

# Performance Assurance Procedures

Risk Evaluation Methodology

*Industry Consultation*



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## Risk Evaluation Methodology

### Summary of the REM

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This is the Risk Evaluation Methodology (REM) for Performance Assurance Operating Period (PAOP) 6 - 2013/2014. The methodology remains unchanged from the previous PAOP but the document has been updated adding clarity in some areas.

This document should be read in conjunction with Section Z of the BSC which sets out the requirements of the REM that the Performance Assurance Board (PAB) will follow to:

- Identify risks that are Settlement Risks;
- Evaluate risks which have been identified as Settlement Risks; and
- Assess the materiality of such Settlement Risks in relation to Performance Assurance Parties.

The PAB has established Settlement Risks with the implementation of P207<sup>1</sup> Modification in 2008, therefore the 2013/14 REM will continue to focus on to the assessment of existing Settlement Risks.

The methodology within this document is designed to ensure fairness and consistency in the application of Performance Assurance Techniques to Performance Assurance Parties, and will be carried out in accordance with the [Annual Performance Assurance Timetable](#).

### Industry Consultation

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This document has been reviewed by the PAB in accordance with the Annual Performance Assurance Timetable prior to being issued for industry consultation. The closing date of the consultation is **16 March 2012**.

### Target Audience

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



#### Performance Assurance Board (PAB)

The PAB 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.

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<sup>1</sup> Introduction of a new governance regime to allow a risk based Performance Assurance Framework (PAF) to be utilised and reinforce the



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## 1. Introduction

### Underpinning Principles of the Risk Evaluation Methodology

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#### Definition of Settlement Risk

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

(a) *"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;"*

(b) *"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;"*

#### SVA Performance Assurance Objectives

The PAB has two objectives in the context of Supplier Volume Allocation (SVA); BSC Section Z 5.1.4:

*"...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."*

#### BSC Section Z Requirements

As set out in Section Z, 5.4.1 of the BSC, the Risk Evaluation Methodology prescribes how the Performance Assurance Board (PAB):

- Identifies Settlement Risks;
- Evaluates those risks by taking account of the probability<sup>2</sup> of the risk occurring, the impact on Settlement and the level of controls in place to mitigate the impact;
- Assesses the materiality of the Settlement Risks in relation to Performance Assurance Parties.

The REM is designed to ensure fairness and consistency in the application of Performance Assurance Techniques (PATs) to Performance Assurance Parties (PAPs) and achieve SVA Performance Assurance objectives.

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<sup>2</sup> Probability, impact and control that are used to evaluate Settlement Risks are defined in Section 3 of the REM

## Scope of the REM

The scope of the REM is the activities the PAB and the PAA (ELEXON) will carry out to deliver the Performance Assurance Procedures; represented in Figure 1.

The distinction between the Central Volume Allocation (CVA) and SVA risks are as follows:

- **SVA Settlement Risks** will be 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.
- **CVA Settlement Risks:** The methodology outlined in this document supports PAB and the Panel in identifying all CVA Settlement Risks. As required by Section Z of the BSC, all CVA risks shall be deemed to be significant in terms of both probability of failure and impact on Settlement.



**Performance Assurance Administrator (PAA)**  
ELEXON, acting on the behalf of the PAB



Figure 1: Key steps in the REM

## Considerations for 2013/14 REM

The risk-based Performance Assurance Framework has been in existence since November 2008. Since then, the PAB has gained a greater understanding of the top Settlement Risks with Suppliers being more focused on the data that determines their Business Unit Settlement Risk Rating (BUSRR).

This document has been updated to provide clarity and more guidance to the evaluation of Settlement Risks, in particular the following sections:

- Section 2 – Risk Identification: Some areas have been moved to Appendix A
- Section 3- Risk Evaluation: Additional guidance included

## 2. Identification of Settlement Risks

### Settlement Risk Identification and Closure

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We will use the current RER as a baseline and the review will include:

- Net Significance of Settlement Risks (Section 3)
- Settlement Risks description and assumption
- Closure and/or addition of Settlement Risks

New risks may be identified from changes to processes, for example Modifications, PAB Strategy work streams and/or via Performance Assurance Parties (PAPs). ELEXON will validate these to ensure that they are Settlement Risks as defined in Section 1 and the BSC. As risks are identified or revised through either annual review or within-period revisions, the PAB will:

- Validate the risk to ensure that it is a Settlement Risk (as described by Section Z, paragraph 5.1.1 (a));
- Categorise the Settlement Risk using the Categories, as defined in Appendix A;
- Evaluate the Settlement Risk using the criteria specified in section 3.

