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Commission for Energy Regulation
The Exchange
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Joe Craig
Northern Ireland Utility Regulator
Queens House
14 Queen Street
Belfast
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Date: 18th January 2016

RE: I-SEM Market Power Mitigation Consultation

Dear Sir/Madam,

Brookfield Renewable Ireland is part of Brookfield Renewable Energy Group, one of the largest publicly-traded pure-play renewable power platforms globally. Brookfield Renewable's power portfolio includes 250 facilities totalling approximately 7,300 MW of hydroelectric and wind capacity, and is diversified across 14 power markets in six countries. The global operating platform employs over 1,500 people and has more than 100 years of experience in power generation. Brookfield Renewable is building a European platform to provide full development, operating, construction and power marketing capabilities. Today the platform has over 580 MW of operating wind capacity across Ireland, the UK and Portugal, and a development pipeline of approximately 1,400 MW.

As a 100% renewable generation portfolio, Brookfield offer a different perspective on consultation responses than other market participants as we face unique challenges with the implementation of the ISEM market redesign.

Brookfield Renewable welcome the opportunity to engage and provide our views on the I-SEM Market Power Mitigation consultation paper. The market power mitigation techniques applied in SEM (MMU, BCOP, Directed Contracts and Vertical Ring Fencing) have proved very effective. It is crucial in the development of a new market for a small island system with limited interconnection and competition that market power mitigation strategies continue to deliver the same results for the Irish consumer and those market participants affected by the abuse of market power. While we expect that the REFIT economics will be maintained for wind generators in I-SEM, it is crucial that wind generators are given the tools to mitigate their imbalance position so that the Irish consumer gets the best possible value for their investment in renewables. The potential impacts of market power on pricing in I-SEM is a primary concern for wind generators such as Brookfield for the reasons discussed below.

- As balance responsible parties who are dependent on a variable resource, intermittent generation units are particularly exposed to the implications of market power abuse in the balancing market. Brookfield welcome the strong regulatory intervention proposed for the balancing markets in the consultation to ensure the equitable treatment of wind generation.
- To limit exposure to balancing market prices, renewable generators will rely on a liquid intraday market (IDM). Due to liquidity concerns and the potential for withholding capacity from the IDM to affect balancing market prices, Brookfield believe that the market power implications of the IDM require more careful consideration than the day ahead market.
- Brookfield also welcome the proactive engagement with regard to transitional arrangements proposed in case of failure to deliver XBID before I-SEM go live, which is a real concern. We would welcome

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opportunity to engage on back-up solutions for the intraday market as it is crucial issue for wind. Forecast uncertainty reduces with time horizon and wind must be given the tools to effectively manage the resulting imbalances. It is essential that the solution chosen affords the entire market including wind generators a traded window one hour out from the balancing market to address forecast uncertainty and mitigate their imbalance volumes.

- With regard to forward contracting obligations, Brookfield believe that sufficient flexibility should be included in product definition to account for the future needs of participants in a market where 40% of demand is met by renewables. Wind indexed products and wind/thermal swaps are discussed further in the response.

The reliability options contracts being introduced in the I-SEM capacity remuneration do remove incentives for generation to bid above the strike price for their de-rated capacity. However, there exists significant incentive for generators to bid above the strike price to capture the bid price for the portion of their nameplate capacity that is available above their administratively set de-rating factor.

In summary, preventing market power abuse in I-SEM is of the utmost importance to wind generators who have limited opportunity to mitigate balancing costs. The remainder of this response is given to answering the questions posed in the consultation. Please do not hesitate to contact me for clarification or further discussion on any of the points raised.

Kind Regards,

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Context for Market Power Policy Development

Question 1: Do you agree with the policy developments and trends identified (above) as potentially impacting on an I-SEM market power mitigation strategy?

Brookfield agree that renewable generation and carbon targets, interconnection, demand side management and REMIT reporting requirements are all relevant issues that should be considered when developing a market power mitigation strategy.

Question 2: Are there other factors not identified here which you consider relevant?

Brookfield agree with the stakeholder comment presented in the paper in 'Summary of Comments to Discussion Paper' regarding the need to assess the market power implications of the interacting system services, energy market and capacity market revenue streams however this particular concern is dealt with further in Question 8.

