally set to be addressed through the Working Group meeting and workstream consultation. However, these concerns on intraday liquidity has not been addressed through either of these routes.

There is currently a lot of uncertainty around the future structure of the REFIT support scheme, in particular whether or not the REFIT floor net of all balance fees will continue. Brookfield Renewable believe that, above all, it is paramount that the REFIT economics must be maintained. Any erosion to the REFIT floor price effectively represents a retrospective change to the support tariff and damages Ireland’s reputation as a location for inward investment.

Brookfield support the market integration of wind and introduction of balance responsibility to intermittent generation. We would welcome the opportunity to engage with the RAs to develop an appropriate set of incentives for wind consistent with maintaining REFIT economics. However, any reform is predicated on a liquid Intraday market that will allow balance risks to be managed. The requirement for a liquid Intraday market is mandated by EU State Aid guidelines which state:

*“beneficiaries are subject to standard balancing responsibilities; unless no liquid intra-day markets exist”<sup>3</sup>*

Assuming balance responsibility, Brookfield Renewable believe that wind generators in I-SEM will participate in the Day-Ahead market to capture the best market price and avoid exposure to volatile Balancing prices. Wind generators will therefore be incentivised to balance their position in the Intraday market to avoid spilling into the volatile Balancing market. All wind generators, with the exception of de-minimis wind, have incentive to trade intraday:

- Merchant wind generators will be fully exposed to imbalance costs;
- NIROC wind generators have no floor price on their merchant revenues and will therefore be incentivised to balance their position;

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<sup>3</sup> Official Journal of the European Union. Guidelines on State aid for environmental protection and energy 2014-2020. [http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52014XC0628\(01\)](http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52014XC0628(01))

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- REFIT wind generators with self-supply contracts may recoup their losses through the PSO but will potentially have a large cash flow issue; and
- REFIT wind generators with external PPAs are likely to face the risk of Market Change clauses.

Wind generators will therefore be exposed to imbalances between the Day-Ahead and Balancing market due to forecast errors in wind production. Figure 2, below, shows the mean absolute percentage error in wind production at the day-ahead stage, based on the difference between the ex-ante and ex-post total wind generation MSQ. Since January 2015, EirGrid have had an mean absolute Day-Ahead forecast error for wind generation of 28%.

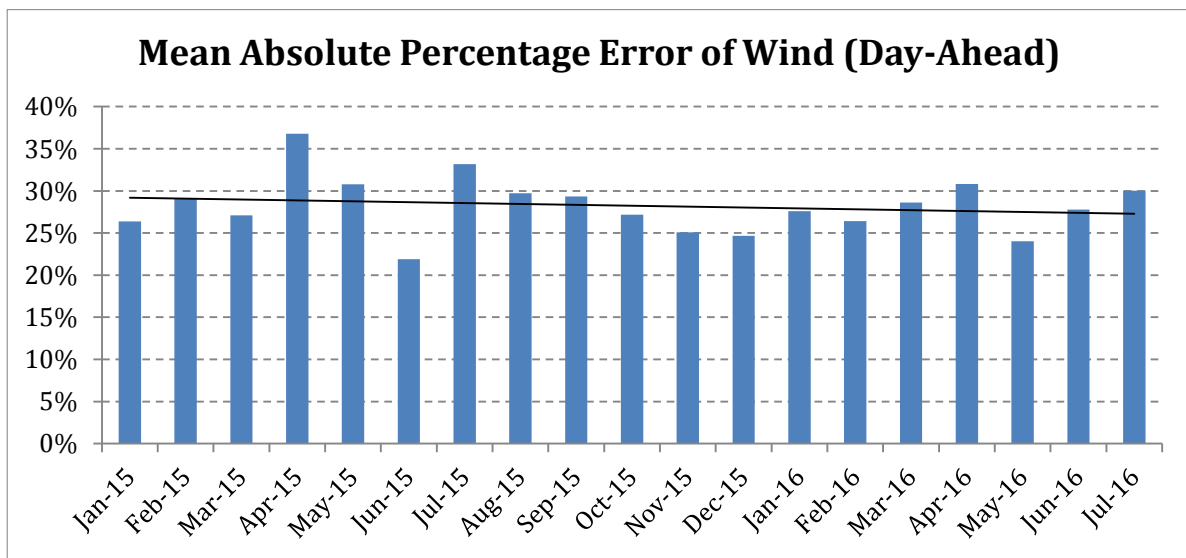


Figure 2: Average percentage error in wind day-ahead forecast in SEM, comparing EA1 and EP2 MSQ. Source: SEMO.

Figure 3, below, shows the frequency of wind imbalance volumes in Ireland since January 2015. The data shows that 70% of the time the wind day-ahead forecast was between 2 GWh/day short and 4 GWh/day long, which is equivalent to between 83 MW short and 166 MW long of baseload power. There have also been days in which wind generation forecasts have been out by as much as  $\pm 10$  GWh, equivalent to over 400 MW of baseload power.

