

Conleth McAteer
SONI Limited
Castlereagh House
12 Manse Road
Belfast
BT6 9RT

19 March 2024

Our Ref: NET/E/DH/893

Dear Conleth,

RE MCR Modification for Approval

We write following our receipt and consideration of SONI's Grid Code Modification Report dated 13 October 2023 (the **Report**), as submitted by SONI to the Utility Regulator (the **Authority**)¹ under paragraph 2 of Condition 16 of the electricity transmission licence held by SONI (the **Licence**).²

The Report sets out SONI's proposed modifications to clauses CC. S1.1.3.8 and CC. S1.2.3.3 (we refer to these as the **relevant provisions**) of the Grid Code (the **proposed modifications**) and requests the Authority's approval (as required pursuant to paragraph 3 of Condition 16 of the Licence) for the proposed modifications to be made.

The Report also sets out the extensive background to the request, including the consultation process, SONI's assessment process, and the January 2023 technical assessment undertaken by independent expert Jacobs. We do not propose to repeat this background for the purposes of this letter, other than to explain our reasoning.

The Authority's Decision

Having reviewed the material provided, including the Report, letters from OEMs and a report by Jacobs entitled '*SONI Grid Code Proposed Minimum Generation Studies*' (the **Technical Report**), we have decided **not** to approve the making of the proposed modifications at this time. However, we continue to keep matters

¹ That is the Northern Ireland Authority for Utility Regulation.

² [2022-11-18 SONI TSO Consolidated.pdf \(uregni.gov.uk\)](#)

relating to the Maximum Continuous Rating (**MCR**) levels and the potential for future Grid Code modifications under review.

Background and Reasons for the Authority's Decision

The relevant provisions of the Grid Code require Generating Units to be capable of remaining Synchronised to the NI System at an Output which is no greater than the lower of 80 MW or 40% of MCR.³

The proposed modifications would have amended the relevant provisions to remove reference to the obligation on a Generating Unit to be capable of remaining Synchronised to the NI System at an Output of 80 MW (if this value was lower than 40% of MCR). The proposed modifications would not have altered the requirement for a Generating Unit to be capable of remaining Synchronised to the NI System at 40% of MCR.

The proposed modifications were initially put forward to SONI by EP Kilroot (**EPK**) in the context of the connection of two new open cycle gas turbines (**OCGT**) – which will be owned and/or operated by its subsidiary EPNI Energy Limited (**EPNIE**) – which cannot meet the current Grid Code requirements. EPNIE confirmed initially that both OCGTs could achieve a minimum output of 40% of MCR, but that this would equate to a minimum output of 140 MW – the OCGTs cannot reach the lower value of 80 MW while complying with emissions requirements.

It is appropriate to note here that EPNIE is expected to have considered compliance with the requirements of the Grid Code and the environmental law when procuring and sizing the new OCGTs.

The Report also notes that EPNIE's initial position has changed such that both OCGTs will actually only be able to achieve a minimum generation level of 147 MW, which equates to 42% of MCR. The clear implication here is that even if the proposed modifications were approved, EPNIE would not be able to meet the revised requirements in respect of its OCGTs.

Notwithstanding this, EPK produced reports from various Original Equipment Manufacturers (**OEMs**) and technology manufacturers supporting its arguments

³ Capitalised terms not defined in this letter have the meaning given to those same terms in the Grid Code.

that 80 MW was difficult or impossible to achieve for other Users due to emissions requirements and suggesting that the 40% of MCR requirement is more achievable as it is more aligned with modern heavy duty gas turbine capabilities.

SONI received three responses to its consultation, one in favour of the proposed modifications, namely from EPK, and two objecting to the proposed modifications, namely from Renewable Energy Systems Limited (**RES**) and RenewableNI.

RES and Renewable NI contended that the challenges faced by EPK could be resolved by plants making all necessary modifications using current technologies, by investing in compliance equipment and smaller compliant generating units, or by seeking amendments to the environmental law. EPK does not appear to have addressed these alternative options in its submissions.

