

Mr William Carr  
Coolkeeragh ESB,  
2 Electra Road,  
Maydown,  
Northern Ireland  
BT47 6UL

19 June 2020

Our Ref – NET/E/TH/225

Dear Sir

**Direction providing derogation from clauses CC.S1.1.3.8; SDC3.4.1.1(a); SDC3.6.1; and SDC1.4.8.10 of the Grid Code<sup>1</sup> in respect of the C30 CCGT unit at Coolkeeragh Power Station.**

I write in response to your letter dated 14 April 2020.

The letter requests that the Authority grant Coolkeeragh ESB Limited (**CESB**) a direction relieving CESB of its obligation – under Condition 4(1) of CESB’s licence to participate in generation activities (the **CESB Licence**) - to comply with certain provisions of the Grid Code. The Authority<sup>2</sup> has the power to grant a direction(s) of the type sought pursuant to Condition 4(2) of the CESB Licence.

The request (which we refer to as a '**derogation request**') is in respect of the C30 CCGT (Combined Cycle Gas Turbine) unit at Coolkeeragh Power Station (the **C30 Unit**) and is sought in order to facilitate the reduction in the level of normal operation *minimum* generation in CCGT mode from 260 MW<sup>3</sup> to 211MW. The relevant provisions of the Grid Code to which the derogation request relates are as follows:

**CC.S1.1.3.8;** *A Generating Unit must 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 maximum continuous rating.*

**SDC3.4.1.1 (a);** *All CDGUs and Controllable WFPSs must be capable of operating at all times in Frequency Sensitive Mode (including, where applicable, with the Unit Load Controller in operation) which term means an automatic incremental or decremental generation response (Primary Operating Reserve) to contain the initial NI System Frequency change together with a sustained generation response (Secondary Operating Reserve) which can contribute to containing and correcting the NI System Frequency within the statutory requirements for Frequency Control.*

---

<sup>1</sup> This is the Grid Code established by SONI in compliance with Condition 16 of SONI’s TSO Licence and approved from time by the Authority. The current version of the Grid Code is published on the SONI website.

<sup>2</sup> 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.

<sup>3</sup> This level is provided for in a previous derogating direction issued to CESB on 31 March 2006.

**SDC3.6.1;** *If NI System Frequency rises to or above 50.2 Hz, each Generator at its Generating Plant will be required to ensure that each of its CDGUs and Controllable PPMs has responded in order to contribute to containing and correcting the high System Frequency by automatically or manually reducing output by a minimum amount of 2% and by a maximum amount of 5% of Generating Plant output per 0.1 Hz deviation of NI System Frequency from target NI System Frequency.*

**SDC1.4.8.10;** *It is a requirement for running the Transmission System that all Synchronised CDGUs and/or Controllable PPMs shall at all times be capable of reducing MW Output sufficient to allow a sufficient Regulating Margin for adequate Frequency Control. The TSO will monitor the MW Output data of the Indicative Operations Schedule against forecast of System Demand on the Island of Ireland to see whether the level of regulation for any period is sufficient, and may take any shortfall into account in Scheduling and Dispatch.*

## 1. Background

- 1.1. On 31 March 2006, the Authority issued a direction relieving CESB of its obligation to comply with the Grid Code to the extent specified in that direction (the **March 2006 Direction**).
- 1.2. In brief, CESB was – by the March 2006 Direction - granted a derogation<sup>4</sup> allowing non-compliance with the then written provisions of the Grid Code relating to the minimum generation level for the C30 Unit<sup>5</sup> at Coolkeeragh Power station to an extent that provided for those same provisions of the Grid to instead provide for (and permit) CESB to operate its C30 Unit as follows:

*"[at] a minimum generation level of 80MW for two 12 hour period (sic.) per year, and for the rest of the year 260MW in CCGT mode and 154MW in OCGT mode . . . Operation of the CCGT in OCGT mode shall only be required under emergency conditions on the [NI System] or periods of low load on the [NI System] each case as determined by [NIE Networks] and/or SONI Limited . . ."*<sup>6</sup>

- 1.3. The March 2006 Direction also set out certain conditions.<sup>7</sup>
- 1.4. On 14 April 2020 CESB submitted its derogation request.

