# Performance Thresholds

## ****Performance Assurance Board (PAB)****

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1. Background
	1. In October 2020, the PAB carefully considered the best approach to take to monitoring and managing issues associated with the Performance Standards, including the deployment of Error and Failure Resolution (EFR).
	2. The committee agreed that:
* There would be an ongoing quarterly review approach taken to managing performance standards and the application of EFR as a response to these issues.
* Elexon and the PAB’s efforts would be predominantly focused on Suppliers with the largest volume of non-compliant estimation (‘focus Suppliers’);
* Whilst there were significant restrictions, the PAB would not require Suppliers in EFR to submit a performance improvement forecast. However, the committee highlighted that it will be beneficial if Suppliers begin to consider forecasts and include them in their plans where possible along with confidence levels. The committee would understand if Suppliers miss targets and it would not apply EFR escalation whilst there were significant restrictions in place.
* Suppliers within EFR could provide performance improvement plans over a quarter and then update them for the following quarter, until the impacts from COVID-19 have stabilised;
* The EFR exit threshold for Suppliers in EFR would be to have a volume of less than 1,000MWh of non-compliant estimation a month; and
* That the PAB expected all Suppliers, not just the focus Suppliers, to work to meet or maintain the Settlement standards.
	1. In October 2020, the PAB agreed that the focus Suppliers should be those with a monthly non-compliant estimation volume of above 2,000MWh in Half Hourly (HH) Measurement Class (MC) C, HH Sub 100kW and Non Half Hourly (NHH) markets respectively. This increased in February 2021 to 4,000MWh for the period from March 2021 to May 2021. This was due to:
* An increased number of focus Suppliers within the 2,000MWh threshold and the need for the number of focus Supplier to be manageable in order to maintain sufficient oversight by Elexon and the PAB could be sustained;
* An understanding that the lockdown that was in place at that time throughout the UK would make it more challenging to obtain reads;
* At that point, there were still three months until RF hit the lowest point reached at R3 prior to some recovery. This, along with the lockdown restrictions in place at that time, meant that it would be unlike to see a significant NHH recovery during the quarter; and
* Elexon expecting the total volume of energy (and therefore the volume of estimation under the standard) to increase for all three of the market areas for the first two months of that quarter which could lead to an increase in the number of focus Suppliers if it remained at 2,000MWh.
	1. In February, the committee acknowledged that lockdown measures would frustrate Suppliers attempts to get Meter Reads but also noted the potential impacts on the industry of estimated energy including:
* Incorrect Settlement volumes and charges;
* Increased imbalance charges as Suppliers are not using the correct volumes to forecast; and
* Increased issues with customer billing and complaints.
	1. These issues could increase the likelihood of Suppliers failing, which, in turn, places a further financial burden on BSC Parties.
	2. It also reviewed the estimation inaccuracy analysis undertaken by Elexon which concluded:
* There is a tendency for estimation to understate domestic consumption and therefore there is a risk of under allocation of Settlement volumes to those Suppliers;
* Conversely, there is a tendency for estimation to overstate non-domestic consumption and therefore there is a risk of over allocation of Settlement volumes to those Suppliers;
* Elexon’s monitoring suggests an overall dominance of under-stated domestic volumes has led to an increase in GSP Group Correction Factors (GCFs) across the board which is shared evenly across all NHH Suppliers (predominately);
* This is likely to result in a double impact to non-domestic Suppliers, the first through the under-allocation in Settlement and the second through the GSP GCF application; and
* As we come out of lockdown this effect is likely to reverse as the reads collected are likely to reflect the period of lockdown and not the forward-looking consumption. This could lead to domestic Suppliers experiencing a double Settlement impact. We do not anticipate this impact to be to the same extent however, as it appears that some of the lockdown consumption behaviour, such as greater working from home, may endure after the pandemic.
	1. The PAB commented that this analysis supported the need to work to monitor Supplier’s efforts to reduce the volume of non-compliant estimation.
	2. This quarterly review provides:
* Updated analysis on the inaccuracy associated with estimated data;
* A re-appraisal of the threshold of non-compliant estimation for the focussed Suppliers and the current EFR exit criteria;
* Recommendations for the deployment of EFR to Suppliers as a result of the review, where required; and
* Recommended refinements to PAB and Elexon’s performance management approach.
1. Updated analysis on the impact of NHH estimation on Settlement

