

Adam Robb
EPNIE Limited
Kilroot Power Station
Larne Road
Carrickfergus
BT38 7LX

08 April 2024

Our Ref – NET/E/DH/917

Dear Adam

RE: KGT6 10 Year SONI Grid Code Derogation Request from Section CC.S1.1.3.9 (Ramp Rate) and OC3.4.2.2 (Operating Reserve) During Augmented Power Generation

I write in response to your letter dated 21 September 2023 and note your follow up material contained in the letter of 13 December and 10 January 2024.

The letter requests that the Authority grant EP NI Energy Limited (“**EPNIE**”) a direction relieving EPNIE of its obligation – under Condition 4(1) of EPNIE’s licence to participate in generation activities (the **EPNIE Licence**) - to comply with certain provisions of the SONI Grid Code (the **Grid Code**). The Authority¹ has the power to grant a direction(s) of the type sought pursuant to Condition 4(2) of EPNIE’s Licence. We shall refer to the request made as the Application.

The Application is in respect of an Open Cycle Gas Turbine (**OCGT**) unit at Kilroot Power Station known as the **KGT6 Unit** and seeks to relieve EPNIE of its obligation to ensure that the KGT6 Unit is to be capable of ramping both up and down at a rate of 3% MCR per minute (clause CC. S1.1.3.9). The relevant section of that clause of the Grid Code reads as follows:

CC. S1.1.3.9;

b) “A Generating Unit which is in a hot condition must be capable of ramping up from part-load pursuant to a Dispatch instruction at a rate of at least 3% of MCR per minute.

c) A Generating Unit must be capable of de-loading at a rate of at least 3% of MCR per minute.”

¹ In this letter the terms “us” “we” “our” “UR” and “Authority” are used interchangeably and refer in each case to the Northern Ireland Authority for Utility Regulation.

The Application also seeks to relieve EPNIE of its obligation to provide Operating Reserve (as defined in the Grid Code in section OC3.4.2.2), between what EPNIE define as Base Load and Augmented Load, for KGT6. The relevant section of that clause of the Grid Code reads as follows:

OC3.4.2.2;

“The Operating Reserve from Generating Plant must be capable of providing response in four distinct time scales:

OC3.4.2.2.1 Primary Operating Reserve

The automatic response to NI System Frequency changes which is released increasingly from the time of Frequency change and fully available by 5 seconds, and, subject to the Unit Load Controller adjustment determined pursuant to the CC where applicable, must be sustainable, for at least 15 seconds.

OC3.4.2.2.2 Secondary Operating Reserve

The additional MW output compared to the pre-incident output, which is fully available and sustainable over the period from 15 to 90 seconds following an Event.

OC3.4.2.2.3 Tertiary Operating Reserve band 1

The additional MW output required compared to the pre-Event output which is fully available and sustainable from 90 seconds to 5 minutes following an Event.

OC3.4.2.2.4 Tertiary Operating Reserve band 2

The additional MW output required compared to the pre-Event output which is fully available and sustainable from 5 minutes to 20 minutes following an Event.”

1. Background

- 1.1. On 21 September 2023, EPNI Energy Limited (EPNIE) submitted a request for derogation from CC. S1.1.3.9 and OC3.4.2.2 of the Grid Code, to apply to the KGT6 and KGT7 Units at Kilroot Power Station. This Decision Letter applies to the KGT6 Open Cycle Gas Turbine (OCGT) GU_504110. An accompanying Decision Letter will detail the Authority’s Decision concerning the KGT7 Unit (GU_504120), which was also the subject of a 21 September 2023 application for derogation by EPNIE, from CC. S1.1.3.9 and OC3.4.2.2.

- 1.2. We will deal with the supporting background for the two separate parts of the Derogation Application below:

Ramp Rate (CC. S1.1.3.9 of the Grid Code)

- 1.3. It is described in the EPNIE application how this section of the Grid Code requires KGT6/KGT7 *“to be capable of ramping both up and down at a rate of 3% MCR per minute.”* Related to the capacity of 350 MW, this requires a ramp up/down rate of *“approximately 10.5 MW/minute.”* The design ramp rate of 13MW/min, which would meet the Grid Code requirement, is *“applicable up to the maximum capacity the unit can achieve without the use of power augmentation (“Base Load”).”*
- 1.4. Above Base Load, and up to registered capacity (‘Augmented Load’), EPNIE described the units using wet compression *“as a form of power augmentation.”* EPNIE says the wet compression enables KGT6/KGT7 to provide 24MW of additional power output, from approximately 326MW Base Load to approximately 350MW Augmented Load (this value will *“be determined during commissioning of the unit”*), but that doing so has an impact on Ramp Rate. The *“Wet compression controls the load of the unit through a different mechanism (water injection flowrate) and this mechanism provides a slower response than the operating mechanism up to Base Load. This slower response impacts the ramp rate and the ability to provide automatic operating reserve.”*
- 1.5. EPNIE says under Augmented Load *“it is capable of a ramp rate of approximately 2MW/min both up and down.”* This ramp rate at augmented load would not be compliant with CC. S1.1.3.9.
- 1.6. EPNIE have proposed a (modified) requirement for KGT6/KGT7:
- 1.7. *“Up to base load (the maximum capacity the unit can achieve without the use of power augmentation):*

b) KGT6 which is in a hot condition must be capable of ramping up from part-load pursuant to a Dispatch instruction at a rate of least 3% of MCR per minute.

