PUBLIC

PAF Review

Data Provision

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PAF REVIEW: DATA PROVISION WORKSTREAM REPORT

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PAF REVIEW: DATA PROVISION WORKSTREAM REPORT

SUMMARY

We have concluded our review activities on the data provision workstream of the PAF Review. This report provides the final deliverable from the workstream outlining our findings and recommendations.

Key findings

Preliminary engagement that helped form the scope of the PAF Review recognised that data is critical to the effectiveness of Performance Assurance. Furthermore, many of the issues cited with the existing arrangements could be partly attributed to current methods of provisioning data. This resulted in a separate workstream of the PAF Review on the subject of data provision. The review activities on this workstream have focused on addressing the issues identified and included an assessment of the two detective techniques that are the primary vehicles for assurance data acquisition and reporting.

Detective techniques such as performance monitoring are by their nature retrospective. Whilst these techniques are necessary as a backstop to identify when Settlement Risk manifest, they shouldn't take away focus from preventative and incentive techniques and they must not encourage participants to become reliant on central monitoring to identify their internal process issues. The onus is on participants operating robust controls to meet their BSC obligations with central monitoring acting as the last line of defence to detect errors that may require the application of remedial techniques to correct. We must therefore strike a balance between going too far and not going far enough when monitoring performance such that the objectives of the assurance arrangements are adequately met.

Whilst we identified opportunities to address the issues with current data provision, we have concluded that it is not the right time to invest industry time and effort to make changes to the reporting framework. This is due to the significant volume of change on the horizon primarily related with Market-wide Half Hourly Settlement (MHHS) and the Retail Energy Code (REC) which are expected to impact key BSC areas. We do not believe there is a case to progress changes at this time due to the significant updates that would be required in the coming years. In addition, the architecture of the target operating model for MHHS presents the opportunity to deliver some of the improvements identified with access to more regular and granular data. Therefore, we plan continued engagement with this activity such that assurance reporting requirements can be implemented as we migrate to the new market design which is anticipated in 2024/25.

In the interim, we are proposing to cease some aspects of assurance data provision that we do not feel are adding sufficient value. This will relieve the reporting burden on participants so that focus can be given to delivering upcoming change. Until any improvements to data provision can be delivered through MHHS, our detective assurance activities will continue to use existing data sources that are providing value with continued support from auditing techniques where necessary.

Finally, to support any changes to assurance data sources on an ad hoc basis in future, we feel it warranted to formally define the process by which we obtain new data for performance monitoring. The technique that provides for this was originally defined in such a way that it could be flexibly applied. However, the absence of a formal process on how new data sources should be obtained has resulted in a lack of awareness of the technique and the potential for it to be applied inconsistently. Defining such a process within a BSC Code Subsidiary Document (CSD) would provide better governance, transparency and opportunity for industry input.

Recommendations

Removing participant reported aspects of assurance monitoring

As part of the Performance, Monitoring and Reporting (PMR) technique, which is delivered through the Performance Assurance Reporting and Monitoring System (PARMS), participants have reported on key Settlement processes (e.g. agent appointment and fault resolution) in a number of iterations for over 20 years. Previous review activities estimated that industry spends in the region of 10 Full Time Effort to support this reporting which seeks to provide

routine insights into participant activities outside of periodic auditing. However, this element of the framework has proven unwieldy and not yielded the desired insights. Therefore, since 2018 we ceased actively using the data to trigger performance investigations as agreed with PAB.

Due to the complexity of the underlying processes and there now being in excess of 30 distinct data providers, we do not feel that the current reporting mechanism is conducive for the desired accuracy and flexibility of performance monitoring. Updates to a number of reported areas need consideration as they have become out of date following almost ten years of BSC changes since the original reporting requirements were defined. Furthermore, upcoming market transformation activities, mainly MHHS and the REC, are expected to require changes to all reported areas to some extent.

We have concluded that there is not a case to update the reporting framework at this time. Also, based on the value received from the current reporting, we are unable to justify the industry effort required to support it. We are therefore recommending that elements of PARMS are ceased and not replaced for the time being. This is not because we do not see value in having such insights into key Settlement processes through a data centric approach. As demonstrated through the case study we undertook on a large scale Settlement issue, such routine insights can facilitate the earliest detection of Settlement issues that preventative and incentive techniques fail to mitigate. We have reached this conclusion due to the issues with the current reporting framework, impact on participants and the need for further changes in the coming years as the market continues to evolve.

We do however feel there are merits in gaining such routine insights using a data centric approach and that it shouldn't be ruled off the table in future entirely. We propose that we revisit the need for such reporting as we transition to the new market arrangements and the risk landscape evolves. When we do this, we propose that consideration be given to whether the reporting should be brought to a higher level by focussing solely on processes that act as controls (e.g. exception management, commissioning and fault resolution) and/or Settlement performance whereby the target operating model for MHHS would provide better and more granular access to data. We feel this could be an appropriate compromise to provide sufficient insights to facilitate detection of issues whilst addressing concerns around central reporting activities going too far and driving the wrong behaviours.

Defining the process to obtain new data for assurance reporting

Making changes to the reported processes through the PMR technique requires a Change Proposal (CP) to the relevant CSD which comes with the required governance and industry consultation. The other avenue for data acquisition for assurance purposes is through the Material Error Monitoring (MEM) technique. This technique was defined in such a way that it could be flexibly applied when access to new data is required to monitor emerging risk areas. However, unlike other techniques that have flexibility to make changes to reporting (such as Peer Comparison), there is no defined process as to how those changes should be made. We feel this can be partly attributed to why the application of the technique hasn't changed in over 15 years.

We are therefore proposing that a defined process for gaining access to new data under the MEM technique be formalised within a new or existing CSD. The intention of this recommendation is to retain the flexibility that already exists within the MEM technique but explicitly define the process that should be followed to access new data. This process is envisaged to include some form of input from participants as obtaining new data is likely to involve a reporting burden on them.

Next steps

Both recommendations discussed above require a Change Proposal to implement the relevant CSD changes. We propose that the PAB uses its power in Section Z8.2 to recommend to the BSC Panel that these changes are raised. In order to relieve the current reporting burden on participants sooner, the recommendation to cease some of the participant reported aspects of PARMS should be prioritised above the other recommendation. Following PAB approval, these recommended CSD changes would be put in the change pipeline and prioritised appropriately.

PAF REVIEW: DATA PROVISION WORKSTREAM REPORT

REVIEW SCOPE AND OBJECTIVES

This section provides an overview of the scope and objectives of the data provision workstream of the PAF Review as approved by the BSC Panel in March 2017 (264/07).