**Estimation inaccuracy by Settlement Runs and by year**

* 1. This month Elexon has completed further Data Transfer Network (DTN) analysis focussed on the NHH market in order to provide a view of the ongoing impact of estimation. We recognise that the DTN does not provide full coverage of the industry flows but provides us with insight.
	2. This analysis aggregates estimated consumption and compares it to the subsequent actual consumption aggregated at a daily Metering System level. When assessing the inaccuracy we looked at the gross difference, i.e. ignoring the direction. The following table is a view of NHH estimation inaccuracy by Settlement Run:

| Period | Unique MPANs | No of EACs | % error |
| --- | --- | --- | --- |
| R1 | 116,942 | 1,692,458 | 22.67% |
| R2 | 123,224 | 659,310 | 23.28% |
| R3 | 85,369 | 201,010 | 25.78% |
| RF | 49,824 | 92,608 | 28.95% |
| Total | 154,802 | 2,645,386 | 24.46% |

* 1. This analysis indicates that estimation inaccuracy increases as the estimate ages. This is even taking into consideration the netting aspect of NHH estimation, which uses looking forward consumption value (i.e. EAC). As estimation inaccuracy increases in later runs, it is reasonable to infer that this trend would continue after RF and some Suppliers within the EFR technique have highlighted AAs that were 50% to 85% higher than the AAs obtained after RF. The analysis also indicates that estimation inaccuracy has increased since the last report in February, especially at RF.
	2. Elexon has also produced an updated view of NHH estimation inaccuracy changes over time (in aggregate for all Reconciliation Settlement Runs, i.e. R1 to RF). Please note we assign estimation inaccuracy to a yearly period based on the date the actual Meter read was entered into Settlement.

| Period | Unique MPANs | No of EACs | % error |
| --- | --- | --- | --- |
| 2018 | 115,466 | 672,707 | 24.09% |
| 2019 | 121,094 | 787,561 | 23.08% |
| 2020 | 125,585 | 875,510 | 25.58% |
| 2021 | 109,003 | 309,608 | 25.93% |

* 1. This shows that whilst estimation inaccuracy had reduced in 2019 (likely as a result of the in excess of 2.4m Smart Meters installed in the period), it increased in 2020 (likely as a result of Meters being read less frequently and being based on past consumption that did not reflect the lockdown volumes). This trend continued in 2021 (most likely because of the volatility of demand during this period).
	2. **The changing trends of estimation inaccuracy**
	3. It is also important to remember that estimation can both overstate and understate consumption. directional aspect of estimation accuracy can be seen further when looking at the distribution of estimation error in NHH Profile Classes one to four.



