

## Grid Code Alternative Form

# GC0148 Alternative 1:

## Implementation of EU Emergency and Restoration Code Phase II – Article 40

**Overview:** Ensuring the Original complies with Article 40 of ERNC

**Proposer:** Garth Graham, SSE Generation and GC0148 Workgroup member.

## Contents

- **What is the proposed alternative solution?**
  - Difference between this and the Original Proposal
- **What is the impact of this change?**
- **When will the change take place?**
- **Acronyms, key terms and reference material**

## What is the proposed alternative solution?

As per the Original with the additional item of ensuring there is a solution to achieve compliance with Article 40 of ERNC/NCER which, as the ESO agreed; in the recent Workgroup consultation document; “needs further consideration”.

This also links to the title page of GC0148<sup>1</sup> which sets out that:

*“The aim of this modification is to outline the work that needs to be completed within GB to ensure compliance with NCER and address some other related items which neatly fit within the Emergency and Restoration Code arena.”*

This alternative fully accords with that statement.

Article 40 (2) - (4)<sup>2</sup> of the ERNC/NCER sets out that certain information SHALL (“for the purposes of system defence plan procedures and restoration plan procedures”) be provided by the TSO (which in the case of GB is NG ESO) to certain parties including, in particular:

- 1) to transmission connected DSOs [as per Article 40 (2) (c)]
- 2) to defence service providers [as per Article 40 (2) (d)]
- 3) to DSOs and SGUs identified pursuant to Article 23(4) and to restoration service providers [as per Article 40 (2) (e)]; and
- 4) to its relevant regulatory authority [as per Article 40 (4) (b)].

Article 40(1)<sup>3</sup> deals with the information that is provided (by various stakeholders) to the ESO. The ESO representative has informed the Workgroup that all these items are already addressed within the (baseline) Grid Code – that being the case<sup>4</sup> then there would be no need to address Article 40(1) matters as part of this alternative.

It should be noted that it is by the notification, according to paragraph (2) – (4), by the ESO, to the identified stakeholders that, in turn, those stakeholders then know that they have to perform the tasks identified under paragraph (1) of Article 40, as appropriate.

Without the initial information exchange from the ESO; in, for example, the case of the system being in emergency state; then it is not possible for the stakeholders to then provide an information exchange to the ESO in terms of discharging their Article 40(1) obligations.

A complete extract of Article 40 is shown below. I’ve taken the liberty of showing some of the particularly relevant legal text (as highlighted in yellow).

An additional piece of text (highlighted in green below) makes clear that where additional information is available to the ESO; that explains the situation on the transmission system; then this should also be provided to the NRA (which in the case of GB is GEMA).

Of course, if that information is not available to the ESO then it does not need to be shared by the ESO (although the system state situation in respect of ‘emergency’, ‘blackout’ and ‘restoration’ shall be shared) with GEMA.

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<sup>1</sup> [GC0148: Implementation of EU Emergency and Restoration Code Phase II | National Grid ESO](#)

<sup>2</sup> Paragraph (5) also deals with information (on the Test Plan) which the ESO shall provide to stakeholders.

<sup>3</sup> Paragraphs (2) – (5) deals with information from the ESO to various stakeholders

<sup>4</sup> If that was not the case then this alternative would need to address this paragraph (1) as well.

For the avoidance of doubt, these are existing<sup>5</sup> legal requirements placed upon the ESO – as, for example, is shown by the use of words such as ‘shall provide’ (in capitals above and in bold below); not the words ‘may provide’; which makes this clear.

## **CHAPTER V INFORMATION EXCHANGE AND COMMUNICATION, TOOLS AND FACILITIES**

### **Article 40 Information exchange**

1. *In addition to the provisions of Articles 40 to 53 of Regulation (EU) 2017/1485, each TSO, when in the emergency, blackout or restoration states, shall be entitled to gather the following information:*

*(a) from DSOs identified in accordance with Article 23(4), the necessary information about at least:*

*(i) the part of their network that is in island operation;*

*(ii) the ability to synchronise parts of their network that is in island operation; and (iii) the capability to start island operation.*

*(b) from SGUs identified in accordance with Article 23(4) and restoration service providers, information about at least the following conditions:*

