

P451 Digital Meeting Etiquette

- Welcome to the P451 Workgroup meeting 1 – we'll start shortly
- No video please to conserve bandwidth
- Please stay on mute unless you need to talk – use IM if you can't break through
- Talk – pause – talk
- Lots of us are working remotely – be mindful of background noise and connection speeds

Slido Guidance

- We will use Slido at the end of today's session to agree the date of the second P451 Workgroup meeting

Requirements:

- Internet access
- Web browser
- Participants can join at slido.com with [#8419446](#)

Joining as a participant?

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ELEXION

**P451 'Updating BSC Black Start provisions
and compensation arrangements'**

Meeting 1

5 May 2023

Meeting Agenda

Objectives for this meeting:

- Consider the background of P451
- Consider the P451 Terms of Reference
- Obtain Workgroup views on ‘Who should be eligible to claim for BSC Black Start compensation?’
- Confirm the next steps

Agenda Item	Lead
1. Welcome and meeting objectives	Ivar Macsween (Elexon) - Chair
2. BSC Modification Process	Kayleigh Neal (Elexon) - Lead Analyst
3. Background and overview of P451	Paul Mott (National Grid ESO) - Proposer
4. Existing Black Start arrangements	David Thomas and Oliver Meggitt (Elexon) - SME
5. P451 Terms of Reference	Kayleigh Neal
6. Who should be eligible to claim for BSC Black Start compensation?	Lorna Lewin (Elexon) - Market Design
7. Workgroup Discussion	Workgroup
8. Next steps	Kayleigh Neal
9. Meeting close	Ivar Macsween

An aerial photograph of a patchwork of green agricultural fields, likely corn or soybeans, separated by dark lines representing roads or irrigation canals. Several bright, parallel yellow light streaks cut diagonally across the lower right portion of the image, adding a sense of motion or energy.

Electricity System Restoration Standard

BSC WG Presentation

5th May 2023

Facilitation of the Electricity System Restoration Standard

In April 2021, the Department for Business, Energy and Industrial Strategy (BEIS) released a policy statement setting out the need to introduce a legally binding target for the restoration of electricity supplies in the event of a total or partial shutdown of the National Electricity Transmission System (NETS) .

This new policy is called the Electricity System Restoration Standard (ESRS). As a consequence of BEIS's policy statement, Ofgem performed an initial consultation in April 2021 followed by a statutory consultation in July 2021 on licence amendments to facilitate the introduction of an ESRS, and to align the regulatory framework for procurement of restoration services with that of other balancing services.

On 24th August 2021, Ofgem published a decision letter stating that they made the decision to make the licence modifications. The modification decisions are publicly available and were implemented on 19th October 2021.

These licence modifications include but are not limited to:

- Introducing the definition of “Restoration Services” in Standard Condition C1 and amending the definition of balancing services to include “Restoration Services”.
- Replacing all references to “Black Start” with “Electricity System Restoration” in the Electricity Transmission Licence, including in the ESO's Special Licence Conditions, to align the licence terminology with BEIS's policy.
- Introduction of updated Special Condition 2.2 of National Grid's Electricity System
- Operator's Transmission Licence requiring the introduction of an ESRS which requires 60% of electricity demand to be restored within 24 hours in all regions and 100% of electricity demand to be restored within 5 days nationally.

ESRS and Distributed ReStart

The Distributed ReStart Project established the technical viability of using Distributed Energy Resources (DERs) for system restoration.

The project had 3 main workstreams:

- The Organisational Systems and Telecommunication workstream assessed the likely impacts of Distributed ReStart to stakeholders
- The Power Engineering and Trials workstream performed technical evaluation of delivering Distributed ReStart. The workstream established that to enable bottom up restoration, certain technical and resilience requirements are required which are different from the ones we use for transmission connected generators
- The main deliverable from the Procurement and Compliance workstream was an end-to-end procurement process that enables buying the de-coupled services required for a Distribution Restoration Zone (DRZ) - power island. This means multiple contracts for service from an Anchor and Top-up provider

Implementation of learnings:

Following the successful trials, Distributed ReStart provides the world first bottom-up approach to restoration to support the traditional top-down approach.

As we transition to cleaner and more decentralised energy, new options must be developed. The enormous growth in DERs presents a big opportunity but for a wide range of reasons they have been unable to participate in ESR.

ESRS and GC0156

In November 2021, seven non-code working groups (WG) made up of industry stakeholders were formed to identify the requirements for the ESRS:

- Technologies and Locational Diversity
- Future Networks
- Markets and Funding Mechanism
- Regulatory Frameworks
- Assurance
- Communications Infrastructure
- Modelling & Restoration Tool

The WGs made several proposals towards the implementation of the ESRS. All the working groups were dissolved in March 2022.

Following the work done by the seven Non-Code Working Groups, four GC0156 Code Working Groups were constituted to focus on ESRS requirements under Assurance Activities, Communication infrastructure, Future Networks and Market and Funding mechanisms.

Stakeholders at the Market and Funding mechanism Subgroup included NGESO, NGET, SSE generation, Elexon, Waters Wye, DTC and SSE. It concluded its work with a recommendation that an amendment be raised to BSC Section G such that lead parties and/or asset owners will be able to claim compensation even if the asset owner is a non-BSC party. Only contracted (Anchor and Top-up Restoration Contractors) non-BSC parties will be eligible for this compensation claim.

Grid Code documents reviewed

- Glossary and Definitions
- Planning Code
- Connection Conditions
- European Connection Conditions
- Operating Code 1
- Operating Code 2
- Operating Code 5
- Operating Code 9
- Balancing Code 2
- Balancing Code 4
- Data Registration Code
- General Conditions

Supplementary Grid Code related documents reviewed

- System Defence Plan
- System Restoration Plan
- Test Plan
- Control Telephony Standard
- Communications Standard
- Distribution Restoration Zone Control System (subject to substantial overhaul)

GC0156 and consequential changes to Regulatory Framework

The ESO has made some significant progress towards implementing the ESRS and the recommendations from the Distributed ReStart project. We have raised modification requests to change various aspects of the Regulatory Frameworks to include the new requirements that will facilitate the implementation of the ESRS by December 2026. These include:

- Grid Code
- System Operator Transmission Owner Code (STC)
- Connection and Use of System Code (CUSC)
- Balancing Settlement Code (BSC)
- Security and Quality of Supply Standard (SQSS)

The ESO aims to complete all code modification processes by the second quarter of 2023, which should allow sufficient time for all affected parties to act on their new requirements in time for the 2026 deadline.

