

PUBLIC

# Risk Evaluation Methodology 2018/19

Performance Assurance Procedures

Melinda Anderson  
PAB192/12  
27 Jan 2017

# RISK EVALUATION METHODOLOGY 2018/19

---

## CONTENTS

<b>OVERVIEW</b> .....	<b>4</b>
<b>INTRODUCTION</b> .....	<b>4</b>
Underpinning Principles of the Risk Evaluation Methodology .....	4
Definition of Settlement Risk .....	4
Scope of the Risk Evaluation Methodology .....	5
<b>IDENTIFICATION OF SETTLEMENT RISKS</b> .....	<b>5</b>
Settlement Risk Identification and Closure .....	5
Settlement Risk Categories .....	6
Sources of Information .....	6
Documentation of Settlement Risks .....	7
<b>EVALUATION OF SETTLEMENT RISKS</b> .....	<b>7</b>
Gross Significance .....	7
Settlement Risk Probability .....	8
Settlement Risk Impact .....	9
Settlement Risk Control .....	12
Controls Type & Mechanism .....	12
<b>NET SIGNIFICANCE</b> .....	<b>14</b>
Assessing Net Significance .....	14
Risk Evaluation Key Assumptions .....	15
<b>PERFORMANCE ASSURANCE TECHNIQUES</b> .....	<b>15</b>
Assessing Mitigating Performance Assurance Techniques .....	16
Mandatory Performance Assurance Techniques .....	16
Standard Performance Assurance Techniques .....	16
Non-Standard Performance Assurance Techniques .....	16
<b>ASSESSING MATERIALITY OF SETTLEMENT RISKS IN RELATION TO PERFORMANCE ASSURANCE PARTIES</b> .....	<b>18</b>
Monitoring Settlement Risks .....	18
Business Unit Settlement Risk Rating .....	18
Settlement Risk Report .....	18
<b>REFERENCES</b> .....	<b>19</b>
<b>FURTHER INFORMATION</b> .....	<b>19</b>

# RISK EVALUATION METHODOLOGY 2018/19

---

## Intellectual Property Rights, Copyright and Disclaimer

The copyright and other intellectual property rights in this document are vested in ELEXON or appear with the consent of the copyright owner. These materials are made available for you for the purposes of your participation in the electricity industry. If you have an interest in the electricity industry, you may view, download, copy, distribute, modify, transmit, publish, sell or create derivative works (in whatever format) from this document or in other cases use for personal academic or other non-commercial purposes. All copyright and other proprietary notices contained in the document must be retained on any copy you make.

No representation, warranty or guarantee is made that the information in this document is accurate or complete. While care is taken in the collection and provision of this information, ELEXON Limited shall not be liable for any errors, omissions, misstatements or mistakes in any information or damages resulting from the use of this information or action taken in reliance on it.

# RISK EVALUATION METHODOLOGY 2018/19

---

## OVERVIEW

---

The Balancing and Settlement Code (BSC) requires the Performance Assurance Board (PAB)<sup>1</sup> to establish and maintain a methodology that it will use to assess Settlement Risks, determine their significance in relation to Settlement and evaluate Performance Assurance Parties (PAPs) performance against these risks. We call this methodology the Risk Evaluation Methodology (REM).

The PAB are required to review and update the REM on an annual basis by consulting with and considering comments received from PAPs and other interested Parties. Following this process the PAB approve and adopt the REM.

This is the REM for the Performance Assurance Operating Period (PAOP)<sup>2</sup> 11 – 1 April 2018 to 31 March 2019.

### Target Audience

All BSC Parties, BSC Agents and Performance Assurance Parties as defined within the BSC.

## INTRODUCTION

---

### Underpinning Principles of the Risk Evaluation Methodology

This Risk Evaluation Methodology (REM) sets out the requirements that the Performance Assurance Board (PAB) will follow to:

- Identify Settlement Risks;
- Evaluate identified Settlement Risks; and
- Assess the materiality of identified Settlement Risks in relation to Performance Assurance Parties (PAPs).

The PAB designed the REM to ensure fairness and consistency in the application of Performance Assurance Techniques (PATs) to PAPs. The REM is carried out as prescribed in the Balancing and Settlement Code (BSC) Section Z and in accordance with the [Annual Performance Assurance Timetable](#) (APAT).

### Definition of Settlement Risk

Section Z, paragraph 5.1.1 (a) of the BSC defines a Settlement Risk as:

“... a risk of any failure or error in a step or process required under the Code (including in each case a risk which has materialised as an actual failure or an error) for the purpose of effecting Settlement or otherwise required in connection with Settlement in accordance with the provisions of the Code”.

---

<sup>1</sup> The Performance Assurance Board is appointed by, and reports to the BSC Panel. The PAB conducts and administers activities to provide assurance that all participants in the BSC arrangements are suitably qualified and the relevant standards maintained.

<sup>2</sup> The Performance Assurance Operating Period is the twelve month period of time over which assurance processes are reported on.