Any new risk identified as a Settlement Risk will be recorded in the RER. Any risk that is not a Settlement Risk will be disregarded (but may be noted and recorded elsewhere if it is relevant to ELEXON or the PAB).

Each Settlement Risk will be documented in the RER using the following format:

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

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

SR0072: The risk that **NHHDCs process incorrect Meter readings**, resulting in **erroneous data being entered into Settlement**.



#### Risk Evaluation Register

The Risk Evaluation Register (RER) sets out the Settlement Risks identified and evaluated by the Performance Assurance Board (PAB) in accordance with the Risk Evaluation Methodology (REM). We publish the RER via a word document and an excel spreadsheet (Ledger)



#### Within-period revision

A revision by the PAB of the Risk Evaluation Register, Risk Operating Plan or a Risk Management Plan within a PAOP or after the deliverable has already been approved for use

## Sources of Information

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The following are the main sources of Settlement Risk information for the RER review:

- New and closed BSC Audit issues during 2011/12 (PAOP4) and that part of 2012/2013 (PAOP5) completed at the time the analysis is done;
- The results and outcomes of the application of the PATs during PAOP4;
- Panel and Panel Committee papers presented during PAOP 4;
- Change Proposals (CPs) and Modifications (both approved and rejected) during PAOP4;
- Outcome of Draft Change Proposals (DCPs), issues, standing issues in PAOP 4;
- Outcome from PAB Strategy work streams;
- Potential Settlement Risks that have been highlighted by industry and made available to the PAA; and
- Feedback from discussion with PAPs on Settlement Risks and their net significance.

## 3. Evaluation of Settlement Risks

Each Settlement Risk will be evaluated and defined in terms of the following Settlement Risk attributes:

1. Gross Settlement Risk Significance;
2. The Controls that are in place, and the strength of those Controls; and
3. Net Settlement Risk Significance.

### Gross Significance

The gross Settlement Risk is comprised of the probability, impact and significance that a Settlement Risk would have on Settlement if no controls were applied. Gross Risk represents the 'worst case' scenario for each Settlement Risk<sup>3</sup>. The PAB will assess the Gross Settlement Risk as:

- Settlement Risk probability: how likely a Settlement Risk is to occur if there are no controls in place;
- Settlement Risk impact: how severe the impact of a Settlement Risk would be (should it happen) if there are no controls in place;
- Gross Settlement Risk significance: the Gross probability multiplied by the Gross impact.

The PAB will assess each Settlement Risk and agree on the probability and impact ratings based on the criteria explained in this section. In assessing the gross Settlement Risk, the PAB will not take any current or planned controls into account. The PAB will record the Gross Settlement Risk values against each Settlement Risk in the RER.

### 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. In the case of the risk-based PAF, Settlement Risk probability is defined as the chance of a Settlement Risk occurring during a single PAOP.

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

Table 1: Probability Rating for Settlement Risks

<sup>3</sup> Gross probability, impact and significance offer a method to measure the relative Settlement Risk and facilitate a comparison of other Settlement Risks relative to each other.

## *Guidance for 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. PARMS Serial Data and the prevalence of associated BSC Audit issues.

### **Example: Assessing the Probability**

**SR0072:** The risk that 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 28m NHH Metering Systems)
- **Manual Intervention:** Retrieval of Meter readings is a manual operation in NHHDC service.
- **Performance History:** The Erroneous EAC/AA issue has been a prevalent BSC Audit issue since 2001

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

Figure 2: Example for Assessing Probability

## **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 SVA Objectives (see Section 1 of REM). We score the Settlement Risk impact using a numeric scale between 1 and 5, where 1 is the least severe and 5 the most severe.

It is assessed to represent the impact of the risk occurring in the absence of any controls. The scale is further detailed in table 2 below.



Impact Rating	Description
<b>5</b>	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.
<b>4</b>	The Settlement Risk has the potential to impact one or more GSP Groups and would have a significant impact on the Business Plans of multiple Performance Assurance Parties
<b>3</b>	The Settlement Risk could have an impact on a particular area of Settlement and/or the Business Plans of one or more Performance Assurance Parties
<b>2</b>	The impact of the Settlement Risk is not severe enough to pose a threat to Performance Assurance Parties' businesses, but is significant enough for the Industry to consider addressing via corrective measures.
<b>1</b>	The Settlement Risk is not severe enough to pose a threat to Performance Assurance Parties' 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 Impact for Settlement Risk

When assessing the impact of a Settlement Risk, ELEXON and the PAB initially consider the result identified in the risk description and determines 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 the table when assessing the impact of a Settlement Risk.