Why does the PAF need data?

It is widely acknowledged that accurate monitoring data is critical to the PAF's effectiveness and credibility. Whilst there are some assurance techniques that are entirely data-centric, such as PMR, all aspects of the assurance framework require reliable and accurate data to some extent in order to:

- Identify and assess the impact of Settlement Risks;
- Monitor market compliance with key BSC processes;
- Facilitate coordinated and proportionate application of assurance techniques;
- Track participant performance for identified issues; and
- Evidence the need for escalation and/or the application of sanctions.

Existing methods of data provision are seen to exacerbate the perceived issues with the PAF by creating inaccuracy and inconsistency, undermining the PAF's credibility, limiting the capacity to assess and quickly act upon Settlement Risks and occasioning disproportionate cost for data providers and BSC Parties.

Review scope and deliverables

This aspect of the PAF Review will identify and evaluate options for future approaches to data provision. This encompasses the PMR and MEM techniques as the primary vehicles for data acquisition and reporting. We have investigated the feasibility of opportunities to improve the way in which we provision data to deliver the techniques. It is desired that the future approach will be scalable to meet changing assurance needs, enable evidence-based decision making and be as inexpensive as possible to maintain or change. This approach should also be consistent with wider strategic objectives, systems transformation work and reflect industry appetite for change/expense.

This report provides the final deliverable of the data provision workstream which outlines the options considered, the findings from the evaluation of those options and a set of recommendations as to how data should be provisioned in future to support assurance activities. We also provide a view on how the recommended approach will impact existing PAF data activities. I.e. any existing data sources that should remain largely the same, be enhanced or be removed.

How has the review been structured?

This workstream has been delivered in two main stages. We undertook industry engagement to support both stages through the Issue 69 workgroup and a PAB subgroup when required.

The first stage was an assessment of existing data sources which we presented our findings to the PAB in December 2019 (PAB227/07). This further defined the issues with existing assurance data sources, how those issues limit our ability to deliver effective assurance, and identified opportunities to address them. These opportunities were classified as those that could be progressed now or required further assessment as part of the on-going review work.

The second stage focussed on the different options for future data provision to address the identified issues and the benefits of those options. Following stakeholder engagement where the options were discussed, we reached a determination on which we feel was the most appropriate under the current circumstances.

PAF REVIEW: DATA PROVISION WORKSTREAM REPORT

BACKGROUND INFORMATION

This section provides some key background information relevant to this PAF Review workstream.

What are the detective techniques related to data provision?

In November 2007, the BSC Panel defined five assurance techniques which it categorised as detective (Panel 133/11). These five detective techniques can be further grouped as either of an auditing (3) or data provision (2) nature. This report has focussed on the techniques related to data provision which are the PMR and MEM techniques. However, as nearly all aspects of the assurance framework require data to some extent and the data provision techniques were designed to complement those aspects, they are also touched on in this report.

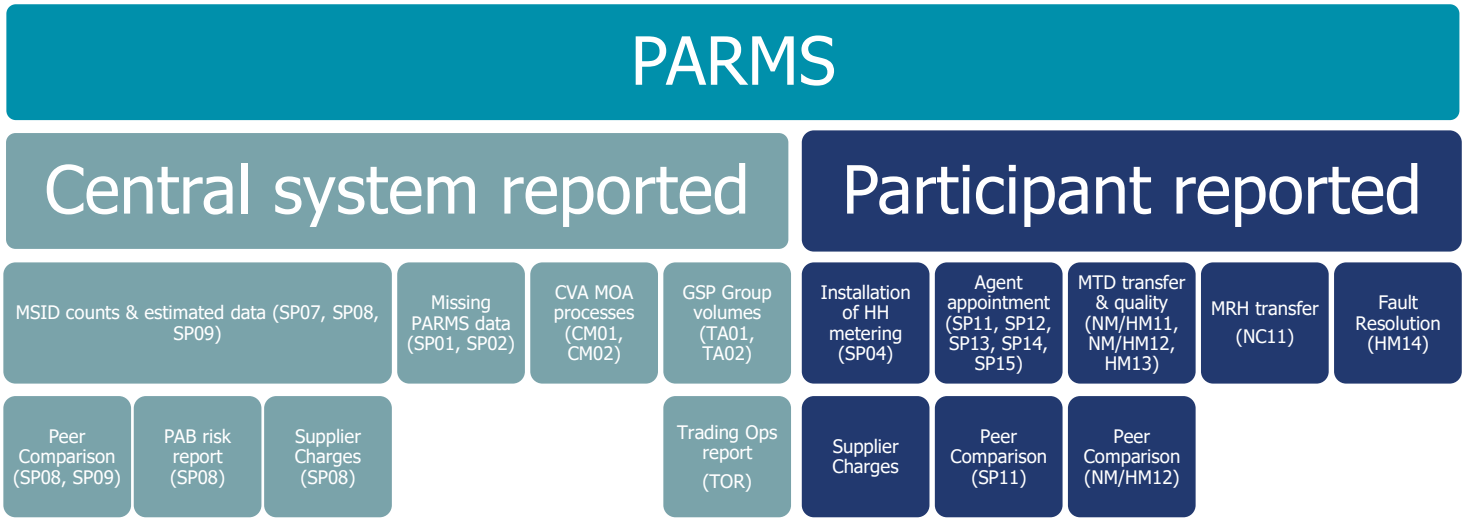
The detective techniques are designed to identify when undesirable outcomes have been realised. Their effect is by definition retrospective so they are only appropriate in isolation when it is possible to accept the loss or damage incurred in the context of the Settlement process.

Whilst an assurance technique might be considered to provide one primary type of assurance (e.g. detective), it can be contemplated that ancillary types of assurance can also be provided by that technique. For example, while PMR is clearly a detective technique, it may provide an incentive by virtue that participants know a process is being measured and performance recorded.

What is the Performance Monitoring and Reporting technique?

The Panel formally defined the PMR technique as a "detective technique that complements the BSC Audit and Technical Assurance processes through the provision of quantitative data designed to identify performance at key control points in Settlement processes". Each key control point to be monitored is given a unique reference or "Serial". The purpose of the Serials is to provide assurance that participants are meeting their obligations. Performance data for each Serial is routinely reported from participant or central systems into the Performance Assurance Reporting and Monitoring System (PARMS). As the PMR technique is delivered through PARMS, the terms are used interchangeably throughout this report. BSCP533 defines 22 PARMS Serials which are currently reported.