c) KGT6 must be capable of de-loading at a rate of at least 3% of MCR per minute.

From base load to augmented load (the maximum capacity the unit can achieve with the use of power augmentation):

d) KGT6 which is in a hot condition must be capable of ramping up from part-load pursuant to a Dispatch instruction at a rate of at least 0.5% of MCR per minute.

e) KGT6 must be capable of de-loading at a rate of at least 0.5% of MCR per minute.”

Operating Reserve (Section OC3.4.2.2 of the Grid Code)

- 1.8. It says in this section of the Grid Code that *“The Operating Reserve from the Generating Unit must be capable of providing response in four distinct time scales,”* with sections OC3.4.2.2.1 – OC3.4.4 outlining 6 different time scales that could apply.
- 1.9. The Application suggests modification (applied to KGT6/KGT7) to the first four time scales quoted in the Grid Code – Primary Operating Reserve, Secondary Operating Reserve, Tertiary Operating Reserve Band 1, and Tertiary Operating Reserve Band 2, because *“KGT6/KGT7 can provide Operating Reserve up to Base Load, however due to the slower ramp capability KGT6 cannot provide operating reserve as defined in OC3.4.2.2 between Base Load and Augmented Load.”*
- 1.10. EPNIE suggests modification to the requirement in OC3.4.2.2 to say that *“The Operating Reserve from Generating Plant must be capable of providing response in four distinct time scales up to base load (the maximum capacity the unit can achieve without the use of power augmentation),”* and then list the same MW output requirements and time periods as in the Grid Code text, for Primary Operating Reserve, Secondary Operating Reserve, Tertiary Operating Reserve Band 1, and Tertiary Operating Reserve Band 2.
- 1.11. EPNIE proposed a 10 year derogation from both Grid Code requirements, *“commencing from the moment the unit reaches commercial operation.”*
- 1.12. EPNIE asserts in the Application there would be no impacts on: security of supply, competition, sustainable development, health and safety, and Government Policy, from the Derogation being granted. EPNIE says the availability of KGT6/KGT7 will provide opportunities to reduce costs to the consumer and increase the proportion of electricity generated from renewables, as *“due to fast start times, KGT6/KGT7 can provide desynchronised reserve and be dispatched when required rather than having to be reduced to minimum generation level to provide synchronised reserve....[Redacted].”*
- 1.13. EPNIE stated in the Application there was consideration of alternative actions that would enable the units to meet either Grid Code requirement. *“Through discussions with the OEM (Siemens Energy) it was concluded that there are no alternative actions to provide faster ramp rates or operating reserve between Base Load and Augmented Load.”*

2. NIE Networks' Response

- 2.1. On 10 October 2023, NIE Networks replied to the UR's request for comment. After review, NIE Networks said *"As the derogation requested relates to the Ramp Rate and Operating Reserve capability of KGT6/KGT7 at Kilroot Power Station, then this is primarily an issue for SONI to comment on."*

3. SONI's Response

- 3.1. On 4 October 2023, SONI sent the Authority their Derogation Assessment.
- 3.2. SONI stated the units will not be able to provide operating reserve or respond to dispatch instructions in the expected timeframe, while operating above 326 MW. SONI said that *"This means that additional operating reserve will need to be provided by other sources on the grid when these units are operating above 326MW to ensure that there would be no negative impact to system stability. This poses scheduling and dispatch challenges for the system. The additional 24MW the units can achieve under wet compression could support the system when generation margin is low."* SONI also says that *"Operating Reserve is required to ensure frequency stability. Frequency is managed in SEM on an all-island basis and jointly between Eirgrid and SONI. For these units to operate above 326MW, this would require additional reserve to be provided by other units on the system. This would be expected to come at an additional cost."* SONI also commented that *"This partial non-compliance increases the complexity of operating the system and reduces the system's ability to respond to events on the system."*
- 3.3. The section in the SONI Derogation Assessment Form, concerning Economic Implications, included the comment that *"Should a frequency event occur when these units are operating above 326MW, other units would be required to provide additional response. Should the units operated above 326MW, given the slower response rate of KGT6 and KGT7 above this level, other generators would need to be used to address any imbalances in generation/demand, these generators could be more expensive to dispatch away from their market position."* SONI also commented that it was unclear if EPNIE had pursued alternatives that would mean Grid Code requirements could be met.