## 2. The Derogation Request – April 2020

- 2.1. In its derogation request, CESB has confirmed that it has been working with SONI (the licenced transmission system operator or “TSO” for the transmission system in Northern Ireland) and they have developed and successfully tested the operation of the C30 Unit at a minimum generation below that provided for in the March 2006 Direction.

---

<sup>4</sup> The derogation was expressed to be permanent.

<sup>5</sup> The C30 Unit is not described explicitly in the March 2006 Direction but we proceed on the basis that the same CCGT plant is involved.

<sup>6</sup> The text has been adapted only to reflect current arrangements and the present identity of current electricity undertakings.

<sup>7</sup> These are not considered relevant for present purposes. Neither CESB nor SONI has asked for any continuation of these conditions in connection with the (CESB) derogation request.

- 2.2. CESB states that this new minimum generation level of 211MW - while still above the Grid Code compliance level of 170MW - provides additional operational flexibility to SONI.
- 2.3. CESB states that operating the C30 Unit at this new reduced minimum generation level would involve non-compliance with the following provision of the Grid Code when operating at a base load of at or below 234MW:
- (a) SDC3.4.1.1(a) - which requires the C30 Unit to automatically reduce generation when system frequency rises above nominal;
  - (b) SDC3.6.1 - which requires the C30 Unit to reduce generation by 2% of each 0.1Hz deviation for system frequency above 50.2Hz; and
  - (c) SDC1.4.8.10 - which requires the C30 Unit to reduce output in order to maintain sufficient regulating margin.
- 2.4. As a result, CESB has requested the following time limited derogations to last until 31 March 2022:
- (a) A time limited derogation from clause CC.S1.1.3.8 to reflect a minimum generation level for normal operation of C30 Unit in CCGT mode of 211MW;
  - (b) A time limited derogation from clause SDC3.4.1.1(a) when operating C30 Unit at or below 234MW;
  - (c) A time limited derogation from clause SDC3.6.1 when operating C30 Unit at/or below at load point of 234MW; and
  - (d) A time limited derogation from clause SDC1.4.8.10 when operating C30 Unit at/or below at load point of 234MW.
- 2.5. In support of its request, CESB has stated the following:-
- (a) *In order to maintain combustion stability and therefore avoid the risk of the C30 unit tripping, the gas turbine control system is required to switch operation mode when combustion conditions, and therefore generation output, fall below OEM defined levels. This switch in combustion modes translates to generation output for the overall CCGT unit of below 211MW, (sic.) this low load combustion mode below this principally relates to the unit start up is not designed for continuous operation and results in highly elevated levels of NOx emission. Therefore, in order for the C30 unit to operate in line with the conditions of its environmental licensing and planning consents it is necessary to operate the unit so as to avoid triggering a switch in combustion mode.*
  - (b) *In relation to customers, the reduction of the derogated minimum generation from the current 260MW level to the requested 211MW and related required derogations from SDC3.4.1.1 (a), SDC3.6.1 and SDC1.4.8.10 will provide additional flexibility to SONI in the operation of the NI system. This will be of benefit to consumers by*

*reducing the dispatch production cost to bring the C30 unit on load to resolve the North West Generation Operational Constraint as detailed in the monthly update published by SONI.*

(c) *In relation to decarbonisation levels, the reduction of the derogated minimum generation from the current 260MW level to the requested 211MW and related required derogations from SDC3.4.1.1 (a), SDC3.6.1 and SDC1.4.8.10 will, in addition to reducing dispatch production cost, act to support to sustainable development by reducing the potential requirement to curtail output from wind and solar generation when the C30 unit is constrained on.*

2.6. CESB also commented that there will be no impact of the derogations on the security of supply and competition resulting from the derogation request.

2.7. CESB contends that operation of the C30 Unit at a (new) normal minimum generation of 211MW, subject to the requested derogations, represents the limit of the unit's capability. CESB has stated that it will continue to engage with the unit OEM in respect of the potential improvement of the C30 Unit's performance with regard to minimum generation compliance, but that given the stage of the development cycle of the technology deployed in the unit, it is unlikely that viable technology options will be developed.