In support of the 2020 targets mentioned in the consultation, Brookfield believe that it would be a significant omission not to include policy direction proposed in the Energy White Paper. Although Ireland is on course to meet its 2020 targets, a low carbon economy (80%-95% reduction in 1990 levels) has been targeted for 2050 with a 'zero or below' carbon emissions target for 2100. Wind will continue to play an important role in meeting these objectives. It is essential that market power mitigation methods consider the impact to price taking intermittent generators of the new market design. I-SEM represents a fundamental change in how wind generators participate in the market and introduces substantial new risks. The challenge for wind in managing these risks is underlined in EU state aid guidelines which requires a liquid intraday market if wind is expected to be a balance responsible market participant.

The liquidity and market power abuse potential within the balancing and intraday markets are of particular concern to intermittent generation. This applies to the market power work stream as it must address the need for cost-reflective pricing in the Balancing market and adequate liquidity in the Intraday market to allow wind generators to effectively manage their balancing position.

Relevant Geographic Markets and Trading Periods

Question 3: Do you agree with the proposed appropriate markets/trading periods for assessing market power in I-SEM's energy and financial markets?

Whilst Brookfield agree that the trading periods are sufficient for market power assessment of the financial and energy markets in I-SEM we believe that the traded windows must be assessed individually. The intraday window is the key opportunity for wind to effect a balanced position through more accurate production forecasts. While REFIT will ensure wind revenues of supported plant will be maintained, it is essential that wind is given the appropriate tools to mitigate its balance exposure to protect the consumer from socialised costs of penal balancing arrangements paid through REFIT reconciliation payments to wind generators.

The relevant markets are assessed across product, time and scope. The time horizon of these markets is of particular interest to balance responsible intermittent generators who rely on weather forecasts to forecast power production at day ahead stage. After selling power day ahead, intermittent generators will use the intraday market to correct the position for forecast inaccuracies. This effectively constitutes a difference in product between the

day ahead and the intraday markets and as such each time horizon should be considered independently of the others with regards to market power measurement and mitigation. Therefore the intraday market requires focussed attention separate to the day ahead market.

Question 4: Do you agree with the proposed geographic scope of the proposed markets/trading periods?

Brookfield strongly support the assertion made in the consultation that price coupling between Ireland and the UK will not reduce market power concerns as the ability of generators in the UK to participate is limited by the physical capacity of the interconnectors.

Brookfield also agree that the relevant geographic zone for a particular market could be very small due to large amount of transmission constraints that will remains in I-SEM. This will be of particular concern in the balancing market, which is physically constrained such that a single generator could set the price in an individual price period. Local network constraints will only be resolved through non-energy balancing actions which should not, in theory, impact on imbalance prices. However, payment of these constraint costs will be made by the TSO on behalf of the customer, so the imperative to ensure these costs are not artificially inflated remains.

I-SEM Design, Interactions and Implications

Question 5: Do you agree with the proposed definition of competitive behaviour and pricing in I-SEM?

Brookfield agree that short run marginal cost pricing is indicative of a market where sufficient competition exists that increases in offer prices could result in the loss of sale.

Question 6: Do you think that the suggested examples in which market power can be exercised in I-SEM captures the relevant issues?

Brookfield believe that physical and financial withholding, predatory pricing and transmission related strategies as discussed in the consultation do cover the majority of the market power implications. Some of these concerns might require different assessment strategies for parties having more than one generation unit in the supply stack.

Question 7: Do you agree that the potential for market power abuse in I-SEM appears to be weaker in the forward financial market compared to the physical markets?

Market power concerns are present in the forwards time frame and should be addressed equally. Potential new entries to forward markets require liquid intraday and balancing markets. Without certainty over the ability of either market to offer liquid, equitable solutions new entrants will be less likely to offer forward products. This might dampen entry signals to the forwards market and increase the potential for market power abuse.

As the Irish market transitions to higher proportions of the energy requirements being met by wind power there will further forward products required, At present, forwards contracts are used to hedge against price volatility in the spot market and allows suppliers to hedge their books. With 75% SNSP limits and at least 40% of demand being met by wind there will be a need for generators to manage volume volatilities that result from the variability of wind generation. The forwards market will evolve over time with changing participant needs. Forwards markets market power mitigation strategies developed now should provide the flexibility required to cope with the evolving market where renewables have greater participation in the forwards markets.