Each Settlement Risk is moderated on a case by case basis using additional observed evidence available, particularly any associated BSC Audit issues or information from materiality calculations linked to the risk.

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' 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 Performance Assurance Parties' 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</p>



Result Type (as identified in Risk Description)	Initial Range of Impact Rating	Rationale	
<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 Performance Assurance Parties' 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 Performance Assurance Parties</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 Performance Assurance Parties</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 Performance Assurance Parties</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 Performance Assurance Parties</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 Risks' impact

### Example for Assessing the Impact

**SR0072:** The risk that NHHDCs process incorrect Meter readings, resulting in erroneous data being entered into Settlement.

While assessing the impact of this risk, we looked at the overall error in relation to the annual take which equated to approximately 0.2%. Taking this and the rating on Table 3 above into consideration; we assigned an **impact of 4** for this risk.

Figure 3: Example for Assessing Impact

## Calculating the Gross Significance

The Settlement Risk significance is the Settlement Risk probability multiplied by the Settlement Risk impact. Settlement Risk significance is a relative measure of the importance of Settlement Risks and should not be interpreted as the absolute magnitude of each Settlement Risk.

### Example for Calculating the Gross Significance

**SR0072:** The Gross Significance will be

$$5(\text{Probability}) \times 4(\text{Impact}) = 20$$

Figure 4: Example for Calculating Gross Significance

## 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 Net Significance values for each Settlement Risk. For the purposes of this methodology:

- A control is identified as any BSC-defined requirement or otherwise established mechanism under the SVA arrangements that should be applied routinely to the Settlement processes;
- The Performance Assurance Framework Techniques, e.g. PARMS, BSC Audit *are not considered* to be controls. They are tools that will be deployed to provide industry with additional assurance; and

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/ELEXON will assess the effectiveness (or "strength") of each control in the set; as shown below.

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 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. Therefore their effectiveness is often limited by partnered corrective controls; 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.

