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Balancing Principles Statement Report

November 2023



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Introduction

The Balancing Principles Statement ('BPS') sets out, at a high level, the obligations and responsibilities of National Grid Electricity System Operator Limited ('ESO') in respect of the management of supply and demand over the Transmission System and has been written by ESO to be broadly consistent with ESO's Transmission Licence obligation to "operate the Transmission System in an efficient, economic and coordinated manner".

Standard Condition C16, paragraph 5(a) of the Transmission Licence requires ESO to:

"prepare a statement approved by the Authority [Ofgem] setting out (consistently with the Licensee's duty under paragraph 2 and consistently with its other duties under the Act [Electricity Act 1989] and the conditions of its Transmission License) the principles and criteria by which the Licensee will determine, at different times and in different circumstances, which balancing services the Licensee will use to assist in the operation of the Licensee's transmission system (and/or to assist in doing so efficiently and economically), and when the Licensee would resort to measures not involving the use of balancing services."

Further, Special Condition C16, paragraph 5(d) requires that:

"The report prepared pursuant to sub-paragraph (c) shall be accompanied by a statement from an independent auditor of internationally recognised standing appointed by the Licensee that they have carried out an investigation, the scope and objectives of which shall have been established by the Licensee and approved by the Authority, and they shall give their opinion as to the extent to which the Licensee has complied with the statement prepared pursuant to sub-paragraph (a) together with any revision made in accordance with paragraph 8 of this condition."

It is to fulfil Special Condition C16, paragraph 5(d), that ESO requires an independent external audit to be performed; PricewaterhouseCoopers LLP ('PwC') is the designated Balancing Principles auditor. In contrast to previous Balancing Principles audits, the period in which the designated auditors' assurance work relates to was 18 month period ended 31 March 2022.

Scope of the Audit Engagement

Condition C16 of ESO's Transmission Licence defines Balancing Services as:

- Ancillary Services;
- Offers and bids made in the Balancing Mechanism; and
- Other services available to ESO, which serve to assist it in operating the Transmission System in accordance with the Electricity Act 1989 and the Transmission Licence and/or in doing so efficiently and economically.

The BPS sets out the principles, criteria, and processes by which ESO determines, at different times and in different circumstances, which balancing services, ESO will use to assist in the efficient and effective operation of the Transmission System.

The purpose of the Balancing Principles assurance engagement is for the Balancing Principles auditor to form an independent opinion as to whether ESO, in all material respects, has carried out the specified processes as stated in the BPS (version 18.0 and 19.0) in respect of its procurement and use of Balancing Services during the 18 month period ended 31 March 2022.

For the purposes of the assurance engagement, the principles, criteria and processes covering the following activities as outlined in the BPS are considered in-scope and form the reporting criteria (the 'specified processes'):

- The receipt and validation of Settlement Data from market participants;
- The submission of data to market participants during the day-ahead and within-day balancing processes;
- ESO's adherence to internal operating procedures for activities that impact the call-off of Balancing Services during the day-ahead and within day balancing processes; and
- Bid Offer Acceptance in cost order during the day-ahead and within-day balancing processes.

Please note that the following activities as outlined in the BPS are out of scope for the purposes of the Balancing Principles assurance engagement:

- Emergency Instructions and Involuntary Reductions as described in the Code for use in preserving system security in exceptional circumstances;
- operational planning activities undertaken prior to the Day Ahead stage;
- specific requirements relating to actions extending beyond the end of the current BM window ('Beyond the Wall actions');
- engineering decisions taken in the calculation of transmission constraints and response/ reserve holdings;
- engineering decisions made in the call-off of Ancillary Services or acceptance of Bids and Offers in the balancing mechanism;
- the procurement of Balancing Services to provide services to external system operators via System-to-System Services;
- acceptance of arbitrage trades, or trades to reduce flows across Interconnectors, made within the Balancing Mechanism;
- the management and planning of Transmission System outages, including the treatment of BMUs disconnected by Transmission System faults;
- the implementation and operation of the Trans-European Replacement Reserve Exchange market;
- the use of 'other services' as referred to in the definition of Balancing Services in paragraph 4 (c) above; and
- the operation of the GB Transmission System in compliance with the National Electricity Transmission System Security and Quality of Supply Standard (NETS SQSS).