*(i) the current status of the installation;*

*(ii) the operational limits;*

*(iii) the full activation time and the time to increase generation; and*

*(iv) the time critical processes.*

2. ***During the emergency, blackout or restoration states, each TSO shall provide in due time and for the purposes of system defence plan procedures and restoration plan procedures, the following information, where available to the TSO:***

~~*(a) to neighbouring TSOs, information about at least:*<sup>6</sup>~~

~~*(i) the extent and borders of the synchronised region or synchronised regions to which its control area belongs;*~~

~~*(ii) the restrictions to operate the synchronised region;*~~

~~*(iii) the maximum duration and amount of active and reactive power that can be supplied via interconnectors; and*~~

~~*(iv) any other technical or organisational restrictions;*~~

*(b) to the frequency leader of its synchronised region, information about at least:*

*(i) the restrictions to maintain island operation;*

*(ii) the available additional load and generation; and*

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<sup>5</sup> Article 55 of ERNC/NCER provides for certain Articles to come into legal effect in December 2022 – but that does not apply to Article 40 matters.

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<sup>6</sup> As per Schedule 2 of [“The Electricity Network Codes and Guidelines \(System Operation and Connection\) \(Amendment etc.\) \(EU Exit\) Regulations 2019 \(legislation.gov.uk\)”](#) 019” certain text has been deleted from the ERNC/NCER due to Brexit.

(iii) the availability of operational reserves;

(c) to transmission connected DSOs identified in accordance with Article 11(4) and 23(4), information about at least:

(i) the system state of its transmission system;

(ii) the limits of active and reactive power, block loading, tap and circuit breaker position at the connection points;

(iii) the information on the current and planned status of power generating modules connected to the DSO, if not available to the DSO directly; and

(iv) all necessary information leading to further coordination with distribution connected parties;

(d) to defence service providers, information about at least:

(i) the system state of its transmission system; and

(ii) the scheduled measures that require participation of the defence service providers;

(e) to DSOs and SGUs identified pursuant to Article 23(4) and to restoration service providers, information about at least:

(i) the system state of its transmission system;

(ii) the ability and plans to re-energise couplings; and

(iii) the scheduled measures that require their participation.

3. TSOs in emergency, blackout or restoration state shall exchange among themselves information concerning, at least:

(a) the circumstances that led to the current system state of its transmission system, to the extent that they are known; and

(b) the potential problems making assistance for active power necessary.

4. A TSO in emergency, blackout or restoration state shall provide, in due time, information about the system state of its transmission system and, where available, additional information explaining the situation on the transmission system:

~~(a) to the NEMO(s), who shall make this information available to their market participants, as provided for in Article 38;~~

(b) to ~~it's~~ the relevant regulatory authority in accordance with Article 37 of Directive 2009/72/EC, or when explicitly provided for in national law, to the entities referred to in Article 4(3); and (c) to any other relevant party, as appropriate.

5. TSOs shall inform each affected party about the test plan developed pursuant to Article 43(2) and (3).

[end]

As the TSOs collectively (including National Grid as the SO for GB) made clear; when they submitted their proposal for the ERNC/NCER; in respect of Information Exchange this is an important item to be undertaken for operational security reasons:

*“This chapter serves to explain the requirements set in NC ER on Information Exchange and Communication, Tools and Facilities necessary to guarantee the Operational Security of the Transmission System at any time”*

*“Information Exchange is an essential topic for the work of the TSO and for guaranteeing the Operational Security of the Transmission System. Therefore the general provisions of Articles 16 to 29 [NC OS] are detailed in this NC especially for Emergency, Blackout and Restoration State.”<sup>7</sup> [emphasis added]*

The TSOs provided further justification on why the Information Exchange to (and from) the TSO (ESO) was operationally necessary, including, for example (in the case of information provided by the ESO to Transmission Connected DSOs<sup>8</sup> or DNOs in GB) because:

- “• the System State of its Transmission System: Transmission Connected DSOs need to know in which System State the TSO they are connected to is in currently. This is also important for the communication to the Distribution Connected DSOs.*
- limits of active and reactive power, Blocking Load, tap and breaker position at the connection points: All the listed information is necessary to be able to coordinate an efficient resynchronisation.*
- information on the current and planned status of Power Generating Modules connected to the DSO, if not available to the DSO directly: In case the DSOs is not able to directly access information of Power Generating Modules connected to his grid (for different reasons) this information, if available to the TSO, should be given to the DSO.*
- all necessary information leading to further coordination with distribution connected parties: In case the TSO plans to activate measures which might lead to further coordination of the Transmission Connected DSOs with Distribution Connected DSOs the TSO has to provide this information to the Transmission Connected DSOs”*