### Control Mechanism

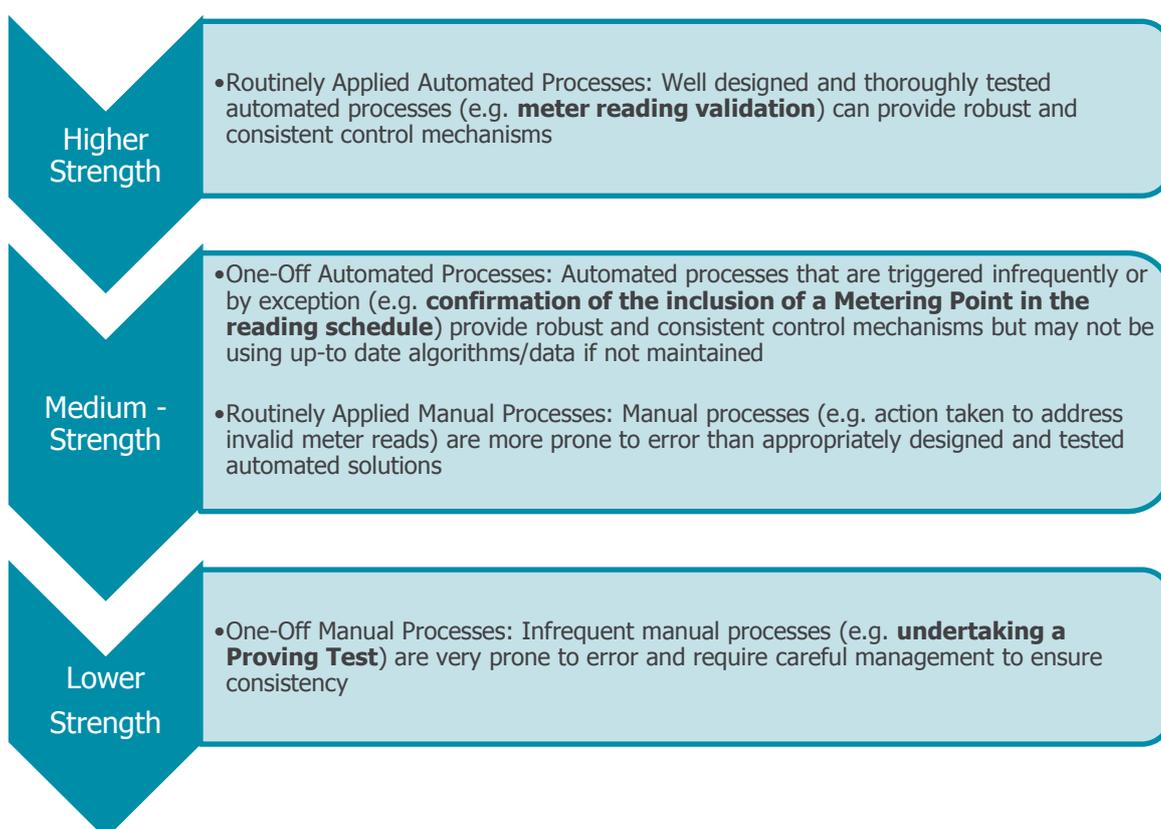


Figure 5: Guidance on control strength for Settlement Risk



The overall strength (High, Medium or Low) of the aggregated set of controls is then assessed 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.

### Example Assessing Control Strength

For **SR0072**<sup>4</sup>, the PAB has recognised the following as controls for this risk:

- Meter Reading Validation;
- The NHHDC informs the Supplier of incorrect Meter register mappings;
- Investigate inconsistencies process;
- Site visit checks by the NHHDC; and
- EAC/AA validation

The control above for SR0072 contains several control of varying strength for example Meter Reading Validation tends to be higher strength and site visits are lower strength; therefore we assigned an overall **control score of Medium** for this risk.

Figure 6: 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<sup>5</sup>;

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

Therefore, net significance represents a 'best case scenario' for each Settlement Risk. As a result of taking the controls into account, the Net Settlement Risk significance will be scored using the same scale as gross Settlement Risk (i.e. out of 25) and decimals will be rounded normally.

<sup>4</sup> The risk that NHHDCs process incorrect Meter readings, resulting in erroneous data being entered into Settlement

<sup>5</sup> The Settlement Risk significance is the Settlement Risk probability multiplied by the Settlement Risk impact

### Example for Calculating the Net Significance

**SR0072** has a Probability of **5**, Impact of **4** and control strength of **Medium**; therefore:

$$\text{Net Significance for SR0072: } 5 \times 4 \times 0.8 = 16$$

Figure 7: Example for Calculating Gross Significance

## Settlement Risk Thresholds

The PAB will prioritise its deployment of resources against Settlement Risks according to their net significance. The Settlement Risk thresholds represent the PAB and the industry's risk appetite. The PAB will determine two threshold values, between 1 and 25, and they will be defined as:

- Top Settlement Risks threshold
- Lower level risk threshold

### Top Settlement Risks

The PAB has determined the top Settlement Risk threshold at **12**, therefore any Settlement Risks with a net significance of 12 and above will be considered a top Settlement Risk. The management of top Settlement Risks will be prioritised over the PAOP through the application of PATs. Where regular data is available, the top Settlement Risks also attract Business Unit Settlement Risk Ratings (BUSRRs) and the PAB gets visibility of BUSRRs for relevant PAPs on a monthly basis via the Settlement Risk Report and Performance Dashboards. Further information on reporting Settlement Risks is available in Appendix B.



#### Business Unit Settlement Risk Rating (BUSRR)

The BUSRR is a broad indication of relative risk. It indicates whether a business unit is considered as higher risk (RED), lower risk (GREEN), or about average risk (AMBER) within the context of each Settlement Risk. Guidance on BUSRRs can be found on the website.

### Lower Level Risks

The lower level threshold has been set at 3, i.e. all Settlement Risks with a net significance of 4 and above are managed by the PAA through the use of applicable PATs and this will also be overseen by the PAB on an exception basis. Except in limited circumstances<sup>6</sup>, Settlement Risks that have net significance below the Settlement Risk significance threshold will not be actively managed by the PAB using PATs.

<sup>6</sup> Some Mandatory PATs may focus on Settlement Risks which are deemed to fall below the Net Settlement Risk Significance Threshold. These Settlement Risks will be allocated to the appropriate PAPs and the Mandatory PATs set out on each PAP's RMP. Settlement Risks that have an impact rating of 5 will automatically will be assigned to the relevant PAP and managed via the RMPs, unless otherwise determined by PAB.

