

Mr Stephen Brownlees  
EP UK Investments  
EP Kilroot Limited  
Kilroot Power Station  
Larne Road  
Carrickfergus  
BT38 7LX

8 August 2022

Our Ref – NET/E/JF/553

Dear Stephen

**RE: Requested Derogation of K1/KGT1 Generator at Kilroot Power Station, regarding compliance with Grid Code Clause CC.S1.1.3.2 (i)**

I write in response to your email received 10 June 2022 - supplemented with supporting documentation - in regards to your request for a derogation regarding compliance with SONI Grid Code Clause CC.S1.1.3.2 (i).

Section 4 of your submission document (“the **derogation request**”) requests that “*the Authority grant derogations to EP Kilroot Limited (EPKL) and to SONI from compliance with Grid Code clause CC.S1.1.3.2 (i).*”

The request is in respect of generator units K1 and KGT1 at Kilroot Power Station. **The derogation request** is sought in order to relieve EPKL of its Generator Licence obligations under Condition 4(1) and Grid Code obligations under section CC.S1.1.3.2 (i) of the SONI Grid Code. These clauses reads as follows:

**Condition 4(1):** *The Licensee shall comply with the provisions of the Grid Code and the Distribution Code insofar as applicable to it.*

**CC.S1.1.3.2:** *For CDGUs and for CCGT Installations (in relation to the CCGT Modules therein) the Reactive Power capability shall as a minimum be:*

*(i) rated power factor (lagging) = 0.8*

## 1. Background

1.1. In 2015, Kilroot Power Station carried out testing and modifications to the oil firing systems and controls, which facilitated an increase in the generated power output from 260MW to 280MW. An outcome from the analysis of the modification identified an issue with the maximum rating of the generator transformers (340MVA) and maximum possible output from K1/KGT1, K2/KGT2 now exceeding this rating when operating at a power factor of 0.8 as required by Grid Code Clause CC.S1.1.3.2 (i).

- 1.2. On 31 July 2015, EPKL (then named AES Kilroot Power Limited) submitted a request for and was granted derogations from compliance with Grid Code Clause CC.S1.1.3.2.(i) rated power factor (lagging) = 0.8 in specific circumstances. These derogations facilitated a power factor of 0.85 lagging to be allowed for the combined K1, GT1 and K2, GT2 connection points for the specific circumstance of the relevant GT operating a full load and main unit is despatched above 242MW (Sent Out). The Utility Regulator granted these derogations but on a time bound basis until 1st February 2019.
- 1.3. On 10 January 2019, EPKL (then named AES Kilroot Power Limited) submitted a request for an extension of these derogations until 1 February 2024. The Authority granted an extension, but only until 1 February 2022<sup>1</sup>.

## **2. The Derogation Request – June 2022**

2.1. In making the derogation request EPKL confirms-

- (a) That derogation is only required when KGT1 is fully despatched, and
- (b) Where K1 unit is exporting above 242MW, K1 lagging power factor would be limited to 0.85
- (c) When exporting below 242MW, K1 unit is fully compliant with Grid Code clause CC.S1.1.3.2.(i), therefore the derogations do not apply in this scenario.
- (d) The derogation requested, is a time bound derogation, which would be valid for 5 years. This period would cover the remaining life of the station with an allowance for any requirement to provide security of supply post its scheduled closure date (30 September 2023).

## **3. Impact and Risks of Non-Compliance on different parties**

The derogation request includes the following information (as required by UR guidance affecting derogation requests).

### Consumers

Negligible impact on the consumers costs – derogations have been in place from 1 February 2016 – 31 January 2022 and the Kilroot site has not been despatched in the scenario described above when the derogations would be active.

### Security of supply

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<sup>1</sup>[2019-01-31 AES Derogation Approval for AES \(Jenny Signed Copy\).pdf \(uregni.gov.uk\)](#)

Improved security of supply – The granting of the derogations would allow EPKL to declare the K1 fully available when oil firing is available. The alternative would be to restrict the oil firing maximum MW capacity to ensure the transformer rating is not breached.

#### Competition

Negligible impact on competition – derogations have been in place from 1 February 2016 – 31 January 2022 and the Kilroot site has not been dispatched in the scenario described above when the derogations would be active. Kilroot coal units have a limited remaining life span and have not participated in the most recent capacity market auctions.

#### Sustainable Development

Negligible impact on sustainable development – The derogations have been in place from 1 February 2016 – 31 January 2022 and the Kilroot site has not been dispatched in the scenario described above when the derogations would be active. Kilroot coal units have a limited remaining life span and have not participated in the most recent capacity market auctions.

#### Health and safety

Improved health and safety – By removing the risk of the Generator transformers operating outside their design limits, the derogations will reduce the risk of a transformer failure.

#### Other parties affected

SONI. The grant of this further derogation will facilitate K1 remaining available for operation during its duration and hence improve system security.

#### Government Policy

Negligible impact on government policy – These derogations have been in place from 1 February 2016 – 31 January 2022 and the Kilroot site has not been dispatched in the scenario described above when the derogations would be active. Kilroot coal units have a limited remaining life span and have not participated in the most recent capacity market auctions

## **4. Alternative Actions**

4.1. EPKL has supplied the following comments as its assessment of alternative actions if the derogation was not granted. These are as follows:

- (a) Replace generator transformer – replacement of the generator transformer with one capable of covering all maximum export scenarios. This is cost prohibitive given the remaining life span of K1.

- (b) Restrict the Maximum capacity - Restrict the available maximum capacity to 242MW (exporting) of K1 when firing fuel oil to ensure the transformer rating is not breached. This would have potential impacts on security of supply.