4. Further Responses

- 4.1. In light of the level of disagreement between EPNIE and SONI outlined above, the UR contacted EPNIE asking for further information about exploration of potential remedies to achieve Grid Code compliance. At this stage, the UR (with the permission of SONI) shared the SONI Derogation Assessment Form with EPNIE. Having reviewed this Assessment,

EPNIE identified that it would be beneficial to meet with SONI to understand their concerns further before responding to the UR.

- 4.2. After multiple meetings/calls with SONI in November/December 2023, EPNIE provided a follow up document to the UR, on 13 December 2023, which made points under the headings detailed below:

Costs and Practical Difficulties of Granting the Derogation

- 4.3. EPNIE said they undertook *“detailed modelling of the realistic dispatch scenarios for these units. The modelling concludes that there will be no additional costs to the system, or consumer bills but there would be operational and consumer benefits in the form of additional generation capacity available to the System Operator...”* EPNIE took the conclusion that consumer bills would be lower, due to additional generation capacity enabled.
- 4.4. [Paragraph Redacted]
- 4.5. [Paragraph Redacted]
- 4.6. EPNIE says the extra 48MW of capacity provided by augmentation will be available to SONI to mitigate demand risks. EPNIE states *“this additional capacity should be facilitated in the interests of Security of Supply.”*

Precedents for this Type of Derogation

- 4.7. EPNIE highlights how SONI had commented that there is ‘no known precedent’ of a similar derogation, however EPNIE says they have *“found several derogations against ramp and operating reserve requirements for thermal units particularly at the upper range of the units’ capacity.....we consider that it would be discriminatory and irrational to refuse the Derogation on this basis as there are many examples of similar derogations having been granted to other generators.”*

Testing the Performance of the Units Before Granting the Derogation

- 4.8. EPNIE says, in a meeting with SONI, SONI stated that they *“would struggle to support the Derogation before witnessing the performance of power augmentation during commissioning.”*

- 4.9. EPNIE comments that this was *“not a consistent approach to the regulatory process followed to date for previous derogations applied to those units,”* quoting the example of the minimum generation derogation for KGT6 and KGT7 (25 June 2021)² being approved in advance of the commissioning of the units. EPNIE also comments that *“we consider it would be discriminatory and irrational to refuse the derogation on the basis that the power augmentation has not been demonstrated. There is no technical basis for wanting to demonstrate the performance prior to granting the Derogation as power augmentation is not novel technology....”*
- 4.10. EPNIE also commented they *“would be supportive of a reduction in the duration of the Derogation requested from the UR from ten years to three years should the UR consider that appropriate.”*

Operating Reserve Response

- 4.11. EPNIE commented in this document, that *“we are exploring mitigation to improve the full operating reserve response which includes a modification to the frequency trip that should provide full POR, SOR, TOR1 and TOR2 response for an over-frequency event. However, this modification will require an amount of time to design, implement and test and EPNIE will undertake this work during the 3-year period of the Derogation, once granted.”*
- 4.12. In the Derogation Assessment, SONI commented that it is unclear why the units would not be able to provide TOR2 Operating Reserve Response. In response, EPNIE clarified that KGT6 and KGT7, they expect, should be able to provide approximately 10MW response under TOR2 (42% of the TOR2 requirement), and the level would be confirmed during commissioning.
- 4.13. SONI had stated that while operating above 326MW, the units will not be able to *“provide operating reserve or dispatch instructions in the expected timeframe,”* and additional operating reserve will need to be provided by other sources on the grid while the units are operating above 326MW. EPNIE said that *“when a system stress event is anticipated the power augmentation mode for which the derogation is requested will provide additional reserve capacity. Minimum ramp rates are not an important factor for the System Operator to consider in circumstances when it has sufficient response capability on the system to deal with any credible scenario.”* [Redacted] In EPNIE’s view, this means there would not be any *“scheduling and dispatch challenges for the system.”*

² [2021-06-25-epk-36-month-derogation-ktg6.pdf \(uregni.gov.uk\)](https://www.uregni.gov.uk/2021-06-25-epk-36-month-derogation-ktg6.pdf)

- 4.14. EPNIE states that their model shows, as the units would operate with power augmentation or above 300 MW for such a small percentage of time, for *“the vast majority of the time, SONI’s system management activities would be entirely unaffected and SONI would not have to make any additional allowances for operating reserve.”* EPNIE also conclude (unlike SONI in the Derogation Assessment), there would be no negative impact on the SEM, and there would be no additional cost associated with dispatch.
- 4.15. SONI noted that the Capacity Market is the mechanism to secure the generation capacity required in SEM, with the aim to secure Grid Code compliant capacity. EPNIE argues that the Capacity Market does not impose an absolute obligation on technologies to fully comply with Grid Code in every respect, and doing so would stifle innovation. EPNIE argue that the Grid Code should be amended over time to reflect new technologies that mature, such as power augmentation in this case (and EPNIE propose to explore submitting a relevant Grid Code modification concerning Ramp Rates and Operating Reserve, ‘following approval of the Derogation’). EPNIE argue that power augmentation would provide an additional 48MW of capacity, in the context of a 280MW shortfall.