Question 8: Do you agree with the implications for market power arising from interactions between the physical markets, CRM, FTRs and DS3 System Services as shown above?

Brookfield agree that there are market power implications arising from the interaction between the different revenue streams mentioned in the consultation.

Brookfield support the assertion made in the consultation that holding an FTR might provide incentive to exercise market power in either bidding zone as their value is determined from spot/physical market pricing.

With regard to the interaction of the capacity market and physical markets, the reliability option (RO) has been designed to hedge the possibility of high prices in the energy markets. It is suggested that this RO would ensure that generators would have no incentive to bid above the RO strike price. However, the RO will only be held for a de-rated fraction of the nameplate capacity of any generator. This administratively determined de-rating factor will be based on historical annual availability. Therefore an incentive remains for generators to be 100% available in high price periods and to bid above the strike price as they would receive this inflated price for the balance of their nameplate capacity above the de-rated capacity. In events where prices are raised above the strike price, generators benefit by the portion of their capacity that is not de-rated, suppliers are hedged but intermittent generators subject to balancing market prices for forecast errors could be heavily penalised. Given that the market reference price of the RO is likely to be set above the marginal cost of production of one of the most expensive generators, there remains scope to affect prices from a cost reflective price up to the strike price, as discussed in the consultation.

Also, the emerging thinking on the administered scarcity price in the RO suggests that ASP pricing might kick in at the Euphemia price cap of €3,000. This presents ample incentive for generators to inflate the price up to this level outside of scarcity events and capture benefit of the difference between their nameplate and de-rated capacity. Given these reasons, Brookfield strongly disagree that the RO by itself provides an effective market power mitigation measure in the physical markets.

Relevant I-SEM Metrics

Question 9: Do you agree that these are the appropriate metrics to identify market power ex-ante and ex-post in I-SEM?

Brookfield agree with the metrics presented to measure market power.

Question 10: Are there other metrics that you consider should be applied?

Brookfield do not believe that any additional metrics are required. However, the consultation paper states that the forwards market is not considered as it is largely out of scope. We believe that there should be a level of flexibility included here to allow future mitigation of any market power issues that might arise in the emerging forwards market

Estimate of I-SEM market Power

Question 11: Do you agree with the approach taken by the RAs to modelling market power in I-SEM?

Brookfield agree with the approaches taken for the modelling of market power in I-SEM.

Question 12: Do you agree with the conclusions for I-SEM market power that have been drawn from the modelling results?

From the modelling and analysis of market power in future scenarios, it is clear that market power potential will continue to exist in I-SEM in all future scenarios considered. Brookfield support this conclusion.

Review of current SEM measures

Question 13: Do you agree with the SEM Committee's view on the effectiveness of each of the SEM market power mitigation measures?

Brookfield believe that the market power mechanisms introduced in the SEM have broadly worked successfully to promote market entry, investment and transparent, cost-reflective prices. The Bidding Code of Practice (BCOP) ensures that all generators bid their Short Run Marginal Costs into the SEM Pool market and this has provided a very transparent price setting process. Under I-SEM market arrangements it may not be possible to retain the BCOP as it is but we believe that consideration should be given to introducing bidding rules or guidelines in the Balancing market.

Directed Contracts in the forwards timeframe have successfully introduced some liquidity and price certainty in the SEM that is necessary to promote competition in the retail markets.

The Market Monitoring Unit (MMU) currently monitors bidding in the SEM across three gate closures, ensuring that BCOP rules are adhered to by all market participants.

In our view, vertical ring-fencing has also worked well in the current SEM to promote a level playing field for participants competing for a position in the merit order. Until it is clearly established that concentration and market power issues have abated vertical ring-fencing should continue.

Question 14: Are there any particular aspects of the SEM market power mitigation strategy that you think should be applied differently, especially in relation to I-SEM?

Brookfield believe that the market power mitigation measures applied in SEM have been effective at preventing market power abuse. Brookfield support the inclusion of each of these techniques as mitigation tools in I-SEM. However, some of the measures may need to be applied differently to how they were applied in SEM. This is discussed further in the responses to the mitigation techniques for the individual traded windows below.

