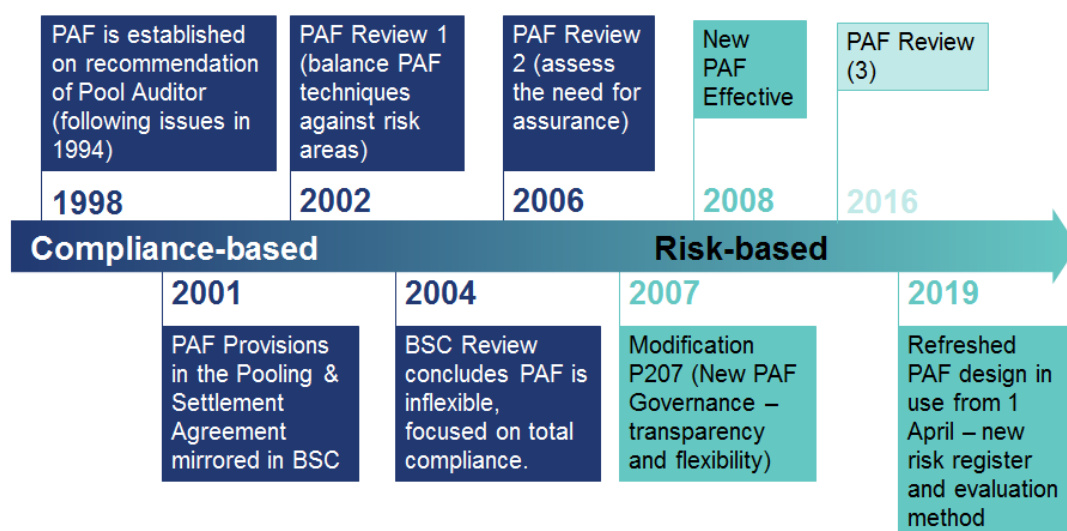


ASSURANCE AND PERFORMANCE OF A RISK BASED PAF

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Summary	This paper describes how assurance activity and performance has changed over the 10 years since a risk based assurance regime was introduced.

1. Introduction

- 1.1 This paper presents a response to a Panel action raised against paper [284/05 'Issue 69 Interim Report Performance Assurance Framework Review'](#) in November 2018, to describe how assurance activity and
- 1.2 The timeline below shows how the Performance Assurance Framework (PAF) has evolved:



- 1.3 In summary, the PAF can be seen as having been overall successful at mitigating risks for a number of years after Modification P207¹ was deployed. Generally error levels in SVA processes declined, and the activities under the PAF evolved and were adjusted to respond to emerging risks and areas identified for improvement.
- 1.4 However, since 2014/15, error levels have been rising in a number of areas, seemingly due in part to specific events (e.g. individual party actions, rollout of smart metering, Modification P272²). It was identified that the PAF should change to better meet the challenges of the market, hence the current PAF Review was initiated and the approved recommendations are being implemented.

¹ [P207](#) - Introduction of a new governance regime to allow a risk based Performance Assurance Framework (PAF) to be utilised and reinforce the effectiveness of the current PAF

² [P272](#) - Mandatory Half Hourly Settlement for Profile Classes 5-8

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- 1.5 This paper summarises key indicators of the assurance framework to answer the Panel's action. Note that the conclusions here have been drawn from a review of key reports, primarily the Annual Performance Assurance Report (APAR) and the BSC Auditor's annual reports, not an exhaustive study of all metrics.

