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Mr. Louis Fisher  
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Our Ref: EN01-005248

4 December 2015

Dear Louis,

**Re: Consultation Response - DS3 Volume Calculation Methodology and Portfolio Scenarios**

Further to the TSOs' System Services consultation paper of 14<sup>th</sup> October, RES is pleased to respond to this important consultation. This response is not confidential.

RES is the UK's largest independent renewable energy developer with interests in onshore wind, wave and tidal, offshore, solar, energy storage and demand-side response. A wholly owned UK company at the forefront of innovation and design around the world, RES now employs over 1000 people and has built over 1000MW of wind energy assets in the UK – around 10% of the UK's total installed capacity.

Since developing our first onshore wind farm in Northern Ireland in the early 1990s, RES has subsequently developed and/or constructed 16 wind farms in Northern Ireland totalling 229MW. This is more than 37% of Northern Ireland's wind capacity. RES currently operates over 83MW of wind capacity across Northern Ireland, has secured planning permission for a further 112MW awaiting construction and has 56MW in the planning system. In addition RES has a very strong wind pipeline of 177MW in Northern Ireland.

In Ireland, we have developed and constructed 50MW of wind farms, of which 35MW are operated by RES.

Based in Larne, County Antrim, RES' team comprises 25 staff covering environmental, planning, technical, legal, commercial, project management, construction, operations and administration disciplines.

RES is an active participant in the DS3 Advisory Council and supports the DS3 project objectives including the introduction of new system services to facilitate increasing the penetration of renewable energy so that national renewable energy targets can be achieved. In the context of this consultation we are responding as a stakeholder in the all island system.

**RES' comments on the proposed volume calculation methodology are as follows:**

In Figure 1, the third step is *"Refine Portfolio Scenarios to ensure System Requirements are just met while minimising curtailment"*. The criteria for minimising curtailment are not described. These criteria should be

described and justified in the decision document and in any report following the execution of the methodology.

In addition to the results of the methodology (the Capability Volume Requirements), the execution of the methodology should be reported to the Regulatory Authorities and stakeholders in sufficient detail to give all parties confidence in the process. The decision document should describe how this will be done. Matters for consideration in such a report should include:

- Criteria for iteratively refining the composition of the portfolio scenarios.
  - How low must the utilisation of a provider be to justify removing it from the portfolio scenario?
  - How much deficit of a service and how much re-dispatch cost would justify adding further service capability?
- Sensitivity of the results to small changes in the composition of the initial portfolios
- Location of the nodes used for SSRP evaluation

In Figure 3, none of the final steps (items 15, 21 and 75) deliver the required service volume since they each derive from a “No” answer to the preceding test “*Is the Hourly real-time service requirement still met?*” In each case there should be a reversion to the satisfactory volume identified in the previous iteration.

Section 2.6 proposes that “*The additional volume requirement for these services [DRR and FPFAPR] is therefore simply the capacity of any new non-synchronous generation connected*”. **RES does not agree with this approach** for the following reasons:

1. The expected volume of services to be provided by new non-synchronous generators is not described. DRR and FPFAPR volumes are not described in terms of generation capacity.
2. The approach does not follow logically from the preceding discussion. The system might be stable and secure with lesser volumes of these services but this is not tested. Therefore there is a risk that excessive volumes of these services might be procured. Alternatively, the adequacy of lesser volumes of these services could be tested using a system wide approach such as in section 2.2, or a locational approach as described in section 2.5.

**Considering the first consultation question “Do you agree with our proposed approach to determining the Capability Volume Requirements for the System Services? If not, please specify what alternative method you believe to be more appropriate.” RES agrees with the proposed approach, subject to the above comments.**

**RES’ comments on the proposed portfolio scenarios are as follows:**

It is not clear whether the proposed portfolio scenarios include committed plant additions, modifications and retirements e.g. Moyle Interconnector will be restricted to 80MW export to GB from 10<sup>th</sup> November 2017 due to amendments to contracts with National Grid (<http://www2.nationalgrid.com/UK/Services/Electricity-connections/Industry-products/TEC-Register/>). These details should be included in the portfolio scenarios and reported in the decision document or a volume calculation execution report or both.

The assumption that the North-South 400kV Interconnector will be built and operational from the end of 2019 is unrealistic. At the very least this assumption is a significant risk which should be considered by conducting studies in which the interconnector is not available.

The TSOs should provide evidence to substantiate all their assumptions of plant capabilities, not least the assumed FFR capabilities of enhanced and non-enhanced plant.

In the interest of transparency, a breakdown of each class of generators in each portfolio scenario should be described in the decision document or a volume calculation execution report or both e.g. the class “CHP & Hydro” will include unspecified quantities of significantly different generators types which should be transparently reported.

In the interest of transparency, the modelled characteristics of all generators in each portfolio should be fully described in the decision document or a volume calculation execution report or both i.e.

- each existing service provider could be identified and its parameters described as *“in accordance with submitted planning data”* and their assumed system services capabilities should be described.
- each known new service provider’s parameters could be described without identifying them by name if this information is not yet in the public domain. Their assumed system services capabilities should be described.
- generic new service providers of each type could have their parameters described. Their assumed system services capabilities should be described.

In the interests of transparency, if any service provider capability has been assumed for a generator or interconnector etc., and this has not been verified, then this should be stated clearly as an assumption in the decision document or a volume calculation execution report or both.

Section 3.2.1 does not specify whether any of the 2017/18 wind farm portfolio will have DRR or FPFAPR capabilities. This should be clarified.

Sections 3.2.3 and 3.2.4 assume certain volumes of wind turbines will have DRR and FPFAPR capability. The TSOs should state in their decision document whether they have any supporting evidence that these assumed volumes might be feasible e.g. from discussion with OEMs.

Section 3.2.3 and 3.2.4 assume that certain volumes of STACOMs and synchronous compensators will connect delivering various services. These two types of device deliver different services and therefore the assumed proportions of the two devices may be important and should be stated in the decision document or a volume calculation execution report or both.

Section 3.2.4 assumes that only 100MW of other renewable generation will connect to the system by 2019/20. The TSO’s should confirm whether this is expected to be synchronous or non-synchronous or what mix. The assumed volume seems pessimistic considering the number of photovoltaic generator connection applications submitted to the DSOs and their short construction lead times.

Section 3.2.4 assumes that there will be 140MW of DSM capacity, with significant reserve capabilities. The TSO’s assumptions on the probabilities of service delivery should be stated.

**Considering the second consultation question *“Do you agree with the 2017/18 and 2019/20 plant portfolio scenarios and underlying assumptions presented as the starting points for carrying out the analysis of System Services Capability Volume Requirements? If not, please specify what alternative scenarios you believe to be more appropriate, and why.”* RES agrees with the proposed plant portfolio scenarios and underlying assumptions so far as they have been described and subject to the above comments.**

The above responses are offered in a spirit of positive cooperation towards minimising constraints on non synchronous generation and energy storage which arise from the present SNSP limits and we will be happy to clarify any of the points raised in this letter.

Yours sincerely,

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