## Risk Evaluation Key Assumptions

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When identifying and evaluating Settlement Risks, we applied 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 including incorrect meter reads (e.g. transposed digits), meter readings for a new meter enter data collection before the final reading associated with the old meter and incorrect Change of Supplier/deemed readings;
- Control mechanisms will be BSC defined or established mechanisms to detect, prevent or correct impact of errors in Settlement;
- Assurance will be delivered across all runs for all Settlement Risks with a greater focus on earlier runs for HH risks (e.g. SF and R1) and later runs for NHH risks (R3 and RF);
- Generic controls which generally apply to all risks such as disaster recovery processes and system security controls *are not considered* as controls in the RER; and
- Settlement Risks are relevant to any PAP which might send, receive or take action in respect of processes, controls or data which relate to the risk in question.

## 4. Publishing Settlement Risks

### Publishing Settlement Risks

ELEXON on behalf of the PAB, will record the list of Settlement Risks and all associated Settlement Risk information in the RER. Following the annual revision<sup>7</sup>, the RER will be presented to the PAB for endorsement prior to being published on the ELEXON website for industry consultation.

All comments raised by industry within the allotted consultation period will be considered by the PAB for final approval<sup>7</sup> (the Panel has delegated approval of the RER and the Risk Operating Plan (ROP) to the PAB). Once we have consulted on the RER and the PAB has approved it, we will publish the RER document and ledger on the ELEXON website.

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<sup>7</sup> Note the RER may be amended to add or remove Settlement Risks via a "Within-Period Revision". Such revisions to the RER do not require industry consultation. Any changes to the RER would be reflected in updated versions of the ROP and RMPs.

## 5. Performance Assurance Techniques

### Determine Performance Assurance Techniques

Once the Settlement Risks are identified and evaluated, the PAB will assign the mitigating PATs against those risks and corresponding roles in the ROP.

### Assessing Mitigating Performance Assurance Techniques

Details of the PATs (as approved and published by the Panel from time to time) can be found on the Performance Assurance Framework pages of the [ELEXON website](#).

For each Settlement Risk identified/evaluated by the process detailed in section 2, 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;
  - Consideration of corrective PATs to Settlement Risks that are low impact (and possibly high probability).

For each Settlement Risk, the PAA will 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 RER and will also highlight any variations to the previously published BSCCo 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 a Business Unit (BU) who has been assigned the Settlement Risk in question because they are mandated by the BSC (e.g. Supplier Charges).

## Standard Performance Assurance Techniques

Standard PATs are the default techniques that the PAB will apply to a BU who has been assigned the Settlement Risk in question in the Material Business Unit's (MBU) RMP. Standard PATs may be switched off for a BU and where this is the case, an explanation will be provided.

## Non-Standard Performance Assurance Techniques

Non-standard PATs are techniques that the PAB may consider applying to derive additional assurance that the BU is addressing the Settlement Risks that have been assigned to it. Where Non-Standard PATs are applied to address a Settlement Risk, an explanation will be provided in the MBU's RMP.



### Business Unit (BU)

A market participant role code combination. PATs are deployed at BU level

### Material Business Unit (MBU)

Group of one or more Business Units for the same legal entity. RMPs are deployed at MBU level

Technique	Type	Category
Qualification	P	Non Standard
Re-Qualification	P	Non Standard
Bulk Change of Agent	P	Non Standard
Education	P	Non Standard
Performance Monitoring and Reporting	D	Mandatory
Material Error Monitoring	D	Standard
Technical Assurance of Metering Systems	D	Mandatory, Standard, Non Standard
BSC Audit	D	Standard
Technical Assurance of Performance Assurance Parties	D	Non Standard
Peer Comparison	I	Standard
Removal of Qualification	I	Non Standard
Breach and Default	I	Non Standard
Supplier Charges	R	Mandatory
Error and Failure Resolution	R	Non Standard
Trading Disputes	R	Non Standard
Change Mechanisms	R	Non Standard



### Preventative (P):

Designed to limit the possibility of an undesirable outcome

### Detective (D):

Designed to identify occasions of undesirable outcomes

### Incentive (I):

Designed to motivate action in order to avoid the possibility of an undesirable outcome

### Remedial (R):

Designed to correct undesirable outcomes

Table 5: The Performance Assurance Techniques (Further information available on the [website](#))



## Example of Risk Operating Plan

The ROP for **SR0072** will show PATs that will be made *available* for use during a PAOP against relevant class of PAPs; a diagrammatic representation of the ROP is shown below.

