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Submission to Single Electricity Market Committee

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DS3 System Services - Procurement Design
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The Irish Wind Farmers Association (IWFA) is Ireland's representative body for independent wind farm developers.

The IWFA has over 100 members with operational wind farms ranging from 1MW to 35MW. IWFA members currently have some 300MW of generating capacity in operation, and a further 200MW under development.

We are the only body representing small independent wind farms, distinct from the large portfolio utilities.

We welcome the opportunity to respond to this important consultation. Our general interest in the consultation is to ensure that the island of Ireland puts in place a full suite of trading arrangements, including a Capacity Remuneration Mechanism as well as System Services, in which both existing and new small independent wind generators can compete on an entirely level playing field with portfolio generators. This will ensure a thriving competitive market in future, to the long term benefit of consumers throughout the island.

Wind has two specific interests in the System Services proposals for the new market:

- that wind receives fair payment for services provided, and,
- that the offering is designed to provide a strong entry signal for new high-tech flexible generation plant complementary to wind, and a similarly strong exit signal for older unsuitable and inflexible fossil fueled plant which, apart from contributing to climate change, while giving limited benefit in terms of security of supply, takes up space on the network and in the market, and absorbs costs for little benefit and at significant cost to the consumer.

IWFA would like to respond to some of the questions posed by SEMC in the consultation paper as follows.

1. Summary

It is requested that respondents provide a summary of their position and any general comments on the system services review and the economic analysis

>> It is now generally accepted that wind reduces cost to the consumer, and the SEMC's paper averts to this fact. Wind therefore is by far the best energy source for this island, as we have it in abundance, it is local and therefore completely secure, it reduces cost, indeed it is now cheaper than gas, and it has minimal environmental implications. Most other non-renewable sources have to be imported, with the notable exception of peat, which must be phased out due to climate change, and gas which also affects climate and will in any case deplete quite quickly.

DS3 sets out to address some of the barriers to growth in wind, and the proposal to have a system services offering as part of DS3 is to be very much welcomed. It shifts payments to plant that provide what is needed to support wind, instead of the rather more blunt instrument of capacity which has helped to keep the lights on, but has not brought on the right kind of plant.

The focus is curtailment. Curtailment is a system wide constraint. Constraint and curtailment are essentially the same thing, so that the TSO often finds it very difficult to distinguish them or handle them separately.

Constraints are not caused by power plants; they are due to inadequate system development. Power plants are not punished for such constraints, rather they are paid compensation.

Curtailment is a constraint caused by an overall inadequacy in the network, it just happens at a system level not a local level. Overall system development is what is required to deal with it. Wind does not cause curtailment any more than power plants cause constraints. Indeed, the rigidity of the non-wind plant worsens curtailment. And yet, when it comes to curtailment, wind is penalised, and will soon not even be compensated. This inconsistency is at the heart of the problem and the reason why the SEMC looks at this problem the wrong way.

The obligation on the TSO to avoid both local and system-wide network inadequacies is exactly the same, as reflected in Article 16 of the RE Directive, which obliges measures to develop the system as required and to guarantee the transmission of renewables. Non-renewable power sources do not have this right.

DS3 is to be part of those measures, but it is very late and inadequate. No move on storage has been made. DC interconnectors don't really help. The special power-electronic features of wind turbines to provide stability have effectively been assumed away and therefore ignored in the analysis to date.

The usual argument that the 'guaranteed transmission' right is qualified is nonsense - it is qualified, but that doesn't remove the obligation to take measures. (The same is true for priority of dispatch.) The TSO needs to take measures to guarantee transmission of renewables and ensure they don't destabilize the network. DS3 is a programme of such measures and it is designed to stabilize the network, which is to be welcomed. Many other similar measures are required in order for the two governments to meet their obligations to renewables.

So, the aim of DS3 and related measures has to be to eliminate curtailment, though full compensation (at the support price) would suffice to avoid adopting the least economic measures. The System Services offering now under

consideration needs to be strong enough to play its part in achieving that aim.

2. Demand and Supply Side analysis

Respondents are asked to provide views on the approach to the demand and supply analysis, the results and the interpretation of those results

>> The demand analysis seems to limit itself to achieving the 2020 target of approx. 40% renewable electricity, implying 75% SNSP. We would argue that in designing the offering, account should be taken of the rest of Gate 3 and also Gate 4 for wind.

3. Procurement Designs

Do you agree with the criteria and analysis used by the SEM Committee to evaluate the options?

>> As was the case with the I-SEM option assessment, SEMC employed a set of criteria of unequal standing. In this case, two are direct legal obligations (those relating to renewables - binding targets and curtailment) and two are policy aims. It is always possible to reduce cost by breaching legal obligations, but that is not the correct approach. The legal obligations are a given, and optimization of policy must occur within that frame. So, no, we don't agree with the approach to the assessment. SEMC needs to do enough to meet the legal obligations, and then assess the options within that implementation, in order to attract the investment, while minimizing cost to the consumer. The current approach of treating all of the selected assessment criteria as equal will lead to the wrong result.