## 5. Restoration of Compliance

5.1. EPKL states that restoration of compliance can be restored:

- (a) When the combined maximum output of the main unit and associated gas turbine are reduced below the transformer MVA maximum rating. The most likely scenarios that will lead to this are:
  - (i) Closure of the main Kilroot units – A closure notice has been submitted for 30 September 2023.
  - (ii) KGT1 electrical reconfiguration – The reconfiguration of the gas turbine electrical apparatus to utilise an alternative route to the grid is proposed to be implemented between 1 October 2024 and 30 September 2025

## 6. SONI's Response

6.1. SONI responded to the derogation request on 24 June 2022. In summary SONI-

- (a) recommends the derogation is granted until the retirement of the plant
- (b) Identified no reason to oppose the request given the rationale set out in the derogation request and the fact that it is a known issue which has previously been derogated i.e. precedent. SONI therefore supports a time limited extension to the existing derogation from CC.S1.1.3.2 (i).

6.2. SONI also provided the following analysis in its response –

- (a) SONI has analysed the request from EPKL for a derogation from CC.S1.1.3.2 (i), which stipulates a reactive capability range. SONI acknowledges the technical basis of this request (though no comment is offered as to the validity of EPKL's assessment of impact on consumers, security of supply, competition, sustainable development, health and safety, other parties or government policy, etc.).
- (b) SONI has reviewed the calculations and note the request is for an increase to 0.88 for K2 given the battery connection impact at K2/KGT2 [see derogation in relation to K2]. SONI also note the previous derogations specified the power factor lagging increase to 0.85, but not to 0.88 [which is required for the K2 combination of GT2 and the battery at full load].

From the office of the Chief Executive

- (c) SONI further accepts that the cost of a new transformer is likely to be prohibitive given the short remaining life of the Kilroot unit, and believes it is likely that active, rather than reactive power would be prioritised if ever a dispatch scenario arose where all of the unit exporting via a given transformer was required to simultaneously output maximum MW and maximum lagging MVA<sub>r</sub>.
- (d) SONI also notes that solutions to the compliance issue have been presented as closure of the K1 unit as planned on 30 September 2023 and electrical reconfiguration of the existing GT's in the 2024/2025 timeframe.

## **7. The Authority's Decision**

- 7.1. We have considered the information provided by EPKL and SONI relating to the derogation request, including our published 2017 Guidance on derogations<sup>2</sup> and our principal objective and general statutory duties as set out in Article 12 of the Energy (NI) Order 2003.
- 7.2. Having considered these matters the Utility Regulator is satisfied that the derogation request is, for the reasons offered by EPKL and supported by SONI, justified. It has, therefore, decided to grant the derogation request by giving a direction in exercise of its power under Condition 4(2) of the Licence.
- 7.3. The direction:
  - (a) is set out in the Annex to this letter;
  - (b) relieves EPKL of its obligation to comply with clause CC.S1.1.3.2 (i), of the SONI Grid Code in relation to the K1 & KGT1 Unit at Kilroot Power Station to the extent specified in the direction; and
  - (c) shall cease to apply on the fifth anniversary of the direction or such earlier date as the Authority may determine.
- 7.4. This derogation will allow SONI to dispatch K1 on the oil firing systems above 242MW, at the same time fully dispatching KGT1 on full load.
- 7.5. The direction applies to EPKL in respect of the operation of the K1 & KGT1 Units. It is non transferrable. This means that should another entity operate the K1 & KGT1 Units in future that entity would (should it wish to operate the K1 & KGT1 Units otherwise than in full compliance with all of the provisions of the Grid Code) need to apply for a direction to be under and in accordance with the electricity generation licence held by it.

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<sup>2</sup>[Decision paper and guidance document on network code derogations | Utility Regulator \(uregni.gov.uk\)](#)

From the office of the Chief Executive

- 7.6. The direction shall cease to apply should the K1 & KGT1 Units be de-commissioned or replaced.
- 7.7. The direction shall be entered and maintained in the Electronic Register.

**John French CEO**



**8 August 2022**

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

**CC: SONI Limited**

**ANNEX**

**DIRECTION UNDER CONDITION 4(2) OF THE ELECTRICITY GENERATING LICENCE  
HELD BY EP KILROOT LIMITED**

**TO: EP Kilroot Limited**

**Whereas:**

- (A) EP Kilroot Limited (**EPKL**) 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 31 March 1992 (the **Licence**).
- (B) EPKL (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 October 2020.
- (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) 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 10 June 2022, the Licensee submitted a request that the Authority relieve the Licensee of its (licence) obligation to comply with Clause CC.S1.1.3.2 (i) of the SONI Grid Code (**the derogation request**) to the extent specified in the derogation request and relating to its operation of K1 & KGT1 units at Kilroot Power Station.
- (H) The Authority has consulted with SONI (the **TSO**).

**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 on and from the date of this direction; and
  - (b) ending on the fifth anniversary of the date of this direction or such earlier date as the Authority may determine,(the **relevant period**), be relieved of its obligation to comply with Clause CC.S1.1.3.2 (i) of the Grid Code (as in effect on the date of this direction) in respect of the K1 & KGT1 Unit.
2. The relief granted by paragraph 1 above is subject to the following conditions –
  - (a) A power factor of 0.85 lagging to be allowed for the combined K1, GT1 connection points
  - (b) Where KGT1 is fully dispatched, and K1 unit is dispatched above 242MW
  - (c) Derogation shall not apply when the K1 is dispatched below or at 242MW
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 K1 & KGT1 Unit is de-commissioned or replaced.
5. The reasons for this direction are set out in a letter accompanying and published with it.

**John French CEO**



**Date : 8 August 2022**

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