2. Assurance pre-P207 and the objectives of P207

- 2.1 In 1998 the assurance framework was defined as:
- "a framework of systems and processes for collecting available evidence of achievement against agreed standards and requirements... to support an equitable, consistent and positive approach to performance management"
- 2.2 Under the Pooling and Settlement Agreement, and in the early years of the BSC, non-compliances in the operation of the arrangements were reported by the various detective techniques (primarily BSC Audit and performance monitoring), and by concerns raised by Parties / Agents. If considered of significant materiality, a rectification project would be established and the issue tackled by improving the BSC requirements and/or action against individual Parties and Agents. Examples of such issues were erroneously large Estimated Annual Consumption / Annualised Advances (EAC/AA), inaccurate Unmetered Supply (UMS) consumption volumes and mismatching logical and physical Energisation Statuses.
- 2.3 As now, the BSC Audit gave assurance against a threshold of material error, and the audit would be qualified if that threshold was breached. Individual 'big ticket' items were quantified yearly to track changes in the associated error volumes. As might be expected with a new set of arrangements, new issues were arising regularly, and in several years the BSC Audit was qualified (for the third and last time in 2005).
- 2.4 The Audit and other detective techniques such as Technical Assurance of Metering, Technical Assurance checks and Performance Assurance Reporting and Monitoring System (PARMS) Serials raised non-compliances against individual parties. Some non-compliances were material to Settlement and others not, but because all BSC Parties and their agents (as Qualified Persons) are expected to be compliant with all BSC obligations, this led to concerns of disproportionate assurance effort for minor non-compliances.
- 2.5 P207 'Introduction of a new governance regime to allow a risk based Performance Assurance Framework (PAF) to be utilised and reinforce the effectiveness of the current PAF' was raised in 2006 after BSC and PAF Reviews. The proposed new governance arrangements were to consist of:
- Supplier Volume Allocation (SVA) assurance objectives – accurate allocation of energy and transfer of data;
 - Performance Assurance Board (PAB) responsibility for completing risk evaluation/prioritisation and planning risk assurance; and
 - inclusion of assurance on the Central Volume Allocation (CVA) market.
- 2.6 P207 brought in the following key elements – all standard parts of risk management:
- A **risk evaluation** methodology, which described how risks should be identified and assigned a priority indicator (through an impact/probability score). Risks are non-compliances that affect Settlement³;
 - A **risk register** to list the identified risks; and
 - A risk **operating plan** which set out how the PAB intended to deploy the mitigating techniques.

³ BSC Section Z5.1 - Settlement Risk - 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.

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3. Assurance and performance since P207

Wider landscape

- 3.1 Since before even the BSC arrangements, parties have consistently noted the rate of change in the industry and the impact that has on their organisations. In fact the last five APARs have referenced the challenges from the rate of change not slowing down. Against this background, parties must set their priorities. Some key sources of change that have directly or indirectly impacted Settlement performance are:
- 3.1.1 Within the BSC:
- Number and mix of Suppliers and other participants (see appendix 1) – there has been a steep rise in the number of Suppliers operating in the market, and in the business models they are adopting, namely ‘off the shelf’ where some or all of the systems and processes are provided by service providers.
 - Modifications P272 and P322, moving to mandatory Half Hourly Settlement for larger Profile Classes – this was a substantial logistical change to switch the registration of around 140,000 Metering Systems. It has also impacted achievement of standards in both the Non-Half Hourly market where many sites that usually settled on actual data by RF were lost, and in the Half Hourly market from the influx of sites having to settle on actual data by SF.
- 3.1.2 Outside the BSC:
- Smart metering rollout – including new obligations, Code bodies, systems, metering equipment and an increasing number of meter exchanges⁴
 - Change of Supplier events – Ofgem reported that in 2018 5.4 million electricity customers switched Supplier; 1.6 million to small or medium Suppliers⁵
 - Technology developments – e.g. electric vehicles, storage, local generation, in-home devices, renewables
 - Government policy changes - e.g. price caps; reducing carbon emissions, fuel poverty, theft arrangements

Performance

- 3.2 The [APARs](#) for each year highlight material movements in the risks and summarise the mitigating activity. There are multiple aspects of Settlement performance that can be and are measured, as well as levels of activity under the PAF. It is not straight forward to draw definitive conclusions from these; however the following general trends are observable:

2008/09 there were a number of priority risks that were worsening; these included excessive erroneous energy volumes entering Settlement (‘large EAC/AA’), inaccurate Energisation Status of Metering Systems, quality of Non-Half Hourly Meter Technical Details and failure to install Half Hourly Meters where required. However, the potential error quantified by the Auditor around a quarter of the threshold for qualification.