CUSC and BSC	To align with the changes introduced by GC0156, a very small handful of definitions and terms in CUSC that relate to “Black Start” need to be replaced in a pair of mods to reflect new terminology introduced by GC0156; we have raised this BSC mod P451. This suite of changes will ensure that all codes remain coherent within themselves and in various inter-code references, and work together as a whole as they did before ESRS. Also, CMP 398/412 was raised by SSE relating to costs of GC0156 compliance.
STC	The STC requires further review to ensure it is consistent with the changes being introduced to the Grid Code
SQSS	The SQSS requires further review to ensure it is consistent with the changes being introduced to the Grid Code and STC to facilitate the implementation of the ESRS.

Consequential changes to Regulatory Framework Timeline

Framework	ESRS Presentation to Panel	Modification workgroup established	Recommendations drafted	Industry Consultation	Draft Modification Report	Issue Modification to Ofgem
Grid Code GC0156	✓	✓	✓	May 23	June 23	July 23
CUSC CMP398 and CMP412	✓	✓	✓	✓	June 23	July 23
STC CM089 and PM0128	✓	Mar 23	Apr 23	Apr 23 and July 23	Aug 23	Sep 23
BSC P451	✓	Apr 23	TBD	TBD	TBD	TBD
SQSS GSR032	Mar 23	April 23	TBD	May 23 and July 23	Sep 23	Sep 23
Date First ESRS contracts go live July 2025						
Date systems need to go live						

BSC mod overview

- The GC0156 markets and funding mechanisms sub-group report noted an intention that new restoration service providers which are non-BSC parties and which have a system restoration contract should be eligible to claim for avoidable costs if they qualify under BSC section G3 provisions.
- P451 will if passed update BSC Section G to allow non-BSC parties who have a contract with NGESO to provide System Restoration services to claim BSC Black Start compensation.
- The additional BSC section G3 claimants would have to have a contract with both the ESO and a DNO.
- Changes to BSC terminology, to reflect the Grid Code terminology change from 'Black Start' to 'System Restoration'. This includes both updating BSC references to Grid Code defined terms and changing the BSC's own defined terms that include the words 'Black Start' (e.g. 'black start compensation' and 'black start instruction').
- Updating BSC cross-references to relevant parts of the Grid Code that have been renumbered by the GC0156 legal text.

BSC mod vs BSC Objectives

Objective	Impact	Rationale
Objective (a) – The efficient discharge by the Transmission Company of the obligations imposed upon it by the Transmission Licence	Positive	P451 will facilitate the implementation of NGE SO's new approach to System Restoration set out in GC0156. This new approach will enable NGE SO to meet their new Transmission Licence obligation to satisfy the ESRS that comes into full effect on 31 December 2026.
Objective (c) - Promoting effective competition in the generation and supply of electricity and (so far as consistent therewith) promoting such competition in the sale and purchase of electricity	Positive	The new approach that P451 facilitates should help a wider range of potential service providers to tender for System Restoration Services knowing that if the appropriate circumstances ever come to pass, they can make a Section G3 avoidable costs claim on a comparable basis to BSC parties who are able to make a claim today
Objective (d) - Promoting efficiency in the implementation of the balancing and settlement arrangements	Positive	Without P451 the BSC's Black Start processes and terminology will become outdated and misaligned with other industry codes such as the Grid Code and CUSC, and would no longer be operable/functional as intended



EXISTING BLACK START ARRANGEMENTS

What is Black Start?

Black Start is the process used to restore power in the event of a total or partial shutdown of the national electricity transmission system.

Where are Black Start provisions described?

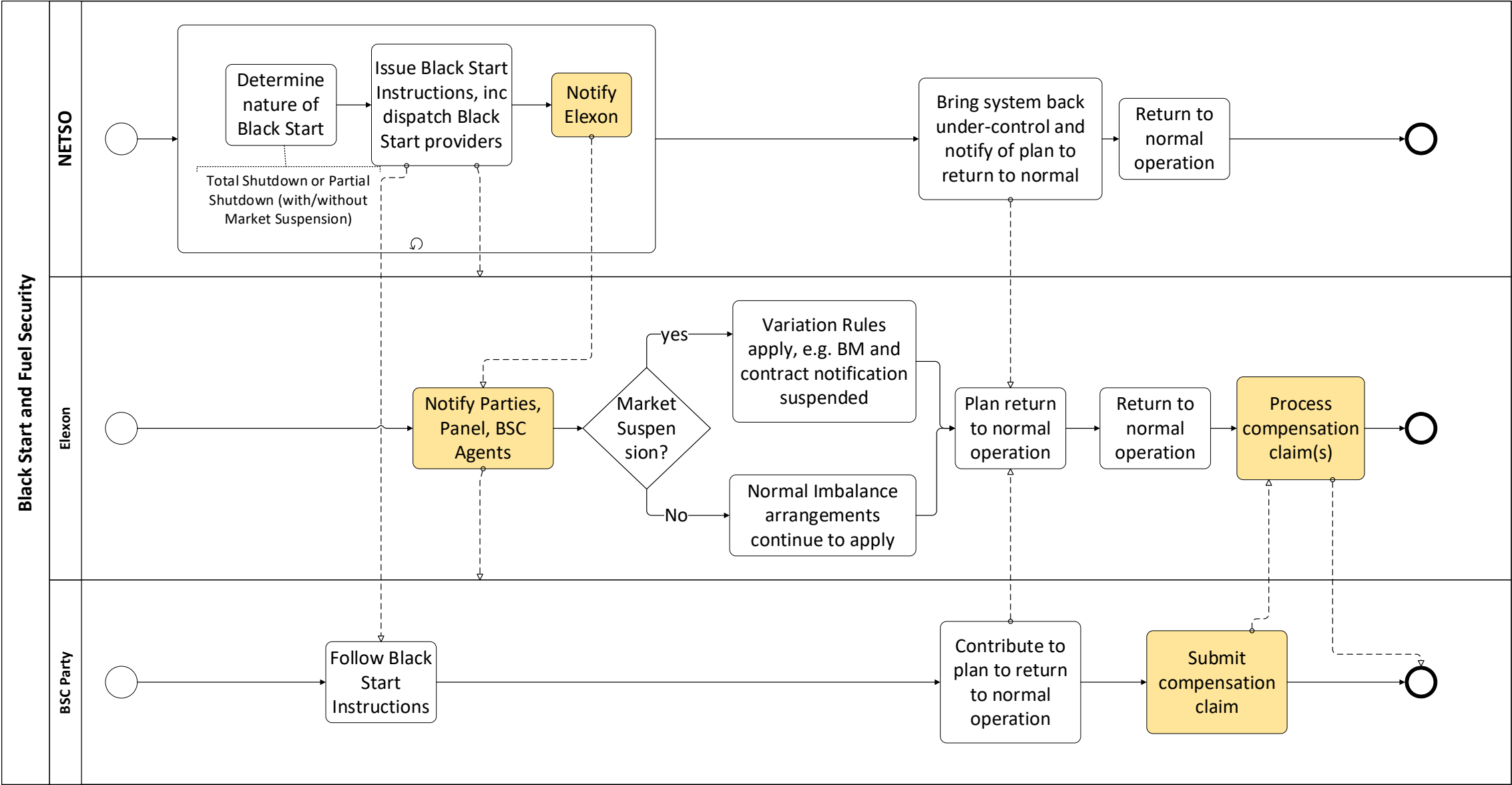
- **Grid Code - Operating Code (OC) 9** – describes operationally how NETSO will restore the Transmission System with support from Black Start Service Providers
- **BSC - Section G3 and BSCP201** – describes consequential actions managed under the BSC – i.e. rules for communicating details of when Black Start Periods begin and end, market suspension and subsequent claims for compensation
- **Restoration Services contracts** – in support of over-arching Grid Code requirements. Where NETSO procures Black Start Services these are typically covered by dedicated contracts between the provider and NETSO

What does Market Suspension mean?