# RISK EVALUATION METHODOLOGY 2018/19

---

The Code further stipulates in 5.1.1 (b) that:

“references to the significance of a Settlement Risk are to be construed in terms of both the probability of the failure or error (referred to in paragraph 5.1.1(a)) and its impact on Settlement”.

## Scope of the Risk Evaluation Methodology

The scope of the REM is the activities the PAB and the Performance Assurance Administrator (PAA)<sup>3</sup> will carry out to deliver the performance assurance procedures for Supplier Volume Allocation (SVA) and Central Volume Allocation (CVA) risks.

### **The distinction between SVA and CVA risks with regards to delivering the Performance Assurance Procedures**

SVA Settlement Risks are subject to a full assessment of probability and impact in order to determine the overall significance of the risk. The PAB will deploy PATs according to the significance of SVA Settlement Risks.

The BSC, Section Z 5.1.3, deems that CVA Settlement Risks are all significant in terms of both probability of failure and impact on Settlement. As a matter of course, we give these risks the highest probability and impact rating (5) and we do not subject these ratings to changes year on year.

## IDENTIFICATION OF SETTLEMENT RISKS

---

### Settlement Risk Identification and Closure

We use the current Risk Evaluation Register (RER)<sup>4</sup> as a baseline to review:

- Net significance of Settlement Risks;
- Settlement Risks description and assumptions; and
- Closure and/or addition of Settlement Risks.

New risks may be identified from changes to processes, for example Modifications, Performance Assurance Board (PAB) strategy work streams and/or via Performance Assurance Parties. ELEXON will validate these to ensure that they are Settlement Risks as defined in the Balancing and Settlement Code (Section Z 5.1.1).

As risks are identified or revised through either annual review or within-period revisions, the PAB:

- Validates the risk to ensure that it is a Settlement Risk;
- Categorises the Settlement Risk using the categories defined below; and
- Evaluates the Settlement Risk using the criteria specified in this document.

We record any newly identified Settlement Risk in the RER. We disregard risks that are not Settlement related (but may note and record such risks elsewhere if it is relevant to ELEXON or the PAB).

---

<sup>3</sup> ELEXON, acting on the behalf of the Performance Assurance Board.

<sup>4</sup> The Risk Evaluation Register (RER) sets out the Settlement Risks identified and evaluated by the Performance Assurance Board in accordance with the Risk Evaluation Methodology. The RER is comprised of a word document setting out the review process and outcome and an excel spreadsheet setting out the risks and their significance.

# RISK EVALUATION METHODOLOGY 2018/19

---

## Settlement Risk Categories

The PAB has identified nine categories of Settlement Risks. Each category relates to areas of the Settlement process (rather than participant specific activities). These categories facilitate the process of risk analysis and aid assessment of Settlement Risks. Each of the risks in the RER are aligned with a specific category (set out below). This is a non-exhaustive list which the PAB may add to or refine as risks are identified.

- Meter reading acquisition;
- Derivation of energy volumes;
- Allocation of energy volumes to Half Hourly (HH) periods;
- Allocation of HH energy volumes to Trading Parties;
- Correction of HH energy volumes between Trading Parties;
- Derivation of energy imbalance volumes;
- Derivation of energy imbalance cash flows;
- Derivation of energy imbalance prices;
- Allocation of Trading Charges to Trading Parties (and Collection); and
- Miscellaneous.

## Sources of Information

The main sources of information the PAB use to review Settlement Risks is set out below. This is a non-exhaustive list which the PAB may add to or refine as risks are identified:

- New and closed Balancing and Settlement Code audit issues during the previous and current Performance Assurance Operating Period (PAOP);
- The results and outcomes of the application of the Performance Assurance Techniques during the current PAOP;
- Panel and Panel Committee papers presented during the current PAOP;
- Change Proposals (CPs) and Modifications (both approved and implemented) during the current PAOP;
- Outcome of issues and standing issues in the current PAOP;
- Outcome from PAB strategy work streams;
- Potential Settlement Risks that have been highlighted by industry and made available to the Performance Assurance Agent; and
- Feedback from discussion with Performance Assurance Parties on Settlement Risks and their net significance.

# RISK EVALUATION METHODOLOGY 2018/19

## Documentation of Settlement Risks

The PAB document each Settlement Risk using the following format:

“The risk that **[Event]** resulting in **[Result]**”; where:

- **[Event]** represents the event that would cause the Settlement Risk to materialise; and
- **[Result]** represents the result that is triggered by the event.

For example:

SR0072: The risk that **Non Half Hourly Data Collectors (NHHDCs) process incorrect Meter readings**, resulting in **erroneous data being entered into Settlement**.

## EVALUATION OF SETTLEMENT RISKS

The Performance Assurance Board (PAB) evaluates and defines each Settlement Risk in terms of the following attributes:

- Gross Settlement Risk significance;
- The controls that are in place, and the strength of those controls; and
- Net Settlement Risk significance.