2009/10 to 2014/15 most of these improved; a few others deteriorated, but there were few new material issues (issues with Commissioning being an exception).

From 2014/15, there were a number of risk areas where material errors were increasing and new areas of focus, e.g. P272, arose. It was also the time when mass rollout of smart meters was approaching. This degradation in the overall health of the risk picture was part of the reason the latest PAF Review was triggered. To date a number of these areas are still struggling to recover. The potential error quantified by the Auditor was around a quarter of the threshold for qualification.

⁴ ELEXON’s [Smart Meter Technical Details report](#) provides recent meter exchange volumes.

⁵ <https://www.ofgem.gov.uk/publications-and-updates/infographic-bills-prices-and-profits>

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3.3 In particular:

Risk	Notes on performance / PAF activity 2008 - 2018
Risks that have overall improved	
Large EAC/AA	The error reported by the Auditor in 2017/18 was 15% of what it was in 2008/9, having fallen in all years except two which had only small increases.
Energisation and UMS	Subject to focus in the past, the estimated error has fallen and remained below the threshold set. Note these have been estimated to be higher impacting risks in the new risk register, despite being de-prioritised some years ago as the BSC Audits found issues to have decreased.
Data flow and meter read backlogs	Auditor noted overall improvement
P272 / P322 Mandatory Half Hourly Settlement	By end of 2017/18, 98.95% of eligible sites had been transferred to the Half Hourly market; 10 Suppliers were escalated but all had exited the process.
Risks that have overall worsened / remained a concern	
Installation and maintenance of Metering Equipment	Various aspects of installing and managing metering systems and their associated records have either not substantially improved, or have got worse, despite substantial efforts under the PAF including changes raised to BSC provisions, targeted audits, monitoring of agent performance including peer comparison, working groups, guidance and education. In particular Commissioning and meter faults.
Interoperability of advanced meters	A relatively new issue; PAF actions to date include a set of targeted audits and Error and Failure Resolution (EFR).
HH and NHH Settlement performance	Declined noticeably in 2014/15 and recovery has been slow – see appendix 2. Significant PAF focus and activity including EFR/escalation and education.
Risks that have remained overall static	
NHH exception management	Has fluctuated year to year from the reporting, but no significant change. PAF activity – reporting material instances, education and EFR.
Revenue protection	Has been a top risk, but there have been no available metrics to measure the impact

Top risks

- 3.4 Overall, since 2011/12 no 'top' SVA risk⁶ has improved to the extent it was demoted; three have moved into the top bracket and one new risk was evaluated as a top risk. Five of the current top risks we have been unable to quantify in any way. It is a dynamic industry, but many of the issues are fairly static, and have similar root causes - managing exceptions, investing in systems to automate processes, co-operation within and without of the Supplier Hub, engaging customers to obtain reads and site access.

⁶ Top risks are those with a Net Significance score of 12 or above (out of 25).

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Party Performance

- 3.5 The PAB sets levels of acceptable performance for the key measurable risks, and takes action against parties that are not meeting those levels. These Business Unit Settlement Risk Ratings (BUSRR) are red / amber / green flags that are reported each month. If a party has unacceptable performance (e.g. repeated red BUSRRs for one or more risks), it is required to submit a rectification plan and may be escalated to the Performance Assurance Board if the plan is not met.
- 3.6 From 2008/2009 to 2017/2018, the proportions of red, amber and green BUSRRs has remained fairly static, with 2013 to 2016 showing only a few more ambers and reds – against an increasing number of parties.
- 3.7 When parties (Suppliers and their Agents alike) invest more resources in their systems, processes and staff, material errors are more likely to be avoided. When there are other priorities, we see more issues.