- A Market Suspension Period will only exist if, at any time during the Partial Shutdown, the Market Suspension Threshold specified in Section G is met.
- Thresholds, as per Section G 3.1.15:
 - *the National Electricity Transmission System Operator (NETSO) determines, in its reasonable opinion, that the spot time Initial National Demand Out-Turn is equal to or lower than 95% of the baseline forecast (the "Market Suspension Threshold")*
 - *no more baseline forecast data is available to the NETSO; or*
 - *72 hours have elapsed since the time and date that the Partial Shutdown commenced*
- The BSC trading rules are amended for all Settlement Periods during a Market Suspension Period.
 - The changes are that:
 - (a) the operation of the balancing mechanism is suspended;
 - (b) contract notifications (to ECVAA) are suspended;
 - (c) the normal imbalance pricing calculations are suspended and a contingency imbalance cashout price applies*
 - (d) the value of Credit Assessment Energy Indebtedness is set to zero for all Trading Parties;
 - (e) the value of Metered Energy Indebtedness is set to zero for all Trading Parties; and
 - (f) the operation of the TERRE Market shall be suspended.
 - In relation to all Settlement Days that fall wholly or partially within a Market Suspension Period, the value of Actual Energy Indebtedness is set to zero for all Trading Parties.

* the way that this is determined is set out in Section T1.7

How does Black Start work?



Existing Black Start arrangements - Compensation

BSC Parties whose BMU(s) are affected by a Black Start Instruction may submit claims to the BSC Panel's Claims Committee for 'Avoidable Costs' (defined by BSC Section G2).

These may be made <=20wd following the end of the Black Start event (unless the BSC Panel grants the Party an extension).

What are 'Avoidable Costs'?

*'G 2.1.2 ... the Panel shall determine, in its opinion, what is the amount of the **net costs of operating the BM Unit which would not have been incurred but for:***

- (a) the relevant changes in Exports and/or Imports: or*
- (b) **a black start instruction.***

'G 2.1.3 For the purposes of the Code, the "Avoidable Costs" shall be the amount determined by the Panel under paragraph 2.1.2 (which may for the avoidance of doubt be a negative amount, in a case where net costs were saved or revenues earned).'

And Black Start Instructions?

'G 3.3.1C For the purposes of this paragraph 3.3, a "black start instruction" is:

- (a) in relation to any Settlement Period(s) which fall within both a Black Start Period and a Market Suspension Period, an instruction given by the NETSO pursuant to OC9.4.7.4, BC2.7 or BC2.9 of the Grid Code; **[i.e. any instruction by NETSO to any User]** or*

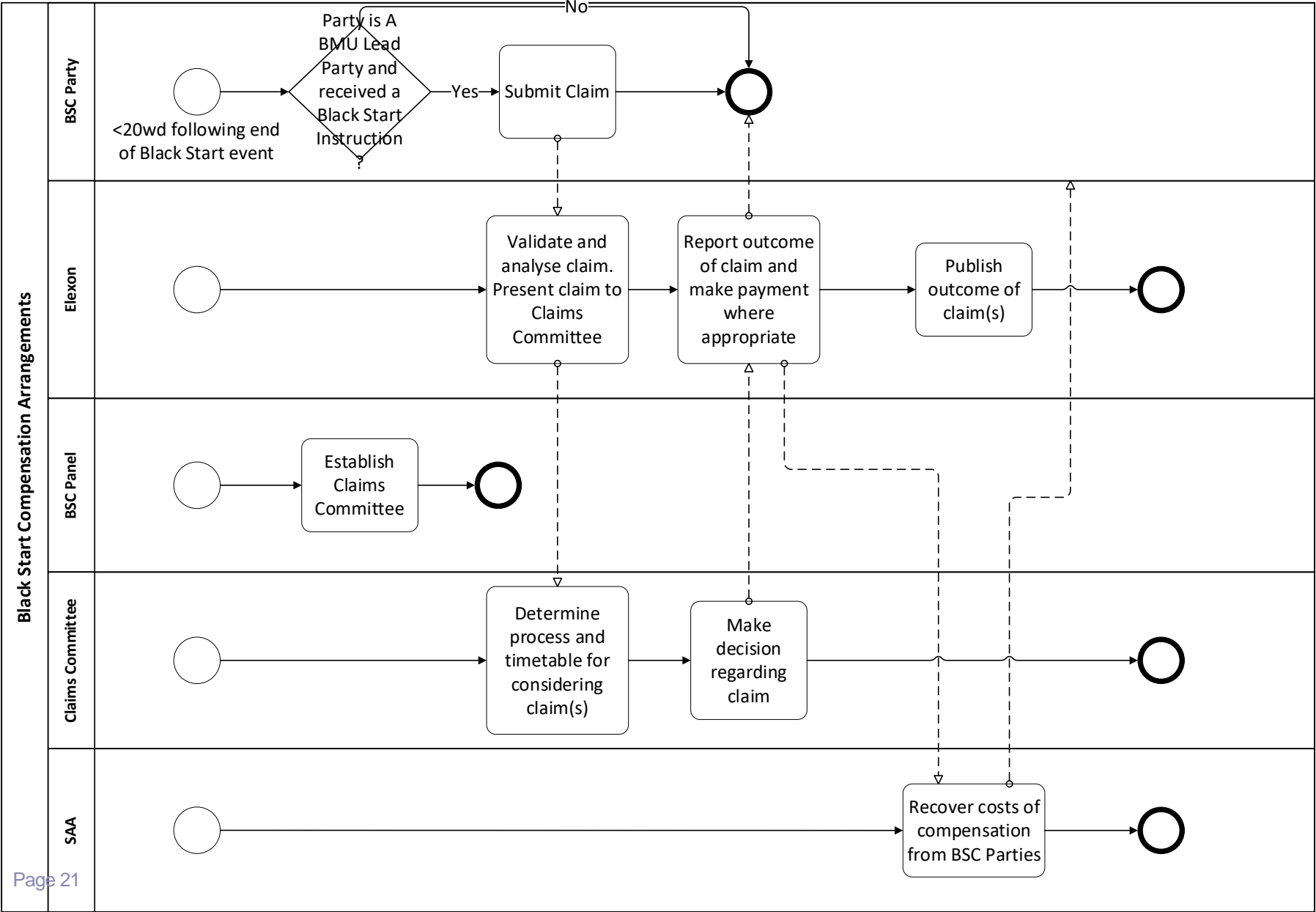
- (b) in relation to any Settlement Period(s) which fall within a Black Start Period but not within a Market Suspension Period, an instruction given by the NETSO pursuant to BC2.9.1.2(e)(i) of the Grid Code. **[i.e. instructions by NETSO to those affected/subject of an 'invoked Local Joint Restoration Plan']***