Furthermore, those aspects of the reporting criteria and/or specified processes that involve engineering decisions that ESO make are expressly excluded from the scope. Additionally, it is not the responsibility of the Balancing Principles auditor to:

- confirm that the BPS is consistent with the Transmission Licence and/or any other legislation/statutory obligations;
- confirm that system security has always been maintained; and/or
- review the accuracy of forecast demand as prepared by ESO compared to actual demand.

In interpreting the BPS and the rules, the Balancing Principles auditor will rely on ESO's interpretation for which it is responsible.

Directors' Statement

The Directors of ESO are and shall be responsible for producing the Balancing Principles Statement Report ("BPS Report 2022") that provides a complete, accurate and balanced reflection of ESO's performance in relation to the subject matter information and disclose, with supporting rationale, matters relevant to the intended users of the BPS report 2022. We are also responsible for interpreting the requirements of the National Grid Electricity System Operator Transmission Licence, drafting, updating and owning the Balancing Principles Statement ('BPS') and for complying with the specified processes as stated in the BPS in respect of its procurement and use of Balancing Services during the 18 month period ended 31 March 2022. Our responsibilities include designing, implementing and maintaining systems, processes and internal controls over information relevant to the evaluation or measurement of the subject matter information, which is free from material misstatement, whether due to fraud or error, against the reporting criteria and ensuring those criteria are relevant and appropriate to ESO and the intended users of the BPS report 2022.

For the purposes of the Balancing Principles assurance engagement, the principles, criteria and processes covering the following activities as outlined in the BPS are considered in-scope and form the reporting criteria (the 'specified processes'):

- The receipt and validation of Settlement data from market participants;
- The submission of data to market participants during the day-ahead and within-day balancing processes;
- ESO's adherence to internal operating procedures for activities that impact the call-off of Balancing Services during the day-ahead and within day balancing processes; and
- Bid Offer Acceptance in cost order during the day-ahead and within-day balancing processes.

All other principles, criteria and processes contained within the BPS are considered out-of-scope for the purposes of the assurance engagement.

We confirm to the best of our knowledge and belief that we have:

- established objective reporting criteria (including interpreting the Transmission Licence conditions where we considered necessary and appropriate) within the BPS;
- established and operate the specified processes in accordance the requirements of the BPS;
- designed, implemented and maintained internal controls and processes over information relevant to the specified processes and the BPS;
- presented information, including the reporting criteria, in a manner that provides relevant, complete, reliable, unbiased/neutral, comparable and understandable information; and
- measured and reported on the specified processes and data based on the reporting criteria.

We confirm our compliance with the BPS for the 18 month period ended 31 March 2022 as set out in:

- BPS Version 18.0, dated 1 April 2020, for the period 1 October 2020 to 31 March 2021; and
- BPS Version 19.0, dated 1 April 2021, for the period 1 April 2021 to 31 March 2022.

For clarity, links to both documents are included in Appendix B.



Fintan Slye

For and on behalf of the Board of Directors of National Grid Electricity System Operator Limited

17 November 2023



Independent Assurance Report

Balancing Principles auditor's independent assurance report to the Directors of National Grid Electricity System Operator Limited for the 18 month period ended 31 March 2022

We have performed an independent reasonable assurance engagement to assess whether National Grid Electricity System Operator Limited ("ESO") has in its procurement and use of Balancing Services and in all material respects, carried out the specified processes in the Balancing Principles Statement ("BPS"), as set out below and referred to in the Director's Statement, for the 18 month period ended 31 March 2022.

Our independent assurance report is produced in accordance with the Framework Services Agreement dated 1 December 2017 and Call-Off Contract Number: ESO-20-07-01 dated 1 October 2020, agreed between ourselves and ESO, as amended by Change Request ESO-22-03-23, dated 17 March 2022 which together form the "agreement".