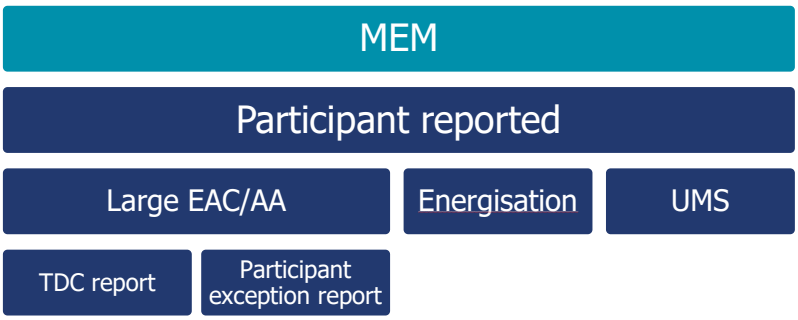
PARMS Serials can and have been used to support delivery of the assurance activities outside the PRM technique. For example, the data has been used for assessing the impact of Settlement Risks, evidencing the need for participants to resolve issues through the Error and Failure Resolution (EFR) technique, publically reporting participant performance through the Peer Comparison technique and levying charges for underperformance through the Supplier Charges technique. The below diagram outlines the source of each PARMS Serial and how the data is currently used at the time of writing this report.



What is the Material Error Monitoring technique?

The Panel formally defined the MEM technique as a "detective technique that complements the BSC Audit, Technical Assurance and Trading Disputes processes through the provision of quantitative data designed to quantify the contribution made by Performance Assurance Parties to error and the impact of such errors on Performance Assurance Parties…Data is collected by the PAB in order to calculate and track identified material errors on a regular basis…It enables BSCCo to model and communicate the impact of identified settlement errors".

We have been deploying the MEM technique in three areas of the NHH market for over 15 years. Those areas being erroneously large consumption values (EAC/AA) and energisation status and Unmetered supplies consumption mismatches between participant operated systems. We still regularly collect data for these three areas and use a set of agreed assumptions and Supplier provided information to estimate the error volume associated with non-compliance. These estimated error volumes feed into on-going risk assessments and reporting to participants and committees where relevant. The below diagram outlines where MEM data comes from and the techniques/reports the data is currently used for.



What is the difference between PRM and MEM techniques?

The main difference between the two techniques is around how they are deployed and the flexibility. The PRM technique defines within the BSC the key controls points (Serials) that are monitored and the performance measures (Standards) applied to those areas. These clearly defined reporting requirements within the BSC provides a degree of rigidity and therefore certainty around how each control point is reported and monitored. The MEM technique was set up in such a way that it could be flexibly deployed. For example, if the PAB had concerns around the error volumes associated with a specific process, it could deploy the MEM technique to obtain the necessary data to estimate the impact on an on-going basis. It is envisaged that once the error volumes associated with a monitored process fall below a level deemed appropriate by the PAB, regular data provision will be discontinued.

Another key difference is around the views of performance each technique seeks to provide. As per the Panel definition, applications of the MEM technique have sought to estimate the error volume associated with certain errors, which has generally required a number of assumptions and regular Supplier input. The PARMS Serials used to deliver the PMR technique don't seek to estimate an error volume and generally provide counts of Metering Systems where information is missing, late or incorrect. However, that being said, Settlement Risk assessments have on occasion used data from PARMS Serials to infer error volumes.

Are there any other existing assurance datasets?

Aside from Settlement data available from BSC Central systems, there are two other quantitative datasets we obtain on a regular basis to support assurance activities outside the PRM and MEM techniques. Those datasets being extracts from the Supplier Meter Registration System (SMRS) and Data Transfer Network (DTN). We have gained access to these datasets through relevant permissions and general access provisions under the BSC (Section U1.4). Both these datasets are used to support the application of auditing techniques and ad hoc Settlement Risk analysis and reporting.

PAF REVIEW: DATA PROVISION WORKSTREAM REPORT

RECAP ON REVIEW OF EXISTING DATA SOURCES

As previously noted, the first stage of the workstream assessed existing assurance data sources. We presented our findings on this work to the PAB in December 2019. Below is a summary of the key issues identified as part of this work which limit our ability to deliver aspects of the assurance framework. The opportunities to address the issues (or not as the case may be) are outlined in the options section later in this report.

Highly aggregated data

This issue covers data we obtain from BSC central systems, such as SP08 which reports on estimated volumes in Settlement, which is aggregated to a Supplier, daily and regional level. This data has proven key in identifying issues at the macro level on which it is reported and we continue to rely on it to trigger performance investigations.

The main limitation with data is the aggregated level on which it is reported, as this is the level held within BSC central systems. This provides limited opportunity to drill down into issues and identify root causes. We generally remain reliant on participants self-reporting on root causes which can be difficult to independently validate. In addition, as Settlement Errors have a multi-directional nature to them (either under or over stating consumption), we acknowledge that the data contains a multitude of opposing errors which aren't visible at the level we receive.

Inaccuracy and inconsistency of de-central reporting

This issue mainly covers the participant reported aspects of PARMS which provides insights into the key Settlement processes that are upstream of BSC central systems. On-going issues with the accuracy of the reported data has negatively impacted its credibility as an assurance data source. We have routinely identified inconsistent and inaccurate interpretations of the reporting requirements when we have used the data for performance investigations. This was identified as a key issue with existing data provision.

Incompleteness of data

This issue is related to the extracts from the DTN to which we access on a routine basis. This dataset provides insights into the granular transactions between participants for key Settlement processes upstream of BSC central systems.

The primary issue with the DTN extracts we receive is that they do not provide full coverage of the market. The gaps in data are generally for market participants who are vertically integrated and operate as different market roles. This degree of incompleteness varies across processes depending on the market and participant role. For example, based on analysing communications between participants (or lack thereof), in the HH market for communications from the Supplier to Data Collector we estimate completeness as high as 99%. Whereas, in the NHH market for communications from Data Collector to Data Aggregator we estimate completeness as low as 18%. Due to the incompleteness of this dataset for certain participants for aspects of their activities, the dataset is biased and cannot provide an equitable view of performance. As such, any management of performance solely through this dataset would also be biased.

Extracts of a snapshot nature

A number of our assurance datasets are based on extracts of a snapshot nature. This covers the SMRS dataset which is a snapshot on a quarterly basis and all three applications of MEM which are snapshots on a quarterly or monthly basis.