### Gross Significance

The PAB determine the gross significance of a Settlement Risk by considering the probability of a risk occurring and the impact that a risk would have on Settlement if no controls were applied. Gross Settlement Risk represents the ‘worst case’ scenario for each Settlement Risk.

Once the PAB agrees the probability and impact ratings for each Settlement Risk<sup>5</sup>, it then calculates the gross significance of the risk by multiplying the probability rating by the impact rating (see Figure 1).

Example for Calculating the Gross Significance
<p><b>SR0072</b> The risk that Non Half Hourly Data Collectors (NHHDCs) process incorrect Meter readings, resulting in erroneous data being entered into Settlement.</p> <p>The gross significance will be:</p> $5(\text{Probability}) \times 4(\text{Impact}) = 20$

Figure 1: Calculating gross significance

<sup>5</sup> Based on the criteria explained in this section.

# RISK EVALUATION METHODOLOGY 2018/19

The PAB records the gross significance value for each Settlement Risk in the Risk Evaluation Register. Gross probability and impact offer a method to measure the relative importance of Settlement Risks and facilitates a comparison of other Settlement Risks relative to each other. It should not be interpreted as the absolute magnitude of each Settlement Risk.

## Settlement Risk Probability

Settlement Risk probability is the likelihood of a Settlement Risk occurring and is scored using a numeric scale between 1 and 5, where 1 is the least likely and 5 the most likely (see Table 1). In the case of the risk-based Performance Assurance Framework, the PAB define Settlement Risk probability as the chance of a Settlement Risk occurring during a single Performance Assurance Operating Period (PAOP) e.g. where evidence suggests few instances of a risk would occur in a single PAOP the PAB would bestow a probability rating of 1, whereas where evidence shows many instances of a risk occurring in a single PAOP, the PAB would bestow a probability rating of 5. All CVA Settlement Risks are deemed to be significant and therefore in terms of probability they are always scored as a 5.

Probability Rating	Description
5	It is highly likely that the Settlement Risk will occur during a single PAOP.
4	It is likely that the Settlement Risk will occur during a single PAOP.
3	Approximately, the Settlement Risk is as likely to occur as not occur during a single PAOP.
2	It is unlikely that the Settlement Risk will occur during a single PAOP.
1	It is highly unlikely that the Settlement Risk will occur during a single PAOP.

Table 1: Probability ratings for Settlement Risks

## Guidance for Assessing the Probability of Settlement Risks

The PAB takes into account various factors when assessing Settlement Risk probability, including (but not limited to):

- The opportunity for failures to occur – the greater the volume and frequency of process events which contribute to the risk, the greater the opportunity for an error to arise;
- The complexity of the process(es) which might contribute to the risk – a more complex process might be more subject to errors than a simple process;
- The level of manual intervention in the process(es) – a significant level of manual intervention within a process increases the likelihood of errors arising within that process;
- The incentives surrounding the process(es) – where adverse incentives exist, it might be more likely that a process is not completed correctly, or at all; and
- Consideration of the performance history of the process(es) that contributes to the Settlement Risk, e.g. Performance Assurance Reporting and Monitoring System (PARMS) serial data and the prevalence of associated Balancing and Settlement Code Audit issues.

# RISK EVALUATION METHODOLOGY 2018/19

Figure 2 provides an example of how to assess the probability of a Settlement Risk occurring.

**Example: Assessing the Probability**

**SR0072:** The risk that Non Half Hourly Data Collectors (NHHDCs) process incorrect Meter readings, resulting in erroneous data being entered into Settlement. We reviewed the data relating to this Settlement Risk:

- Opportunity for failures: Many (over 30m<sup>6</sup> NHH Metering Systems that are routinely read);
- Manual intervention: Retrieval of Meter readings is a manual operation in NHHDC service; and
- Performance history: The erroneous Estimated Annual Consumption/Annualised Advance (EAC/AA) issue has been a prevalent Balancing and Settlement Code Audit issue since 2001.

Based on the above and Table 1, we assigned a **probability rating of 5**

Figure 2: Assessing the probability for Settlement Risks

## Settlement Risk Impact

Settlement Risk impact represents how severe the impact of the Settlement Risk would be if it occurred. We measure the impact rating by the extent to which it would have an impact on the Supplier Volume Allocation (SVA) Objectives. The PAB has two objectives in the context of SVA; BSC Section Z 5.1.4 states that the PAB:

"...shall have regard to the following (so far as consistent with the provisions of the Code) save where to do so would, in the opinion of the Performance Assurance Board or Panel as applicable, substantially prejudice the interests of all Performance Assurance Parties collectively or a class of Performance Assurance Parties collectively:

- (i) the efficient, equitable and accurate allocation of energy between Suppliers resulting from the aggregated consumption of Metering Systems for which each Supplier is responsible; and
- (ii) the efficient, accurate and co-ordinated transfer of Metering Systems data by Performance Assurance Parties between Suppliers and Supplier Agents".