In the I-SEM there will be greater opportunities to trade across the market timeframes. Consideration should be given to the capabilities required by the MMU to effectively monitor activity in the I-SEM particularly given that bidding is unlikely to be as transparent as the current SEM.

SEM mitigation strategy and measures

Question 15: Do you agree with the five key principles for assessing market power mitigation policies as outlined in this section 8.3? If you think there should be alternatives, please state the reasoning.

Brookfield agree with the principles for assessing market power mitigation as outlined in the consultation. However, with regard to 'Practicality' it is essential that any decisions made on the basis of cost effectiveness should be balanced with by the cost implications of delivery of an inefficient market, the costs of which will ultimately be borne by the consumer

Question 16: For the Forward Contracting Obligation:

- What should be the measure and threshold that results in a market participant being included or excluded in the FCO, i.e. what is its applicability?

Brookfield propose that the approach chosen should ensure that all participants in a position of market power in the spot market are identified and targeted by the measure. This should enable exposure to volatile spot market prices to be mitigated by suppliers or wind generators through products as identified below. Any strategy to mitigate market power needs to be complementary to the design of the market so that barriers to entry are low and participation is encouraged.

- What should be the volume and product definition of forward contracting required from a market participant who falls under the FCO?

Forward contracting obligations were developed to hedge the risk of volatility of price in the spot market. Products available reflected the time related price periods. In a rapidly changing energy market with an evolving fuel mix and a more involved consumer provisions should be made for future products requirements that differ from the traditional peak/off-peak products. Flexibility of product definition must be considered in any decision made by this consultation. Thus far Ireland has displayed an exemplary in integrating renewables into the electricity market. Ensuring a transition to ISEM that continues to integrate renewables fairly by incentivising participation without merely applying additional costs provides a great opportunity to stay at the leading edge while meeting Ireland's decarbonisation policy objectives. Brookfield are willing to invest to ensure that we can participate in this market including developing new products that will facilitate renewables.

Brookfield would also like to take the opportunity provided by this question to address some market participant concerns relating to forward contracting of power in the new market. Multiple market participants have expressed concerns that 100% of suppliers will want to contract forward but that only two thirds of generation will be able to contract forward. This comes from the fact that traditional forward products have focussed on traditional peak price and non-peak price periods which were governed by demand and hence time of day. As the amount of wind on the system increases to up to 75% when DS3 is delivered peak price periods might no longer be as closely related to time of day.

Brookfield believe that this 'hole' in the forward contracts available to suppliers can be provided in part by wind. Wind indexed contracts, as have been recently launched in Germany by EEX, will help to provide forward security for the suppliers as more wind power comes off support and begins to interact more with the markets. Introducing Wind Power Futures, as a standardised exchange traded power derivative, EEX stated that they will enable hedging of the risk of wind power generation. Given the volume of wind that will be traded in I-SEM by 2020 these products will become an essential part of the forwards markets.

There is also an opportunity for wind to work together with the plants that they displace in the merit order to offer combined forward contracting opportunities that are mutually beneficial i.e. swaps. While swap contracts may not be required to mitigate market power at present, it is worth introducing the concept in order to ensure flexibility of forward products offered. Swap contracts could become important tools for hedging forward the volume risks of both wind and thermal generation displaced by wind as the penetration of wind increases to the 75% SNSP limit delivered under DS3 and levels of merchant wind grow.

- How should the price be set for the volume contracted under the FCO?

One of the options presented in the consultation is to allow the contracting party flexibility and discretion over the price once they sold the required volumes. As there is a shortage of supply of forward products according to other market participants this might provide potential for market power.

Brookfield also support the transparency of the method utilised in SEM and suggest that a similar methodology should be retained. The methodology chosen does not hamper the liquidity of the forwards market.

- What type of access should buyers have to FCO volumes?

There should be no restriction or limitation to buyers access to the FCO volumes. Increasing buyer access to the FCO volume will drive liquidity into the forwards market which will encourage other generators to sell forward. Consistent with this objective it would be also appropriate that any barriers to entry for trading FCO volumes such as large collateral requirements should be removed to ensure efficient entry to the market. Otherwise market power concerns in the forwards markets will persist.