The main limitation with such datasets is they only provide a view at a point in time and as such can miss activity between snapshots. For example, if something changes multiple times between snapshots, only the latest change is visible. This means that any reporting on the volume of changes will be under representing the actual number of changes that occur. This has the potential to materially impact the estimation of error associated with the applications of MEM.

DO WE NEED ALL ASPECTS OF PARMS?

Stakeholder feedback that helped form the scope of the PAF Review drew out fundamental issues with some of the participant reported aspects of PARMS. On-going review work has identified opportunities to address the issues, but they present non-trivial impacts on participants who act as PARMS data providers or require a fundamental redesign of the reporting mechanism. Therefore, before discussing those opportunities, it's worth considering whether we need regular insights into processes upstream of BSC central systems and the consequences of not having them.

What are the issues?

Since 2011 when the current participant PARMS reporting requirements were introduced, we've experienced issues with inconsistent and inaccurate reporting. Such reporting errors have been drawn out whenever we have used the data to support risk mitigation. Whilst it was never envisaged that this area of PARMS would provide an entirely accurate view of performance due to the complexity of the underlying processes, the volume of reporting errors experienced was not anticipated. These on-going issues with reporting have negatively impacted its credibility as an assurance data source, and participants commonly quote it as a disproportionate reporting burden with questionable value added.

We have previously attempted to assess and remedy the data quality issues through "drill down" audits which confirmed wide scale reporting non-compliance (PAB163/08 "Auditing the accuracy of PARMS submissions"). However, such auditing proved resource intensive and did not result in notable improvements to accuracy due to the number of data providers, complexity of the data and number of processes that are reported on.

Another key issue with the data is the aggregated nature on which it is reported. This provides limited opportunity to drill down into issues and assess root causes. We were largely reliant on Suppliers investigating and self-reporting on performance issues. To do this, Suppliers requested the backing data (i.e. drill down reports) for PARMS submissions from numerous data providers, which proved onerous on Suppliers to undertake and ELEXON to validate. Furthermore, the outcome of these investigations largely drew out reporting errors or immaterial non-compliances, which due to the amount of effort involved, did not seem beneficial. Therefore, we stopped using data from this aspect of PARMS to trigger performance investigations as agreed with PAB.

As we are not currently taking assurance actions based on the data, we considered whether the reporting should be switched off as an interim measure until the wider review work concluded. However, the majority of respondents on a PARMS survey noted that they find the pursuant reports somewhat or very useful, so we did not propose such a measure at the time (PAB227/07).

What is the reporting seeking to provide?

As previously noted, the participant reported aspects of PARMS seeks to provide insights into key Settlement processes that are upstream of BSC central systems. These are processes such as fault resolution, agent appointment and transfer of Metering System data which continue to be critical for Settlement accuracy and are managed entirely by participants under the Supplier hub arrangements. Meter Operators and Data Collectors report on various processes as the hubs for key Settlement processes.

During initial engagement activities, stakeholders acknowledged the importance of accurate monitoring data to the assurance arrangements. Routine performance reporting acts as the eyes and ears of the PAB, enabling it to track trends in performance over time and identify and mitigate emerging risk areas.

As this review has progressed, there have been discussions as to how far the PAF should go in terms of obtaining routine insights into participant activities. When considering this it's worth bearing in mind the objectives of the PAF as defined in Section Z5.1.4. The first objective being the efficient, equitable and accurate allocation of energy between Suppliers. In other words, accurate Settlement. The second objective being the efficient, accurate and co-ordinated transfer of Metering System data. This objective acknowledges the importance of the interface between participants as millions of end consumers continually churn between Suppliers and their agents. The assurance

arrangements seek to deliver against these objectives to ensure Settlement is accurate and that there is a level playing field.

Regular insights into key Settlement processes have been obtained through the various iterations of PARMS since it was originally devised in 1998. These insights into the granular activities at individual organisations can act as the early warning for future Settlement performance issues. For example, we undertook the case study (summary in Appendix 1) on a previous large scale Settlement issue to draw out any limitations with our existing assurance data and reporting in regards to detecting such issues. The case study confirmed that the earliest notable change in performance data was via the participant reported PARMS Serial that measures the submission of Meter read histories (NC11). However, due to the on-going issues with accuracy of PARMS data and the process not being considered a top risk at the time, we were not monitoring participant level performance. Corrective techniques were not deployed to address the issue until a year later when poor performance was observed for the participant at the Final Reconciliation (RF) Settlement Run.

The primary purpose of PARMS reporting is to support the PAB's decision making when deploying additional assurance techniques to mitigate risk. In addition to reporting we provide to PAB, we have previously provided consolidated PARMS Serial reports to participants. These consolidated reports provide participants a view of what other participants have reported on them and their performance in relation to peers so they are not surprised if remedial techniques are deployed to address under performance. From engagement we undertook through the PARMS survey and Issue 69 workgroup, we also understand that some participants use the reporting to investigate exceptions and address them where appropriate. Due to the resource invested in the PARMS reporting framework, it provides some comfort that it has supported participants in identifying and addressing material issues. This should however be considered an ancillary benefit. As current PARMS Serial data is reported two months after the event and participants will always have better and more regular access to the underlying data within their systems, the expectation is for each participant to have internal reporting that would provide timely identification and resolution of issues. Through onsite auditing activities, we see participants that have such internal reporting in place and based on our experience the participants that do not are newer with less mature internal processes.

What other techniques can provide similar insights?

Outside of routine performance reporting, the auditing detective techniques can (and do) provide insights into the key Settlement processes upstream of BSC central systems. The most widely applied auditing technique being the annual BSC Audit which seeks to touch on most key Settlement processes to some extent. We note that nearly all participant reported PARMS Serials cover the same processes as the onsite testing undertaken by the BSC Auditor, e.g. fault resolution, agent appointment, and transfer of Metering System data such as MTDs and MRHs. Using auditing techniques to provide such insight come with the following benefits and limitations:

Benefits	Limitations
• Can be flexibly applied. Can be scaled up and down as required (depending on contractual and resource limitations) and doesn't require system changes to shift direction. • Can dive deep into processes and draw out root causes of non-compliances. Having "boots on the ground" allows for follow up questions and challenge which can facilitate a more rigorous assessment.	• Can be expensive to deliver and intrusive to participants. The various auditing techniques currently accounts for approx. two thirds of the annual assurance budget. Aside from the central cost to deliver the techniques, the resource required for participants to support auditing most likely doubles the overall cost. • Provides a snapshot in time. As auditing is expensive and intrusive, it is not practical to undertake it on a frequent basis. Therefore, it could take a reasonable amount of time before a systematic issue is detected through an audit. • Can only cover small samples from large populations (sometimes populations of several million). Auditing

	via small random samples over large populations is only effective at picking up systematic errors

The other avenue to obtain similar insights would be through the MEM technique. Whilst this technique was setup such that it could flexibly deployed, in practice it has rarely changed, i.e. the three applications of MEMs have been in place in their current form for in excess of 15 years.