The PAB score the Settlement Risk impact using a numeric scale between 1 and 5, where 1 is the least severe and 5 the most severe. Further details of the scale are in Table 2.

The BSC deems that all Central Volume Allocation Settlement Risks are significant in terms of impact and therefore the PAB always score them an impact rating of 5.

---

<sup>6</sup> As of 31 December 2015, Supplier Meter Registration Service snapshot.

# RISK EVALUATION METHODOLOGY 2018/19

Impact Rating	Description
5	The Settlement Risk has the potential to threaten the Balancing Mechanism and industry Settlement procedures as a whole; causing severe problems for customers, industry, the System Operator and/or ELEXON. Extreme Settlement Risks would have significant financial and/or political consequences on Performance Assurance Parties (PAPs).
4	The Settlement Risk has the potential to impact one or more Grid Supply Point (GSP) Groups and would have a significant impact on the business plans of multiple PAPs.
3	The Settlement Risk could have an impact on a particular area of Settlement and/or the business plans of one or more PAPs.
2	The impact of the Settlement Risk is not severe enough to pose a threat to PAPs' businesses, but is significant enough for the industry to consider addressing via corrective measures.
1	The Settlement Risk is not severe enough to pose a threat to PAPs' businesses and could be dealt with using normal business procedures; or the cost and effort required to address the Settlement Risk outweighs the benefit.

Table 2: Impact rating for Settlement Risks

## Guidance on Assessing the Impact for Settlement Risk

When assessing the impact of a Settlement Risk, the PAB initially consider the result identified in the risk description and determine the extent to which the result falls into one of the result types described in Table 3 below. The PAB/ELEXON uses the guidelines in this table when assessing the impact of a Settlement Risk.

The PAB moderate Settlement Risks using any additional observed evidence available, particularly any associated Balancing and Settlement Code Audit issues or information from materiality calculations linked to the risk.

Figure 3 shows an example of how the PAB assess the impact for Settlement Risk 0072.

Example for Assessing the Impact
<p><b>SR0072:</b> The risk that Non Half Hourly Data Collectors (NHHDCs) process incorrect Meter readings, resulting in erroneous data being entered into Settlement.</p> <p>While performing an assessment of the impact of this risk, the PAB looked at the overall error in relation to the NHH annual take (pre-Final Reconciliation Run error/NHH). Taking this and the rating in the guidance on Settlement Risks impacts in Table 3 into consideration; the PAB assigned an <b>impact of 4</b> for this risk.</p>

Figure 3: Assessing Settlement Risk impact

## RISK EVALUATION METHODOLOGY 2018/19

Result Type (as identified in Risk Description)	Initial Range of Impact Rating	Rationale	
<b>Old or default data will be applied and used</b>	1 to 2	<p>The Settlement Risk is not severe enough to pose a threat to Performance Assurance Parties' (PAPs') businesses and could be dealt with using normal business procedures or the cost and effort required to address the Settlement Risk outweighs the benefit.</p> <p><b>Or</b></p> <p>The impact of the Settlement Risk is not severe enough to pose a threat to PAPs' businesses, but is significant enough for the industry to consider addressing by corrective measures.</p>	<p>Old or default data might not be the best representation of reality but might provide the best approximation for a period of time. In some cases the use of old or default data in relation to Half Hourly (HH) Metering Systems might be considered to be less satisfactory than for the Non Half Hourly (NHH) equivalent. This is because HH metered consumption patterns might be more volatile than NHH consumption and, generally, any estimations made are based on smaller sample sizes.</p>
<b>Data is missing or unavailable for use</b>	2 to 3	<p>The impact of the Settlement Risk is not severe enough to pose a threat to PAPs' businesses, but is significant enough for the industry to consider addressing via corrective measures.</p> <p><b>Or</b></p> <p>The Settlement Risk could have an impact on a particular area of Settlement and/or the business plans of one or more PAPs.</p>	<p>The unavailability of data is likely to not only have a greater impact than use of old data but is also likely to require greater efforts to resolve. Where data is missing the impact is considered to be constrained by the magnitude/nature of the missing data.</p>
<b>Erroneous data will be applied and used</b>	3 to 4	<p>The Settlement Risk could have an impact on a particular area of Settlement and/or the business plans of one or more PAPs.</p> <p><b>Or</b></p> <p>The Settlement Risk has the potential to impact one or more Grid Supply Point (GSP) Groups and would have a significant impact on the business plans of multiple PAPs.</p>	<p>In some cases the use of erroneous data might be considered to have a similar impact to the unavailability of data. However, where erroneous data is used, there is considered to be no constraint on the impact since the error could significantly deviate from the magnitude/nature of the correct data.</p>
<b>Extreme instances of erroneous data or extended instances of missing/old data</b>	5	<p>The Settlement Risk has the potential to threaten the Balancing Mechanism and industry Settlement procedures as a whole, causing severe problems for customers, industry, the System Operator or ELEXON. Extreme Settlement Risks would have significant financial or political consequences on PAPs.</p>	<p>Extreme Settlement Risks are unlikely to arise except in limited circumstances where identified risks are moderated upwards.</p> <p>It may be anticipated that risks arising in central systems which, would impact the whole of imbalance settlement would fall into this range of impact.</p>