Special Condition C16, paragraph 5(d) of the Transmission Licence requires that the activities set out below should be subject to the audit by the BPS auditor and accordingly they form the subject matter information of the engagement. For the purposes of our assurance engagement, the principles, criteria and processes covering the following activities outlined in the BPS are considered in-scope and form the reporting criteria (the "specified processes"):

- The receipt and validation of Settlement data from market participants;
- The submission of data to market participants during the day-ahead and within-day balancing processes;
- ESO's adherence to internal operating procedures for activities that impact the call-off of Balancing Services during the day-ahead and within day balancing processes; and
- Bid Offer Acceptance in cost order during the day-ahead and within-day balancing processes.

All other rules, principles, criteria, processes, and controls described in the BPS or required by the Transmission Licence are excluded from the scope of our independent assurance report.

In addition, for the purposes of our assurance engagement we have considered the following versions of the BPS:

- BPS Version 18.0, dated 1 April 2020, for the period 1 October 2020 to 31 March 2021; and
- BPS Version 19.0, dated 1 April 2021, for the period 1 April 2021 to 31 March 2022.

Unless the context otherwise requires, words and expressions defined in the BPS versions 18.0 and 19.0, which are documents prepared by ESO pursuant to Paragraph 5(d) of Special Condition C16 of its Transmission Licence, have the same meaning in this independent assurance report.

Inherent limitations

Because of their nature, ESO carrying out the specified processes may not prevent or detect and correct all errors or omissions in the procurement and use of Balancing Services. Furthermore, our opinion is based on historical information and the projection to future periods of any evaluation or conclusions about ESO's application of the specified processes in respect of its procurement and use of Balancing Services would be inappropriate.

Responsibilities of the Directors

As explained in the Directors' Statement on page 3 of the Report, the Directors of ESO are responsible for:

- preparing the BPS and complying with the specified processes as stated therein in respect of its procurement and use of Balancing Services, including establishing suitable reporting criteria (including

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interpretation of the National Grid Electricity System Operator Transmission Licence conditions where they consider necessary and appropriate). This includes designing, implementing and maintaining systems, processes and internal controls over information relevant to the evaluation or measurement of the subject matter information, which is free from material misstatement, whether due to fraud or error, against the reporting criteria;

- ensuring that those criteria are relevant and appropriate to ESO and the intended users of the Balancing Principles Statement Report (“BPS Report 2022”);
- appointing an independent auditor to review whether it has carried out the specified processes set out in the BPS, as required by Special Condition C16 of the Transmission Licence, paragraph 5(d); and
- producing the BPS Report 2022 (other than the independent assurance report and Appendix A – Assurance Approach sections), including underlying information and a statement of Directors’ responsibility, which provides a complete, accurate and balanced reflection of ESO’s performance in relation to the subject matter information and discloses, with supporting rationale, matters relevant to the intended users of the BPS Report 2022.

Our responsibilities

We are responsible for:

- planning and performing the engagement to obtain reasonable assurance as to whether ESO, has, in its procurement and use of Balancing Services and, in all material respects, carried out the specified processes in the BPS for the 18 month period ended 31 March 2022 whether due to fraud or error;
- forming an independent opinion, based on the evidence we have obtained; and
- reporting our opinion to the Directors of ESO.

Professional standards applied

We have performed our reasonable assurance engagement in accordance with the requirements of the International Standard on Assurance Engagements 3000 (Revised), ‘Assurance engagements other than Audits or Reviews of Historical Financial Information’ issued by the International Auditing and Assurance Standards Board.

Our independence and quality control

We have complied with the Institute of Chartered Accountants in England and Wales Code of Ethics, which includes independence and other requirements founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour, that are at least as demanding as the applicable provisions of the International Ethics Standards Board for Accountants International Code of Ethics for Professional Accountants.

We apply the International Standard on Quality Management (UK) 1 and accordingly maintain a comprehensive system of quality management including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Summary of our work performed as the basis for our assurance opinion

We have planned and performed our work in accordance with our Assurance Approach which is included as Appendix A of the ‘BPS Report 2022’. Our work included an examination, on a test basis, of both the Balancing Services procured and used by ESO, and of relevant estimates and judgements made by ESO in procuring and using Balancing Services.