What would be the consequences of not having such insights?

It could be argued that if we ceased the participant reported aspects of PARMS and didn't fill the gap immediately or at all (as per option 1 discussed later in the report) we'd not be in a worse off position than we are currently. However, we note that perceived inefficiencies with the current operation of the assurance arrangements, particularly issues around data provision, were the initial drivers for the PAF Review.

If it was determined not to replace this aspect of PARMS on an enduring basis, we'd rely on auditing techniques and Settlement performance data from central systems (i.e. SP08) to detect any issues that are not mitigated through incentive or preventative techniques such as Qualification and Re-qualification.

Whilst auditing techniques come with the limitations outlined above, they can be flexibly applied as the risk landscape changes. In addition, there's the opportunity to refocus them on the operation of controls rather than the current approach that looks at the large number of underlying processes.

In terms of reliance on Settlement performance, there are two main limitations in regards to detecting issues. The first being that it only covers Settlement Errors that result in estimated data. There are three potential outcomes when a Settlement Error occurs: estimated, erroneous or missing data. The SP08 Serial only covers estimated data and therefore Settlement Errors that result in the other two outcomes would not be captured. The second limitation relates to the timeliness of detecting issues. The case study (summary in Appendix 1) demonstrated that process level failures provide the initial warning signs that will result in Settlement performance issues down the line. With monitoring that largely relies on Settlement performance data, we'd have to accept that issues may not be detected until later than they could have otherwise been. However, there is an opportunity to introduce an element of forecasting in monitoring to predict drops in performance.

In addition, future Peer Comparison reporting would be limited to central system PARMS Serials (which are on a Supplier only level) or through audit reports which can be seen as subjective.

What do we conclude?

We have investigated key Settlement processes through detective techniques such as auditing and performance monitoring since the introduction of the assurance arrangements, and we do not envisage a time when we would not want to look at process level activities at all as the market continues to evolve and new risks emerge. Therefore, we do not feel we should rule out gaining such insights through a data centric approach in the future. In certain situations such an approach can deliver more robust, cost effective assurance with better coverage than that achieved through auditing. It is however important to understand the cost effectiveness of auditing vs. a data centric approach and that the latter will provide the desired insights without presenting a disproportionate reporting burden.

CURRENT AND FUTURE CHANGES

Assurance data provision and reporting must reflect current processes and have sufficient flexibility to be updated as the market continues to evolve. To understand this, we reviewed existing reporting and key upcoming changes that could impact reporting. We identified that some existing PARMS Serial reports are out of date and do not entirely reflect how processes have changed over time. We also identified two key market transformation activities that need particular consideration for future assurance data provision and reporting.

Retail Energy Code

What is the Retail Energy Code?

The REC is a new dual fuel code (gas and electricity) which brings together the code requirements relating to retail energy activities and it will govern the operation of faster and more reliable arrangements for consumers to switch their energy Suppliers.

What are the impacts on BSC processes?

At this time of writing this report (July 20), aspects of metering are proposed to move from the BSC to the REC. Those aspects relate to the appointment of metering agents and the transfer and maintenance of Meter Technical Details (MTDs) following a change of Supplier as part of the switching process and other non-switching related processes, e.g. change of agent (not concurrent with a change of Supplier), and other physical metering activities such as following a Meter exchange or change of energisation status. The current proposal has the BSC retaining the metering Codes of Practice (which are the obligations in relation to the physical installation of metering) and the processes that act as controls over metering, e.g. fault resolution, commissioning and proving.

However, it should be noted that the split outlined above is still subject to industry consultation. Therefore, exactly what metering aspects will be removed from the BSC is currently uncertain – it could be more than stated above and it could be less.

What are the anticipated impacts on assurance activities?

Providing assurance over metering activities has been a key focus of the framework for many years as correctly functioning metering is fundamental to Settlement accuracy. The proposed split has a number of key risks areas moving to the REC. For example, the Settlement Risk related to quality of MTDs was selected as one of the four Settlement Risks that will undergo greater focus in the 2020/21 period due to participants continuing to raise it as a significant concern. Based on the current proposal, five[1] out of the 19 (or just over a quarter) SVA risk areas on 2020/21 risk register would move to the REC and therefore the assurance of those areas would also move. For the 2020/21 period, those five SVA risks areas were estimated to have a combined Settlement impact of between £29m and £71m.

Based on the current baseline, the changes presented by the REC are expected to impact most BSC assurance techniques to some extent particularly those related to data and reporting as a number of PARMS Serials and applications of MEM relate to processes that would no longer reside within the BSC. It is currently unclear how the newly introduced cross code assurance arrangements will work, as this is yet to be discussed and agreed. However, with a number of key Settlement related processes potentially moving to the REC, there will certainly be hand-offs between the arrangements that need careful consideration to avoid duplication or gaps.

What are the anticipated timescales?

[1] Four would be wholesale moves, whilst one (agent appointments) would be a partial move.

The original intention was for the required BSC changes presented by the REC to be implemented by April 2021. However, due to the global pandemic, the timescales are subject to delays.

Market Wide Half Hourly Settlement

What is Market-wide Half Hourly Settlement?

Following the mass rollout of advanced and smart Meters, a large proportion of energy consumers have a Meter capable or recording consumption to Half Hourly time periods. However, nearly all are still being settled on a Meter advance basis (i.e. register reads every week, month, quarter etc.) with Half Hourly consumption values being estimated based on typical consumption for a similar type of consumer. MHHS forms part of Ofgem's Settlement Reform work and seeks to move all these consumers to being settled on Half Hourly time periods. This will expose energy Suppliers to the true cost of their customers' usage and incentivise them to help their customers move consumption to times of the day when electricity is cheaper to generate and transport. This is seen as an enabler for a smarter, more flexible energy system that lowers bills, reduces carbon emissions and enhances security of supply.

What are the impacts on BSC processes?

The recommended target operating model for MHHS re-designs a number of key BSC Settlement processes related to registration, data processing and aggregation and some areas of MTD transfer. Whilst these processes would remain under the BSC, material changes are planned to the operation of the processes. However, it should be noted that the move to MHHS is still subject to Ofgem decision following full cost benefit analysis.