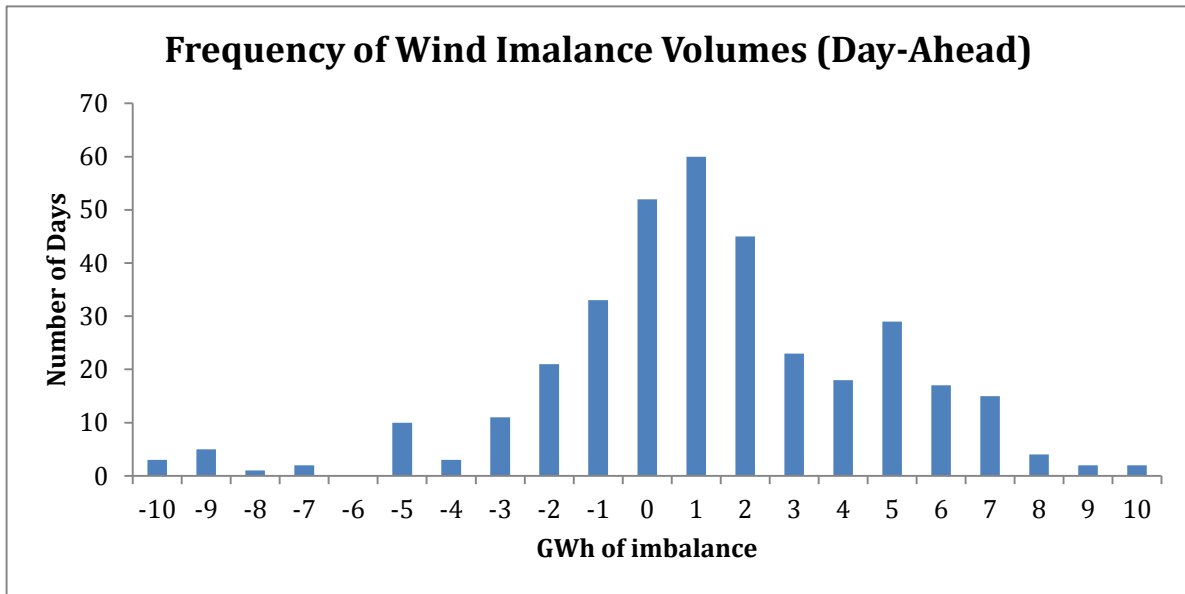


Figure 3: Likelihood of wind imbalance volumes (since January 2015). Source: SEMO.

With a high forecast error at the Day-Ahead market timeframe, it is crucial to wind generators, which will represent 40% of the island’s electricity generation by 2020 that there is a liquid Intraday market to mitigate this forecast volume risk as more accurate forecasts become available closer to real time. Brookfield Renewable do not accept the regulators’ assumptions that EirGrid Intraday market design proposals, given XBID not being available, will provide adequate liquidity, and give that the Interim design is still not finalised Brookfield Renewable along with other market participants remain sceptical that all three of the proposed regional Intraday auctions with the GB market will be implemented.

Assuming the Interim Intraday market design is implemented as proposed, there is still a significant risk that the market will be illiquid due to the lack of incentives on suppliers of residential and SME customers to participate. We believe that these suppliers will not be incentivised to mitigate their balancing risk from Day Ahead to Balancing as SME and residential customers are not fitted with quarter or half-hourly electricity meters, therefore their suppliers are not provided with real time consumption data which will show daily imbalances and are instead charged based on customer profiles with imbalances smeared between meter read periods.

As a result, suppliers cannot act on any daily imbalance in their load forecasts and any imbalances are netted off each other between meter readings. With residential and SME customers making up 70%<sup>4</sup> of the supply demand in SEM, there is a strong risk that there will be little incentive for buyers to participate in the proposed Intraday market, resulting in a large risk for the wind industry that the

<sup>4</sup> CER & UR – Annual Electricity Retail Reports.  
<http://www.cer.ie/docs/001035/CER15112%20The%20Electricity%20and%20Gas%20Retail%20Market%20Report%202014.pdf> & [http://www.uregni.gov.uk/uploads/publications/ERR\\_2014.pdf](http://www.uregni.gov.uk/uploads/publications/ERR_2014.pdf)

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intraday market will be strongly asymmetrical in favour of sellers leading to concerns about cost reflective price formation.

Considering the above, Brookfield Renewable strongly urge the regulators to address the industry's concerns of illiquidity in the Intraday market and at the very least demonstrate to market participants why you believe these concerns to be unnecessary. Further, if these Intraday liquidity concerns prove well founded Brookfield Renewable request that liquidity monitoring and promotion measures are developed and implemented to address the issue.

We reiterate our view that a liquid, functioning Intraday market is a pillar of the I-SEM High Level Design due to the introduction of balance responsibility and the additional requirement for all market participants and wind generators in particular to manage the risk of being out of balance from outages or forecast error. If this pillar is not delivered it calls into question the punitive imbalance pricing arrangements that are being introduced as there would be no market mechanism to manage this risk.

I will be pleased to discuss these points or any more in relation to I-SEM in more detail.

Kind regards,

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