Similarly, the TSOs stated; in respect of information provided to other stakeholders by the TSO (ESO in GB); that:

*“Besides the information to be gathered by TSOs, the common understanding of information to be provided by the TSO in due time and for the purposes of System Defence Plan Procedures and Restoration Plan Procedures to DSO and Significant Grid Users identified in the Restoration Plan and Restoration Service Providers is also very important, provided the information is available to the TSO.” [emphasis added]*

The TSOs also provided further justification; in respect of information being provided to Defence Service Providers, SGUs and Restoration Service Providers (as well as DSOs) in the following terms:

*“Besides this, TSOs shall also provide Defence Service Providers, DSOs and Significant Grid Users identified pursuant to in the Restoration Plan and Restoration*

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<sup>7</sup> [1 \(entsoe.eu\)](http://entsoe.eu)

<sup>8</sup> A further aspect that will need to be considered is the onward provision of the system state information from the ESO to the IDNOs (via the transmission connected DNOs?).

*Service Providers with information about at least the System State of its Transmission System and scheduled measures which require their participation. The actual System State can be communicate by phone call<sup>[9]</sup> or trough other communication. The scheduled measures can be any independent activities coordinated earlier with TSO also.*

*In addition TSOs shall provide to DSOs and Significant Grid Users identified in the Restoration Plan and to Restoration Service Providers with information about ability and plans to re-energize couplings. The ability can be communicate by phone call or trough other communication. Very important are coordinated independent activities for instance preparing schemes, energizing power plants etc...”*

This all formed part of the detailed body of evidence submitted by the TSOs to support their proposal for the ERNC/NCER.

In this regard it should be noted that the TSOs (unanimously, including National Grid, the SO for GB) proposed the wording<sup>10</sup> which became Article 40 (as it now appears) in ERNC/NCER.

The TSOs complete proposal<sup>11</sup> (including the Article 40 wording as it now appears) was then endorsed, unanimously, by the board members of ACER (which included, at the time GEMA).

For the avoidance of doubt, ACER (and by express extension GEMA in GB) were accepting the TSOs justification for the operational necessity of, amongst other things, information exchange to (and from) the ESO and the identified stakeholders – for if ACER had any doubts about this (or any other) matter in the proposed law then they were duty bound to return the proposal to the TSOs (as they had, for example, done with the original three ‘operational’ network codes) to correct it.

The submission of the TSOs proposal, endorsed and recommended by ACER (including the Article 40 wording as it now appears) was taken by the Commission through the ‘comitology’ process whereby the Member States (including BEIS for GB/UK) took the proposal and amended some aspects of the proposal (but not materially the Article 40 wording, as originally proposed by the TSOs).

Likewise, the Member States<sup>12</sup> (and the Commission) accepted the operational necessity of, amongst other things, information exchange to (and from) the ESO and the identified stakeholders during an emergency or restoration situation – because if this was not the case then why would they (along with the TSOs and ACER) be putting forward, into law,

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<sup>9</sup> It is proposed that active consideration be given by the Workgroup to these communications from the ESO to at least DSPs, SGUs and RSP be via a BMRS type solution to avoid the current burden on the ENCC (as set out here) for them having to communicate via phone calls with each of the relevant stakeholders. For the avoidance of doubt such communications should be; as with all the stakeholders listed in Article 40 (2) – (4) equally; done with alacrity and without undue delay on the part of the ESO as the wording, in paragraphs (2) and (4), are, in this regard, the same, namely “*in due time*”.

<sup>10</sup> It appears in Article 38 of the TSOs proposal which can be found at: [150325\\_ENTSO-E\\_NC\\_ER\\_final.pdf](https://entsoe.eu/150325_ENTSO-E_NC_ER_final.pdf) ([entsoe.eu](https://entsoe.eu))

<sup>11</sup> Dated 25<sup>th</sup> March 2015 (which can be found at [Emergency and Restoration \(entsoe.eu\)](https://entsoe.eu/Emergency_and_Restoration))

<sup>12</sup> Including BEIS for GB/UK.

items that were irrelevant to the operational needs of an emergency or restoration situation?