What are the anticipated impacts on assurance activities?

The re-design of the key BSC Settlement processes is expected to present a large impact on assurance activities. Based on the recommended target operating model, we envisage impacts to 10 out of the 19 (or just over half of) SVA risk areas.

It is envisaged that monitoring migration to the new arrangements will be a focus of assurance activities due to the increased opportunities for errors to be introduced. Following transitional activities concluding and the end state being reached, it is likely for a continued focus on assurance as new systems and processes bed in. Following a bedding in period, assurance activities would be expected return to relative normality as future changes would be of a more iterative nature.

Whilst we envisage the need for increased assurance activities to support the move to MHHS, the new market arrangements also present the opportunity for some existing risk areas to diminish or disappear. For example, the new registration service providing a single view of the truth and potentially managing notification of changes could result in Settlement Risk related to agent appointments being significantly reduced or eliminated.

It should also be noted that the target operating model brings with it a number of opportunities to enhance assurance delivery with more regular and granular access to Settlement data. For example, under the central data aggregation framework, assurance reporting can be undertaken that addresses the issues previously discussed with the highly aggregated data currently held within BSC central systems.

What are the anticipated timescales?

The move to MHHS is not definite with the final decision planned in spring 2021. If MHHS is progressed, full migration activities are anticipated during 2024/25. However, as with the REC, any progression timescales are likely to be impacted by the global pandemic and could therefore be subject to delays.

Other key BSC changes

Outside of the REC and MHHS, there have or are expected to be changes to BSC processes that present impact to assurance data and reporting. Below is a summary of the key changes and the impacted areas. Please note: this does not seek to provide an exhaustive list as there any many potential changes in the pipeline.

Since the current set of participant reported PARMS Serials were introduced nearly a decade ago, there have been changes to Meter Technical Detail (MTD) processes specifically in the NHH market. These changes relate to Auxiliary MTDs for advanced Meters and Smart Meter Configuration Details for smart Meters. The PARMS Serials that cover MTD transfer in the NHH market (NM11 and NM12) have not been updated to reflect those changes. Consideration should be given to whether these updates should be progressed so the new processes are appropriate captured.

There is no requirement to transfer the Meter read history on a change of Supplier for Data Communications Company (DCC) serviced smart Meters. As this wasn't added as an exclusion to the PARMS Serial that reports on missing Meter read histories (NC11), the Serial is out of date and is potentially over reporting the volume missing.

The fault resolution process has been under review since 2015. This resulted in three Change Proposals to the fault resolution process recommended by the Issue 73 workgroup. Despite these three Change Proposals being rejected in March 2020, further work is expected which will result in refined Change Proposals. Some of the process changes discussed would require a fundamental redesign of how the fault resolution PARMS Serial (HM14) is reported.

Summary

Both the REC and MHHS present the potential for significant changes to BSC processes and therefore assurance activities. However, the timescales and scope of both market transformation activities are currently uncertain and could be subject to delays. In addition, we have identified other changes that have or will present the need to update any process level performance monitoring. The below table outlines all SVA risk areas and whether MHHS, REC or other BSC changes are expected to present an impact. All current participant reported PARMS Serials and applications of MEM are expected to be impacted to some extent.

SVA risk area	Existing report	MHHS	REC	Other
Registration		X		
Attributes		X		
Metering Equipment installation				
Notification of change to metering	HM11/NM11		X	X
Fault resolution	HM14			X
MTDs transfer and processing	HM12/NM12	X	X	X
Retrieval of Metered Data		X		
Processing of Metered Data		X		
DA processes Metered Data		X		
Meter read history	NC11	X		X
Unmetered Supplies	MEM	X		
Metering Technical Detail Quality	HM13		X	
Manual adjustments				
Agent appointments	SP11/12/13/14/15	X	X	
Reference data				
Energisation status	MEM		X	
Exception management		X		
Revenue protection				
Virtual Lead Parties				

OPTIONS

This section provides details of the options we considered as part of our review activities and the feedback received for each from industry through the Issue 69 workgroup.

Options overview

To address the issues identified with the participant reported aspect of PMR (which is delivered through PARMS), we identified three broad options which are summarised as follows.

1 – Retire parts of PARMS	2 – Tweak PARMS framework	3 – Centralise PARMS
Remove the participant reported elements of assurance reporting and do not replace them with an equivalent at this time. Under this approach, we would wait for more certainty around the impact of market transformation activities to consider new assurance reporting.	Retain the existing participant de-central reporting mechanism but deliver improvements to the framework and bring it up to date with current processes.	Move towards a more centralised approach to assurance reporting whereby access is gained to the granular data required to provide equitable performance reporting for key BSC processes.

What's common under all options?

The older PARMS Serials that are mainly reported from BSC central systems, such as SP08 which reports on estimated data, would remain largely the same. Our review activities confirmed that these Serials provide effective high level KPIs for Suppliers and have been key in identifying Settlement issues. However, an aspect of option 3 seeks to enhance this data by facilitating Settlement performance reporting by additional dimensions, e.g. by agent.

All existing MEM areas would continue in their current form for the time being. Review activities found that the reporting continues to provide insights into key risk areas and the associated Settlement impacts. Also, as they have been reported for in excess of 15 years, they are well established and understood reporting processes. However, as all applications of MEM are in the NHH market, they will naturally become redundant with the migration to MHHS. Therefore, we propose that they remain in their current form until such a time as they become redundant.

Finally, all options envisage further changes being necessary to update assurance processes to reflect the market transformation activities whether that be consideration on implementing new data feeds and reporting (option 1) or update existing processes to reflect any changes (options 2 and 3).

Option 1 Retire parts of PARMS

At this time, the market is not in a phase of iterative updates; there are a number of initiatives that seek to wholesale redesign or in some cases remove elements of the market (e.g. NHH Settlement arrangements). This option would remove the participant reported elements of PARMS and not replace them with an equivalent for the time being. This would remove the regular insights we receive into key processes that are upstream of BSC central systems.

This approach seeks to merely remove the elements of existing assurance data provision that have not provided the desired insights without considering to fill the gap until the new market arrangements start to bed in. In this interim period, business as usual assurance activities would rely on other existing data sources and less data centric techniques to identify and mitigate risk. Whilst it could be argued that we'd not be in a worse off position than we currently find ourselves, over reliance on such techniques were at least in part the original driver for the PAF Review.