EFR and escalations

- 3.8 A Performance Assurance Party could be escalated to the PAB for failure to submit an acceptable rectification plan for a material non-compliance, or not meeting the milestones within a plan. There have also been specific programs of risk management that have used escalation, for instance tackling long running rectification plans, performance against the actual/estimate energy volumes standards, market transitions under P272 and supporting implementation of change (P283).
- 3.9 In the last four years, approximately 22 parties (mostly Suppliers; a mix of newer and longer established organisations) have been invited to attend the PAB for a new or pre-existing escalation⁷. Of those around 25% have not (yet) been called back and around 50% have been invited more than twice for the same issue. Our experience is that the influence of a PAB escalation on a party's compliance varies – some are quick to recognise the severity of the situation and use the experience to gain greater understanding of their issues and learn from the PAB's guidance, whilst others are not forthcoming and/or able to provide the PAB with assurance that they can get the situation under control adequately.
- 3.10 Over the 10 years, the number of EFR plans decreased to 2013/14, but has been creeping up since – a notable proportion due to P272/322. Although the closure rate is better than previously and there are fewer long-outstanding after a programme of work with parties to close them off.

BSC Audit

- 3.11 The proportion of high, medium and low audit issues (raised on individual parties) has shifted significantly, from approximately half being medium and a third of the remainder being high to around 80% being low and around 4% high⁸.

Key indicators

- 3.12 NHH energy performance (at a market level) fell in 2014/15, due to a single large Supplier, but many other Suppliers have fallen below the 97% standard⁹ since then and at a market level performance has remained more or less static for several years. HH energy performance also dropped from Settlement days mid-2013 and have not yet shown marked recovery.

⁷ Excluding escalations for Modifications P322 and P272 (transfer of meters to Half Hourly market)

⁸ Note there was a review of the approach and open audit issues when the BSC Auditor changed

⁹ Note that the standards are set at a Supplier ID level per GSPG

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Assurance activity

- 3.13 Delivery of performance monitoring and reporting, mitigating techniques and escalations for significant underperformance have been driven by the risk register, and in particular the identification of the “top” SVA risks – those with a score of 12 or more (out of 25). CVA risks have not featured highly in the PAF activity – CVA participants are included in the BSC Audit and ELEXON’s service management function manages many of those processes. The PAB has also had a strategy, capturing priority action areas.
- 3.14 The PAB and PAA are continually evolving and adjusting our response to the Settlement Risk landscape. Since P207 was introduced, there have been (not an exhaustive list):
- new PARMS Serials to measure key performance metrics
 - BUSRR reviews (see 3.6 below) to set performance thresholds to trigger mitigating actions
 - some significant individual party issues that have impacted at a market level
 - a change in the BSC Auditor, annual changes to audit scope and changes to audit approach
 - substantial issue management projects (e.g. for Commissioning – Modification [P283](#), and mandatory Half Hourly Settlement - Modification [P272](#))
 - changes to the risks and their evaluated significance
 - increased reporting on agent performance and agent peer comparison
 - reviews of Supplier Charges and Qualification, to consider if fundamental changes were required
 - an increasing number and range of education sessions provided to parties
 - significant changes in the number of Suppliers and their average portfolio sizes. For example from 9 Supplier IDs responsible for 75% of total energy Settled in 2008 and the remaining 25% spread across 27 IDs, at the end of 2018¹⁰, 14 Supplier IDs were responsible for 75% of total energy Settled, with the remaining 25% spread across 123 IDs. Many of these Supplier IDs are “off the shelf”, hosted by a service provider – we have seen up to 97 Qualification applications¹¹ in a single year, 337 across the 10 years.