For Reference

Section G2.1.4 In determining what are **the costs of operating a BM Unit** and **what such costs would not have been incurred** (as provided in **paragraph 2.1.2**), the Panel shall have regard to the following:

- (a) costs include lost revenues, and costs saved include revenues earned;
- (b) in the case of a BM Unit comprising premises of a Customer, the costs which are to be counted are the costs incurred by the Customer;
- (c) costs are not to be counted unless they are demonstrably:
 - (i) costs directly incurred in the operation of the Plant and Apparatus comprised in the BM Unit;
 - (ii) costs which were reasonably and prudently incurred, and incurred pursuant to commitments reasonably and prudently made; and
 - (iii) costs the amount of which would be expected to differ according to whether there occurred the relevant changes in Exports and/or Imports or changes in operation to comply with a black start instruction in the relevant Settlement Period alone;
- (d) costs include costs (incurred or saved) of consumption of electricity or fuel;
- (e) the following costs are not to be counted:
 - (i) costs or losses in respect of damage to property (including Plant or Apparatus) or death or injury to persons;
 - (ii) insurance premia; and
 - (iii) financing costs and overhead costs;
- (f) amounts payable (other than by way of rebate of payment for supply), under any contract or otherwise, by way of compensation for loss of supply or otherwise in consequence of relevant changes in Exports and/or Imports, by the Lead Party to the person referred to in paragraph (b), are to be disregarded; and
- (g) amounts payable or receivable under the Code in respect of Trading Charges or BSCCo Charges are to be disregarded.

Compensation – illustrative summary





P451 TERMS OF REFERENCE

P451 specific Terms of Reference

ToR	Details	When will this be discussed?
a)	Who should be eligible to claim for BSC Black Start compensation?	Workgroup 1
b)	What type(s) of Black Start instruction(s) could be given to non-BSC Parties? Do they differ from existing instructions?	Workgroup 2
c)	How will claims be submitted by non-BSC Parties?	Workgroup 2
d)	How will claims by non-BSC Parties be validated?	Workgroup 2
e)	How will claims be paid out by Elexon?	Workgroup 2
f)	How will the amounts paid out to non-BSC Parties be recouped/recovered by Elexon?	Workgroup 2 and/or 3
g)	How will the implementation of the Grid Code, CUSC and BSC changes be aligned?	Workgroup 3
h)	Should the BSC Black Start compensation payment mechanism sit within the BSC?	

P451 standard Terms of Reference

ToR	Details	When will this be discussed?
i)	What impact will P451 have on the BSC Settlement Risks and what changes will be required to the Performance Assurance Arrangements?	Workgroup 3
j)	What changes are needed to BSC documents, systems and processes to support P451 and what are the related costs and lead times? When will any required changes to subsidiary documents be developed and consulted on?	Workgroup 2 and 3
k)	Are there any Alternative Modifications?	Workgroup 3
l)	Should P451 be progressed as a Self-Governance Modification?	Workgroup 3
m)	Does P451 better facilitate the Applicable BSC Objectives than the current baseline?	Workgroup 3
n)	Does P451 impact the EBGL provisions held within the BSC, and if so, what is the impact on the EBGL Objectives?	Workgroup 3
o)	Does P451 impact on the consumer benefit criteria?	Workgroup 3



WHO SHOULD BE ELIGIBLE TO CLAIM?

Who can claim BSC Black Start compensation?

The Grid Code states that a **generator** who receives an emergency instruction during a Black Start/System Restoration is eligible to claim compensation under BSC Section G (**BC2.9.2.6**).

The existing BSC compensation arrangements allow generators who are BSC Parties to claim compensation during a Black Start for Avoidable Costs, where the Lead Party is given a Black Start instruction by NGESO under the Grid Code (**BSC section G3.3**).

There is currently no mechanism in the BSC for generators who are non-BSC Parties to claim compensation.

Generator Role in the BSC - Licensable and Exemptable

- A licenced generator must sign up to the BSC to comply with Standard Licence Condition 9.1
- BSC Section K defines Generating Plant as '**Licensable**' or '**Exemptable**'
- For Licensable Generating Plants, generators must register their own Metering Systems and BM Units (they will have had to become BSC Parties in order to comply with SLC9.1)
- For Exemptable Generating Plants, generator can register Metering Systems and BM Units (if they're a BSC Party), or arrange for a BSC Party to do it for them (e.g. a Supplier with whom they have a Power Purchase Agreement)