ALLOWS MORE TIME TO UNDERSTAND CURRENT MARKET TRANSFORMATION ACTIVITIES

INCREASED RELIANCE ON AUDITING TECHNIQUES WOULD NOT BE DESIRABLE

REMOVING THOSE ASPECTS OF PARMS MAY FLUSH OUT PARTIES RELYING ON IT INSTEAD OF INTERNAL REPORTING

Issue 69 views on option 1

Option 2 Tweak PARMS framework

This option would tweak/iterate on the existing PARMS reporting framework but would retain the de-centralised reporting mechanism, i.e. participants reporting on defined performance measures for processes upstream of BSC central systems. As part of our review activities on existing assurance data, we identified three main areas of improvements that could be delivered to the existing PARMS reporting framework.

The first area being to standardise the format of PARMS drill down reports and require them to be submitted into the PARMS system. This would move away from only receiving aggregated reports centrally thus allowing ELEXON to provide Metering System level exception reports to Suppliers/agents, and use the more granular data internally for root cause analysis and selecting targeted audit samples.

The second area being to review and update the existing set of Serials where appropriate. As previously discussed, we are aware that some Serials are now out of date and do not entirely reflect the underlying BSC processes. In addition, we have identified additional areas where we may wish new PARMS Serials to be introduced, e.g. the structured process for commissioning introduced in November 2018.

The final area is to improve the process by which the PARMS systems knows which submissions to expect from agents. This is currently undertaken de-centrally by all Suppliers, however there is scope to do this centrally using data from the Supplier Meter Registration Service (SMRS) to reduce the reporting burden. This would require ELEXON to gain a more live view of changes in SMRS which is currently under investigation.

This option iterates on the existing PARMS reporting framework to increase the value and bring the reporting up to date with current BSC processes. This approach keeps the bulk of the reporting requirements and therefore any future updates on participants who have access to all the necessary data within their systems thus removing the need for reasonable amounts of data to be transferred and processed as per option 3.

COST AND EFFORT TO BRING SERIALS UP TO DATE AND INTRODUCE NEW ONES WOULD NOT BE POPULAR

SOME SUPPORT FOR NEW SERIALS AND STANDARDISATION OF THE DRILLDOWN REPORT

LARGEST IMPACT ON PARTICIPANTS

MAJOR DRAWBACKS OF BOTH ACCURACY AND FLEXIBILITY OF PARMS WOULD REMAIN

Issue 69 views on option 2

Option 3 Centralise PARMS

This option would replace the participant reported elements of PARMS with a centrally reported equivalent. Under this option, ELEXON would gain access to the granular data required to produce performance reports on key BSC processes. This would remove the requirement for participants to analyse data within their systems and provide aggregated reports on performance measures, thus shifting the reporting burden to providing raw copies of the transactional data between systems related to BSC processes. We have identified a number of aspects to this option, which could be delivered as standalone items or as a combination of elements within each.

Serials on control processes – this aspect relates to gaining access to the required data to report on BSC processes that act as controls (e.g. fault resolution, commissioning, exception management etc.). As there are a small number of such control processes which mitigate errors over a broad range of risk areas, this aspect keeps the number of Serials, volumes of data and complexity of reporting system low whilst maximising risk coverage.

Serials on core processes – this aspect relates to gaining access to the required data to report on core BSC processes (e.g. transfer of Meter read histories, Meter Technical Details, agent appointments etc.). This aspect would provide a more detailed view of specific risk areas whilst increasing the number of Serials, volumes of data and complexity of reporting system.

Disaggregated Settlement data – the final aspect relates to gaining routine access to the Metering System level consumption data used in Settlement either from the inputs or outputs from Data Aggregation (DA) systems. Access to this data facilitates more granular reporting of Settlement performance (e.g. by additional market dimensions such as by agent and Meter type) and assessing the net and gross impact of estimated and erroneous consumption values.

Whilst the above aspects could be delivered as standalone items, a key enhancement to existing PARMS reporting requires linking the process/Serial level data to consumption data. This seeks to attribute a control or core process failure to a Settlement impact to address the feedback that existing PARMS reporting mainly captures immaterial non-compliances. However, the linking of process failures to Settlement impacts for such large volumes of data containing significant "noise" would require reasonably complex mapping logic. This is expected to be the most technically complex and challenging aspect of all options under consideration. In addition, the mapping logic couldn't guarantee 100% accuracy when estimating Settlement impact due to the number of potential scenarios and noise.

This option pushes the more complex reporting aspects to a central system such that there are no de-central interpretations of reporting requirements and large numbers of system changes required to make future change. This seeks to address the existing issues with inaccuracy and inflexibility of existing performance reports, which would make it simpler to update as the market continues in evolve. However, this option does require significantly more data to be routinely provided which presents a level of duplication and technical complexity. There would also still be a reporting burden on participants.

