

Grid Code Modification Proposal Form		At what stage is this document in the process?												
<h1>GC0133:</h1> <p><b>Mod Title:</b> Timely informing of the GB NETS System State condition</p>		<table border="1"> <tr> <td>01</td> <td>Proposal Form</td> </tr> <tr> <td>02</td> <td>Workgroup Consultation</td> </tr> <tr> <td>03</td> <td>Workgroup Report</td> </tr> <tr> <td>04</td> <td>Code Administrator Consultation</td> </tr> <tr> <td>05</td> <td>Draft Grid Code Modification Report</td> </tr> <tr> <td>06</td> <td>Final Grid Code Modification Report</td> </tr> </table>	01	Proposal Form	02	Workgroup Consultation	03	Workgroup Report	04	Code Administrator Consultation	05	Draft Grid Code Modification Report	06	Final Grid Code Modification Report
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<p><b>Purpose of Modification:</b> This Modification will require the Transmission System Operator (TSO) for GB National Grid Electricity System Operator (NGESO) to inform, in a timely manner, the System State condition of the GB National Electricity Transmission System (NETS) to market participants.</p>														
	<p><b>The Proposer recommends that this modification should be:</b> This change is straightforward and self-evident so should proceed to Code Administrator Consultation.</p> <ul style="list-style-type: none"> <li>proceed to Consultation</li> </ul> <p>This modification was raised 14 October 2019 and will be presented by the Proposer to the Panel on 29 October 2019. The Panel will consider the Proposer’s recommendation and determine the appropriate route.</p>													
	<p><b>High Impact:</b></p>													
	<p><b>Medium Impact</b></p>													
	<p><b>Low Impact:</b> ESO (in terms of reporting the System State condition) and for Generators, Suppliers and other market participants (in terms of receiving, considering and taking internal action(s) arising from being notified of the System State condition).</p>													

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<b>3 Why Change?</b>	<b>6</b>	 telephone <b>07794 537028</b>
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<b>9 Legal Text</b>	<b>12</b>	 telephone <b>07799 656402</b>
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Timetable		
<i>The Code Administrator will update the timetable following consideration by the Grid Code Review Panel.</i>		
<b>The Code Administrator recommends the following timetable:</b> <i>(amend as appropriate)</i>		
Initial consideration by Workgroup	dd month year	
Workgroup Consultation issued to the Industry	dd month year	
Modification concluded by Workgroup	dd month year	
Workgroup Report presented to Panel	dd month year	
Code Administration Consultation Report issued to the Industry	dd month year	
Draft Final Modification Report presented to Panel	dd month year	
Modification Panel decision	dd month year	
Final Modification Report issued the Authority	dd month year	
Decision implemented in Grid Code	dd month year	

**Proposer Details**

<b>Details of Proposer:</b> (Organisation Name)	SSE Generation Ltd
Capacity in which the Grid Code Modification Proposal is being proposed: (e.g. CUSC Party)	SSE Generation Ltd
<b>Details of Proposer's Representative:</b> Name: Organisation: Telephone Number: Email Address:	Garth Graham  SSE Generation Ltd 01738 456000 garth.graham@sse.com
<b>Details of Representative's Alternate:</b> Name: Organisation: Telephone Number: Email Address:	Andrew Colley  SSE Generation Ltd 01738 456000 andrew.colley@sse.com
<b>Attachments (No): None.</b> <b>If Yes, Title and No. of pages of each Attachment:</b>	

**Impact on Core Industry Documentation.**

*Please mark the relevant boxes with an "x" and provide any supporting information*

<b>BSC</b>	<input checked="" type="checkbox"/>
<b>CUSC</b>	<input type="checkbox"/>
<b>STC</b>	<input type="checkbox"/>
<b>Other</b>	<input type="checkbox"/>

The BSC deals with the BMRS. We do not think that this proposal will directly impact on the BSC itself. However, it would see the ESO using the current BMRS System Warning page to inform stakeholders of changes to the condition of the GB NETS 'System State' situation.

# 1 Summary

## Defect

We have identified a defect: namely that the current condition of the ‘System State’<sup>1</sup>; which the ESO is required<sup>2</sup>, in real time operations, to monitor and determine for the GB NETS; is not currently visible to the wider industry<sup>3</sup>, such as Generators, Suppliers and other market participants (as well as BEIS, Ofgem, DNOs, Interconnectors, etc.) in a timely, and ongoing, manner.