Ramp Rates

- 4.16. SONI had commented that the *“slow ramp rates of the units above 326MW means that the generators could potentially exacerbate system frequency issues”* and other units would be required to compensate for their performance. EPNIE claims this is *“inaccurate”* and that a slow ramp time contributing to system frequency issues is *“an extremely unlikely scenario”* [redacted], with it therefore being *“extremely unlikely”* in EPNIE’s view that interconnectors will be exporting, or pumped hydro charging, during these scenarios, *“As such an over frequency event is not a feasible scenario when the units are generating at above Base Load.”* EPNIE have quantified the likelihood (on their own model) of the units exacerbating frequency issues as [redacted].
- 4.17. EPNIE thinks the additional 24MW the Units can achieve under wet compression to support the system is valuable, *“particularly in an extreme event.”* In the event of an underfrequency event, in EPNIE’s view, there would not be ability to provide additional capacity, whether the Derogation is granted or not.
- 4.18. EPNIE also states that usage of power augmentation will depend on ambient conditions and actual performance of the unit. EPNIE refers to SONI’s commentary about this as a *“misconception.”*
- 4.19. SONI says the units are compliant with Operating Reserve and Ramp Rate requirements, up to 326MW. EPNIE argues, given the clarification produced in their response, and the two

modifications proposed (subject to derogation), that the units will be materially compliant up to 350MW, and that the units exceed Grid Code requirements *“in all credible dispatch scenarios and only show minor incompliance with Grid Code requirements in improbable dispatch scenarios.”*

Efforts Made to Improve Compliance

- 4.20. SONI said in the Derogation Assessment they did not know of any efforts made to improve compliance. EPNIE said they have worked with the OEM to try and ensure the units are fully Grid Code compliant, however have not identified modifications that do this when the Units are operating with power augmentation. They also stated it is not practical or economic for OEM’s to develop additional technologies such as engines or batteries, to operate seamlessly with an OCGT. EPNIE states that SONI *“do not have the technical knowledge to comment upon this as they are not party to the discussions between EPUKI and the OEM.”* EPNIE says they updated SONI on the discussions at the 8 November 2023 meeting. EPNIE also disagreed SONI’s note that batteries could be considered, maintaining they are a completely different technology class under the Capacity Market Code.
- 4.21. EPNIE disagree with SONI’s comment on *“no known limitations,”* for OCGTs to meet the requirements, saying no OCGT with power augmentation will be fully Grid Code compliant.

Precedents

- 4.22. SONI says there is no known precedent for the derogations being granted, but EPNIE cites NET/E/TH/30 granted to Lisahally Biomass, as relevant to ramp rates. Derogation ID 55 (expired) granted to Coolkeeragh relieved the obligation to meet 10% POR requirements, which SONI were supportive of. EPNIE also cites four derogations the CRU has approved linked to ramp rate and frequency response.
- 4.23. We note that within the UR letter quoted by the applicant it specifically states in the letter that this direction does not set precedent for future derogations and therefore cannot be considered precedent within this request.

EPNIE Conclusions and Comments to the UR

- 4.24. EPNIE comments that *“It would appear to EPNIE that SONI is inadvertently preventing innovative new technologies, which would provide significant benefit to the grid and hence consumers, from being connected to avoid having to change an outdated Grid Code. In fact,*

the Grid Code should, and indeed needs to, be amended to accommodate a wide range of technologies as they mature and EPNIE will be submitting Grid Code modifications in due course. In the meantime, this Derogation should be granted.”