Costs and error volumes

- 3.15 The PAB sets the PAF budget each year in the Risk Operating Plan which describes the priority risks and activities for the period.
- 3.16 Over the 10 years from 2008/9 to 2017/18, the average cost to ELEXON in delivering the PAF was £3m (ranging from 2.7 to 3.3), of which an average 67% was outsourced costs of service providers. Much of the PAF activity is mandated under the BSC and/or demand-led by parties e.g. Qualification, Disputes, PARMS, the BSC Audit and Technical Assurance of Metering. But there are elements of most that can be flexed to an extent to respond to the priority of risks.
- 3.17 It is worth noting that there are aspects of the costs and error we cannot quantify to any realistic extent, in particular:
- the cost borne by parties in participating in the PAF;
 - the total error detected through delivery of the PAF across those same years. A few significant issues have been quantified, but most are only evaluated by the risk impact/probability score of 1-25;

¹⁰ R2 run for Settlement Day 5 December 2018

¹¹ For all Qualified roles, not just Supplier

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- how much error has been avoided through the incentive the PAF provides to parties to be compliant with the BSC; and
 - how much error (and parties' effort) has been avoided due to the effect of PAF incentivising data quality and accurate/timely transfer of data between parties – a key objective of the PAF. This is of particular importance now as data quality issues can exacerbate problems as the number of 'change of' events (meter exchanges, of Supplier, of Agent etc.) increases in the more dynamic industry.
- 3.18 However, we can take an indication from the BSC Auditor not reporting a qualified opinion since 2005, despite the qualification threshold falling from 1.65TWh to 1.3TWh.
- 3.19 The new risk evaluation approach¹² (in use from 1 April 2019) forecasts an impact value for each risk. Although trying to sum the impacts would not give a genuine total potential Settlement error, as there are overlaps and assumptions which would make any such sum misleading, it will give a sense of the scale of error. More importantly, it will allow the PAB to judge a proportionate amount of effort to invest in reducing risk impacts. The forecast impact on Settlement for 2019/20 is in the hundreds of millions (£), should no action be taken to mitigate it.

4. Assurance after the current PAF Review

PAF Review drivers

- 4.1 The Panel's 2016/17 Strategic Work Programme (paper 255/12) included a review of the PAF, on the basis that the industry was facing substantial change (e.g. smart metering, non-traditional business models), and the PAF approach needed to be fit for purpose to continuing offering robust assurance without creating undue barriers to innovation.
- 4.2 The conclusion was that the PAF did provide a flexible, integrated approach to the deployment of techniques, but that there were opportunities to further enhance the application of the risk-based PAF that had been envisaged with P207, to meet the challenges of a changing industry. The BSC Audit, Market Entry and Exit and escalation of non-compliant parties were highlighted as likely to be key areas for change.

Delivering enhanced risk based assurance

- 4.3 The review is being delivered in four parts. Two have completed: a new set of risks related to the smart meter rollout were developed and the processes for delivering the PAF were re-designed. That design was approved by the PAB in September and is being delivered now; key features of the evolving PAF are:
- **Risk appetite** – new PAF design has more opportunities / clarity on what stakeholder and PAB risk appetite is; what error can be tolerated in the coming year. This is supported by a quantification in financial terms of a reasonable forecast of likely impact on Settlement for each risk.
 - **Structured by risks** – whilst the top risks have given focus to the PAF since P207 was introduced, much of the PAF delivery has still been driven by the mitigating techniques. A number of changes are being introduced to ensure that the PAF is driven by the risks. For instance, a risk owner for each risk, a Risk Manager role to co-ordinate risk management, a PAB agenda structured by the risks.
- 4.4 Two parts are still underway – a review of the majority of the assurance techniques, and a review of the data that is available to support the PAF (including what further data could be made available, how and the benefits). The scope of these workstreams includes recommending how the techniques and data provision

¹² The approved Risk Evaluation Register for 1 April 2019 onwards - <https://www.elexon.co.uk/reference/performance-assurance/performance-assurance-processes/performance-assurance-risk-evaluation-register/>

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can enhance support to risk management. In particular, gaining better insight into risks and issues, and strengthening the 'toolkit' of mitigating actions the PAB can use to manage risks to meet its risk appetite.