## What

The Grid Code will need to be amended to include a simple requirement on the ESO to update the BMRS System Warning webpage<sup>4</sup> as soon as reasonably practical, using reasonable endeavours, whenever the GB NETS ‘System State’ condition changes; be that a degradation or an improvement in the ‘System State’.

The ESO would be required to report, via an update on the BMRS System Warning webpage, any and all changes in any ‘System State’ of the GB NETS irrespective of whether it is an improving or degrading situation.

The definitions of the various System States etc., would be based on those found in Article 3 of the System Operation Guideline (‘SOGL’) (Regulation (EU) 2017/1485<sup>5</sup>) and we detail this further in Section 5 below.

For the avoidance of doubt, the definitions proposed to be used do not currently appear in the ‘Glossary & Definitions’<sup>6</sup> of the Grid Code (so including them as new definitions, with this proposal, should not give rise to inconsistencies etc., with the baseline).

The reasons for using these existing, well established and understood, definitions from SOGL for the purposes of this proposal is twofold.

Firstly, they are the prevailing legal definitions (as the SOGL has already entered into effect) that the ESO uses to operate the GB NETS.

Secondly, as such, the ESO is very familiar with these terms and already uses them; in respect of the classification of the ‘System State’<sup>7</sup>; when performing its operational

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<sup>1</sup> Which we detail further in Section 5 below.

<sup>2</sup> In accordance with Article 19(1), (2) and (3) of SOGL.

<sup>3</sup> Although it is provided, by the ESO, to other TSOs, in accordance with Article 19(4), Article 42(1)(e) and Article 152(3)(a) of SOGL.

<sup>4</sup> <https://test2.bmreports.com/bmrs/?q=transmission/systemwarning>

<sup>5</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R1485&from=EN>

<sup>6</sup> <https://www.nationalgrideso.com/document/33836/download>

<sup>7</sup> In accordance with Article 18 of SOGL.

security requirements of monitoring and determining the 'System State'<sup>8</sup> and taking the appropriate ESO action(s)<sup>9</sup> accordingly, as part of its day to day operation of the GB NETS, that they have been trained<sup>10</sup> to undertake.

This means that the change this proposal seeks to introduce into the Grid Code; to report in a timely manner using the BMRS website (which the ESO already uses, day to day) any changes to the GB NETS operational 'System State' situation; will be a very simple one for the ESO to undertake as the ESO already currently performs these two constituent elements (all be it separately at present).

## Why

There are three reasons for this change. First, this change should be made to enable Generators, Suppliers and other market participants (as well as BEIS, Ofgem, DNOs, and Interconnectors etc.,) to be constantly aware of the condition of the GB NETS 'System State' at any moment in time so that they can perform their work in a way that is conducive to supporting the ESO's operation of the GB NETS. Second, it will, by improving wider industry communications, result in the better operation of the GB NETS. Third, this proposal also seeks to *ensure and enhance the transparency and reliability of information on transmission system operation* (as required by Article 4(1)(g) and 4(2)(b) of SOGL). On their own each of these reasons would justify why this change should be made – combined they make a compelling case why this simple and straightforward change should be made.

## How

As detailed in Section 5 below, the ESO would be required to update the BMRS System Warning webpage as soon as reasonably practical, using reasonable endeavours, whenever the GB NETS 'System State' condition changes.

That change in the 'System State' condition would be in the form of either:

- (i) a degradation of the 'System State'; or
- (ii) an improvement of the 'System State'.

The ESO would be required to report, via an update on the BMRS System Warning webpage, any and all changes in any 'System State' of the GB NETS irrespective of whether it is an improving or degrading situation such that the current 'System State' is known to relevant parties in a timely manner.

The definitions of the various 'System States' etc., to be used in the Grid Code would be based on those found in Article 3 of SOGL.

The classification of the 'System State', by the ESO, would be in accordance with Article 18 of SOGL and this shall be monitored and determined, by the ESO, in accordance with Article 19 of SOGL.

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<sup>8</sup> In accordance with Article 19 of SOGL.

<sup>9</sup> See, for example, Articles 20, 21, 22, 23, 27, 32, 35, 42, 56, 102, 103, 131, and 152 of SOGL.

<sup>10</sup> See, for example, Articles 58 and 63 of SOGL.

The definitions that we consider should be included in the legal text for this proposal are:

- “operational security”
- “normal state”
- “alert state”
- “blackout state”
- “disturbance”
- “system state”
- “emergency state”
- “restoration state”
- “local state”
- “operational security indicators”
- “wide area state”.

The definition for each of these is detailed further in Section 5 below.