* 1. The boxplots above set out the distribution of daily EAC error for each of the Profile Classes one to four in 2018, 2019 and 2020 respectively for a random sample of NHH Metering Systems. The middle horizontal dotted line at zero represents where there was no inaccuracy from the EACs. The solid lines within each box show the median average whereas the solid dots show the mean average for daily EAC error for that Profile Class in that year.
	2. A median above the dotted line outlines a tendency for the estimation to overstate consumption whereas a median below the dotted line outlines a tendency for the estimation to understate consumption.
	3. As you can see above, in 2018 and 2019 estimation on average tended to overstate consumption across all four of the Profile Classes. However, in 2020 this changes.
	4. For the domestic Profile Classes (one and two) during 2020, the direction of average estimation inaccuracy flipped and tended to understate consumption. We noted in the February 2021 update that this was to be expected and aligned with what participants told us as the lockdown has resulted in more people being at home and using more energy, i.e. not reflective of historical consumption on which looking forward EACs were based.
	5. For the domestic Profile Classes, so far during 2021 the direction of inaccuracy has flipped again and now indicates an overstatement in estimation that is greater than prior to the pandemic. Elexon and the PAB had noted at the February meeting that a change in direction would be likely, as restrictions eased, but this change earlier than we may have expected given the further lockdown in 2021. This may be explained by [this analysis](https://www.ons.gov.uk/economy/economicoutputandproductivity/output/articles/coronavirushowpeopleandbusinesseshaveadaptedtolockdowns/2021-03-19) from the Office of National Statistics, which indicates that behaviour changed considerably between the first lockdown and the subsequent ones.
	6. The small and medium business site Profile Classes (three and four) during 2020 still showed that estimation, on average, tended to overstate consumption, but this has become more pronounced/skewed in 2020 and to an even greater extent so far in 2021 where there were more likely to be larger overstatements of consumption. Again, this is to be expected and what participants have told us because many of these businesses have been closed for the lockdown periods and the estimates would have been based on past consumption when they were operating normally. The derogated process that Elexon and the PAB put in place to allow Data Collectors to accept amended EACs from Suppliers to account for this change in consumption would have mitigated this issue to an extent for some of the largest sites where evidence of reduced consumption was available. However, the derogations would also have added to the EAC converting to a lower AA, as deemed AAs were created as part of this process.
	7. It is likely that lockdown measures being introduced and eased has resulted in demand volatility. Therefore, the direction of inaccuracy and the extent of it is also likely to remain volatile until a time when more regular consumption patterns are established and maintained again.
1. Prioritising based on the volume of energy under the standards
	1. When monitoring Settlement performance, Elexon checks both the Settlement performance against the appropriate standard for each Measurement Class and Supplier MPID, and the monthly volume of energy under the standard. This enables us to prioritise our investigations and apply Performance Assurance Techniques (PATs) to the Supplier MPIDs with the largest volume of estimates below the applicable standards.
	2. This can result in Suppliers being prioritised above those with a lower percentage performance due to the total volume of energy (and, as a consequence, the estimated energy) being higher.
	3. This approach enables Elexon and the PAB to take actions to more rapidly understand and, where possible, work to reduce the volume of estimated energy under the standard.
	4. Elexon does not recommend a change of this approach at this time, as the majority of non-compliant estimation volume is still concentrated in a relatively small number of Suppliers. However, it is important that all Suppliers continue to work to improve their performance.
2. Performance Overview, changes over the last quarter and potential impacts in the next which we need to consider

Looking at the volume of non-compliant estimation in all three market areas based on May 2021 reporting (which reports on Settlement Days in February 2021 at R1 and Settlement Days in February 2020 at RF), we can see that two thirds of this is currently within the NHH market. There has been very little movement in this sector breakdown since the last quarterly review. This is something that we need to consider when reassessing the threshold for focus Suppliers in each of the areas and it is worth continuing to place a similar prioritisation of our effort for each area as we did for the last quarter:

| Market Area | Settlement Run and standard used for current view | Settlement month used in current view | Industry Average | Volume under the standard MWh | % of the impact per market area |
| --- | --- | --- | --- | --- | --- |
| HH MC C | R1 99% (standard required at SF but assessed due to risk based approach at R1) | February 2021 | 98.08% at R1 | 78,668 | 22% |
| HH MC E,F and G | R1 99% | February 2021 | 94.51% at R1 | 41,720 | 11% |
| NHH | RF 97% | February 2020 | 95.07% at RF | 241,532 | 67% |
| Total: | 361,920 |  |