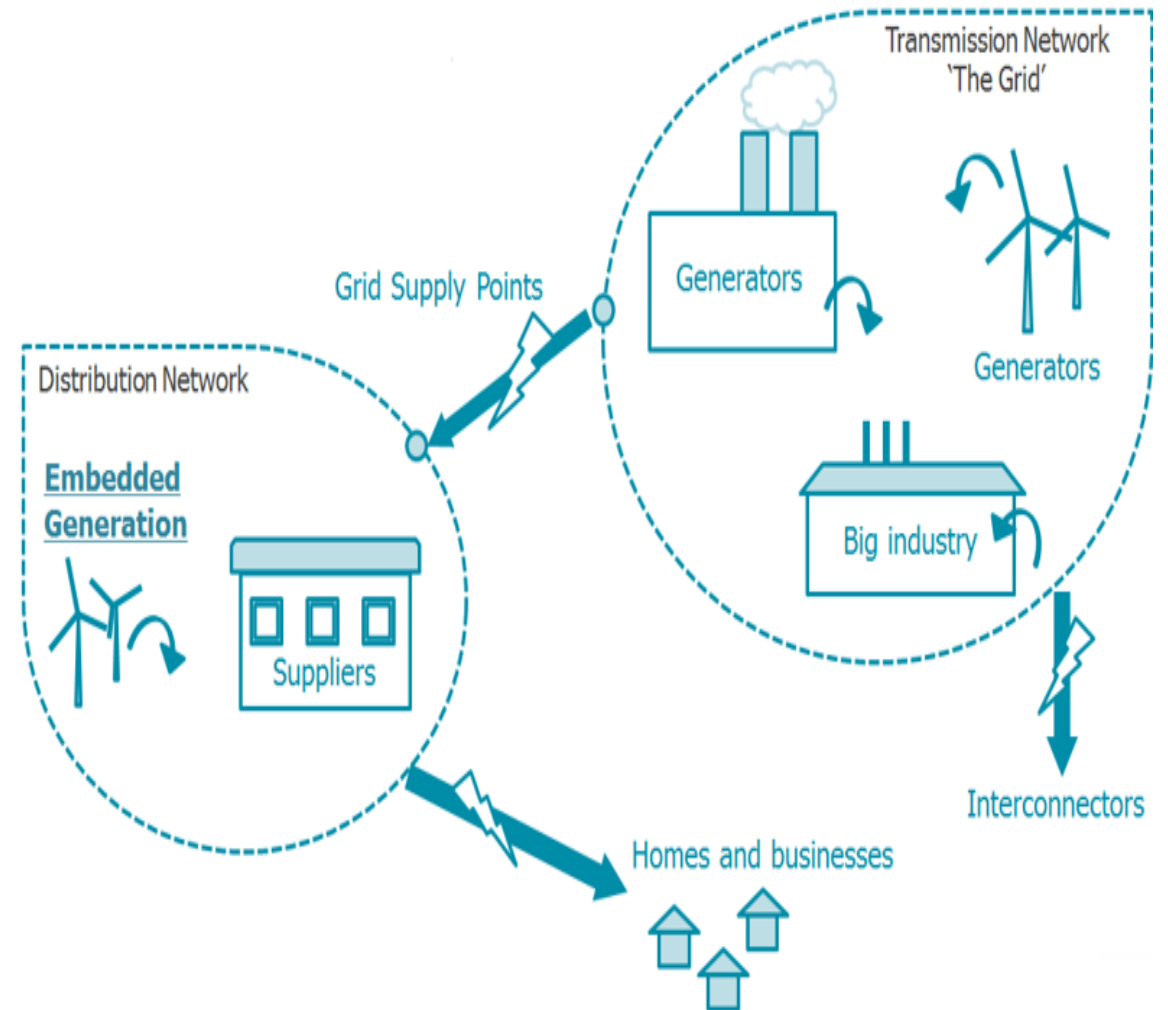
Registration in Central Volume Allocation (CVA) or Supplier Volume Allocation (SVA)

Registration in CVA:

- Available for all generators (whether or not generator registers BM Unit or BSC Party does it for them)
- Generating unit will have its own individual BM Unit

Registration in SVA:

- Only available to Exemptable distribution-connected generating units
- Can only be done by Suppliers
- Allows generating unit to be aggregated into a larger Supplier BM Unit



Generator Options

Power Station Size	Generator Options
Above 100 MW (i.e. a large power station, as typically used in the current Black Start process).	<p>A licence exemption is unlikely to be an option, which means the Generating Plant will be Licensable.</p> <p>The generator will be required (by SLC9.1) to become a BSC Party, and also (by BSC Section K) to register their own Metering Systems and BM Units.</p>
50 – 100 MW	<p>In some cases it may be possible to apply for an individual licence exemption (or make use of a class exemption), in which case the Generating Plant will be Exemptable. Otherwise it will be Licensable.</p> <p>If the Generating Plant is Licensable the situation is similar to plant above 100 MW i.e. Generator must become a BSC Party and register their own Metering Systems.</p> <p>If the Generating Plant is Exemptable they can choose not to get a licence, and have a Supplier (or other BSC Party) register the Metering Systems and BM Units for them.</p>
Below 50 MW	<p>Generating Plant is small enough to be operated under the class exemption for small generators (and therefore Exemptable).</p> <p>Even if the Generator chooses to become licenced, they don't have to become a BSC Party (as SLC9.1 won't apply to this power station). The generator can have a Supplier (or other BSC Party) register the Metering Systems and BM Units for them.</p>

Black Start: Current Approach

Uses **Black Start Service Providers** that have Black Start Capability.

Black Start Capability

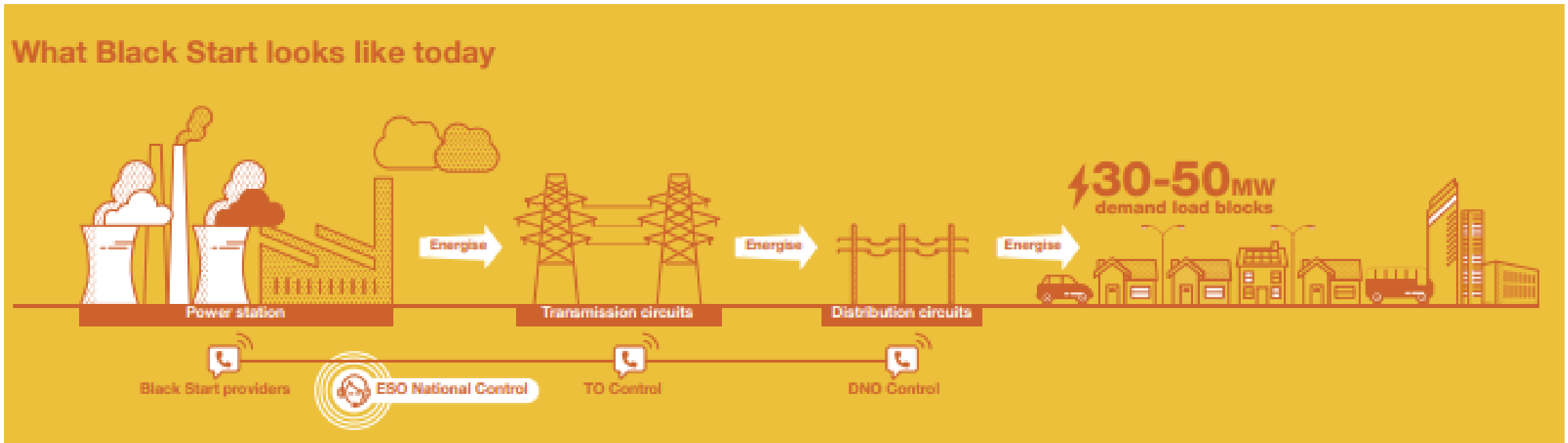
*In the case of a **Black Start Station**, is the ability for at least one of its **Gensets** to **Start-Up** from **Shutdown** and to energise a part of the **System** and be **Synchronised** to the **System** upon instruction from **The Company**, within two hours, without an external electrical power supply.*

*In the case of a **Black Start HVDC System** is the ability of an **HVDC System** to **Start-Up** from **Shutdown** and to energise a part of the **System** and be **Synchronised** to the **System** upon instruction from **The Company**, within two hours, without an external electrical power supply from the **GB Synchronous Area**.*

Black Start: Current Approach

Black Start Service Providers are generally connected to the **Transmission System**.

