

Issue	Revision
1	

# **Black Start Allowed Revenue**

**Produced in accordance with Standard Condition  
C16 of the National Grid Transmission Licence  
and Special Licence Condition 4G.16**

**Effective from**

**1<sup>st</sup> April 2017 to 31<sup>st</sup> March 2018**

## EXECUTIVE SUMMARY

National Grid spent £57,743,277 for the provision of Black Start for year April 1<sup>st</sup> 2017 to March 31<sup>st</sup> 2018.

## BACKGROUND

In the role as National Electricity Transmission System Operator, National Grid Electricity Transmission plc (National Grid) has produced this report in accordance with Special Condition 4G, Part B of its electricity transmission licence. In particular, Special Condition 4G.16 states that the licensee National Grid must make public its annual report in respect of total costs incurred in this relevant year 1<sup>st</sup> April 2017 to 31<sup>st</sup> March 2018.

This Black Start Allowed Revenue Report details, the total costs incurred, how they have been calculated and how they adhere to the approved “Black Start Strategy” and “Black Start Procurement Methodology<sup>1</sup>”.

This Black Start Allowed Revenue Report is made up of the following parts:

- 1) Total Black Start Costs
- 2) Validation of data used to determine the Total Costs
- 3) Compliance with the Methodologies

## 1) TOTAL BLACK START COSTS

The total costs incurred for the provision of Black Start for the year 2017/18 is £57,743,277.99 m. There are a number of areas of spend associated to Black Start, which can be categorised into the following elements.

Breakdown of Costs	
Availability Payments	£35,392,352.16
Capital Expenditure	£1,528,771.40
Feasibility Studies	£724,490.17
Testing	£193,702.38
Warming	£19,903,961.88
<b>Total</b>	<b>£57,743,277.99</b>

**Availability Payments:** These are paid per settlement period to the service provider to maintain capability throughout the year. In the event that a provider’s yearly availability falls below the contracted minimum, it would be subject to a claw back enacted through the ‘availability shortfall payment’ mechanism.

**Capital Expenditure:** New Black Start services are likely to require significant capital investment as outlined in the Procurement Methodology. This is typically agreed at the start of the contract and is either paid upfront before the service commences or is smeared over the duration of the contract. In either case, it would be dependent upon the receipt of valid invoices, though sometimes invoices can

<sup>1</sup> <https://www.nationalgrid.com/uk/electricity/balancing-services/system-security-services/black-start?assessment-process>

be received a number of years after a service commences, in the case where the capital is for ongoing work.

**Feasibility Studies:** Feasibility studies are carried out to identify if potential providers have the capability to provide a Black Start service. National Grid will ensure any costs incurred by service providers have been procured in an economic manner. In the first instance this would be through a competitive tender process. If this is not feasible (e.g. Original Equipment Manufacturer has contractual rights to deliver work), National Grid will expect the service provider to demonstrate why they have awarded the study work to a particular provider. National Grid provides a standard outline for feasibility studies to make it easier to compare the content, and therefore to assess the proposed costs.

**Testing:** As per OC5 of the Grid Code, National Grid must test existing Black Start Providers to prove their capability to Black Start in accordance with their contractual terms and the Grid Code requirements. National Grid will work together with the provider to develop a strategy to test the unit at the most economic and efficient time, informing the market and mitigating any distortion.

**Warming Requirements:** Black Start providers must be able to respond in a specified time period), to be deemed available for Black Start. If service providers of certain technology types have not generated for a period of time the units may not be warm enough to meet that response time. In such circumstances, National Grid will assess the overall availability in the zone, and may instruct a capable unit for warming in order to maintain the minimum service level. This is typically during summer months when demand is lower and contracted stations are on outage or out of merit. Spend on warming may be instructed through the BM, trades, or by forward contracting. We have spent £19,903,961 on warming in 2017/18.

## 2) VALIDATION OF DATA

This will provide an overview of the costs and how they have been calculated to ensure that the reported costs and the integrity of the data are accurate and that National Grid has followed a robust process for validation.

**Availability Payments:** There is a defined process that National Grid follows to determine the monthly payment based on availability declarations received from the provider. The contract data including availability payment per settlement period and if necessary any indexation data is taken from the signed Commercial Services Agreements between National Grid and the service provider and the monthly payment determined.

**Capital Expenditure:** This is paid upon the submission of valid invoices to National Grid and in accordance with the signed sanction papers. As the provider, may incur these costs before recovering them from National Grid, they may be collated and submitted by the provider in tranches throughout the service term. Therefore, National Grid could receive invoices dated for the previous year, which it may not have received until the next financial year. Once received invoices are reviewed and validated against the agreed spend in the service contract, and only then will a Purchase Order be raised for payment.

**Feasibility Studies:** Similarly, to capital expenditure, the feasibility study costs are paid upon the submission of valid invoices in accordance with the signed sanction papers and feasibility study contracts with the service providers.