2.8. CESB states that the requested temporary derogations are intended to provide a period of time to build operational experience at the reduced load level of 211MW in terms of both station and system operation. However, in its view, on the basis of the available information and the competing compliance requirements, a further derogation will likely be required at the end of the temporary period (i.e. post 31 March 2022).

### **3. NIE Network's Response**

3.1. NIE Networks Limited (**NIE Networks**) responded to the request on 16 April 2020. In its response, NIE Networks stated that *"As the derogations requested relate to the minimum generation level at Coolkeeragh Power Station and its response to frequency variations at this level, then this is primarily an issue for SONI to comment on"*.

3.2. NIE Networks also stated *"These derogations relate to the reduction of the level of normal operation minimum generation in CCGT mode from 260 MW to 211 MW. This reduction to 211 MW, although still above the Grid Code requirement, will allow the TSO greater flexibility to operate the electricity system with higher levels of renewable energy."*

### **4. SONI's Response**

4.1. SONI responded to the derogation request on 29 April 2020. In its response SONI sets out the following:-

(a) *SONI tested the C30 machine in July 2019 for provision of system services and at the request of the generator carried out a test for a reduction in Min Gen from 260 MW. There are compromises in the units' flexibility at the nadir with the proposed*

*level of 211 MW and this must be balanced against the provision of vital services and regulation for the system as a whole.*

- (b) *SONI has been working with CESB to ensure that the generating unit can operate in an optimal manner that does not compromise system security and stability. The provision of a temporary derogation would give time for the unit to be monitored at the new Min Gen to ascertain its performance and response to frequency transients.*

4.2. SONI also noted that:

- (a) *These requests by [CESB] are the result of significant work between SONI and the generator over many years to ensure that the services we require are available in this location on the Northern Ireland transmission system. SONI welcomes the temporary nature of the derogation to monitor the generator performance over a period of two years because it provides an opportunity to ascertain if the generator responds to operating at the new Min Gen of 211 MW. We note the point at which no downward regulation can be given by the generator is at or below 234 MW. Any changes made to such a large generator on the system in an area where voltage can be an issue needs monitoring over a period of time to ensure the reliability and performance is not compromised."*

4.3. SONI supports CESB's derogation request stating further that ". . . this change, at this time, will have no adverse implications for day to day system security and operation".

4.4. The Authority has consulted with SONI and NIE Networks (and CESB) following receipt of the derogation request and the original responses from SONI and NIE Networks in order to seek certain clarification. Both SONI and NIE Networks remain supportive of the derogation request.<sup>8</sup>

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

5.1. We have considered the information provided by CESB, SONI and NIE Networks and all other relevant factors relating to the derogation request to include our published 2017 Guidance on derogations<sup>9</sup> and our principal objective and general statutory duties as set out in Article 12 of the Energy (NI) Order 2003.

5.2. Having considered these matters the Authority has decided to grant the derogation request by the making of an appropriate direction in exercise of its power under Condition 4(2) of the CESB Licence, being satisfied that the derogation request is (for the reasons offered by CESB and supported by both SONI and NIE Networks) justified. The direction: -

- (a) is attached as an Annex to this letter

---

<sup>8</sup> We have also engaged with the regulatory authority in the Republic of Ireland (CRU) to confirm that it has no objection to the grant of the derogation request. No objection has been raised.

<sup>9</sup><https://www.uregni.gov.uk/sites/uregni/files/media-files/Decision%20Paper%20on%20Derogations%20-%20February%202017.pdf>