5. Recommendations

5.1 We invite you to:

a) **NOTE** the summary of assurance activity and performance over the 10 years of a risk-based PAF.

Appendices

Appendix 1 – Number of small, medium and large Supplier organisations and average portfolio sizes

Appendix 2 – HH and NHH performance

For more information, please contact:

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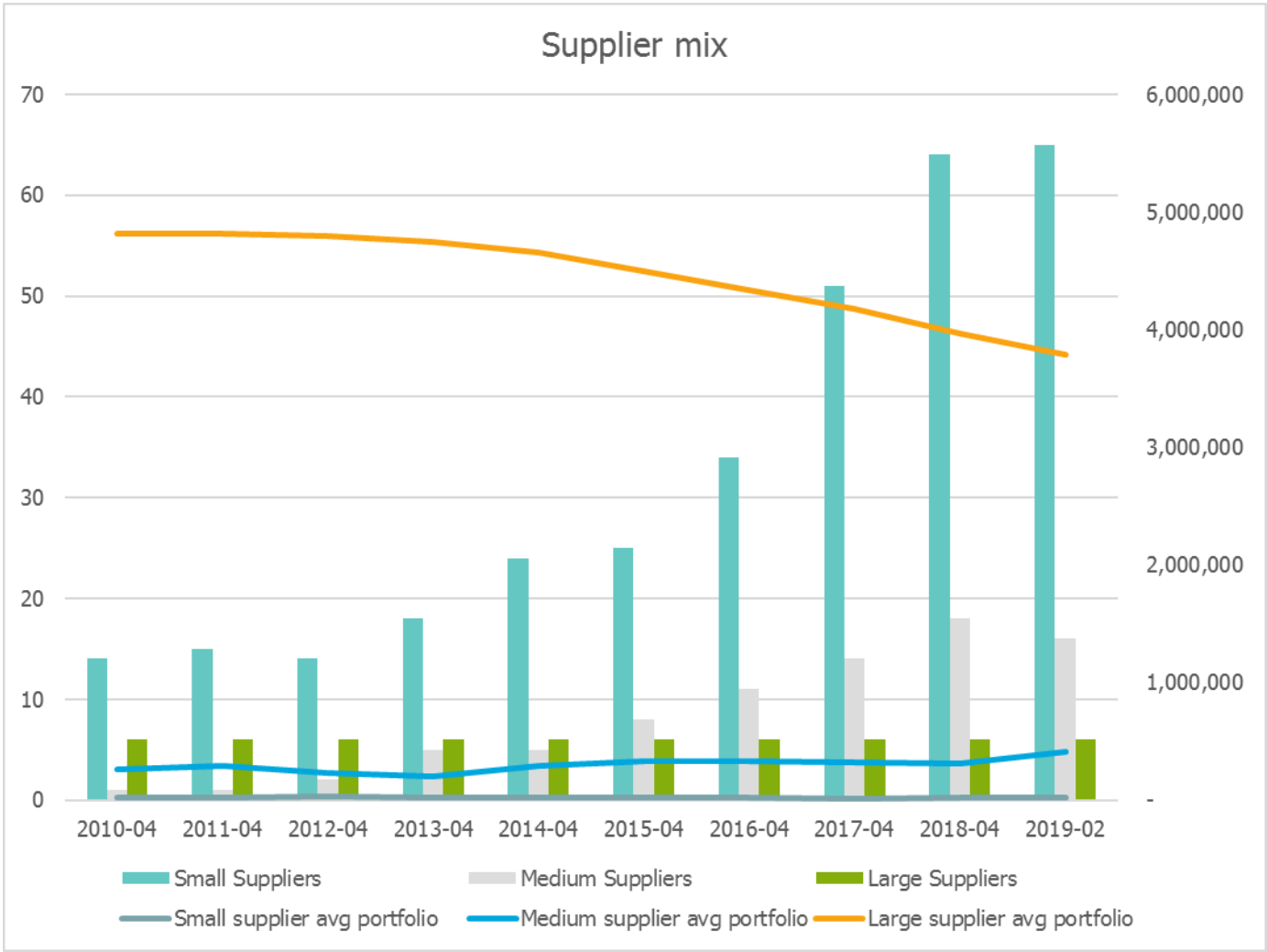
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Appendix 1