## 2 Governance

### Justification for Normal Procedure

We believe, for the reasons we set out in Section 1 (Summary) above and Section 5 (Solution) below, that this change is simple and straightforward as it utilises existing processes / procedures / systems already used by the ESO in order to provide information to stakeholders in a timely manner, as outlined in the indicative legal text provided. This, in our view, warrants this proposal proceeding to Consultation.

### Requested Next Steps

This modification should: Proceed to Consultation

## 3 Why Change?

There are three reasons for this change. First, this change should be made to enable Generators, Suppliers and other market participants (as well as BEIS, Ofgem, DNOs, and Interconnectors etc.,) to be constantly aware of the condition of the GB NETS ‘System State’ at any moment in time so that they can perform their work in a way that is conducive to supporting the ESO’s operation of the GB NETS.

Second, it will, by improving wider industry communications, result in the better operation of the GB NETS.

Third, this proposal also seeks to *ensure and enhance the transparency and reliability of information on transmission system operation* (as required by Article 4(1)(g) and 4(2)(b) of SOGL) which therefore helps to efficiently discharge the obligations imposed upon NGENSO by its license and to comply with the Electricity Regulation.

On their own each of these reasons would justify why this change should be made – combined they make a compelling case why this simple and straightforward change should be made.

This is a focused, simple, straightforward, ‘quick win’ proposal that plays its part (in terms of the wider industry communication processes and protocols) in taking forward a clear improvement to the Grid Code.

We note, more generally, that our GC0109<sup>11</sup> proposal also addresses wider industry communication processes and protocols which could be improved. However, to be clear our GC0109 defect does not deal with ‘System State’ condition notification, hence why we have raised this new proposal which compliments, but does not conflict with, our GC0109 proposal.

## 4 Code Specific Matters

### Technical Skillsets

Knowledge of the Grid Code and SOGL.

#### *Reference Documents*

“System Operation Guideline” (‘SOGL’) (Regulation (EU) 2017/1485<sup>12</sup>) dated 2<sup>nd</sup> August 2017

## 5 Solution

The Grid Code will need to be amended<sup>13</sup> to include a requirement on **the ESO to update the BMRS System Warning webpage as soon as reasonably practical, using reasonable endeavours, whenever the GB NETS ‘System State’ condition changes.**

**That change in the ‘System State’ condition would be in the form of either:**

- (iii) **a degradation** (such as might arise from a disturbance, going from ‘Normal State’ to ‘Alert State’ etc., or going from ‘Alert State’ to ‘Emergency State’ etc.,) **in the ‘System State’; or**
- (iv) **an improvement** (going from ‘Emergency State’ to ‘Alert State’ or ‘Alert State’ to ‘Normal State’ etc.,) **in the ‘System State’.**

For the avoidance of doubt, it is possible for a change in the ‘System State’ condition to occur such that it degrades (or improves) by ‘jumping’ one or more states; for example, straight from ‘Normal State’ to ‘Emergency State’ (thus ‘skipping’ the ‘Alert State’) or

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<sup>11</sup> <https://www.nationalgrideso.com/codes/grid-code/modifications/gc0109-open-transparent-non-discriminatory-and-timely-publication>

<sup>12</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R1485&from=EN>

<sup>13</sup> We show here in red text the elements of the solution that are likely to appear in the legal text for this proposal.

vice versa. Equally its possible for a state to improve; such as from 'Blackout State' to 'Restoration State'; but then quickly degrade back, in this example, to 'Blackout State' from 'Restoration State'.

The ESO would be required to report, via an update on the BMRS System Warning webpage, any and all changes in the 'System State' of the GB NETS irrespective of whether it is an improving or degrading situation such that the current condition of the 'System State' is known to relevant parties in a timely manner.

The BMRS reporting by the ESO would take the form either of:

“There has been a degradation in the 'System State' from [X] State to [Y] State”;  
or

“There has been an improvement in the 'System State' from [Y] State to [X] State”.

The ESO would be free, but not obliged, to add any additional commentary, about the change in the 'System State' condition, that they wished within their BMRS messaging.

The definitions of the various 'System States' etc., to be used in the Grid Code to put this proposal into effect would be based on those found in Article 3 of SOGL.

The ongoing classification of the 'System State' condition, by the ESO, for the purposes of reporting to GB stakeholders shall be in accordance with Article 18 of SOGL and this shall be monitored and determined, by the ESO, in accordance with Article 19 of SOGL.

In simple terms the definitions would read along the lines of:

“*[X] State' as defined in Regulation (EU) 2017/1485*”.