- 4.25. EPNIE has also commented, from their analysis, that the SONI Grid Code is an ‘outlier’ with the Eirgrid and GB Grid Codes. In GB and ROI, KGT6 and KGT7 would be compliant across three assessed areas of Ramp Up, Ramp Down, and Operating Reserve requirements (however in some of these cases, only with the proposed modifications detailed earlier in this LWR). EPNIE points out that the ramp requirement in SONI Grid Code is twice as fast as that required by the EirGrid Grid Code.
- 4.26. EPNIE also comments that *“we consider that, consistent with the UR’s principal objective and statutory duties under the Energy (Northern Ireland) Order 2003, it is in the best interests of consumers and vital for Security of Supply for the requested Derogation to be granted. For the reasons set out in this letter, and in our application for Derogation, granting the Derogation is also entirely proportionate and consistent with Principles of best regulatory practice, and we respectfully consider that it would be irrational to decline the Derogation request.”*
- 4.27. On 10 January 2024, EPNIE sent through a ‘Further Information’ document, the purpose of which was cited as providing *“an update on the continuing efforts being made by EPNIE to improve grid code compliance of the units.”* Two graphs were attached to this document. The first (which had been shared with SONI during an 8 November 2023 meeting) demonstrated the expected behaviour of the units over a typical dispatch profile over 4 hours, including areas where the unit would *“potentially lag Grid Code requirements causing non-compliance.”*
- 4.28. EPNIE outlines in the document that:
- 4.29. *“Following the meeting with SONI we have continued to investigate whether any modification to the units could improve grid code compliance and, to date, we have identified that the following could, potentially, improve compliance with the ramp rate and operating reserve requirements:*
- 1. A wet compression trip in support of de-loading the unit, and*
 - 2. Utilising overfiring above base load.”*
- 4.30. Another graph was supplied (a ‘best estimate’ from available information, on which more accurate information could be supplied after commissioning tests) which EPNIE says show

“the proposed modifications could, potentially, make the units fully compliant with the ramp rate requirements of grid code.”

- 4.31. EPNIE stated this additional information had been shared with SONI on 22 December 2023. EPNIE also commented that *“In the interest of security of supply, our focus is delivering the capacity of the units as soon as possible by prioritising the commissioning of the units. Following commissioning we will then continue to explore the implementation of these, and potentially other, modifications to improved grid code compliance. We believe that a time limited three-year derogation would be appropriate to allow for the assessment and implementation of these modifications.”*

February 2024 SONI Document

- 4.32. On 2 February 2024, SONI sent a document including further information on SONI’s views on the Request, and the EPNIE letters to the UR of 13 December 2023 and 10 January 2024. SONI stated in this document they welcomed the further information provided by EPNIE, and *“the increased capability that is expected to be provided from the KGT6 and KGT7 units since the original derogation request.”*
- 4.33. SONI also provided further information relevant to the topics EPNIE had raised, under the headings below:

Implications on SONI and on Consumers

- 4.34. SONI detailed they had performed a market modelling assessment on the impact of KGT6 and KGT7 providing operating reserve above 326MW, as per the original derogation request, using the latest approved 23/24 Imperfections Model. This assessment reflected that this would mean a [redacted] in the 2023/2024 year, *“due to an increased need to run more expensive plant.”*

Potential Impact of the Derogation on the System

- 4.35. SONI comments that *“Throughout the correspondence EPNIE have presented their own view as to the impact these derogations could have on the whole system.....Operating reserve and ramp rate requirements are both important for the stable and flexible operation of a small system such as the electricity system in Northern Ireland. System stability becomes more challenging as the energy transition progresses and compliance with Grid Code requirements becomes more important.”*

Precedent for the Derogation

- 4.36. SONI states they do not consider the other derogations EPNIE referred to as precedents for the present derogation request. *“SONI do not consider derogations to technical requirements granted to other technology types as setting precedent due to the inherent differences between the capabilities and characteristics of different technologies.....SONI also do not consider derogations to technical requirements in other jurisdictions as setting precedent, unless they are directly comparable to the technology type and the applicable NI requirements.”*
- 4.37. SONI specifically commented that *“given the differences in both, SONI do not consider the C30 POR derogation to set precedent for the KGT6 and KGT7 operating reserve derogation request.”*

Procedural Matters

- 4.38. SONI states they *“welcome EPNIE’s reduction in the duration of the derogation requested from 10 years to 3 years. Since the original derogation request, the expected response of KGT6 and KGT7 in terms of ramp rates and operating reserve has improved significantly through discussions between EPNIE and their Original Equipment Manufacturer.”* SONI also comments that *“With operation of an OCGT in power augmentation mode being a new concept in Northern Ireland, SONI are eager to see how KGT6 and KGT7 perform in commissioning and testing. SONI consider that the results of testing will better indicate the performance of the machines against Grid Code requirements, and better inform (if) any derogation(s) would be required for both units.”*
- 4.39. SONI additionally comments that *“Given the EPNIE correspondence of 10 January 2024, it is unclear whether a derogation from CC. S1.1.3.9 will be required.”*
- 4.40. SONI summed up as follows:
- 4.41. *“EPNIE have engaged with both SONI and their Original Equipment Manufacturer since submitting the original derogation request and have demonstrated a willingness to improve the expected performance of KGT6 and KGT7 in terms of both operating reserve and ramp rates. Grid Code is the ask of SONI for all plant connected to the system so that we can ensure the secure operation of the electricity system.*
- 4.42. *SONI consider that commissioning and testing of both operating reserve and ramp rates will highlight the performance of the units against Grid Code requirements and better inform any necessary derogation(s).”*

