

## DS3 System Services Consultation – Volume Calculation Methodology and Portfolio Scenarios

This questionnaire has been prepared to facilitate responses to the consultation. Respondents are not restricted to this template and can provide supplementary material if desired.

Please send responses in electronic format to [DS3@eirgrid.com](mailto:DS3@eirgrid.com) or [DS3@soni.ltd.uk](mailto:DS3@soni.ltd.uk)

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**Note:** It is the TSOs' intention to publish all responses. If your response is confidential, please indicate this by marking the following box with an "x". Please note that, in any event, all responses will be shared with the Regulatory Authorities.

Response

confidential

The closing date for responses is Wednesday, 25<sup>th</sup> November 2015

**(Subsequently extended to 4 December to facilitate bilateral meetings with EirGrid and the RAs)**

<i>Question</i>	<i>Response</i>
<b>Determination of Capability Volume Requirements</b>	
<p>Do you agree with our proposed approach to determining the Capability Volume Requirements for the System Services?</p> <p>If not, please specify what alternative method you believe to be more appropriate.</p>	<p>The approach to modelling system services presented in the consultation paper is extremely high-level, and we would suggest that a number of key areas require further detailed attention. These include:</p> <ol style="list-style-type: none"> <li>1. <b>Assumption errors:</b> Although unavoidable in a forecasting exercise, assumption errors have material impacts on the integrity of decisions informed by the modelling results. It is unclear, however, how the modelling approach will quantify the impact of assumption errors or how the decision making process will account for them. Normally a wide range of scenarios is run to understand the sensitivity of modelling results to the underlying assumptions, to ensure the conclusions drawn are future proofed, to the greatest extent possible, against contingencies. Given the importance of DS3 to system management and minimisation of curtailment we suggest that significant scenario analysis on key assumptions needs to be undertaken as part of the modelling approach set out for determining DS3 volume requirements. Furthermore, clarity is needed on how decision making will take these sensitivities into account.</li> <li>2. <b>Appropriateness of forecasting software / modelling approach:</b> It is assumed that the PLEXOS software is capable of providing an accurate representation of system dispatch under I-SEM conditions. We note that this assumption is untested. While we appreciate it cannot be validated prior to market go-live a prudent approach would incorporate the potential error of the forecast methodology itself when drawing conclusions from the modelling. The potential inaccuracy of using PLEXOS to replicate I-SEM market dynamics is a substantial risk under the proposed approach and should be openly acknowledged and accounted for as part of the volume determination process.</li> <li>3. <b>The extremely challenging / unrealistic project timelines:</b> Energia notes the contracted timelines for the decision on the Volume Calculation Methodology and Portfolio Scenarios. Under the proposed timelines in Table 1 of the consultation paper</li> </ol>

the decision and modelling need to be completed during Q1 2016. Given the preparation required to develop the models and the need, as outlined above, to complete adequate stress testing of the impact of assumptions on modelling outcomes to ensure robustness of the conclusions drawn, these timelines seem extremely challenging. Concerns include:

- a. The ability of DS3 / I-SEM project teams to take on board industry responses on this and other DS3 / I-SEM consultations. Models are likely to need to be in development prior to the decision to facilitate meeting the stated timeline.
- b. There is a risk that the importance of the modelling processes for DS3 is being underestimated: Energia is concerned that the fundamental importance of implementing robust modelling processes to ensure the success of the DS3 programme is not fully acknowledged in the consultation paper. There is therefore an increased risk that it may not be receiving due consideration given the extremely challenging timelines. The paper states that “The portfolio scenarios will have no bearing on the outcome of the competitive process other than informing the volumes to be procured”(P29). Energia however observes that the volumes to be procured through an auction are one of the fundamental parameters underpinning the auction process and will materially influence the clearing price for system services. Furthermore, the Regulated Tariff consultation proposes using the model developed for the volume calculation to carry out analysis to inform the setting of regulated tariffs. The modelling process is therefore of fundamental importance to the efficacy and efficiency of both the auction process and the regulated tariff process and accurate, carefully considered, modelling is an essential component to ensuring the success of the DS3 programme and comply with EU requirements to minimise curtailment of renewable generation sources.
- c. The risk of shortcuts being applied in the modelling approach: There is a lack of detail pertaining to the underlying modelling assumptions that will be employed and this is a significant concern. Is the scale of modelling (number of

scenarios used to stress test assumptions) being limited in order to facilitate timelines? It is difficult to comment as there is no discussion of this in the consultation paper. What are the core assumptions being employed for fuel costs, plant availability, demand, wind generation, system constraints, etc? The lack of consultation in these areas is a major omission and of significant concern, increasing the risk of inaccurate conclusions being drawn from the modelling. We note the outcomes of the modelling could have significant implications for future system management including levels of wind curtailment.

- d. Quality assurance (QA) on modelling results: There is no discussion of the QA arrangements that will be put in place to identify and correct human errors in the modelling process. Even under normal conditions errors do occur when managing large volumes of data and it is considered good practice to apply QA. However, the contracted timelines presented in the consultation paper, combined with the fact that this is a new and complex modelling process, put further additional pressure on the processes for preparing, extracting, analysing and reporting results, significantly increasing the risk of human error. It is therefore essential that the QA on modelling results is prioritised and is robust to ensure the integrity of the decisions upon which it is based.