Question 17: Which of the balancing market mitigation options do you consider most appropriate, i.e. MMU-triggered intervention, automated intervention via a PST or via the “flagging and tagging” approach, or prescriptive bidding controls? Where feasible please relate the preferred approach the five key principles for this work stream of effective, targeted, flexible, practical and transparent.

Brookfield agree with strong regulatory intervention to monitor and prevent market power abuse in the balancing market. Brookfield believe that prescriptive bidding controls should be introduced. As discussed earlier in this response renewable generators will have particular exposure to balancing market prices and must be protected from market abuse.

As concluded in the consultation text, BCOP has been a very effective tool in SEM consistent with the objectives of each of the key principles for assessing market power. The MMU have shown their capability to monitor prescriptive bidding controls effectively. Given the potential for, and the significance of market power abuse in the balancing market, Brookfield do not see any justification for a relaxation from prescriptive bidding or the development of an alternate unproven solution at cost to the consumer.

Question 18: Which ex-ante bidding/offer market power mitigation options for the DA and ID markets do you favour – bidding principles and ex-post assessment, or ex-post assessment only? Where feasible please

relate the preferred approach to the five key principles for this workstream of effective, targeted, flexible, practical and transparent.

Brookfield do not believe that the DAM and the IDM should be considered together as part of this consultation. Brookfield, as a 100% renewable generator, will use the DA and ID markets for different functions.

Brookfield believes that the design of ISEM will focus liquidity on the day ahead market as generators seek to ensure dispatch and suppliers want a predictable price. Participating in the Day Ahead market presents a different challenge for wind than for conventional generators as wind generators do not know with certainty what their exact generation profile will be when submitting bids due to unavoidable forecast uncertainty. This forecast uncertainty has the potential to expose wind generators to balancing market prices that will be set through the flagging and tagging mechanism and with a scarcity pricing function that could rise to €11,000/MWh, which we believe to be excessive when compared with the Euphemia price cap of €3,000/MWh. Wind generators, therefore, have a commercial imperative to manage this exposure. One of the key tools to managing this exposure will be to use the intraday market to modify their positions in order to mitigate this exposure to balancing market prices.

Concerns have been expressed by market participants and regulators alike over the liquidity of the intraday market and the timely delivery of the European XBID platform. This is exasperated by uncertainty over any transitional arrangements. Voluntary participation in the intraday market combined with its potential illiquidity could also provide generators an incentive to withhold capacity from this market to impact the balancing market prices. Therefore there will likely be inherent difference in renewable and conventional generator utilisation of the intraday market Brookfield contend that there is greater potential for market power in the intraday market and this should be reflected in the way that the consultation addresses both markets. Given the importance of the intraday market to intermittent generators and the potential for market power Brookfield feel that stronger ex-ante regulatory control is required in the intraday market than in the day ahead market. Therefore it is inappropriate to consult on a single market power mitigation measure applicable to both market timeframes.

Question 19: If ex-ante bidding principles were to be adopted, how flexible should they be and how would this be facilitated/enshrined in their wording?

Brookfield believe that there will be sufficient liquidity in the day ahead market to justify a more relaxed approach to market power. In this auction based competitive environment. ex-ante bidding principles should have a degree of flexibility to ensure that generators can recover their costs. Artificial inflation of prices beyond competitive markets should result in loss of sale which incentives downward pressure to any margin applied by generation. However, bidding principles must result in transparent bids to ensure that abuse of market power can be identified and thereby discouraged.

Question 20: Under what structural conditions or in combination with other market power mitigation measures should vertical ring-fencing of the incumbents be relaxed?

Vertical ring fencing has been a very effective market power mitigation measure in SEM that reduced the potential for cross subsidisation between generation and supply businesses. Any relaxation proposed must not treat the generation and supply arms of a business in isolation. ESB have a 39% share of market share and nearly 65% share of the price setting generation in the balancing market.

Question 21: Under what circumstances and criteria (or metrics) should the application of ring-fencing to other market participants be considered?

Any metric chosen for the introduction of vertical ring fencing must be reciprocally relatable to that chosen for the relaxing of the same measure for former incumbents to ensure equity of treatment of market participants.