We performed a reasonable assurance engagement. A reasonable assurance engagement involves performing procedures to obtain evidence about the subject matter information. The nature, timing and extent of procedures selected depend on professional judgement, including the assessment of risks of material misstatement,



whether due to fraud or error, in the subject matter information. In making those risk assessments, we considered internal control relevant to the subject matter information.

In reaching our opinion, we assessed the risk of a material breach of the way ESO has procured and used the Balancing Services in relation to the specified processes, whether caused by fraud or error.

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Furthermore, those aspects of the specified processes that involved engineering decisions that ESO made are excluded from the scope. Additionally, it is not the responsibility of the BPS auditor to:

- confirm that the BPS is consistent with the Transmission Licence and/or any other legislation/statutory obligations;
- confirm that system security has always been maintained; nor
- review the accuracy of forecast demand as prepared by ESO compared to actual demand.

In interpreting the BPS and the rules, we relied on ESO's interpretation for which it is responsible.

Materiality

The assessment of what is material and therefore what issues, if any, warrant inclusion in the independent assurance report, is a matter of professional judgement. However, in applying this professional judgement, we judged a failure on ESO's part to comply with the BPS as being material if, in our opinion, a reasonable professional person, considering ESO's adherence to the BPS in the round, would form a different view as to whether ESO had complied with the BPS dependent as to whether or not the matter was disclosed to them. In applying our judgement, we also considered the following factors:

- a. the number of persons and entities affected by the specified processes;
- b. the effect of an adjustment which affects (in the past or the current audit period) whether ESO has carried out the specified processes, or is likely to affect the future;
- c. whether a misstatement is the result of an intentional or unintentional act;
- d. the extent to which the actual outcome would have been different had the specified processes in respect of the procurement and use of Balancing Services as set forth in the BPS had been carried out; and
- e. the aggregate impact of any failure to comply with the BPS.

Basis for our opinion

Based on the procedures performed and evidence obtained, in our opinion, in all material respects, ESO has carried out the specified processes as set forth in the Balancing Principles Statement, in respect of its procurement and use of Balancing Services for the 18 month period ended 31 March 2022.

Other information

The information included in the 'Introduction' section and Appendix B is presented by ESO to provide additional information and is not part of the description of specified processes subject to the scope of our assurance engagement.

Such information has not been subjected to any assurance procedures performed in the examination of the ESO's application of the specified processes in respect of its procurement and use of Balancing Services. Accordingly, we express no opinion on it.



Use and distribution of this report

Our report is intended solely for the benefit of the Directors of ESO in connection with ESO's reporting obligations under Condition 5(d) of the National Grid Electricity System Operator Transmission Licence and in accordance with the agreement.

Our report must not be made available to any other party save as set out in the agreement between us. To the fullest extent permitted by law we do not accept or assume any liability or responsibility for any other purpose or to any other party for our assurance work or our report save where terms are expressly agreed in writing.

Where the 'BPS Report 2022' (including our independent assurance report) is published on a website by ESO, it shall be subject to the conditions of access specified in the agreement between us and ESO. The maintenance and integrity of that website is the responsibility of ESO; the work carried out by us does not involve consideration of these matters and, accordingly, we accept no responsibility for any changes that may have occurred to the 'BPS Report 2022' or our independent assurance report or the BPS when presented on that website.

PricewaterhouseCoopers LLP

PricewaterhouseCoopers LLP
Chartered Accountants
Watford
17 November 2023



Appendix A - Assurance Approach

We designed our audit approach and testing to provide reasonable assurance that the specified processes had been carried out in accordance with the BPS, which consisted of the following, in respect of ESO's procurement and use of Balancing Services:

- a) obtained an understanding of the computer systems and/or internal operating procedures that ESO has established;
- b) tested on a sample basis, to the extent we considered necessary, the ongoing operation of the IT systems and/or internal operating procedures relevant to the specified processes for the period 1 October 2020 to 31 March 2022; and
- c) tested on a sample basis, to the extent that we considered necessary, the data processed by the relevant IT systems and/or internal operating procedures for the period 1 October 2020 to 31 March 2022.

