



Energy for  
generations

Generation & Wholesale Markets

**Response to:**

Utility Regulator's Proposed Decision Paper on "Rate of Change of Frequency Modification to the Grid Code"

## Part One: Introduction

ESB Generation and Wholesale Markets (GWM) welcome the opportunity to respond to the Utility Regulator's (UR) Proposed Decision Paper on "*Rate of Change of Frequency (RoCoF) Modification to the Grid Code*". The ESB GWM generation portfolio comprises of both conventional and renewable generators. The successful delivery of the DS3 programme is therefore important to the ESB GWM business.

The main points of ESB GWM's response to this consultation are summarised below. Part Two of the consultation response gives more detailed comments.

### 1.1 Summary of Main Comments

- ESB GWM supports the delivery of Northern Ireland's renewable energy target of 40% renewable energy by 2020 and the implementation of the DS3 programme of which RoCoF is an important variable.
- ESB GWM do not agree with approving the proposed grid code modification. The modification report sent to the UR by SONI acknowledges the need for analysis to be completed and full implementation of the recommendations. The UR must acknowledge that until this analysis is complete that there is a real and as yet unquantified risk that it may not be feasible for generators to comply with the proposed modification. This was also highlighted to the CER whose own advisors, PPA Energy, "recommend that CER does not approve MPID 229" pending completion of a number of processes which are not yet complete.
- Conventional generators have actively engaged with OEMs to understand the implications of moving to a higher RoCoF value. The OEMs need to carry out technical studies to assess the impact of the proposed change and each study is expected to take between 12-18 months to complete. The OEMs have indicated that studies will be carried out consecutively for each generating unit. Therefore, it is not feasible that generators can comply with the UR's proposed implementation phase of 18 months and the UR must adapt realistic timeframes in which the OEMs can complete the required studies. PPA Energy's report suggests "timescales of 8-10 years to study all of the plant on the system<sup>1</sup>". The UR must review the proposed implementation timeframe in light of industry feedback from discussions with OEMs and the CER's advisor's report.
- ESB GWM suggests that one possibility is to consider a phased approach to implementation i.e. an initial 18 month phase after which the UR assesses the results of the completed studies as well as the alternatives investigated by the TSO and

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<sup>1</sup> PPA's RoCoF Report, Page 22

determine if the proposed higher RoCoF standard appears feasible and if so, agrees the necessary time and most economic solutions for cost recovery required for completion of the remaining technical studies.

- Due to the lengthy timeframes associated with the technical studies provided by estimated figures from the OEMs,, the as yet undetermined results of these studies including the possible inability to comply with the proposed grid code modification, the extent of any corrective actions required for each unit, the impact on operating behaviour and the current unquantifiable costs associated with mitigating any potential risks identified, ESB GWM strongly support the proposal that the TSO investigate alternative means of achieving the additional 10% SNSP that RoCoF delivers.
- The proposed decision paper states that all generators must comply with the new standard – is there a tipping point at which any new RoCoF standard cannot be implemented due to proven inability of non-compliance by some generators as a result of technical studies? ESB GWM request clarification on how this issue will be managed and communicated to industry participants. Has the TSO determined a mandatory level of compliance required? This information should be available to market participants to provide clarity on RoCoF implementation.
- In the proposed decision paper the UR suggests that all studies carried out should also assess the impact of a RoCoF of 2Hz/s. This is significant as it will add to both the cost and timeline for the studies.
- The UR acknowledges that the proposed RoCoF modification is likely to result in an “excessive cost” and that “the benefits of the RoCoF change will accrue to wind plant only”. The proposed RoCoF modification is a consequence of the renewable energy targets. Costs must be recoverable otherwise this amounts to a fundamental change in the investment landscape, creates regulatory uncertainty and amounts to cross-subsidisation from one class of generator to another. In the proposed decision paper the UR has not addressed the issue of cost recovery. ESB GWM would argue strongly in favour of allowing a cost recovery mechanism for completion of the required studies. One possible cost recovery mechanism is the use of the DS3 system services pot.
- The DS3 system services pot was calculated using a value based approach for the provision of system services. ESB GWM proposes that the UR examines the possibility of setting aside monies from the DS3 system services pot to fund generator studies. This would result in no net impact to the consumer for completion of the studies and would provide a cost recovery mechanism for generators. One possible idea is to delay the implementation of this cost recovery mechanism until October 2015 to coincide with the introduction of the DS3 system services pot.
- The proposed GPIs for RoCoF non-compliance are penal and have the ability to affect the future commercial viability of a generating unit. GPIs should not threaten

the potential continued existence of a generator and undermine investment decisions made at a different time.

- The proportionality of the proposed GPI is highly questionable given it could potentially lead to the closure of a plant with an inability to meet a new standard that was not in existence at the time the plant entered the market. Introducing such an exorbitant GPI creates regulatory uncertainty for investors.
- It is not appropriate that a generator may be subject to a substantial GPI due to factors which it cannot control i.e. the scheduling by OEMs of generating units' studies. Without the OEMs assessment, generators cannot demonstrate compliance with the proposed new RoCoF value. It must be possible for generators to receive a derogation and not be subject to GPIs in the event that the OEMs cannot complete the studies within the 18 month timeframe.
- ESB GWM requests that the UR provide more information on the coordination/project management of the studies. For example, how is satisfactory compliance with the proposed standard determined? Will this criteria be consulted at an industry level and allow generator input? ESB GWM would be of the opinion that generators' technical studies should be managed by a co-ordinated, industry wide project as this will lead to greater efficiencies and savings. ESB GWM would favour the appointment of an independent third party technical advisor with detailed knowledge of generator behaviour to coordinate/project manage the studies.
- ESB GWM requests that the TSO provide a frequency trace showing the worst case RoCoF event that can occur under the proposed definition of 1Hz/s over a 500ms period. The OEMs have indicated that this data is required for meaningful studies to occur. Delays in receiving this data from the TSO will result in subsequent delays in starting the OEMs' studies. It is assumed that this data, or similar data, was used in the DNV KEMA study so it should be freely available.