Table 3: Guidance on Settlement Risk impacts

# RISK EVALUATION METHODOLOGY 2018/19

## Settlement Risk Control

Having identified a list of Settlement Risks and assigned the impact, probability and gross significance to each, the PAB will assess what controls are in place to mitigate against the Settlement Risk occurring. Having considered all relevant controls, the PAB will determine the net significance values for each Settlement Risk. For the purposes of this methodology:

- A control is identified as any Balancing and Settlement Code (BSC) defined requirement or otherwise established mechanism that should be applied routinely to the Settlement processes; and
- The Performance Assurance Techniques, e.g. Performance Assurance Reporting and Monitoring System (PARMS), BSC Audit are not considered to be controls. The PAB will deploy these tools to provide industry with additional assurance.

Examples of controls include failure monitoring (e.g. exception reports or validation), failure mitigation (e.g. use of default and estimation methods) and defined standards (e.g. commissioning of Metering Systems). Once the set of controls for each Settlement Risk has been identified, the PAB will assess the effectiveness (or "strength") of each control in the set as shown in Table 4.

Control Strength	Description
<b>Low</b>	Where the control strength is low, or no controls exist, net Settlement Risk significance will be gross Settlement Risk significance multiplied by <b>1.0</b> (i.e. will equal gross Settlement Risk significance).
<b>Medium</b>	Where the control strength is medium, net Settlement Risk will be gross Settlement Risk significance multiplied by <b>0.8</b> .
<b>High</b>	Where the control strength is high, net Settlement Risk will be gross Settlement Risk significance multiplied by <b>0.6</b> .

Table 4: Control strength for Settlement Risks

## Controls Type & Mechanism

When assessing the strength of controls, the PAB first considers each individual control and takes account of various factors in relation to the control type and mechanism.

### Control Type

- Preventative controls seek to ensure that an issue does not arise in relation to a risk and so might be seen to be strong controls;
- Detective controls identify where an issue has arisen and generally require further corrective controls to address the identified issue; and
- Corrective controls seek to ensure that an issue is addressed and so might be seen as effective controls. However, their strength might be considered lower than preventative controls as the impact of the issue might have already been felt.