They are instructed by the ESO to start within 2 hours and energise part of the NETS in accordance with a **Local Joint Restoration Plan (LJRP)**.



An **LJRP** is used to form a Power Island. As the restoration progresses, individual Power Islands are subsequently connected together to form wider Power Islands. This facilitates the connection of other parties including Generators and Embedded Generators without any current restoration capability.

System Restoration: New Approach

Uses **Anchor and Top Up Restoration Contractors** (collectively '**Restoration Contractors**')

- Anchor Restoration Contractors have Plants that can Start-Up from Shutdown and energise and maintain a part of the Total System without an external power supply
- Top Up Restoration Contractors have Plants that can Start-Up from Shutdown, be Synchronised and remain Synchronised to a part of the Total System without an external power supply

Restoration Contractors will have contracts with:

- **The Company** in the case of a **LJRP**
- **The Company** and relevant **Network Operator** in the case of a **Distribution Zone Restoration Plan**

What is a DZRP?

- A DZRP details the agreed method and procedure by which a Network Operator will instruct a Restoration Contractor with an Anchor Plant to energise part of a Network Operator's Total System within 8 hours of that instruction, and subsequently meet complementary blocks of local Demand so as to form a Power Island
- It may require the use of Top Up Restoration Plant

System Restoration: Distributed ReStart and New Technology

DERs may act as **Anchor and Top Up Restoration Contractors** connected to the Transmission System (providing services through an LJRP) or a Distribution System (providing services through a DZRP)



The GC0156 Technology and Locational Diversity WG considered the attributes and mitigations of a range of technologies noting that each DNO licence area should have diverse technologies to mitigate against the risk of one type being unavailable or a common source of failure

System Restoration: Distributed ReStart and New Technology

Taken from the **GC0156 Markets and Funding Mechanisms Subgroup Report**

Stakeholder	Funding Mechanism	Compensation Mechanism
Anchor and Top-up Restoration Contractors on Transmission Network	Bilateral Commercial Contract	BSC Section G
Anchor and Top-up Restoration Contractors on Distribution Network - BSC parties	Tripartite Commercial Contract	BSC Section G
Anchor and Top-up Restoration Contractors on Distribution Network - Non-BSC parties	Tripartite Commercial Contract	No commercial contract
DERs (Non-CUSC and Non-Contracted)	Not applicable	Business as Usual

Terms of Reference

- a) Who should be eligible to claim for BSC Black Start compensation?
 - i) Should non-BSC Parties be eligible to claim?



NEXT STEPS

Next steps

- Summary of Workgroup meeting decisions and actions by **12 May 2023**
- Next Workgroup meeting will focus on ToR b – e as a minimum

ToR	Details
b)	What type(s) of Black Start instruction(s) could be given to non-BSC Parties? Do they differ from existing instructions?
c)	How will claims be submitted by non-BSC Parties?
d)	How will claims by non-BSC Parties be validated?
e)	How will claims be paid out by Elexon?

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Progression plan

Event	Date
Present IWA to Panel	9 March 2023
Workgroup meeting 1	5 May 2023
Workgroup meeting 2	W/C 29 May or W/C 5 June
Workgroup meeting 3	W/C 19 June or W/C 26 June
Assessment Procedure Consultation	10 July – 31 July 2023
Workgroup meeting 4	W/C 7 August 2023
Present Assessment Report to Panel	14 September 2023
Report Phase Consultation	20 September – 20 October 2023
Workgroup meeting 5 (if required)	W/C 20 October 2023
Present Draft Modification Report to Panel	9 November 2023
Issue Final Modification Report to Authority	15 November 2023

MEETING CLOSE

ELEXON

THANK YOU

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5 May 2023

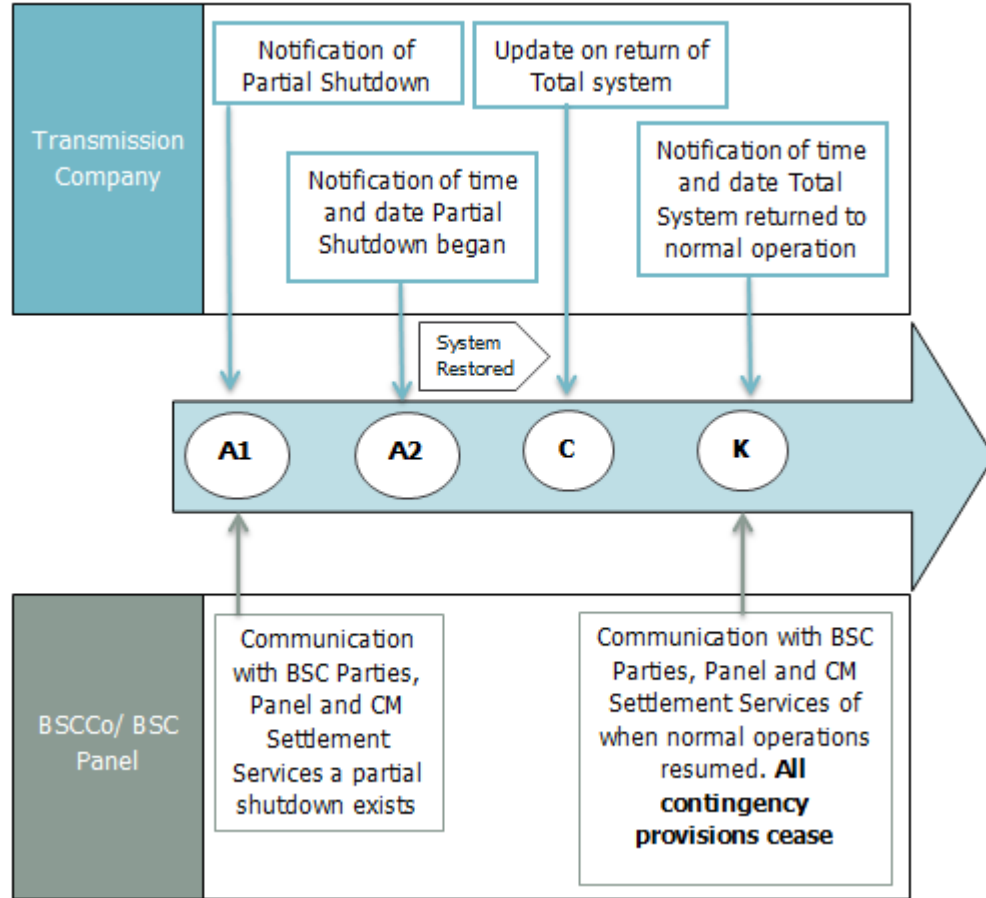
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**Black Start
Process Maps**