Finally, in passing, I note the wording provided by the ESO (as set out in the Workgroup Consultation document) namely that:

*“...the ESO will share the ‘emergency’, ‘blackout’ and ‘restoration’ states on a reasonable endeavours basis but continues to have reservations about codifying absolute requirements that might be difficult or counterproductive to meet during an actual emergency when the ESO’s control room will be experiencing a period of severe stress”*

I note that if this is a correct way to proceed (I have my doubts in terms of legal compliance<sup>13</sup>); whereby legal obligations are not to be codified or only met on a reasonable endeavours basis or if not ‘difficult or counterproductive to meet’; then the ESO should be extending this to all aspects of the GC0148 Original solution; i.e. non ESO stakeholders should also equally be afforded this same, non-codified, approach or (if codified) that they are only met, by those stakeholders, on a reasonable endeavours basis or if not ‘difficult or counterproductive to meet’ as, for example, those stakeholders control rooms will, likewise, *“be experiencing a period of severe stress”* during an actual emergency.

Related to this I’m also mindful that the GC0133 decision<sup>14</sup> from GEMA makes reference to ‘Alert’ or ‘Awareness’ system state. However, it does not refer to either the ‘Emergency’, ‘Blackout’ or ‘Restoration’ system state. For the avoidance of doubt, this alternative only concerns (amongst other things) the ‘Emergency’, ‘Blackout’ or ‘Restoration’ system state – it does not deal with (or propose) the approach to either the ‘Normal’ or ‘Alert’ system state.

## What is the difference between this and the Original Proposal?

As detailed above, it is as per the Original but reflecting the requirements of Article 40 (2) – (4) in terms of the exchange of operationally necessary information by the ESO to stakeholders.

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<sup>13</sup> Because the ERNC/NCER does not afford this to the ESO (or other stakeholders) as the TSOs did not seek (and ACER did not recommend, and the Member States did not stipulate) such a derogation from their legal obligations under the code. It would also seem to be somewhat bizarre (to say the least) to have a piece of law to deal specifically with ‘an actual emergency’ which is, apparently, unworkable in ‘an actual emergency’ – which begs the question why, in this regard, did National Grid, as the GBSO, propose / support (and vote for) this wording of the law?

<sup>14</sup> [Grid code accept decision letter template \(nationalgrideso.com\)](https://nationalgrideso.com/grid-code-accept-decision-letter-template)

## What is the impact of this change?

Proposer's Assessment against Grid Code Objectives	
Relevant Objective	Identified impact
(a) To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity	<b>Neutral</b>
(b) Facilitating effective competition in the generation and supply of electricity (and without limiting the foregoing, to facilitate the national electricity transmission system being made available to persons authorised to supply or generate electricity on terms which neither prevent nor restrict competition in the supply or generation of electricity);	<b>Neutral</b>
(c) Subject to sub-paragraphs (i) and (ii), to promote the security and efficiency of the electricity generation, transmission and distribution systems in the national electricity transmission system operator area taken as a whole;	<b>Neutral</b>
(d) To efficiently discharge the obligations imposed upon the licensee by this license and to comply with the Electricity Regulation and any relevant legally binding decisions of the European Commission and/or the Agency; and	<b>Positive</b> Positive impact as it ensures legal compliance by the ESO of its duties in a reasonable, efficient and proportionate manner whilst also ensuring the operational necessity of information exchange is achieved.
(e) To promote efficiency in the implementation and administration of the Grid Code arrangements	<b>Neutral</b>

## When will this change take place?

### Implementation date:

Same as the Original.

### Implementation approach:

Same as the Original.

**Acronyms, key terms and reference material**

Acronym / key term	Meaning
ACER	The European Union Agency for the Cooperation of Energy Regulators
BEIS	Department for Business, Energy and Industrial Strategy
BMRS	Balancing Mechanism Reporting Service
DSO	Distribution System Operator
ESO	National Grid Electricity System Operator
GEMA	Gas and Electricity Markets Authority
NCER	Network Code Emergency and Restoration
NRA	National Regulation Authority
SGU	Significant Grid User
TSO	Transmission System Operator
WAGCM	Workgroup Alternate Grid Code Modification

**Any Other Reference material:**

None