PAP Type	Qual	Re-Qual	BSC Audit	TA PAP	MEM	EFR
NHH Supp.	○		○	○	○	○
NHH DC	○	○	○	○	○	○
NHH DA			○		○	○

Figure 8: Diagrammatic representation of the ROP

## Risk Management Plans

Risk Management Plans (RMPs) document the Settlement Risks and the Performance Assurance Techniques relevant to each PAP/MBU; in effect, the RMP is a version of the ROP tailored for each organisation. RMPs can be updated throughout the PAOP. The RMP does *not* monitor performance. The approach to applying RMPs is shown in Appendix B.

## Publishing Settlement Risks and Mitigating Performance Assurance Techniques

### ROP

ELEXON, on behalf of the PAB, will publish mitigating PATs available for deployment for each Settlement Risk in the ROP. As with the RER, following the annual review, the ROP will be presented to the PAB for endorsement prior to being published on the ELEXON website for industry participants to comment.

All comments raised by industry within the allotted consultation period will be considered by the PAB for final approval. It is then published on the ELEXON website.

### RMPs

Each MBU's RMP will be made available for consultation and use only to the MBU concerned because of the confidential nature of the data contained in it. Each time a new version of the RMP is produced, the PAB will work with the MBU to whom the RMP relates to develop all revisions to the RMP. MBUs will also be given the opportunity to confirm their understanding of the RMP.

## Assessing Materiality of Settlement Risks

As mentioned in Section 3; we present the Settlement Risk Report (SRR) to the PAB on a monthly basis. The SRR illustrates market trends and industry performance subject to availability of data. It also details performance of Suppliers and MOAs<sup>8</sup> on top Settlement Risks where regular performance data (e.g. PARMS) is available. In addition MBU Dashboards are available to the PAB which illustrate the MBU trend analysis for most top Settlement Risks.

Within the context of each Settlement Risk, the PAB will ask the question: "to what extent could this BU materially impact the SVA Objectives?" (Section 1). For example, one BU, operating in a well-managed environment, may pose inherently less risk to the successful delivery of a process than a BU with the same Settlement Risk but a less well developed management process.

Reviewing the SRR, MBU Dashboards and the RMPs allows the PAB to consider how each BU's performance might impact and/or contribute to the materiality of the Settlement Risk; and use the PATs available to minimise the impact on Settlement.

The materiality of Settlement Risks and RMPs for each will be treated confidentially and only made available to it in the MBU Dashboard.

The MBU Dashboard(s) for each MBU will be reviewed and updated on a regular basis. We will ensure that the tailored MBU Dashboards and RMPs are being produced in accordance with this methodology and that there is:

- Efficiency in the cost and application of Performance Assurance Techniques.
- Fairness and consistency in the application of Performance Assurance Techniques across MBUs.

The PAB will validate the activities carried out by ELEXON to provide assurance to industry that the process is being followed.

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<sup>8</sup> Other relevant role codes may be included if performance data becomes available

## Further Information

If you have any questions or require further information on the Risk Evaluation Methodology please contact:

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## Appendix A

### Glossary of Terms

Term	Definition
<b>Annualised Advance (AA)</b>	The rate of consumption for a Settlement Register over the period between two Meter readings. The value is nominally expressed as kWh/Year, but this is only for ease of understanding and cannot be relied upon as a true value.
<b>BSC</b>	The Balancing and Settlement Code
<b>Business Unit (BU)</b>	A Business Unit is a market participant role code combination.
<b>Control</b>	A control is identified as any BSC-defined requirement or otherwise established mechanism that should be applied routinely to the processes for deriving Trading Charges from recorded energy production or consumption.
<b>Code Subsidiary Documents (CSDs)</b>	Any document referred to in section H1.4 as modified from time to time in accordance with sections F3.
<b>Central Volume Allocation (CVA)</b>	The determination of quantities of Active Energy to be taken into account for the purposes of Settlement in respect of Volume Allocation Units;
<b>Estimated Annual Consumption (EAC)</b>	An estimated rate of consumption, nominally expressed in kWh/Year, that is used in Settlement until an AA is calculated.
<b>Gross Settlement Risk</b>	Gross Risk is the probability, impact and significance that a Settlement Risk would have if no controls were applied. Gross Risk, therefore, represents the 'worst case' scenario for each Settlement Risk.
<b>Material Business Unit (MBU)</b>	Combination of one or more Business Units for the same legal entity.
<b>Net Settlement Risk</b>	Net Risk is the significance that a Settlement Risk would have when existing controls are taken into account.
<b>Performance Assurance Operating Period (PAOP)</b>	The period of time detailed as such in the Annual Performance Assurance Timetable from time to time;  PAOP 1&2 – November 2008 to 31 March 2010 PAOP3 – 1 April 2010 to 31 March 2011 PAOP4 – 1 April 2011 to 31 March 2012 PAOP5 – 1 April 2012 to 31 March 2013 PAOP6 – 1 April 2013 to 31 March 2014
<b>Performance Assurance Administrator (PAA)</b>	ELEXON acting on behalf of the Performance Assurance Board
<b>Performance Assurance Board (PAB)</b>	The panel committee established as defined in section Z 1.2 of the BSC.
<b>Performance Assurance Framework (PAF)</b>	Performance Assurance Framework (PAF) consists of a complementary set of preventative, detective, corrective and remedial techniques designed to mitigate against risks to the BSC arrangements. The aim of the PAF is to provide independent, equitable, positive and consistent assurance regarding the integrity of Settlement, and to promote corrective actions to address any issues that are identified



Term	Definition
<b>Performance Assurance Party (PAP)</b>	A Performance Assurance Party is a Participant (or organisation) with Performance Assurance Risks (see the BSC section Z 5.1.1 (c) for more information). PAP is a Supplier, Meter Operator Agent, Data Collector, Data Aggregator, Meter Administrator, Licensed Distribution System Operator and/or a Registrant.
<b>Performance Assurance Technique (PAT)</b>	As defined in section Z 5.3.2 of the BSC.
<b>Risk Evaluation Methodology (REM)</b>	As defined in section Z 5.4 of the BSC.
<b>Risk Evaluation Register (RER)</b>	As defined in section Z 5.5 of the BSC.
<b>Risk Management Plan (RMP)</b>	As defined in section Z 5.7 of the BSC.
<b>Risk Operating Plan (ROP)</b>	As defined in section Z 5.6 of the BSC.
<b>Risk Probability</b>	Risk probability is represented by a score between 1 and 5 and is the likelihood of a Settlement Risk occurring, (1 being the least probably and 5 being the most probable).
<b>Risk Impact</b>	Risk impact is the impact that a Settlement Risk would have if it occurred. The Risk impact is represented by a number between 1 and 5 (1 being the least severe and 5 being the most severe).
<b>Risk Significance</b>	Risk significance is the Risk Probability multiplied by the Risk impact
<b>Settlement</b>	Annex X-1 – of the BSC defines Settlement as: "The determination and settlement of amounts payable in respect of Trading Charges (including Reconciliation Charges) in accordance with the Code (including where the context admits Volume Allocation)"
<b>Settlement Risk</b>	Section Z, paragraph 5.1.1 (a) and (b) of the BSC defines a Settlement Risk as: (a): <i>" 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;"</i> (b): <i>"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;"</i>



Term	Definition
<b>Settlement Risk Materiality</b>	Section Z, 5.1.1 (d) of the BSC states that: "a Settlement Risk is "material" to a Performance Assurance Party where: <i>(i) there is a risk that the Performance Assurance Party may, by failing (in whole or part) to perform any obligation under the Code or any Code Subsidiary Document, cause or contribute to the occurrence of such Settlement Risk; and</i> <i>(ii) the significance of the Settlement Risk is of a level which the Performance Assurance Board determines (in its opinion) to be material;..."</i>
<b>Supplier Volume Allocation (SVA)</b>	means the determination of quantities of Active Energy to be taken into account for the purposes of Settlement in respect of Supplier BM Units;

## Settlement Risks Categories

The PAA has identified eight categories under which Settlement processes can be grouped. These categories will facilitate the process of Risk Analysis and aid assessment of Settlement Risks. This is non-exhaustive list which may be added to or refined as risks are identified.