* 1. The following table shows the key changes that have taken place since the last review:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | HH  | Sub 100kW | NHH |
| Industry Average performance | September 2020 | 97.87 % at R1 | 94.23% at R1 | 95.98 % at RF |
| February 2021 | 98.02% at R1  | 94.60% at R1 | 95.01% at RF |
| May 2021 | 98.08% at R1 | 94.51% at R1 | 95.07% at RF |
| Difference from September 2020 to May 2021 | **+ 0.21%**  | **-0.28%** | **-0.91%** |
| Difference from February 2021 to May 2021 | **+0.06%** | **-0.09%** | **+0.06%** |
| Volume of non-compliant estimation | September 2020 | 94,423MWh | 36,821MWh | 113,281MWh |
| February 2021 | 90,233MWh | 42,642MWh | 258, 509MWh |
| May 2021 | 78,668MWh | 41,720MWh | 241,532MWh |
| Total volume of energy | September 2020 | 8,162,367MWh | 771,757MWh | 9,092,129MWh |
| February 2021 | 9,169,976MWh | 986,276MWh | 12,964,989MWh |
| May 2021 | 8,562,925MWh | 930,155MWh | 12,518,519MWh |

**Half Hourly performance considerations for the next quarter**

* 1. The HH MC C market has increased performance slightly since the February 2021 report period. However, the sub-100kW performance has not yet recovered from an industry-wide decrease at SF over the Christmas period. Whilst performance was impacted by the early 2021 lockdown in both MCC and sub 100kW, it was not impacted to the extent seen in the first lockdown where HH MC C monthly average performance dropped to 94.90% for MC C and 90.35% for the Sub 100kW market.
	2. Over the next quarter we should expect both a further easing of restrictions and a reduction in the volume of total energy (which, if everything else stayed the same, should result in a reduction in the volume of non-compliant estimation).
	3. However, the impact of the April 2021 contract round has not yet been observed in these performance figures and is likely to result in a temporary drop in performance at the start of the next quarter. In addition, Suppliers have highlighted that access to rectify faults is still challenging and that this continues to be an issue even as restrictions ease, as many business are prioritising access to customers and employees alongside new health and safety requirements.
	4. Therefore, whilst we should expect improvements over the next quarter, based on the current COVID-19 guidance provided by the UK, Scottish and Welsh governments, there are likely to be some challenges for Suppliers working to improve performance over the period too.

**Non Half Hourly considerations for the next quarter**

* 1. The NHH market has increased performance slightly at RF since the February 2021 report period. R2 performance had been reducing this quarter as the lockdown at the start of 2021 set in. However, we have seen an increase in R2 performance has eased since the start of April 2021. R3 performance appears to be reflecting the drop at R2 due to the lockdown and we will need to monitor R3 performance carefully over the next quarter to determine to what extent Suppliers are able to mitigate this in order to provide some insights into the future challenges at RF.
	2. The current RF Settlement Dates are at the point when the industry reached its lowest R3 performance due to the first lockdown. This, alongside further easing of restrictions (especially in Scotland where the government prohibited internal Meter Reading activity until the end of April) and a reduced volume of total energy this quarter, indicates that RF performance should increase over the next quarter.
	3. However, as with the HH market, there are some challenges expected as Suppliers are reporting access rates that are approximately 50% lower than before the pandemic with only minimal improvements since the restrictions have eased.
1. Recommendations for the threshold for Focus Suppliers and EFR for the next quarter
	1. Elexon has considered the following points in order to set the thresholds for the next quarter:
* The current number of Suppliers that fall above a number of different potential thresholds for each market area (below);
* The relative volume of non-compliant estimation between each of the market areas; and
* The potential coming up in the next three months.

**HH MC C – 22% of all non-compliant estimation**

* 1. Elexon considered the effectiveness of the following thresholds for the HH MC C market:

| **Threshold (MWh)** | **No of Suppliers** | **Vol of non-compliant energy** | **% coverage of non-compliant energy in this market** |
| --- | --- | --- | --- |
| 1,000 | 17 | 69,949 | 89% |
| 2,000 | 10 | 59,964 | 76% |
| 4,000 | 6 | 47,687 | 61% |
| 5,000 | 6 | 47,687 | 61% |
| 6,000 | 3 | 31,064 | 39% |
| 8,000 | 2 | 25,063 | 32% |

* 1. Elexon concluded that maintaining a threshold of 4,000MWh and a market coverage of 61% of the non-compliant estimation would:
* Cover the majority of non-compliant estimation whilst ensuring the number of focus Suppliers is proportional to the level of impact for that market area; and
* Keep the level of market coverage and number of Suppliers under focus at a similar level to that agreed as sensible during the last quarterly review in February 2021 when a 4,000MWh threshold resulted in a 66% market coverage and six focus Suppliers. It is also worth noting there are currently three Suppliers within EFR for HH MC C performance that now have a volume of non-compliant estimation beneath the threshold but that have not yet met the criteria of reducing the volume of non-compliant estimation beneath 1,000MWh in order to exit EFR. This provides further coverage of the non-compliant estimation within this market.