The definitions within the SOGL that we consider should be included in the legal text for this proposal are:

“(1) **'operational security'** means the transmission system's capability to retain a normal state or to return to a normal state as soon as possible, and which is characterised by operational security limits;”

“(5) **'normal state'** means a situation in which the system is within operational security limits in the N-situation and after the occurrence of any contingency from the contingency list, taking into account the effect of the available remedial actions;”

“(17) **'alert state'** means the system state in which the system is within operational security limits, but a contingency from the contingency list has been detected and in case of its occurrence the available remedial actions are not sufficient to keep the normal state;”

“(22) **'blackout state'** means the system state in which the operation of part or all of the transmission system is terminated;”

“(31) **'disturbance'** means an unplanned event that may cause the transmission system to divert from the normal state;”

“(36) **'system state'** means the operational state of the transmission system in relation to the operational security limits which can be normal state, alert state, emergency state, blackout state and restoration state;”

“(37) **'emergency state'** means the system state in which one or more operational security limits are violated;”

“(38) **‘restoration state’** means the system state in which the objective of all activities in the transmission system is to re- establish the system operation and maintain operational security after the blackout state or the emergency state;”

“(46) **‘local state’** means the qualification of an alert, emergency or blackout state when there is no risk of extension of the consequences outside of the control area including interconnectors connected to this control area;”

“(51) **‘operational security indicators’** means indicators used by TSOs to monitor the operational security in terms of system states as well as faults and disturbances influencing operational security;” and

“(62) **‘wide area state’** means the qualification of an alert state, emergency state or blackout state when there is a risk of propagation to the interconnected transmission systems.”

For the avoidance of doubt, the definitions listed above do not currently appear in the ‘Glossary & Definitions’<sup>14</sup> of the Grid Code (so including them as new definitions, with this proposal, should not give rise to inconsistencies etc., with the baseline).

That these various ‘System States’ are important, in terms of the operation of the GB NETS, is clear from both their pre-eminence and repeated use, as well as the associated obligations, detailed elsewhere in SOGL, on the ESO<sup>15</sup> (and other parties) together with what is set out in the Emergency & Restoration Network Code<sup>16</sup> which states that:

*“Commission Regulation (EU) 2017/1485 [SOGL] sets out harmonised rules on system operation for transmission system operators (‘TSOs’), regional security coordinators (‘RSCs’), distribution system operators (‘DSOs’) and significant grid users (‘SGUs’). It identifies different critical system states (normal state, alert state, emergency state, blackout state and restoration).”<sup>17</sup> [emphasis added]*

If the ‘System State’ condition were not considered to be critical to the safe and secure operation of the system in both ordinary, day to day, situations or in exceptional circumstances then there would be (i) no need to explicitly set this out in a law, or (ii) define, and use, those terms repeatedly in the SOGL (and Emergency & Restoration Network Code) when the ESO performs the operational security requirements<sup>18</sup> needed to ensure the operational security<sup>19</sup> of the GB NETS.

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<sup>14</sup> <https://www.nationalgrideso.com/document/33836/download>

<sup>15</sup> See, for example, Articles 20, 21, 22, 23, 27, 32, 35, 42, 56, 102, 103, 131, and 152 of SOGL.

<sup>16</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R2196&from=EN>

<sup>17</sup> Recital (3), ERNC.

<sup>18</sup> See, for example, Part II, Title 1 of SOGL.

<sup>19</sup> See, for example, Part II of SOGL.

## 6 Impacts & Other Considerations

We expect this proposal to have a low impact on the ESO (in terms of reporting the 'System State' condition) and for Generators, Suppliers and other market participants (in terms of receiving, considering and taking internal action(s) arising from being notified of the 'System State' condition).

In terms of the ESO this is because they already:

- (i) classify, monitor and determine the 'System State' on a real time basis, as part of their operation of the GB NETS; and
- (ii) provide information about the GB NETS, such as System Warnings, using the existing BMRS website tool.

As a result, in respect of this proposal, there is no new task for the ESO to perform in terms of (i).

However, there is only a new task, in terms of (ii), for them to perform with this proposal, which is to simply update the BMRS System Warning webpage with any and all changes (degradations or improvements) to the 'System State'.

This proposal therefore has a Low Impact on the ESO and should not, for example, require new IT system solutions to be procured / tested/ installed.

In terms of Generators, Suppliers and other market participants (as well as BEIS, Ofgem, DNOs and Interconnectors etc.), they will need to be cognisant of the possibility of amending their internal procedures in terms of considering the information they receive, via the BMRS, on the 'System State' condition and take whatever appropriate action they deem fit to act on that information in a manner conducive to supporting the ESO's operation of the GB NETS.