Appendices

Appendices

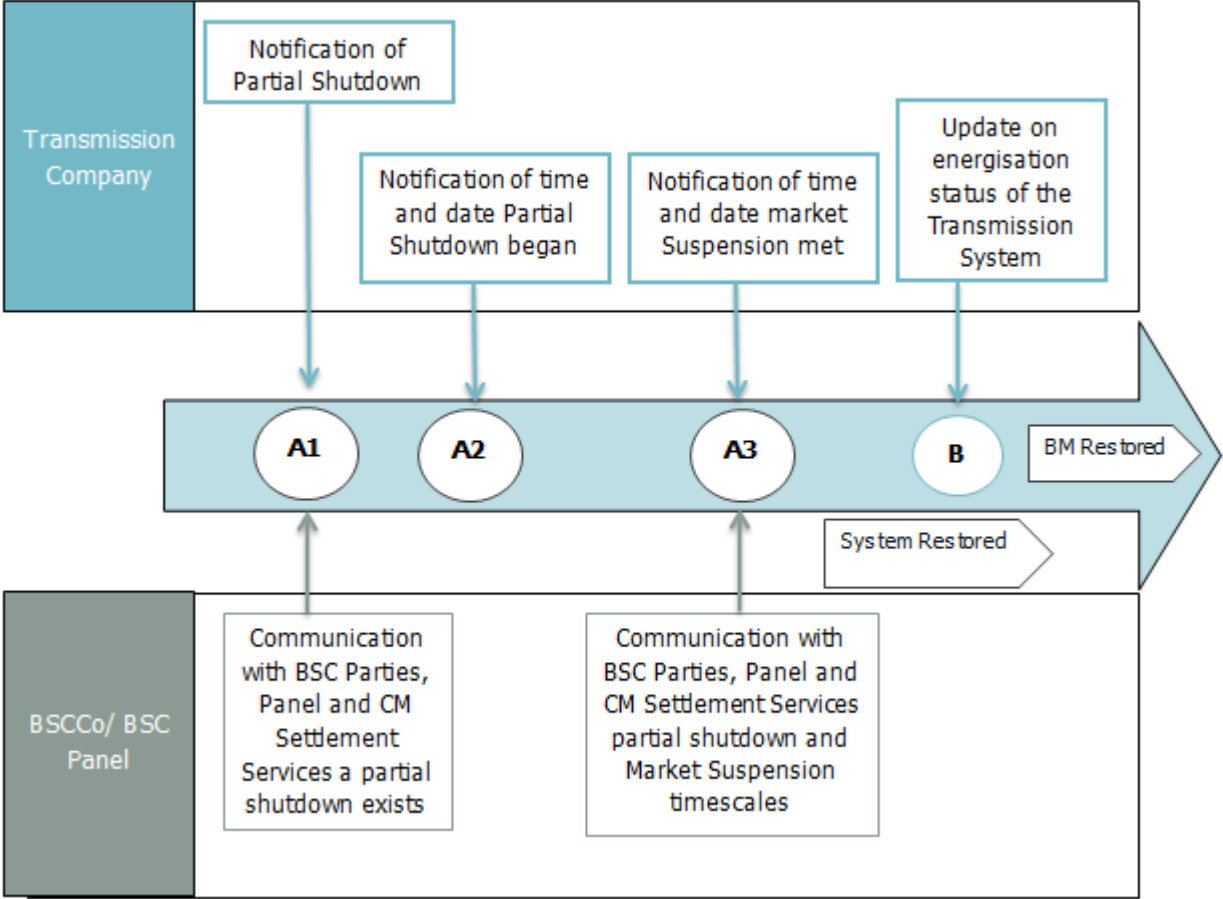
Appendix 1: Partial Shutdown with no Market Suspension (Market Suspension Threshold not met) Process Map



Ref.	Event	From	Notes	Reference
A1	A Total or Partial Shutdown of the Transmission System has occurred	NETSO	May be notified at the same time as A2	BSC Section G 3.1.2 Grid Code OC9.4 BSCP201 3.2.1
A2	Time and Date of Total or Partial Shutdown established	NETSO	May be notified after or at the same time as A1	BSC Section G 3.1.2 BSCP201 3.2.4
C	Update on Return of Total system	NETSO	ELEXON forwards information to BSC Parties, Agents, Panel	BSCP201 3.1.4
K	Normal market operations are in place and Black Start Provisions no longer apply	-	All normal rules apply and BSC Parties can submit Physical Notifications up to Gate Closure. Confirm resumption of normal BSC market operations and end of Black Start period.	BSCP201 3.3.18