Curiously, we again note that the legal obligations overlooked by SEMC are invariably associated with wind, and yet this is the priority energy source for the whole island.

4. Procurement Options

a. Do you agree with the design of the procurement options? Are there any different design elements or procurement options that the SEM Committee should consider?

b. Do you agree with the SEM Committee's analysis of the procurement options?

c. Which option do you prefer?

>> We set out in the Annex the ways in which wind can and does contribute to system services. Some of these capabilities are inherent at all times, some only arise when the wind turbine has been instructed by the TSO to operate away from its desired setting. Such services provided by wind can make a considerable contribution in both the Transmission and Distribution Systems, so the offering should be extended to generation plant in the Distribution System.

At this stage, we do not see that wind could hope to compete in any of the proposed auctions. SEMC might want to consider a special section of the System Services offering for wind by:

1. paying a flat regulated fee per MW to wind for inherent services, on a capability basis, dependent on the technology of the turbines, and
2. paying a further capability fee for those services which the various turbine technologies can provide and which depend on the TSO dispatching turbines away

from their normal or preferred setting, when instructed to do so.

5. Option 5: Multiple Bid Auctions

- a. Do you agree which the SEM Committee's proposal to adopt this option and only to fall back on Option 1 (Regulated Tariffs) where the auction fails to deliver the required volume of services?
- b. Are there any specific issues the SEM Committee should consider regarding the auction design?
- c. Do you agree that market power mitigation measures are required?
- d. Are the SEM Committee's proposals regarding market power sufficient? Should alternative or additional measures be considered?
- e. Are there any specific requirements that the SEM Committee should include in the bidding rules?

>> At this stage, we do not consider these auctions relevant to wind, and would suggest that the SEMC be guided on these matters by the financial needs of new entrant modern efficient flexible plant and offer them contracts of sufficient length and strength so that they have an adequate entry signal. It would be best to avoid signals which leave inefficient inflexible plant on the system, which is what is causing curtailment. Indeed, SEMC needs to make sure that the full suite of market elements provides an exit signal for such plant.

6. Payment basis for the services

Do you agree with the proposed payment basis for each service/option?

>> Please see our answer to question 4. We propose that any System Service payments to wind be made on a capability basis, which would allow for future technological development.

7. Interaction with I-SEM

- a. Do you agree with the SEM Committee's views on the interaction with the energy market?
- b. Do you have any views on the potential interactions and the appropriate measures to address these interactions?

>> No further comment

8. Other Issues

Are there any other issues not raised in this paper the SEM Committee should consider?

>> We understand that Eirgrid as the owner of EWIC is expected to provide system services. This places the Eirgrid in three conflicted roles, namely:

- EWIC as a producer of services,
- TSO as procurer of services
- TSO as dispatcher of services.

EWIC should only be a provider of last resort for System Services and on a regulated tariff.

ANNEX

Synchronous Inertial Response (SIR)

Until recently, it was not possible for SIR to be provided by typical wind turbine generators. Now however, those WTGs equipped with special features like the WindINERTIA, under patent by GE, utilize the energy stored in the rotor to provide an increase in power when needed. Hence, this feature does not adversely impact annual energy production.

Unlike the inherent response of synchronous machines, inertial wind turbine generator (WTG) response is dependent on active controls, but is nevertheless real and helpful to the system and ought to be fully considered.

Fast Frequency Response (FFR)

It is suitable for wind to provide this service.

Fast Post Fault Active Power Recovery (FPFAPR)

Synchronous units can inherently provide this service and wind farms are now required to provide it. To be Grid Code compliant, wind turbines must now have a Fault Ride Through (FRT) capability, so that much of the existing wind plant is capable of providing this service. However, the service can only be provided when the units are dispatched.

Operating Reserve (POR, SOR, TOR1, TOR2)

Wind farms could be paid for this service when being dispatched during a curtailment period. This could be valid under the 'Dispatch' or 'Capability' payment systems.

Replacement Reserve (RRS, RRD)

Not suitable for wind unless wind units that are curtailed are being dispatched to replace units which were providing POR, SOR and TOR.

Ramping Margin (RM1; RM3; RM8)

Not suitable for wind unless those wind units that are curtailed are being commanded to ramp-up to support the System when for example wind generation is decreasing in a different section of the network.

Dynamic Reactive Response (DRR)

This service is currently being provided by some wind farms. The WTGs react automatically, controlling their reactive power to support the system during voltage dips.

Steady-State Reactive Power (SRP)

This service can be provided by wind farms or WTGs with enhanced reactive power capabilities. Some WTGs are equipped with extra reactive power compensation features which allow them to inject or absorb reactive power to/from the system as the case may be. Some windfarms can do this even when they are not exporting active power. Other wind farms can install or have installed stand alone reactive compensation equipment to provide reactive power support to a higher capability than required by in the Distribution Codes or Transmission Codes.