5. The Application and the Authority's Interpretation

- 5.1. To inform our Decision on the EPNIE request, we considered the original application, and the follow up material submitted by EPNIE and SONI, as well as one response from NIE Networks. The follow up material has made many points not included in the original Derogation Application, and SONI Derogation Assessment, which we have taken into account.
- 5.2. EPNIE have clarified some of the issues SONI raised in the Derogation Assessment. They have detailed an alternative action which would improve compliance with the Grid Code Ramp Rate requirements, **potentially** to the extent that there would be compliance with CC. S1.1.3.9. The proposed mitigations could also reduce the amount of projected non-compliance related to Operating Reserve and the OC3.4.2.2 requirements. EPNIE also clarified there would be some TOR2 response available, also the subject of query by SONI.
- 5.3. EPNIE indicated, in their follow up documents, they would consider a three year derogation appropriate, instead of the 10 year derogation originally applied for. SONI, in the February 2024 document, welcomed the proposed reduction in the length of time of the derogation, and also welcomed the proposed measures aimed at improving compliance.
- 5.4. However, despite the follow up information provided, and the discussions between EPNIE and SONI, we recognise there are still differences between the two positions EPNIE and SONI have evidenced. There are three key differences identified:
- 5.5. The first is modelling employed by EPNIE and SONI. EPNIE's says their modelling has demonstrated KGT6 and KGT7 will only operate with power augmentation in operation (and potentially in breach of the relevant Grid Code requirements) [redacted]. Therefore, for a large majority of time, in EPNIE's view, SONI would not incur additional costs. EPNIE also assert it is extremely unlikely non compliance with ramp rate requirements will contribute to system frequency issues.
- 5.6. By contrast, SONI's market modelling assessment on the impact of KGT6 and KGT7 providing operating reserve above 326MW, as per the original request, [redacted], in 2023/24. SONI has included this reference in the February 2024 document, responding to EPNIE's statement that their modelling shows no additional costs to the system, or consumer bills. SONI has also emphasised the importance of both Grid Code requirements to the stability and flexibility of the electricity system.
- 5.7. We have also noted EPNIE and SONI disagree on whether the two derogations that EPNIE have identified set a precedent for this derogation – EPNIE believe they do, and SONI do

not consider them directly comparable to this derogation application, and do not think they represent precedent.

- 5.8. The third disagreement is over the interplay between testing and the need for the derogation. SONI have expressed the opinion that the commissioning and testing of both operating reserve and ramp rates will better indicate the performance of the units against the CC. S1.1.3.9 and OC3.4.2.2 requirements. They then consider this would better inform if derogation(s) against the operating reserve and ramp rate requirements would be necessary.
- 5.9. By contrast, EPNIE have commented that this is unnecessary, does not follow a consistent approach to previous derogations granted to KGT6 and KGT7, could be discriminatory, and has no technical basis, as power augmentation is not a new technology.

Impact on the Authority's Decision

- 5.10. These different views have prompted the Authority to explore a bespoke solution, that would achieve the stated aims of bringing this capacity onto the system (EPNIE) while also gaining data that would enhance analysis of the need for derogation from Operating Reserve and Ramp Rate requirements (SONI).
- 5.11. We are also mindful that different assertions have been made regarding technical matters, and costs. With the status of the units regarding commissioning and entry into the market, and the access to the Units and expertise that would be involved in reconciling the different claims provided on these issues, this makes it more difficult for the Authority to undertake further verification of the data provided.
- 5.12. Our approach (as outlined in the Direction below) is to facilitate this capacity coming on the system, but for a more limited period than applied for. This time limited period can then be used for the testing SONI states would provide better information about the technical capability of the Units. It would also allow, on SONI's side (as outlined further in the SONI Direction) for real world data to be gathered on any costs on the system that would apply from any non compliance with CC. S1.1.3.9 (Parts b) and c)) and OC3.4.2.2 (the four distinct timescales then identified in OC3.4.2.2.1, OC3.4.2.2.2, OC3.4.2.2.3 and OC3.4.2.2.4).
- 5.13. We recognise this will not fulfil the SONI request that testing occur before derogation is applied for. We also recognise this adds an extra condition to the derogation EPNIE has applied for, as well as granting the derogation for a shorter time than they have identified as appropriate.
- 5.14. However, this would allow the Units to start operating, and the capacity to come on the system, as EPNIE have cited. This in turn, at the end of the time limited period, would better

inform EPNIE whether there is a need to apply for derogation from one or both of the Grid Code clauses. If so, this could give SONI increased certainty, in assessing a potential future application for derogation. The Authority has noted in this Application that SONI has expressed the benefits of testing, in terms of informing the need for derogation.