# RISK EVALUATION METHODOLOGY 2018/19

## Control Mechanism

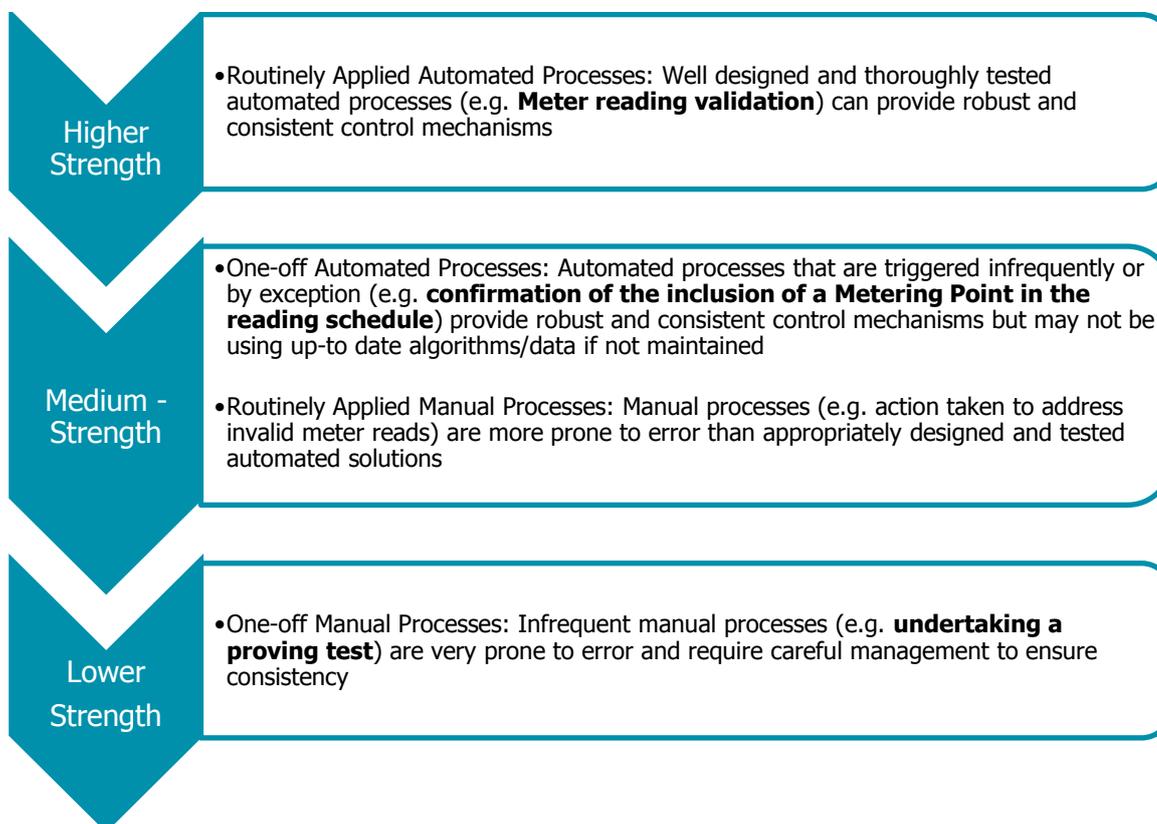


Figure 4: Guidance on control strength for Settlement Risks

The PAB assesses the overall strength (low, medium, high) of the aggregated set of controls on a case by case basis by considering how the individual controls work together and the available supporting evidence, such as the prevalence of BSC Audit issues arising in areas subject to the controls. The PAB provides some generic guidance on assessing control strength, demonstrated in Figure 4. We provide an example of how the PAB assesses control strength in Figure 5.

Example Assessing Control Strength
<p><b>SR0072:</b> The risk that Non Half Hourly Data Collectors (NHHDCs) process incorrect Meter readings, resulting in erroneous data being entered into Settlement.</p> <p>For this risk the PAB recognised the following as controls:</p> <ul style="list-style-type: none"><li>• Meter reading validation;</li><li>• The Non Half Hourly Data Collector (NHHDC) informs the Supplier of incorrect Meter register mappings;</li><li>• Investigate inconsistencies process;</li><li>• Site visit checks by the NHHDC; and</li><li>• Estimated Annual Consumption/Annualised Advance (EAC/AA) validation.</li></ul> <p>The control above for SR0072 contains several controls of varying strength for example Meter reading validation tends to be higher strength and site visits are lower strength; therefore the PAB assigned an overall <b>control score of medium</b> for this risk.</p>

Figure 5: Example for assessing control strength

## NET SIGNIFICANCE

### Assessing Net Significance

Once we have identified the control strength for a Settlement Risk as low, medium or high, we multiply the equivalent value of the control (as defined in Table 4) and the gross significance;

$$\text{Net Significance} = \text{Probability} \times \text{Impact} \times \text{Control}$$

Therefore, net significance represents a 'best case scenario' for each Settlement Risk. As a result of taking the controls into account, the Performance Assurance Board (PAB) scores the net Settlement Risk significance using the same scale as gross Settlement Risk (i.e. out of 25) and round decimals normally. We show an example of this calculation in Figure 6.

Example for Calculating the Net Significance
<p><b>SR0072:</b> The risk that Non Half Hourly Data Collectors (NHHDCs) process incorrect Meter readings, resulting in erroneous data being entered into Settlement.</p> <p>SR0072 has a Probability of <b>5</b>, Impact of <b>4</b> and control strength of <b>Medium</b>; therefore:</p> <p style="text-align: center;"><b>Net Significance for SR0072: <math>5 \times 4 \times 0.8 = 16</math></b></p>

Figure 6: Example for calculating net significance

# RISK EVALUATION METHODOLOGY 2018/19

---

## Settlement Risk Thresholds

The PAB will prioritise its deployment of resources against Settlement Risks according to their net significance. The PAB have determined that SVA Settlement Risks with a threshold of 12 or above are top Settlement Risks. The PAB manages top Settlement Risks by applying Performance Assurance Techniques (PATs). Where regular data is available, the PAB gets visibility of the performance of relevant PAPs against the top Settlement Risks on a monthly basis via the Settlement Risk Report. Further information on Settlement Risk Reporting is available in the section on assessing the materiality of Settlement Risks in relation to PAPs, p.20.

The lower level threshold has been set at 3. All Settlement Risks with a net significance above 3 may be managed by the PAB through the use of PATs on an exception basis. Except in limited circumstances, Settlement Risks that have a net significance below 3 will not be actively managed by the PAB using PATs.

## Risk Evaluation Key Assumptions

When identifying and evaluating Settlement Risks, the PAB applies the following assumptions:

- The preceding steps in the process have been successfully completed thus excluding the cumulative impact of errors in the risk evaluation process;
- A Settlement Risk can be triggered by multiple root causes; for example, the identified root causes for SR0072 includes:
  - Incorrect Meter reads (e.g. transposed digits);
  - Meter readings for a new Meter entering data collection before the final reading associated with the old Meter does; and
  - Incorrect Change of Supplier/deemed readings.
- Control mechanisms will be defined in the Balancing and Settlement Code or established to detect, prevent or correct impact of errors in Settlement;
- Assurance will be delivered across all Settlement runs for all Settlement Risks with a greater focus on earlier runs for Half Hourly (HH) risks (e.g. Initial Settlement Run and Initial Reconciliation Settlement Run) and later runs for Non Half Hourly (NHH) risks (e.g. Third Reconciliation Settlement Run and Final Reconciliation Settlement Run);
- Generic controls which generally apply to all risks such as disaster recovery processes and system security controls are not considered as controls in the Risk Evaluation Register; and
- Settlement Risks are relevant to any Performance Assurance Party which might send, receive or take action in respect of processes, controls or data which relate to the risk in question.