- (b) applies from 00.00 GMT on 20 June 2020
  - (c) replaces the March 2006 Direction, which is thereby no longer of any effect
  - (d) relieves CESB of its obligation to comply with Clauses CC.S1.1.3.8, SDC3.4.1.1(a), SDC3.6.1, and SDC1.4.8.10 of the Grid Code in relation to the C30 Unit at Coolkeeragh Power Station to the extent specified in the direction; and
  - (e) ceases to apply on and from 00.00 GMT on 1 April 2022, or such earlier date that the Authority shall determine by further direction.
- 5.3. Accordingly, the March 2006 Direction shall cease to apply from the date given in paragraph 5.2(b) above.
- 5.4. The direction applies to CESB's licence obligations in respect of the operation of the C30 Unit. It does not apply to the C30 unit itself. It is non transferrable. This means that should another entity operate C30 in future that entity would (should it wish to operate the C30 Unit otherwise than in full compliance with all the provisions of the Grid Code; to include those provided for in the direction at the Annex to this letter) that entity shall have to apply for a direction granting appropriate relief.
- 5.5. The direction shall cease to apply should the C30 Unit be de-commissioned or replaced.
- 5.6. The direction shall be entered and maintained in the Electronic Register.



**Tanya Hedley**

**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 GENERATION LICENCE  
HELD BY COOLKEERAGH ESB LIMITED**

**TO: Coolkeeragh ESB Limited**

**Whereas:**

- (A) Coolkeeragh ESB Limited (**CESB**) 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 9 August 2002 (the **Licence**).
- (B) CESB (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 14 February 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) and the Transmission Owner (namely Northern Ireland Electricity Networks Limited), 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) By direction dated 31 March 2006 (the **March 2006 Direction**) the Licensee was granted a derogation<sup>10</sup> allowing non-compliance with the then written provisions of the Grid Code relating to the minimum generation level for the C30 (CCGT) unit (**the C30 Unit**) at Coolkeeragh Power Station to an extent that provided for those same provisions of the Grid to instead provide for (and permit) CESB to operate its C 30 Unit as follows:  
  
*"[at] a minimum generation level of 80MW for two 12 hour period (sic.) per year, and for the rest of the year 260MW in CCGT mode and 154MW in OCGT mode . . . Operation of the CCGT in OCGT mode shall only be required under emergency conditions on the [NI System] or periods of low load on the [NI System] each case as determined by [NIE Networks] and/or SONI Limited . . ."*<sup>11</sup>
- (G) On 14 April 2020, the Licensee submitted a request that the Authority relieve the Licensee of its (licence) obligation to comply with; Clauses CC.S1.1.3.8; SDC3.4.1.1(a),

---

<sup>10</sup> The derogation was expressed to be permanent.

<sup>11</sup> The text has been adapted (only) to reflect current arrangements and the present identity of current relevant electricity undertakings.

SDC3.6.1; and SDC1.4.8.10 of the Grid Code (**the derogation request**) to the extent specified in the derogation request and relating to its operation of C30 Unit.

(H) The Authority has consulted with SONI (the TSO) and NIE Networks (as the Transmission Owner).

**The Authority now gives the following direction:**

1. The March 2006 Direction ceases to apply from the date of this direction, being 00.00 GMT on 20 June 2020.
2. That, pursuant to Condition 4(2) of the Licence, for the period commencing on 00.00 GMT on 20 June 2020 and ending 00.00 GMT on 1 April 2022 (the **relevant period**) the Licensee is relieved (to the following extent) of its obligation under Condition 4(1) of its Licence to comply with the following provisions of the Grid Code as they apply to its C30 Unit:-
  - (i) Clause CC.1.3.8 to the extent that the Licensee shall instead comply with that clause of the Grid Code as if the requirements of that clause instead provided for (and permitted) the Licensee to operate its C30 Unit so that it must be capable of remaining Synchronised to the NI System at an Output which is no greater than (i.e. at a *minimum* generation level of) 80 MW for two 12 hour periods per year, and for the rest of the year 211 MW in CCGT mode and 154 MW in OCGT mode. Operation of the CCGT in OCGT mode shall only be required under emergency conditions or periods of low load on the NI System, in each case as determined by NIE Networks and/or SONI; **AND**
  - (ii) Clause SDC3.4.1.1(a); Clause SDC3.6.1; and Clause SDC1.4.8.1, in each case to the extent of when, and only when, the C30 Unit is operating at or below a load point of 234MW.
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 C30 Unit is decommissioned or replaced.
5. The reasons for this direction are set out in a letter accompanying and published with it,

**Signed:**



**Name: Tanya Hedley**

**Date: 19 June 2020**

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