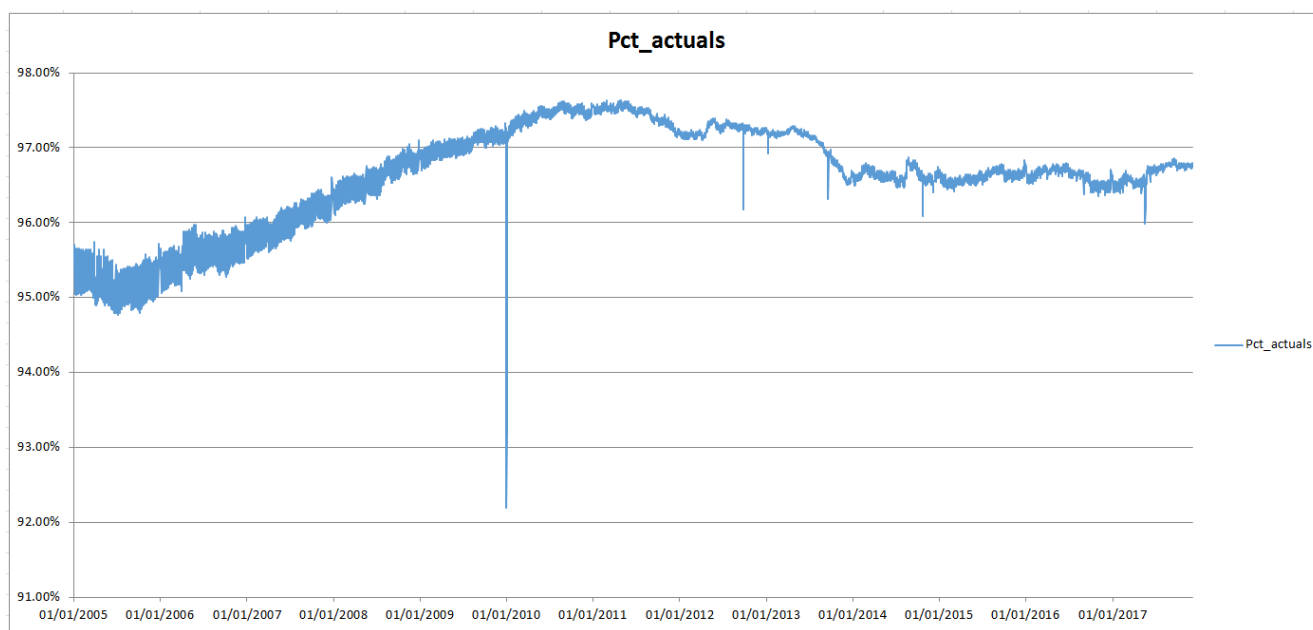
The number of small, medium and large Supplier organisations (not individual Supplier IDs) is on the left axis, and average portfolio sizes is on the right axis. Note in particular the rapid growth in small Supplier organisations and the decline in the average portfolio size of the large Suppliers.



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Appendix 2

Non-Half Hourly market performance since January 2005. Note the performance standard is 97% at Final Reconciliation - applicable for all Supplier MPIDs in each GSP Group, but the market level view is a good guide to general performance.



Half hourly market performance since January 2005. The performance standard is 99% at SF - applicable for all Supplier MPIDs in each GSP Group, but as above, the market level view is a useful indicator of overall performance.