As these parties already have access to and use the BMRS website, including the System Warning webpage, for this general purpose, this proposal therefore has a Low Impact on Generators, Suppliers and other market participants (as well as BEIS, Ofgem, DNOs and Interconnectors etc.) and should not, for example, require new IT system solutions to be procured / tested/ installed.

### **Does this modification impact a Significant Code Review (SCR) or other significant industry change projects, if so, how?**

No. This proposal does not relate to any matters pertaining to the current SCRs.

### **Consumer Impacts**

This proposal will not have any detrimental impact on consumers.

However, by improving the communication processes and procedures for the wider industry regarding the ongoing operation of the GB NETS this proposal will lead to a more secure system which, in turn, will benefit consumers directly.

## 7 Relevant Objectives

### Impact of the modification on the Applicable 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	Positive
(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);	Neutral
(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;	Positive
(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	Positive
(e) To promote efficiency in the implementation and administration of the Grid Code arrangements	Neutral

This proposal to change the Grid Code will have a positive effect in terms of Applicable Objective (a) especially with respect to the operation of an efficient, coordinated and economical system for the transmission of electricity as stakeholders will have a constant understanding of the ‘System State’ condition of the GB NETS.

This proposal to change the Grid Code will have a positive effect in terms of Applicable Objective (c) especially with respect to the security of the transmission and distribution systems in the national electricity transmission system operator area taken as a whole as stakeholders will have a constant understanding of the ‘System State’ condition of the GB NETS

This proposal to change the Grid Code will have a positive effect in terms of Applicable Objective (d) especially with respect to discharging the obligations imposed upon the licensee in terms of comply with SOGL, as well as the Emergency & Restoration Network Code.

This proposal to change the Grid Code will have a neutral effect in terms of Applicable Objectives (b) and (e).

## 8 Implementation

We believe that implementation of this change should be brought in ten working days after an Authority decision.

## 9 Legal Text

### Text Commentary

We have broadly set out the indicative legal text in Section 5 above in the form of the red text. We are happy to support the Code Administrator’s legal team with the development of the legal text for this proposal.

## 10 Recommendations

### Proposer’s Recommendation to Panel

Panel is asked to:

- Issue this modification directly to Consultation.

### GLOSSARY

GB NETS	The National Electricity Transmission System for GB: “ <i>This is the system consisting of high voltage electricity lines</i> ”
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	<i>owned or operated by the three transmission licensees within Great Britain. The term also encapsulates a number of offshore transmission lines.<sup>20</sup></i>
TSO	Transmission System Operator, as defined in EU law.
ESO / NGESO	Electricity System Operator, or National Grid Electricity System Operator: “As system operator, ESO ensures the flow of energy around Great Britain, monitors the supply of energy provided by powers stations, and instructs generators in order balance demand and supply one second by second basis. The ESO can take preventive actions to ensure the protection of critical assets but does not own power station infrastructure and is not responsible for their maintenance. <sup>21</sup> ”
DNO	Distribution Network Operator <sup>22</sup>
BEIS	Department for Business, Energy & Industrial Strategy <sup>23</sup>
BMRS	Balancing Mechanism Reporting System, which includes a ‘System Warning’ webpage <sup>24</sup> .
SOGL	System Operation Guideline (Regulation (EU) 2017/1485 <sup>25</sup> ).
GC0109	Grid Code change proposal number 109, titled “ <i>The open, transparent, non discriminatory and timely publication of the various GB electricity Warnings or Notices or Alerts or Declarations or Instructions or</i>

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<sup>20</sup> Glossary, page 38, ESO Technical Report into 9<sup>th</sup> August 2019, dated 6<sup>th</sup> September 2019.

<sup>21</sup> Glossary, page 37, ESO Technical Report into 9<sup>th</sup> August 2019, dated 6<sup>th</sup> September 2019.

<sup>22</sup> <https://www.ofgem.gov.uk/electricity/distribution-networks/gb-electricity-distribution-network>

<sup>23</sup> <https://www.gov.uk/government/organisations/department-for-business-energy-and-industrial-strategy>

<sup>24</sup> <https://test2.bmreports.com/bmrs/?q=transmission/systemwarning>

<sup>25</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R1485&from=EN>

	<i>Directions etc., issued by or to the Network Operator(s)</i> <sup>26</sup>
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<sup>26</sup> <https://www.nationalgrideso.com/codes/grid-code/modifications/gc0109-open-transparent-non-discriminatory-and-timely-publication>