TECHNICAL COMPLEXITY TO EXTRACT THE REQUIRED DATA WOULD VARY ACROSS PARTICIPANTS

ACCESSING DISAGGREGATED SETTLEMENT DATA FROM DA SYSTEMS COULD IMPACT SETTLEMENT PROCESSING TIMES

ELEXON COULD BECOME "SWAMPED" WITH DATA

FURTHER CHANGES WOULD ALMOST CERTAINLY BE NEEDED AS A RESULT OF MWHHS AND THE REC

GDPR IMPLICATIONS DUE TO TYPE OF DATA PROVISIONED

Issue 69 views on option 3

CONCLUSIONS

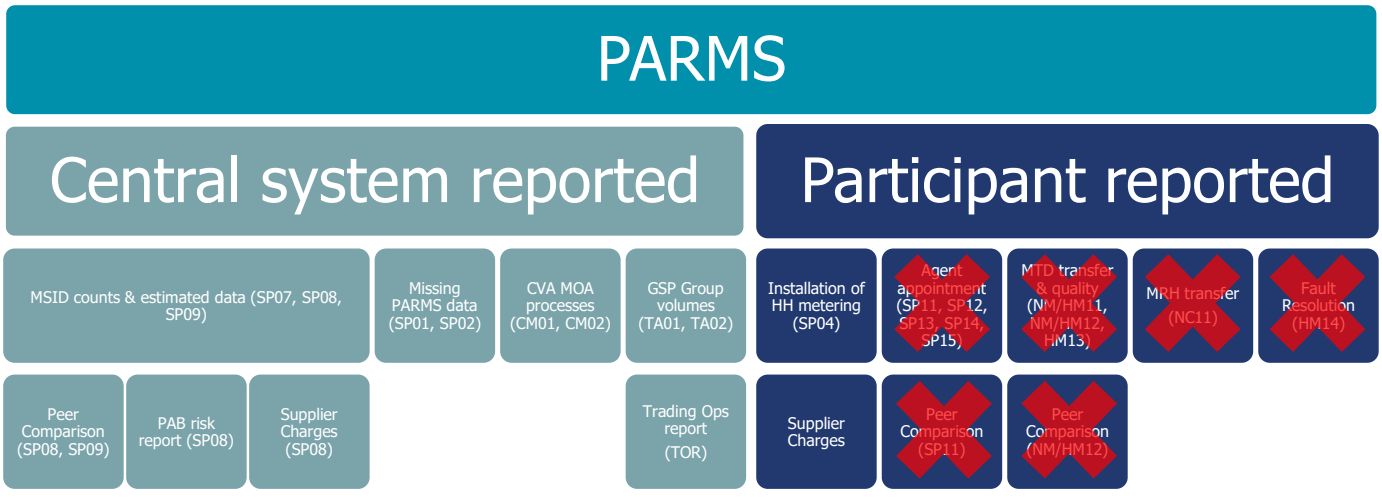
Stakeholder consensus is that acquisition of data that supports identification of issues within industry processes is desirable especially for participants that feel impacted by the non-compliance of others. However, previous attempts to gain routine actionable insights into granular industry processes through a data centric approach have been subject to issues and put large reporting burdens on participants. Furthermore, in the coming years, industry resource will be focused on delivering fundamental market changes. Whilst providing assurance during this time of substantial change will be a key focus of assurance activities, performance monitoring must support and not hinder migration to the new market arrangements.

Whilst option 2 iterates on the existing reporting framework and would address some of the current issues, the impact on participants would be significant with reasonable lead times. In addition, we share concerns that some of the more fundamental issues with the framework, namely the accuracy and flexibility, would persist to some extent. Therefore, we are not proposing this this option is progressed at this time.

Whilst on the face of things option 3 would address the more fundamental issues with accuracy and flexibility, it's the most technically complex and presents a step change in the volume of data provision. Also, despite some of the more complex reporting aspects being pushed to a central system, there would still be an impact on participant systems and on-going reporting burden. As some aspects from this option become achievable through the target operating model for MHHS, such as access to disaggregated Settlement data, we are unable to justify making such changes at this time as an interim measure. We have concluded that it would be more appropriate to wait until the implementation of the new market arrangements to reconsider delivering such improvements.

Therefore, taking the findings from our review activities and engagement into consideration, we recommend that option 1 (Retire parts of PARMS) is the most appropriate and pragmatic course of action at this time. This would free up participant resource to focus on delivering upcoming change and streamline our data provision activities to focus on maximising the utility from other existing data. Whilst this option presents the potential for limitations from a detective technique perspective, it also brings with it a degree of flexibility and promotes focus on preventative and incentive measures to mitigate risks related to migration activities rather than relying on the backstop.

For completeness, the below diagram shows which aspects of existing performance monitoring option 1 would remove.



In regards to SP04: The Supplier Charges review presented to the PAB in March 2020 (230/08) did not conclude that this Serial, which is an old PARMS Serial and the only one reported by Suppliers, was redundant or that charges should cease. Despite the significance of the Serial being greatly reduced with Profile Classes 5-8 moving to HH under Modification P272, we do still see volumes reported against SP04. This demonstrates that it's not yet redundant, and there is still a case for ensuring NHH Meters that breach the 100 kW threshold have the required

Metering Equipment installed and are settled on a HH basis promptly. Therefore, we propose that this Serial is left in its current form until such a time as it does become redundant. This would leave a reporting burden on Suppliers until then.

APPENDIX 1 – CASE STUDY ON SIGNIFICANT SETTLEMENT ISSUE

This appendix provides a summary of the findings from a case study on a previous significant Settlement issue. We have purposely omitted details around the cause of the Settlement issue and when it occurred to protect confidentiality.

Scope

To draw out any limitations with our existing data and reporting processes for risk management, we undertook a case study on a large Settlement impacting issue. There was a previous lessons learned exercise in relation to this issue which focused was on whether the preventative techniques should have provided more mitigation. This further assessment as part of the PAF Review has focussed on how effective our data and reporting activities were at detecting the issue in a timely manner to identify opportunities for improvements.

Findings

Below is a summary of the areas of improvement identified during the case study.

Bespoke monitoring or mitigation plans for high risk events

The root cause of the Settlement issue can be considered a high risk event. After the application of preventative techniques ahead of the event, consideration was not given as to whether any key metrics should be closely monitored during and after the event. We relied on the routine reporting and monitoring processes to identify any issues, which can be viewed as reactive rather than proactive.

Using existing data to its full potential

The dashboard overleaf provides an overview of the relevant performance indicators for the participant over the period with commentary on noteworthy items prior to mitigation techniques being formally deployed.

As previously noted, many of our performance triggers can be viewed as reactive rather than proactive. Despite having access to data at earlier runs, our KPIs (particularly in the NHH market) were mainly focused on metrics at the Final Reconciliation Settlement Run where the opportunity to address the issue has passed. As displayed overleaf, NHH Settlement performance for the participant had shown a notable drop at the Second Reconciliation Settlement Run (R2), which was six months prior to any non-BAU technique deployment (EFR in this case) which was progressed based on RF performance.

The earliest notable change in our performance data was a year prior to any non-BAU technique deployment via the PARMS Serial that measures the submission of Meter read histories (Serial NC11). However, due to the issues with the accuracy of new PARMS Serial data and the aggregated level at which we receive it, we were not monitoring participant level performance using this data at the time.

As per our BAU monitoring processes, we waited until the participant achieved three consecutive red KPIs (party's risk rating - BUSRR) at RF performance before deploying remedial techniques. There were however other indicators that could have triggered action earlier. It's worth noting that improvements to participant reporting have since been delivered that provide views of performance at earlier Settlement Runs.

Looking at performance indicators across risks

This finding is linked to the two previous items discussed. High risk events such as the cause of the significant Settlement issue have the potential to impact multiple risks, and whilst such an event may not impact each risk significantly, the aggregate impact across risks could be significant. Outside historical overall BUSRR reporting, which provided a single red, amber, green traffic light rating for the top risks, we didn't look at any other risk indicators when assessing performance on a participant level. In addition, the way we reported parties' overall BUSRR provided no view on trends in participant performance over time, and therefore the opportunity to spot change points in performance (both good and bad) is limited.

Looking at trends across performance indicators, including for non-focused risks, can support assessing the overall risk profile of an organisation.