6. The Authority's Decision

- 6.1. We have considered: (a) the information provided by EPNIE, SONI and NIE Networks (b) our published 2017 Guidance on derogations³ and (c) our principal objective and general statutory duties as set out in Article 12 of the Energy (NI) Order 2003.
- 6.2. Having considered these matters, the Authority is satisfied that a derogation request is, for reasons offered by EPNIE, when assessed with the information provided by SONI and NIE Networks, **and on the judgment of the Authority**, justified. It has, therefore, decided to grant a derogation request, with the Direction specified by the Authority, by giving a direction in exercise of its power under Condition 4(2) of the Licence.
- 6.3. We have noted the comments and information provided by SONI, and have come to the judgment that granting a partial derogation to ensure testing can be undertaken is consistent with principles of best regulatory practice. We consider that, consistent with our statutory duties under the Energy (NI) Order 2003, it is in the best interests of consumers and vital for security of supply for the partial derogation to be granted. We have come to the conclusion that if we don't grant the partial derogation (albeit for a more limited period than applied for) i.e. refuse to grant a derogation we risk overlooking the evidence of compliance issues against Grid Code requirements in terms of both operating reserve and ramp rates, and how this would impact the potential operation of these units on the system. We are not satisfied we should grant the 10 year derogation from both requirements at this stage as requested by EPNIE.
- 6.4. The direction:
- (a) is set out in the Annex to this letter;
 - (b) relieves EPNIE of its obligation to comply with clause CC. S1.1.3.9 (Parts b) and c)) of the SONI Grid Code. EPNIE must comply with the following requirement, in relation to the KGT6 Unit at Kilroot Power Station, to the extent specified in the direction:

³ [Guidance Document on Derogations - February 2017.pdf \(uregni.gov.uk\)](#)

“Up to base load (the maximum capacity the unit can achieve without the use of power augmentation):

b) KGT6 which is in a hot condition must be capable of ramping up from part-load pursuant to a Dispatch instruction at a rate of at least 3% of MCR per minute.

c) KGT6 must be capable of de-loading at a rate of at least 3% of MCR per minute

From base load to augmented load (the maximum capacity the unit can achieve with the use of power augmentation):

d) KGT6 which is in a hot condition must be capable of ramping up from part-load pursuant to a Dispatch instruction at a rate of at least 0.5% of MCR per minute.

e) KGT6 must be capable of de-loading at a rate of at least 0.5% of MCR per minute.”

- (c) relieves EPNIE of its obligation to comply with clause OC3.4.2.2 (linked to the four distinct timescales then identified in OC3.4.2.2.1, OC3.4.2.2.2, OC3.4.2.2.3 and OC3.4.2.2.4), of the SONI Grid Code. EPNIE must comply with the following requirement, in relation to the KGT6 Unit at Kilroot Power Station, to the extent specified in the direction:

“The Operating Reserve from Generating Plant must be capable of providing response in four distinct time scales up to base load (the maximum capacity the unit can achieve without the use of power augmentation).”

- (d) for the relevant period the Base Load and Augmented Load for the unit, will be determined by the TSO following engagement with the Licensee
- (e) on the condition that, during the derogation period, both operating reserve and ramp rates are tested, and the results analysed, to determine whether a future derogation from CC. S1.1.3.9 and OC3.4.2.2 are required. The scope of this testing should be set and monitored by SONI.
- (f) shall commence from the moment the unit reaches commercial operation, and cease to apply on and from the date 24 months from when the unit reaches commercial operation.

6.5. This derogation will allow this capacity to be brought onto the system, while providing opportunity for more comprehensive data to be generated on the operating reserve and ramp rate capabilities of the units (as well as any net costs to the system from non compliance, which is outlined in more detail in the SONI Decision).

- 6.6. The direction applies to EPNIE in respect of the operation of the KGT6 Unit. It is non transferrable. This means that should another entity operate the KGT6 Unit in future that entity would (should it wish to operate the KGT6 Unit otherwise than in full compliance with all the provisions of the Grid Code) need to apply for a direction to be given under and in accordance with the electricity generation licence held by it.
- 6.7. The direction shall cease to apply should the KGT6 Unit be de-commissioned or replaced, within the 24 month period after the Unit reaches commercial operation.
- 6.8. The direction shall be entered and maintained in the Electricity Register.
- 6.9. The direction may be varied, revoked or replaced by subsequent direction made by the Utility Regulator during the relevant period.