- Meter Reading Acquisition
- Derivation of Energy Volumes
- Allocation of Energy Volumes to Half Hour Periods
- Allocation of Half Hourly Energy Volumes to Trading Parties
- Correction of Half Hourly Energy Volumes Between Trading Parties
- Derivation of Energy Imbalance Volumes
- Derivation of Energy Imbalance Cashflows
- Allocation of Trading Charges to Trading Parties (and Collection)
- Miscellaneous



### Settlement Risk Categories

Each category relates to areas of the Settlement process (rather than participant specific activities). As the Risk Analysis work progresses, additional categories may be added by ELEXON or the PAB as required

## **Risk Analysis**

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Previously, consideration has been given to adopting a more quantitative approach to risk evaluation such as quantifying the materiality for each Settlement Risk. We agree that ideally all risks would be fully quantified for both impact and probability. However the data which we currently have access to, does not provide the level of granularity for a consistent and robust assessment of each Settlement Risk in the Risk Evaluation Register to accommodate this approach.

To obtain this amount of data would require significant changes to the output of PATs, such as the BSC Audit and PARMS Serials. We are still of the view that this is neither feasible nor cost effective for PAOP 6; consequently no changes of this manner to the REM will be made during the 2013/2014 review.

We welcome any additional evidence of impact and probability participants can provide to assist with the review of the RER that will start in April 2012.

## Appendix B

### Approach to Application of Performance Assurance Techniques

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To appear on a RMP, a Settlement Risk must have at least one mandatory, standard or non-standard PAT available to be deployed (in the ROP). The PAB will then assess the Settlement Risk for each associated BU to determine how rigorous it will be in the application of PATs.

Typically, when a BU 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 will be assigned those 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 fewer Standard PATs (from the shortlist against the Settlement Risk in the ROP) may be applied to the BU. Conversely, where the PAB feels it is appropriate, the BU may have some of the additional Non-Standard PATs (from those available in the ROP) assigned to it. For each Settlement Risk that has been assigned to a BU, the BU will only have those PATs that are 'linked' to the Settlement Risk on the ROP assigned to it.

Where a BU has been assigned fewer Standard PATs, or additional Non-Standard PATs, the PAB will provide the rationale for this in the BU's RMP. Where the PATs that are assigned to address the BU's Settlement Risks do not differ from the Mandatory and Standard PATs, no rationale will be provided in the RMP.

The PAB will create an initial RMP for each MBU. When there is a change in circumstance, such as a trigger for Re-Qualification or a Technical Assurance check, it will make amendments to an MBU's RMP to reflect this by the application and/or disapplication of non-mandatory PATs. At the end of each quarter, we provide the PAB with a summary of all the changes carried out within that period.

On an annual basis, following the review of the RER and the ROP, the PAB is presented with all the RMPs to review and, if necessary, amends the RMPs for the following Performance Assurance Operating Period (PAOP) in relation to the RER, ROP and additional information from the BU. The PAB will consider all BU Settlement Risks on an individual basis and for each Settlement Risk that the BU has, the PAB will determine what PATs (from the shortlist in the ROP) it wishes to apply to the BU. RMPs can also be updated on a monthly basis if the BU's performance changes or there are associated changes to the RER and the ROP.

Having assessed each Settlement Risk individually, the PAB will consider all of the Settlement Risks that the BU 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 once to address more than one Settlement Risk.

## Assessing MBU Settlement Risk Rating

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### Business Unit Settlement Risk Rating

The Business Unit Settlement Risk Rating (BUSRR) has been developed to determine the extent of BU materiality.

The PAB approves 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 measured Role Code.

When calculating the BUSRR for each BU, the following dimensions are taken into account:

- The BU's performance against the PAB approved criteria;
- The BU's dimensions and portfolio of metering systems;
- The BU's historic performance in this area of Settlement Risk;
- The BU's relevant control arrangements in the areas in which they have Settlement Risk;
- Current market knowledge;
- Results of previously applied PATs (for example, the Qualification process could provide information about a BU's control environment);
- Past Precedent (how similar BUs with similar Settlement Risks have or are being managed under the Risk-Based PAF);
- Industry input;
- Any additional information provided by the BU.

The materiality of Settlement Risks and RMPs for each will be treated confidentially and only made available to the associated MBU in the form of an MBU Dashboard. The MBU Dashboard(s) for each MBU will be reviewed and updated on a regular basis.

We will ensure that the tailored MBU Dashboards and RMPs are being produced in accordance with this methodology and that there is:

- Efficiency in the cost and application of Performance Assurance Techniques.
- Fairness and consistency in the application of Performance Assurance Techniques across MBUs.

The PAB will validate the activities carried out by us to provide assurance to industry that the process is being followed.