## PERFORMANCE ASSURANCE TECHNIQUES

---

The Risk Operating Plan (ROP) sets out the Settlement Risks and the Performance Assurance Techniques (PATs) that the Performance Assurance Board (PAB) will apply to manage Settlement Risks relating to Supplier Volume Allocation (SVA), Central Volume Allocation (CVA) and central systems processes. The PAB review the ROP annually and publish it on the [BSC website](#).

The PAB determine which Settlement Risks are material in relation to a PAP (and/or a distinct operating unit of a PAP) by making Risk Management Determinations (RMDs). The PAB then determine which PATs they will deploy against a PAP in relation to such risks and communicate their determination directly to the relevant PAP.

# RISK EVALUATION METHODOLOGY 2018/19

---

RMDs are a version of the ROP tailored to a distinct operating unit(s) of a PAP. Typically the first PAT deployed against a PAP is Qualification. Thereafter the PAB, on an ad hoc basis, will review a PAP's RMD and make revisions in consultation with the PAP, as it considers appropriate. The PAB treats RMDs confidentially and only make them available to the associated PAP.

We publish details of the PATs (as approved and published by the Panel from time to time) on the Performance Assurance Techniques pages of the [BSC website](#).

## Assessing Mitigating Performance Assurance Techniques

For each Settlement Risk identified/evaluated, the PAB will assess the PATs that are best suited to mitigate the Settlement Risk by considering:

- Its own professional judgement;
- The cost/benefit of applying the PATs to the Settlement Risk;
- Past-precedent for similar Settlement Risks;
- General risk management best practice, for example:
  - The application of preventative techniques to high-impact Settlement Risks; and
  - Consideration of corrective PATs to Settlement Risks that are low impact (and possibly high probability).

For each Settlement Risk, the PAB identify:

- The 'mandatory' PAT(s);
- The 'standard' PAT(s); and
- The 'non-standard' PAT(s).

ELEXON will also record the projected cost for deploying the PATs across the Risk Evaluation Register and will also highlight any variations to the previously published BSCCo (ELEXON) Business Plan (including any impact on the approved BSCCo budget).

## Mandatory Performance Assurance Techniques

Mandatory PATs are those techniques that the PAB is required to apply to Performance Assurance Parties (PAPs) who have been assigned the Settlement Risk in question because they are mandated by the Balancing and Settlement Code.

Example: Supplier Charges.

## Standard Performance Assurance Techniques

Standard PATs are the default techniques that the PAB will apply to PAPs who have been assigned the Settlement Risk in question. The PAB may switch off standard PATs for PAPs and where this is the case, it will provide an explanation in the ROP.

Example: BSC Audit may be switched off for smaller PAPs if PAB deems it appropriate.

## Non-Standard Performance Assurance Techniques

Non-standard PATs are techniques that the PAB may consider applying to derive additional assurance that the PAPs are addressing the Settlement Risks that have been assigned to it. Where the PAB applies non-standard PATs to address a Settlement Risk, it will explain its rationale to the relevant PAPs.

## RISK EVALUATION METHODOLOGY 2018/19

Example: Error and Failure Resolution is applied at the approval by PAB following an error or failure being identified. Table 5 sets out each PAT by category type.

Technique	Type	Category
<b>Qualification</b>	Preventative	Non-standard
<b>Re-Qualification</b>	Preventative	Non-standard
<b>Bulk Change of Agent</b>	Preventative	Non-standard
<b>Education</b>	Preventative	Non-standard
<b>Performance Monitoring and Reporting</b>	Detective	Mandatory
<b>Material Error Monitoring</b>	Detective	Standard
<b>Technical Assurance of Metering Systems</b>	Detective	Mandatory, standard, non-standard
<b>BSC Audit</b>	Detective	Standard
<b>Technical Assurance of Performance Assurance Parties</b>	Detective	Non-standard
<b>Peer Comparison</b>	Incentive	Standard
<b>Removal of Qualification</b>	Incentive	Non-standard
<b>Breach and Default</b>	Incentive	Non-standard
<b>Supplier Charges</b>	Remedial	Mandatory
<b>Error and Failure Resolution</b>	Remedial	Non-standard
<b>Trading Disputes</b>	Remedial	Non-standard
<b>Change Mechanisms</b>	Remedial	Non-standard

Table 5: PAT by category type

The PAB deploys CVA PATs as mandated within the BSC. In particular:

- The scope of the BSC Audit will encompass central systems including the Balancing Mechanism Reporting Agent; Central Registration Agent; Central Data Collection Agent; CVA Meter Operator Agents; Energy Contract Volume Aggregation Agent; Funds Administration Agent; Market Index Data Providers; Settlement Administration Agent; and Supplier Volume Allocation Agent;
- CVA Meter Operator Agents will remain subject to the SVA Qualification, Re-Qualification and Removal of Qualification processes; and
- CVA Metering Systems will remain within the scope of the Technical Assurance of Metering Systems (TAM) technique delivered by the Technical Assurance Agent (TAA).