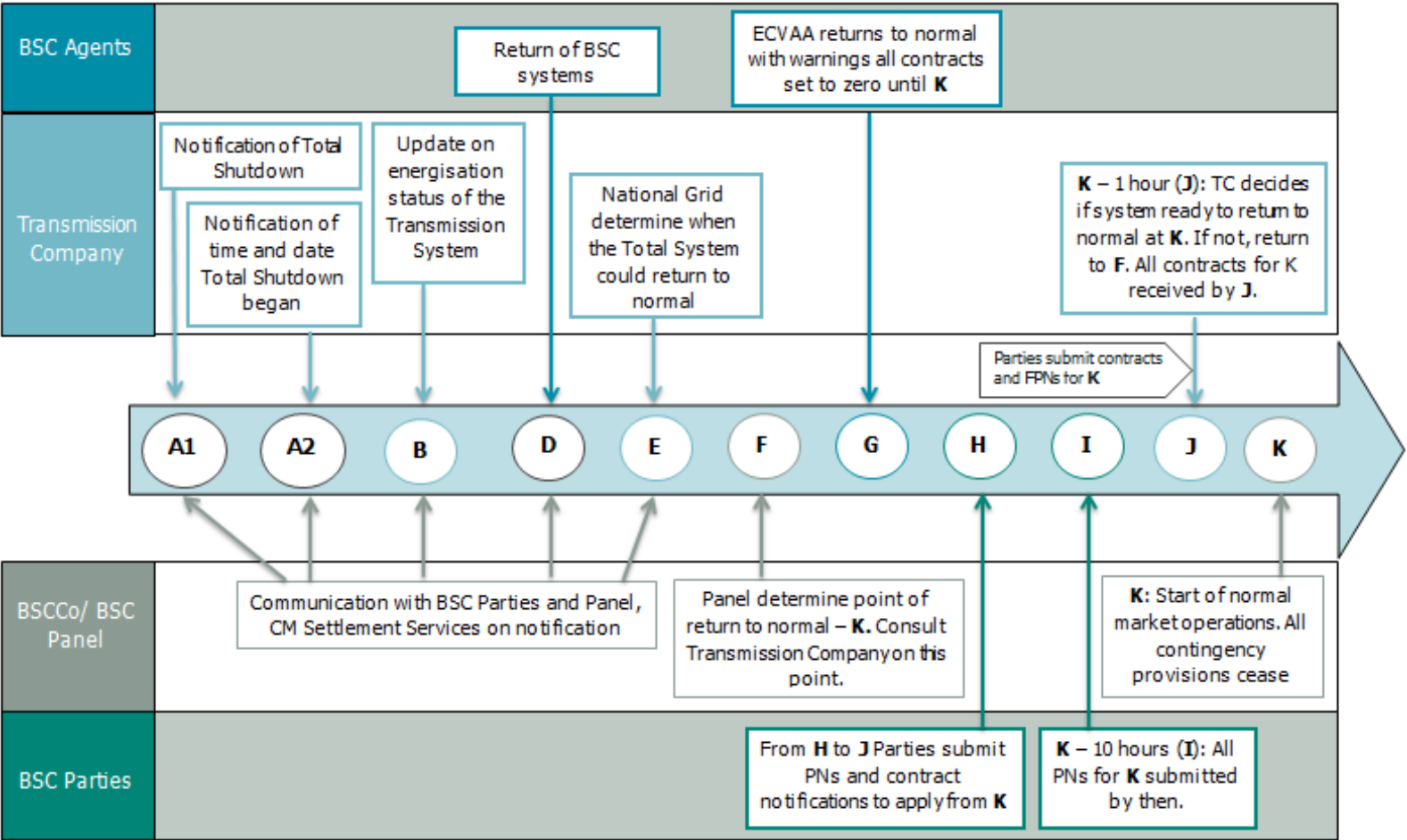
Appendices

Appendix 2: Partial Shutdown with Market Suspension (Market Suspension Threshold met) Process Map



Ref.	Event	From	Notes	Reference
A1	A Total or Partial Shutdown of the Transmission System has occurred	NETSO	May be notified at the same time as A2	BSC Section G 3.1.2 Grid Code OC9.4 BSCP201 3.2.1
A2	Time and Date of Total or Partial Shutdown established	NETSO	May be notified after or at the same time as A1	BSC Section G 3.1.2 BSCP201 3.2.4
A3	Time and Date of Market Suspension Threshold met	NETSO	Only notified in the event of Partial Shutdown.	BSC Section G3.1.6 Grid Code OC9.4 BSCP201 3.2.7
B	Update on operation of the Transmission System	NETSO	ELEXON forwards information to BSC Parties, Agents, Panel	BSCP201 3.1.4

Appendix 3: Full Shutdown (with Market Suspension) Process Map



Appendices

Appendix 4: Full Shutdown and Partial Shutdown (inc. with Market Suspension) Process Map Key

Ref.	Event	From	Notes
A1	A Total or Partial Shutdown of the Transmission System has occurred	NETSO	May be notified at the same time as A2
A2	Time and Date of Total or Partial Shutdown established	NETSO	May be notified after or at the same time as A1
B	Update on operation of the Transmission System	NETSO	ELEXON forwards information to BSC Parties, Agents, Panel
D	BSC Systems have been restored	BPO	
E	National Grid determines when the Total System could return to normal.	NETSO	<p>NETSO will also provide information on any circumstances which may affect the calculation of the single imbalance price. This information is to be used by the S&I team. If none provided, the S&I team should contact the NETSO. The S&I team will pass this information to the Panel when seeking agreement for the Single Imbalance Price methodology.</p> <p>Please note that the process for calculating the single imbalance price starts at this point (method for calculating the Single Imbalance Price detailed in section 8). The market suspension will continue until point K.</p>
F	<p>The Panel Determines the proposed time to start normal market operations, both the Calendar Day and Settlement Period – point K.</p> <p>After consultation, Panel makes the final decision on the date and time to start normal market operations – point K</p>	Panel	<p>This is potentially an iterative step. It can occur after point B and D above.</p> <p>ELEXON will advise the Panel on a proposed date and time (see Actions Checklist).</p> <p>A new date and time may be proposed a) following consultation or b) or if a “no go” decision is made at point J.</p> <p>ELEXON will advise the Panel on the feedback from industry (see Actions Checklist).</p>
G	ECVAA returns to normal operations	ECVAA	<p>No specific trigger for point G which occurs after the Panel has made the final decision on the date and time for resuming market operations.</p> <p>Normal operations mean that Volume Notifications submitted by parties will be processed and forward contract report issued. However, contract positions CEI, AEI, MEI are zero until point K.</p>
H	BSC Parties submit Physical Notifications, Volume Notifications and Bid Offer Data applying from point K onwards.	BSC Parties	No specific trigger for point H, but it occurs after the Panel has made the final decision on the date and time for resuming market operations.
I	10 hours before point K	NETSO	The point at which all Physical Notifications for point K should have been received.
J	1 hour before the return to normal operation, the NETSO decides whether or not it is practical to return to normal market operations	NETSO	Actions and communications will depend on whether this is a 'yes' or a 'no' decision. If 'no' return to point F.
K	Normal market operations are in place and Black Start Provisions no longer apply	-	All normal rules apply and BSC Parties can submit Physical Notifications up to Gate Closure. Confirm resumption of normal BSC market operations and end of Black Start period.

Appendices

Appendix 5: Elexon-BSC Interactions

When a Full Shutdown or a Partial Shutdown occurs, the following process is enacted as detailed in the BSC (note, dependencies or actions expected of the Panel are highlighted):

Ref.	Event	From	Notes
A1	A Total or Partial Shutdown of the Transmission System has occurred	NETSO (National Grid Electricity Transmission System Operator)	May be notified at the same time as A2
A2	Time and Date of Total or Partial Shutdown established	NETSO	May be notified after or at the same time as A1
A3	Time and Date of Market Suspension Threshold met	NETSO	Only notified in the event of Partial Shutdown.
B	Update on operation of the Transmission System	NETSO	Elexon forwards information to BSC Parties, Agents, Panel
D	BSC Systems have been restored	BPO (Business Process Outsourcing – Elexon ownership and accountability)	
E	National Grid determines when the Total System could return to normal.	NETSO	NETSO will also provide information on any circumstances, which may affect the calculation of the single imbalance price. This information is to be used by the S&I (Elexon) team. If none provided, the S&I (Elexon) team should contact the NETSO. The S&I (Elexon) team will pass this information to the Panel when seeking agreement for the Single Imbalance Price methodology. Please note that the process for calculating the single imbalance price starts at this point (method for calculating the Single Imbalance Price detailed in section 8). The market suspension will continue until point K.