**HH Performance Sub 100kW – 11% of all non-compliant estimation**

* 1. Elexon considered the effectiveness of the following thresholds for the HH Sub 100kW market:

| **Threshold (MWh)** | **No of Suppliers** | **Vol of non-compliant energy** | **% coverage of non-compliant energy in this market** |
| --- | --- | --- | --- |
| 1,000 | 12 | 33,181 | 80% |
| 2,000 | 8 | 28,823 | 69% |
| 3,000 | 4 | 19,048 | 46% |
| 4,000 | 3 | 15,170 | 36% |
| 5,000 | 2 | 11,135 | 27% |

* 1. Elexon concluded that maintaining a threshold of 4,000MWh and a market coverage of 36% of the non-compliant estimation would:
* Cover the majority of non-compliant estimation whilst ensuring the number of focus Suppliers is proportional to the level of impact for that market area (this market area only has 11% of all non-compliant estimation but was a much larger proportion prior to the pandemic so it is important to maintain so oversight and action here); and
* Keep the level of market coverage and number of Suppliers under focus at a similar level to that agreed as sensible during the last quarterly review in February 2021 when a 4,000MWh threshold resulted in a 37% market coverage and three focus Suppliers.

**NHH Performance – 67% of all non-compliant estimation**

* 1. Elexon considered the effectiveness of the following thresholds for the NHH market:

|  |  |  |  |
| --- | --- | --- | --- |
| **Threshold (MWh)** | **No of Suppliers** | **Vol of non-compliant energy** | **% coverage of non-compliant energy in this market** |
| 2,000 | 16 | 232,883 | 96% |
| 4,000 | 12 | 222,207 | 92% |
| 6,000 | 10 | 212,695 | 88% |
| 8,000 | 7 | 192,808 | 80% |
| 10,000 | 6 | 184,070 | 76% |
| 20,000 | 5 | 172,828 | 72% |