- 4. **Appropriate governance and accountability provisions for DS3 modelling processes:** Given the importance of the modelling approach to the DS3 process a high degree of transparency and robust governance arrangement are required to ensure its integrity. We observe that results could be materially impacted by changes in underlying assumptions or the modelling methodology. Energia therefore recommends that there should be a further consultation on the assumptions and the wider modelling approach (not just the development of portfolio scenarios) with robust ongoing governance arrangements to provide accountability for the DS3 modelling processes. Given the complexities to be resolved in the initial set up we suggest that a dedicated working group is formed in this area to allow for meaningful engagement across all

stakeholders.

5. **Transparency of DS3 modelling processes:** To instill confidence in the DS3 modelling process and its governance, and to improve stakeholder engagement, Energia recommends that a high degree of transparency be adopted. We suggest this should include full disclosure of modelling assumptions (unless such assumptions are deemed commercially sensitive by participants), detailed documentation and publication of the modelling approach and publication of the forecasting model (with information deemed commercially sensitive by participants removed).
6. **Minimisation of curtailment:** At the forum in Dundalk on 12<sup>th</sup> November 2015 it was stated that a figure of 5% curtailment might be acceptable. Energia believes that the target curtailment level should be 0% based on the RES Directive. If 0% curtailment is not targeted as the objective it will never be achieved and this would seem difficult to justify in the context of the RES Directive which stipulates that curtailment of renewable generations should be minimised and, in cases where curtailment is required, actions should be identified to **prevent** inappropriate curtailments:  
*“Member States shall ensure that appropriate grid and market-related operational measures are taken in order to **minimise the curtailment of electricity produced from renewable energy source**”*
7. **Specific plant portfolio scenarios and their selection:** Our views on the specific plant portfolio scenarios and their selection are provided in our answer to the next question.

## Plant Portfolio Scenarios

Do you agree with the 2017/18 and 2019/20 plant portfolio scenarios and underlying assumptions presented as the starting point 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.

The consultation paper gives the impression that the modelling processes for DS3 will not have a material effect on auction outcomes. This is unfortunate because, for reasons outlined in point 3b above, the validity of the conclusions drawn from the modelling results is paramount to the success of the wider DS3 programme, including maximising the benefits of wind generation for all-island consumers and compliance with EU requirements to minimise curtailment. We therefore make the following observations and comments in relation to the plant portfolio scenarios presented in the consultation paper and the proposed approach to refining the scenarios to determine final requirements:

1. Energia would recommend modelling each study year rather than interpolating results between study years. The latter approach, proposed in the consultation paper, is likely to increase inaccuracy in the model outcomes and does not facilitate impact assessments on key assumptions such as the availability of the new N/S interconnector which could have a sizeable material effect on system service volumes due to the affect the new interconnector will have on reducing system constraints.
2. Modelling of EWIC and Moyle is not clear and requires further detail to understand.
3. While we agree that it would seem sensible to assume only limited new investment in relation to the 2017/18 starting portfolio, the use of only two starting portfolios for the 2019/2020 study year seems inadequate to ensure that outcomes are not unduly biased by the starting portfolios (including contingent assumpitons made within these starting portfolios such as the reduction in min gens or the addition of network devices). We therefore recommend that the modelling is run using significantly more starting plant portfolios. The number of starting portfolios should be sufficient to adequately stress test the assumptions behind the starting portfolio scenarios. The number of starting portfolios should also be sufficient to allow for the identification and management of any potential bias in the modelling results when drawing conclusions.
4. The process, including the criteria used, for refining plant portfolios should be clearly

set out in a plain English document so it is easy to understand. For example, it is not clear how re-dispatch costs will be taken into account in the process of refining scenarios. What are the criteria that will be applied? We would reiterate the pressing need for robust governance, accountability, appropriate stakeholder engagement and transparency as discussed in our response to the previous question.

5. It is unclear how locational constraints will be accounted for in the modelling process. It would seem important to ensure that sufficient system services will be procured to ensure that system requirements can be met given binding network constraints. We would therefore welcome a much more detailed explanation and discussion of how system constraints will be factored into the DS3 modelling processes. The consultation paper seems to suggest that only the N/S constraint will be modelled actively when determining plant portfolios but that more detailed constraint modelling will be carried out on voltage control as a separate process. There does not however seem to be any feedback from this process into the development of plant scenarios and rather the assumption is made that any shortfall will be met by network devices. It is difficult to see how this process can guarantee an optimal outcome in terms of the determination of plant portfolios and it may therefore be better to dynamically consider the impact of network constraints as part of the plant selection process. We would welcome further consideration of this or a more detailed explanation of why the current approach has been proposed.
6. Section 2.5 states that Steady State reactive Power will be studied using nine areas. Northern Ireland is covered as a single area. There is no Belfasts area. We would question how reactive power can be provided by any source in Northern Ireland to support voltage at major demand centres.