RES and Renewable NI also submitted that the proposed modifications would increase the minimum generation of affected generators and increase the curtailment of renewable generators. RES considered that this would undermine SONI's compliance with its licence and hinder achievement of Northern Ireland's decarbonisation targets. RES considered EPK's argument that there exist sufficient incentives to lower minimum generation to be unsubstantiated.

Following its own initial review SONI procured a technical assessment from an independent expert. The appointed expert undertook a comparative study of international TSOs and their minimum generation requirements, and analysed the technological capabilities of generator OEMs in this area, specifically how minimum generation requirements interact with emissions requirements, particularly the Industrial Emissions Directive, and produced the Technical Report.

The Technical Report considered that the proposed modifications did not pose significant obstacles and might be suitable based on evaluating the requirements of TSOs, environmental requirements, and the capabilities of the generation-turbines. However, it concluded that the proposed modifications would result in an increase in minimum generation, which would result in a net increase in system costs to the Northern Ireland electricity market, an increase in emissions, an increase in total curtailment, and it would also reduce the ability of the electrical network to deal with the "*emerging*" issue of managing the minimum demand conditions. The Technical Report stated that the proposed modifications have "*no impact for generating units with a maximum continuous rating below 200 MW, but for units with maximum capacity greater than 200 MW it effectively raises their*

minimum generation requirement from the current standard, which effectively requires them to be less flexible relative to the current standard.”

The Technical Report analysed a variety of MCR sensitivities and concluded that the net cost of the proposed modifications would be minimised by also reducing the prescribed minimum generation level to 35%, which presented a slight net benefit to the Integrated Single Electricity Market (**ISEM**). However, this was to be balanced against the technical capability and regulatory compliance of existing synchronous generating units: the Technical Report noted the danger that generators may not be able to meet 35% minimum generation, although it noted that a review of actual generators' technical capabilities and the regulatory landscape would be required to confirm this point.

We note that the Technical Report considered that the position may be different in future as technology improves: *“technological advancement within hydropower and Combined Cycle Gas Turbine (CCGT) allows generators to meet the minimum inertia level at lower minimum generation levels. As the future capabilities of generating technologies improve, this may allow SONI to reduce their minimum generation level while still maintaining safe operation of the power systems”*. We note that minimum generation limits in Northern Ireland are set at present with reference to the optimum levels to safely respond to an increase or decrease in system frequency, as well as with reference to the technical capabilities of generating units.

The Authority acknowledges that the assessment in the Technical Report is that the proposed modifications are suitable based on the evaluation of certain requirements. However, the Authority is not satisfied that the benefits of removing the 80 MW requirement in the relevant provisions outweigh the potential disadvantages which exist at this stage.

The proposed modifications could potentially increase the minimum generation of generators, with impacts on curtailment, cost and emissions, without considering the sufficiency of incentives for generators to keep minimum generation low. This is significant, particularly as it challenges the achievement of Northern Ireland's decarbonisation targets and may potentially compromise compliance with environmental law and regulation.

Implementing the proposed modifications may result in a net cost to the ISEM.

Accordingly, the Authority has decided not to approve the proposed modifications.

However, the Authority considers that further analysis and review is required on the issues highlighted by respondents to SONI's consultation on the proposed modifications and on the topics outlined and discussed in the Technical Report.

In particular, we consider it would be helpful for the points raised in the Technical Report concerning different approaches in setting a minimum generation level by TSOs, and potential advances in equipment enabling lower minimum generation levels, to be explored further.

While these questions remain open, the Authority believes any new plant proposed should demonstrate, through the derogation process, they cannot procure equipment that would meet the current Min Gen generation levels in the Grid Code.

We would be happy to meet and discuss the next steps in terms of the further review and analysis that we consider to be required on this matter. If you require any further information, please do not hesitate to get in contact.

Yours sincerely,



Donald Henry
Networks and Energy Futures Director