ANNEX

**DIRECTION UNDER CONDITION 4(2) OF THE ELECTRICITY GENERATION LICENCE
HELD BY EP NI Energy Limited**

TO: EP NI Energy Limited

Whereas:

- (A) EP NI Energy Limited (**EPNIE**) holds an electricity generation licence granted (or treated as granted) under Article 10(1)(a) of the Electricity (Northern Ireland) Order 1992 (the **Order**) on 24 March 2021 (the **Licence**).
- (B) EPNIE (the **Licensee**) is authorised by the Licence to generate electricity for the purpose of giving a supply to any premises or enabling a supply to be so given.
- (C) The Grid Code is required to be prepared by SONI Limited (**SONI**) under Condition 16 of the electricity transmission licence granted to SONI under Article 10(1)(b) of the Order. The Grid Code is required to be approved Northern Ireland Authority for Utility Regulation (the **Authority**) and the currently applicable Grid Code is dated 8 December 2023.
- (D) The Licensee is required, under and in accordance with Condition 4(1) of the Licence, to comply with the provisions of the Grid Code insofar as applicable to it.
- (E) Condition 4(2) of the Licence provides that the Authority may, following consultation with the Transmission System Operator (namely SONI) and the Transmission Owner (namely Northern Ireland Electricity Networks Limited – **NIE Networks**), issue direction(s) relieving the Licensee of its obligations under Condition 4(1) of the Licence in respect of such parts of the Grid Code and to such extent as may be specified in those directions.
- (F) On 21 September 2023, the Licensee submitted a request that the Authority relieve the Licensee of its (licence) obligation to comply with Clauses CC. S1.1.3.9 (Parts b) and c) and OC3.4.2.2 (the four distinct timescales then identified in OC3.4.2.2.1, OC3.4.2.2.2, OC3.4.2.2.3 and OC3.4.2.2.4), of the SONI Grid Code (**the derogation request**) to the extent specified in the derogation request and relating to its operation of an Open Cycle Gas Turbine (**OCGT**) unit at Kilroot Power Station (the **KGT6 Unit**).
- (H) The Authority has consulted with SONI (the **TSO**) and NIE Networks (as the **Transmission Owner**) on the derogation request.

The Authority now gives the following direction:

1. Subject to compliance with the conditions set out in paragraph 2 below, the Licensee shall, for the period –
 - (a) commencing from the moment the unit reaches commercial operation; and
 - (b) ending on the date 24 months from the unit reaching commercial operation (the '**relevant period**'),
 - (c) or such earlier date as the Authority may determine,
 - (d) within the relevant period, be relieved of its obligation to comply with Clause CC. S1.1.3.9 (b) and (c) of the Grid Code, (as in effect on the date the unit reaches commercial operation) in respect of the KGT6 Unit, and comply with the following requirement:

“Up to base load (the maximum capacity the unit can achieve without the use of power augmentation):

b) KGT6 which is in a hot condition must be capable of ramping up from part-load pursuant to a Dispatch instruction at a rate of at least 3% of MCR per minute.

c) KGT6 must be capable of de-loading at a rate of at least 3% of MCR per minute

From base load to augmented load (the maximum capacity the unit can achieve with the use of power augmentation):

d) KGT6 which is in a hot condition must be capable of ramping up from part-load pursuant to a Dispatch instruction at a rate of at least 0.5% of MCR per minute.

e) KGT6 must be capable of de-loading at a rate of at least 0.5% of MCR per minute.”

- (e) Also within the '*relevant period*' be relieved of its obligation to comply with Clause OC3.4.2.2 of the Grid Code (as in effect on the date the unit reaches commercial operation) in respect of the KGT6 Unit, and comply with the following requirement:

“The Operating Reserve from Generating Plant must be capable of providing response in four distinct time scales up to base load (the maximum capacity the unit can achieve without the use of power augmentation):.....”

- (f) For the relevant period the Base Load and Augmented Load for the unit, will be determined by the TSO following engagement with the Licensee.
2. The relief granted by paragraph 1 above is subject to the following conditions –
- (a) During the relevant period, the Licensee, after communication with SONI, where SONI will set the scope of the testing to be conducted, procures relevant and appropriate testing and research relating to operating reserve and ramp rate, for the purposes of determining whether a future derogation from CC. S1.1.3.9 (b) and (c) and OC3.4.2.2 is required.
- (b) The licensee shall notify SONI of all testing schedules prior to testing, and within one month of the end of testing, submit full test data and results to SONI.
3. The Authority may revoke, vary or replace this direction by a further Direction before the end of the relevant period.
4. This direction shall further cease to apply on and from any date that the KGT6 Unit is de-commissioned or replaced, within the 24 month period after the Unit reaches commercial operation.
5. The reasons for this direction are set out in a letter accompanying and published with it.

Signed:



Name: Donald Henry
Networks and Energy Futures Director

Date: 08 April 2024

Duly authorised by and on behalf of the Northern Ireland Authority for Utility Regulation