In performing our assurance engagement, we assessed the risk of a material non-compliance with the specified processes, with areas of the BPS within the scope of our assurance engagement. In areas where we identified specific risks, or where weaknesses were identified in the operation of certain internal processes or controls, these compliance tests were supplemented by substantive tests of detail of the relevant underlying data.

We selected several half-hour periods within Settlement Days for testing across the reporting period. The selection of the Settlement Days (and subsequently half-hour periods within) reviewed was based solely on our assessment of risk and application of our sampling methodology. Our samples included a mixture of "normal" days and "other" days (e.g., a day where an outage has occurred), in order to ensure that we were able to test all relevant in-scope areas of the BPS which we are required to assure.

Where it was more efficient for us to do so, we used technology enabled audit tools and ran tests for the entire selected sample day. These methods involved the use of data interrogation tools to perform automated tasks such as matching two or more types of records, identifying patterns and looking for anomalies.

Where we did not find sufficient samples of events/activities on the selected sample days we selected data from additional days to ensure that the sample sizes selected continued in line with our sampling methodology.

Through-out the period of execution of our work we monitored developments that had a potential impact on the call-off of Balancing Services, and where we identified a potential risk in respect of our assurance engagement, we assessed the risk and determined an appropriate response.

The work that we carried out can be summarised as follows:

1) The receipt and validation of Settlement data from market participants

- Compared the Settlement Data (Physical Notifications, Bid/Offer Data and Maximum Export Limit/ Maximum Import Limit Data) sent by the BMUs against the information processed by the ESO systems and notified to the Balancing Mechanism Reporting Agent (BMRA);
- Re-performed controls that confirm the completeness and validity of the receipt of Settlement Data (by reviewing acknowledgement, acceptance and rejection files returned to the BMU);
- Confirmed the appropriate application of re-declarations, and additional information were submitted via other means (e.g., by telephone); and
- Confirm the relevant application of default data where required, through sample testing.

2) The submission of data to market participants during the day-ahead and within-day balancing processes

- Compared the Settlement Data in the ESO systems with the information notified to the BMRA;
- Confirmed the appropriate submission of demand forecast data to the BMRA within the required timescales, through sample testing; and
- Tested controls over changes or additions to BMU data to the ESO systems.



3) ESO's adherence to internal operating procedures for activities that impact the call-off of Balancing Services during the day-ahead and within day balancing processes

- Sample tested to check that the System Operating Plan reflects the transmission constraints and response/reserve holdings during the day-ahead and within day balancing processes and that it was prepared in accordance with documented procedures; and
- Confirmed the completeness and accuracy of the list of BM Start Up and STOR contracts, through sample testing.

4) Bid Offer Acceptance in cost order during the day-ahead and within-day balancing processes

- Inspected Bids/Offer for the sample Settlement Days to confirm whether those accepted represented the least cost available. Where this was not the case, we reviewed any explanation provided by ESO control engineers and substantiated this explanation against the available information;
- Reviewed explanations provided by ESO for instances where the least cost Bid/Offer was not accepted for reasonableness. Please note, we are not, by profession, engineers and our challenge on engineering decisions was therefore limited as to whether the explanation seemed to us reasonable; and
- Considered whether there has been any obvious bias against BMU participants.

5) General IT Controls Testing

Most transactions involving the input and output of data are sent and processed electronically. The integrity of these transactions may therefore be impacted by the robustness of the IT control environment. Consequently, we obtained an understanding of the IT general controls through testing which covered the following domains of the SPICE and SORT applications:

- Program changes;
- Computer Operations; and
- Access to programs and data.

This testing was not designed to provide us with sufficient appropriate evidence on which to form an assurance conclusion over the design and operation of controls and accordingly we do not express such a conclusion.

Appendix B - Balancing Principles Statement

Below are links to both versions of the Balancing Principles Statement relevant to the 18 month period ended 31 March 2022:

[Version 18.0](#), dated 1 April 2020, covering the period 1 October 2020 to 31 March 2021; and

[Version 19.0](#), dated 1 April 2021, covering the period 1 April 2021 to 31 March 2022.