**Testing:** This is paid either through a negotiated fixed price or through a Bid-offer acceptance and agreed with the service provider. National Grid and the service provider will look at the most cost effective solution for the test.

**Warming Requirements:** This is paid through the following methods.

- 1) Payments made in the Balancing Mechanism (BM) on actions taken to warm Black Start capable plant to ensure we have enough service providers in a state of readiness. These payments are actuals and are carried out in real time on a daily basis.
- 2) Payments made to a provider of a Black Start capable plant as part of a contract to ensure that the plant will be available and running during the relevant year. Some providers have a warming contract within the Commercial Services Agreement to mitigate the risk of not running in the market and therefore not being in a state of readiness.
- 3) Medium to Longer term warming contracts with a provider of Black Start to reduce the cost of trading in advance of taking actions in the BM.

### 3) COMPLIANCE WITH METHODOLOGIES

As the licensee, National Grid must also demonstrate how any new contracts, renewals, warming contracts and feasibility studies in particular comply with the Black Start Strategy and Black Start Procurement Methodology approved by the Authority on the 26<sup>th</sup> July 2017. Many of the existing Black Start contracts were awarded prior to the publication of the methodologies and are therefore out of the scope of this audit; however National Grid followed the principles of the Black Start Strategy and Procurement Methodology.

**Availability Payments:** When determining the need for specific contracts in 2017/18, we assessed the Black Start Strategy and the impact on the restoration times before committing to negotiating a new contract. Once established that there is a need, we assessed the alternative costs in accordance with the procurement assessment approach in the Procurement Methodology. National Grid may consider any or all of the following: the cost of existing services and potential new services; the technical capability, including size, location and reliability; current and future availability and likelihood of warming requirement; the contribution to the restoration time; and current and future operating costs. This may mean some providers are valued more highly, and therefore paid more than an existing service.

National Grid would also look at the alternative options in the area and the time horizons before committing to the contract. We would expect any new providers to require significant capital investment, meaning we need to strike a balance between delivering new contracts to secure our longer-term requirements, and renewing existing contracts with providers who may have a shorter lifespan. We continually review and position ourselves to ensure we can meet Black Start requirements on an enduring basis and therefore actively look to find potential new providers to promote competition for existing providers and mitigate the exposure of future operating costs and will consider the most appropriate mechanism to negotiate a new contract in accordance with the Procurement Methodology.

**Feasibility Studies:** National Grid has produced a standard outline for feasibility studies to make it easier to compare the content, and therefore to assess the proposed costs. In some instances, the specific circumstances of one provider may require more or less study work, and again, this can be assessed proportionately against a standardized baseline. We actively encourage providers to propose more innovative solutions, should they present cost savings, such as allowing the OEMs to draw on their data, modelling or experience of their own equipment in other stations.

We adhere to the principles outlined in the Procurement Methodology by ensuring that as far as possible any costs of these studies have been procured in an economic and efficient manner and, where feasible, the provider is able to tender for the study. We have made cost savings on feasibility studies by ensuring costs are capped when we seek sanction and any provider costs are covered by the provider themselves.

**Warming:** Currently, a large proportion of Black Start providers are large coal and gas generators, which are forecast to decline by 85% from 38GW installed capacity in 2018 to 6GW in 2050. Furthermore, due to the rapid increase in renewable and embedded generation, coal and gas are in merit less, particularly during periods of low demand (e.g. summer months). This leads to decreased running, which can result in a number of these providers no longer being available to provide the service across the whole year, and therefore requiring warming action.

In accordance with the approved Black Start Strategy, we continually assess what Black Start capable plant is available (considering outage plans and commercial factors) to ensure that we meet the requirements of the Black Start readiness policy.

In 2017 we identified a period of five months when we would be short of Black Start capable plant, and later in the year, identified a subsequent requirement following an unforeseen plant breakdown. In both scenarios, after reviewing the options, (including BM actions and trading), it was determined that we would be able to secure these services most economically via forward contracts.

Following the principles in the Procurement Methodology we identified a number of stations that could fulfil this requirement and fostered competition between the respective parties to drive the lowest price. As well as the price, other factors are assessed to determine the best value option, including any secondary system benefits in accordance with the Procurement Methodology, and the frequency and time of day that the plant would need to run to maintain the warmth.

## General Provisions

Generally, National Grid publish information on the Balancing Services we intend to procure and subsequently do procure. In doing so, we seek to provide market participants and other interested parties with sufficient information without compromising the commercial position of any contracting party.

### Disclaimer

All information published or otherwise made available to market participants and other interested parties pursuant to this Black Start Allowed Revenue is done so in good faith. However, no warranty or representation is given by National Grid Electricity Transmission plc., its officers, employees or agents as to the accuracy or completeness of any such information, nor is any warranty or representation given that there are no matters material to any such information not contained or referred to therein. Accordingly, no liability can be accepted for any error, misstatement or omission in respect thereof, save in respect of a misrepresentation made fraud.