## **Part Two: Detailed Comments**

### **2.1 DS3 and RoCoF**

In order to facilitate the 2020 renewable energy targets, SNSP level of 75% are required compared to the current operational limit of 50%. The TSOs have identified an increased RoCoF value of 1 Hz/s over a 500ms rolling period as a means of increasing the SNSP level to 60%. Increasing the RoCoF limit has not been done in any comparable system and all conventional plant in SEM are concerned with the impact of higher RoCoF on (a) operations and maintenance; (b) reduction in life time of the assets and (c) potential failure. These concerns have been validated by VGB; EPRI and OEM's. The OEMs need to complete technical studies on each unit to investigate the impact of the proposed RoCoF modification. DNV KEMAs report identified that stability issues occur at full leading power factor and reinforces generators concerns regarding the proposed RoCoF standard.

Both the TSOs and the RAs must acknowledge that there is no prior international experience in this area. At present, an unquantified risk exists regarding the feasibility of moving forward with an increased RoCoF value due to potential issues which may be identified after completion of the studies such as technical constraints, timing limitations or unbalanced costs requirements for any identified corrective actions. Due to the existence of this risk and the consequential impact on wind curtailment and the 2020 renewable energy targets, ESB GWM strongly supports the proposal that the TSOs should identify and implement alternative solutions. Potential solutions include investigating the ability of generators to provide parking services, the formulation of operational policies which could prevent high RoCoF values occurring, the potential contribution of smart grid or others.

### **2.2 UR Proposed Decision**

#### **2.2.1 Evaluation and Implementation of the Modification**

The UR has proposed to approve the modification but not to give effect to the Grid Code for 18 months. Due to the uncertainty associated with technical capability of the Irish generation fleet, ESB GWM does not believe that this is an appropriate response from the UR. If this modification is approved, a future process is created whereby generators will need to seek a derogation for non-compliance with a standard that is not yet established as being feasible. Generators can only establish their level of compliance post completion of the technical studies. The UR has indicated that it expects an 18 month leadtime for implementation of the new Grid Code standard. Our extensive discussions with the OEMs have indicated a leadtime of 12-18 months per generating unit. Studies will be carried out consecutively and consequently, an eighteen month total implementation timeframe is unachievable.

Generators will be unable to state their level of compliance before the studies are complete and this will create an inefficient and time consuming derogation process involving the majority of generators, the TSOs and the RAs. It is recommended that no modification is approved for inclusion in the Grid Code until completion of the technical studies confirm that the proposed modification is both realistic and realisable.

ESB GWM would welcome the introduction of a centrally managed entity to project manage the process of completing the required technical studies. A centrally co-ordinated and managed industry wide project should result in process efficiencies and cost savings which is beneficial to all stakeholders. We would request that the scope of the project manager is clearly defined as this is not available in the current consultation and may lead to future complications. EirGrid has significant experience in the operating the transmission system however as they do not have the same level of experience regarding generator running and plant behaviour, we would suggest that an entity with more experience in plant behaviour is assigned as project manager.

### **2.2.2 Generator Studies and Cost Recovery**

The proposed decision paper requests that generators should also assess compliance with a Grid Code standard of 2.0 Hz/s. If these studies are required, then the scope of work, the timelines and the costs associated with the technical studies would be expected to increase.

This paper acknowledges that delivering compliance will potentially result in a negative commercial impact for thermal generators while benefiting wind generators. Incurring the cost of the technical studies is, in effect, a potential cross subsidisation from one class of generator to another. Traditionally Grid Code modifications have been retrospective with no cost recovery mechanism available. However, the proposed RoCoF modification is as a result of government policy and generators are not in a position to assess their compliance until the OEM studies are complete. Due to the atypical nature of this proposed modification combined with the fact that conventional generators will not derive any benefit from making the required investment, ESB GWM feel that cost recovery is both appropriate and required in this instance.

As the delivery of the higher RoCoF value is required to achieve the targets established under the DS3 process, a possible cost recovery mechanism is to set aside a once off deduction from the DS3 system services pot valued at €355M by the TSO. This deduction could be delayed until the implementation of the new system services in October 2015.

### **2.2.3 Generator Performance Incentive (GPIs).**

The proposed GPIs for RoCoF non-compliance are penal and have the ability to affect the future commercial viability of a generating unit. Further clarification is required regarding the methodology used in determining that the proposed GPI values are proportionate to the costs underperformance imposes on the TSOs. In addition, the proportionality of the proposed GPI is highly questionable given that it could potentially lead to plant closure for the inability to meet a Grid Code standard that was not in existence at the time the generating unit entered the market.

It is proposed the GPI will be introduced 18 months after the date of the URs decision. Given the issues already highlighted with the timelines associated with the OEMs completing the technical studies, it is not reasonable to expect generators to demonstrate compliance with the proposed higher RoCoF value in 18 months. It is unreasonable to impose such a penal GPI on generators given the circumstances of the RoCoF modification.