* 1. Elexon concluded that a threshold of 4,000MWh and a market coverage of 92% of the non-compliant estimation would:
* Cover the vast majority of non-compliant estimation whilst ensuring the number of focus Suppliers is at a manageable to maintain sufficient focus; and
* Keep the level of market coverage and number of Suppliers under focus at a similar level to that agreed as sensible during the last quarterly review in February 2021 when a 4,000MWh threshold resulted in an 86% market coverage and 13 focus Suppliers. There are an additional two Supplier Ids that now have a volume of non-compliant estimation beneath the threshold but that have not yet met the criteria of reducing the volume of non-compliant estimation beneath 1,000MWh in order to exit EFR. This provides further coverage of the non-compliant estimation within this market.
1. Review of EFR exit requirement and EFR exit recommendation
	1. In October 2020, the PAB agreed that Suppliers were no longer required to maintain a performance average above the relevant standard for three months to exit EFR and agreed that that an EFR exit threshold for performance standards issues would be set and reviewed on a quarterly basis.
	2. This threshold was initially set so that Suppliers with a volume of below 1,000MWh of non-compliant energy would be able to exit EFR so that Elexon and the PAB’s focus could remain on the Suppliers with the largest Settlement impact and the PAB agreed the this exit threshold should remain in place in February 2021.
	3. Based on the recommendations to maintain the focus Supplier thresholds and the potential of these threshold reducing in the next quarter, Elexon does not recommend changing the EFR exit criteria for the upcoming quarter.
2. Recommended adaptions to the quarterly performance review approach
	1. Elexon recommends that the quarterly review approach is adapted so that in addition to considering the approach to performance management and thresholds for the quarter ahead, where possible it also considers any potential or likely changes in approach for the quarter, which follows and signals these to the industry.
	2. These signals would be indications only and would still require confirmation at the next quarterly review but in providing this communication to the industry it will help it to prepare adapt to any expected changes and ensure that Operational Support Managers (OSMs) are able to support and monitor Suppliers appropriately ahead in preparation. It would also enable the industry to signal concerns regarding the approach to Elexon on the PAB so that we can consider them prior to making decisions.
	3. Whilst this approach will help us to manage performance during the pandemic and as we transition out of it, this process will also help us adapt to navigate seasonality and industry wide issues. It will ensure that our focus is always on the performance issues that are causing the biggest impact or risk to Settlement whilst also providing forewarning to the industry where it is possible.
3. Likely changes as a result of the next threshold review in August 2021
	1. Elexon expects that, whilst there are some significant challenges for the industry and there is still potential for further impact from the COVID-19 pandemic on the industry, as noted in section four, performance is expected to improve whilst the total volume of energy is likely to reduce across all three markets. This means that it is likely that the thresholds would need to reduce to keep an acceptable level of coverage of the non-compliant estimation within the focus of Elexon and the PAB. Consequently, it is likely that Elexon will recommend that the threshold is reduced – potentially to as low as 2,000MWh. Elexon and the PAB will confirm this based on the data available in August.
	2. Since the PAB resumed EFR for performance related issues, performance forecasts have not been mandatory, as the PAB understood that forecasting would be challenging whilst restrictions were in place and without an understanding of likely response and access rates. By August, Elexon believes this should be less challenging and that Suppliers are likely to have a better understanding of the response and resolution rates. Therefore, it is likely that as part of the August review, Elexon will recommend that Suppliers be required to submit an end of quarter performance target, which they update for the following period at the end of each quarter.
	3. Given that we can expect some uncertainty and volatility because of the pandemic and recovery from it for some time to come, Elexon is unlikely to recommend that PAB escalation take place if Suppliers miss these performance targets and, instead, Elexon will provide the reasons for the missed targets and any lessons from it in the risk report. The PAB will apply its escalation process however, if there is a lack of co-operation within the EFR process or if there is no evidence of a Supplier undertaking a reasonable level of action to improve its performance.
4. Recommended PAB Reporting changes
	1. Elexon has been providing the PAB with monthly updates on the actions the three Suppliers with the highest volume of non-compliant energy in the HH MC C, HH Sub 100kW and NHH markets are taking since it agreed the approach to monitoring the approach to monitoring performance during COVID-19 in October 2020 (nine updates in total).
	2. The vast majority of the focus Suppliers are now within EFR and Elexon recommends that updates are now provided on an exception basis to enable to focus on the other priority areas set out within the Risk Operating Plan.
5. EFR Considerations this quarter
	1. All but one of the focus Suppliers within the HH MC C market have EFR applied. Elexon has provided an update on this Supplier within the EFR Recommendations section of the Confidential Risk Report. None of the Suppliers that are within EFR has met the threshold to exit the technique this quarter.
	2. All of the focus Suppliers within the HH Sub 100kW market have EFR applied. None of the Suppliers that are within EFR has met the threshold to exit the technique this quarter.
	3. All but two of the focus Suppliers within the NHH market have EFR applied. Elexon has provided an update on these two Suppliers within the EFR Recommendations section of the Confidential Risk Report along with an update on one Supplier that has met the threshold to exit the technique this quarter.
6. Recommendations
	1. We invite the PAB to:
		* 1. **NOTE** the contents of the paper;
			2. **AGREE** that the 4,000MWh threshold for the focus Suppliers in the HHMC C, HH Sub 100kW and NHH market is maintained for the next quarter;
			3. **AGREE** the recommended adaptionsto the quarterly review approach set out in section 7; and
			4. **AGREE** the likely changes to the thresholds and approach expected at the next review in August whilst noting that Elexon will confirm or amended these indicative approaches in August.

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