# RISK EVALUATION METHODOLOGY 2018/19

---

## ASSESSING MATERIALITY OF SETTLEMENT RISKS IN RELATION TO PERFORMANCE ASSURANCE PARTIES

---

The Performance Assurance Board (PAB) considers a Settlement Risk is material to a Performance Assurance Party (PAP) where:

- There is a risk that a PAP may cause or contribute to the occurrence of the risk by failing to perform an obligation under the Code or any Code Subsidiary Document; and
- The risk has been determined to be significant by the PAB.

Typically, when a PAP is identified as having the potential to contribute to a particular Settlement Risk (or to have caused a Settlement Risk to materialise as an issue), it is assigned to those Performance Assurance Techniques (PATs) that are flagged as 'mandatory' and 'standard' for the Settlement Risk in question. There is no flexibility in the application of mandatory PATs and they must always be applied to address the Settlement Risk to which they relate.

If the PAB feels that it is appropriate, then they may apply fewer standard PATs (from the shortlist against the Settlement Risk in the ROP) to the PAP e.g. they may not apply audit to small PAPs. Conversely, the PAP may have some of the additional non-standard PATs assigned to it e.g. Error and Failure Resolution and Technical Assurance of Performance Assurance Parties if a particular problem is detected. For each Settlement Risk that has been assigned to a PAP, the PAP will only have those PATs that are 'linked' to the Settlement Risk on the ROP assigned to it. Where the PAB has assigned fewer standard PATs to a PAP, or additional non-standard PATs, the PAB provides the PAP with their rationale. This is done via the PAT owner (ELEXON staff) directly to the PAP.

Having assessed each Settlement Risk individually, the PAB considers all of the Settlement Risks that the PAP has as a whole. This will enable the PAB to identify any opportunities for greater efficiency in the application of PATs by considering where a single PAT can be applied to address more than one Settlement Risk.

### Monitoring Settlement Risks

The PAB considers how each PAP's performance might impact and/or contribute to the materiality of the Settlement Risk; and uses the PATs available to minimise the impact on Settlement. This is facilitated by reviewing the Business Unit Settlement Risk Ratings (BUSRRs) and the Settlement Risk Report. Each is discussed in turn below.

### Business Unit Settlement Risk Rating

The PAB has developed the Business Unit Settlement Risk Ratings (BUSRRs) to determine the risk a PAP and/or a distinct operating unit of a PAP pose to Settlement. The term Business Unit refers to a distinct operating unit for a particular PAP. The PAB approves the criteria for determining a BUSRR for all the top Settlement Risks which are currently measurable. Applying these criteria allows the PAB to assess the materiality of the top Settlement Risks for each PAP. We publish full details on the [BUSRR criteria](#) on the BSC website.

### Settlement Risk Report

The Settlement Risk Report (SRR) illustrates market trends and industry performance subject to the availability of data and ELEXON presents this to the PAB on a monthly basis. It looks at the performance of Suppliers and Meter Operator Agents<sup>7</sup> in relation to top Settlement Risks and provides an overview of the BUSRRs for each Settlement

---

<sup>7</sup> Other relevant PAPs may be included if performance data becomes available.

# RISK EVALUATION METHODOLOGY 2018/19

---

Risk. Within the context of each Settlement Risk, the PAB uses the information provided in the SRR to explore the extent to which a PAP might impact or contribute to the materiality of the Settlement Risk. For example, one PAP operating in a well-managed environment, may pose inherently less risk to the successful delivery of a process than another PAP with the same Settlement Risk but with a less well developed management process.

## REFERENCES

---

Document
<a href="#">BSC Section Z</a>
<a href="#">Glossary</a>
<b>Performance Assurance Processes:</b> <ul style="list-style-type: none"><li>• <a href="#">Risk Evaluation Methodology</a></li><li>• <a href="#">Risk Operating Plan</a></li><li>• <a href="#">Risk Management Plan</a></li></ul>
<a href="#">Settlement Risk Report (non-confidential version), see 'historical meetings'.</a>

## FURTHER INFORMATION

---

**For more information, please contact:**

Melinda Anderson, Compliance Analyst

[melinda.anderson@elexon.co.uk](mailto:melinda.anderson@elexon.co.uk)

020 7380 4109