



3.2.5: Inaccurate / Out of date AQs - impact of AQ . Investigate the change in the AQ mix and direction of travel following introduction of rolling AQ

Volatility Analysis for MOD 0672

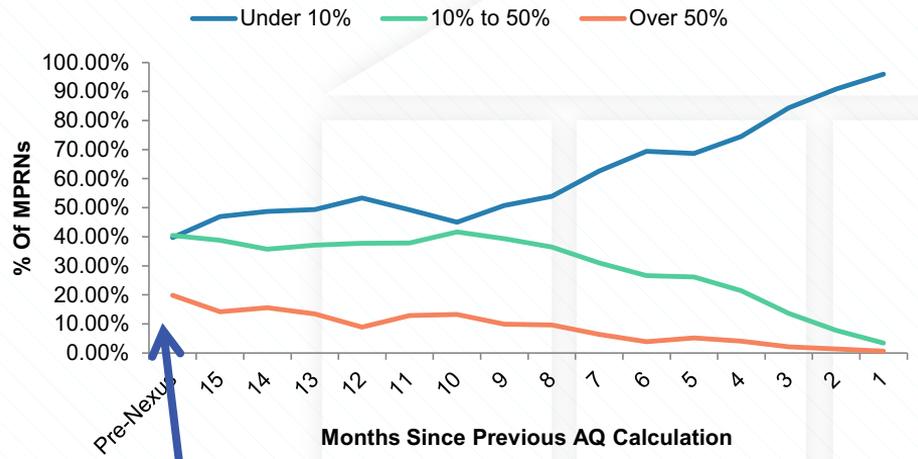
Summary of Findings

Area & Ref #	Inaccurate / Out of date AQs - impact of AQ . Investigate the change in the AQ mix and direction of travel following introduction of rolling AQ (Ref # 3.2.5). Analysis to support MOD 0672.	Findings Status	Closed
UIG Hypothesis	If UK Link AQs do not represent actual seasonal normal consumption, then the allocated energy will not be accurate which will contribute to UIG at allocation. The Rolling AQ process calculates a new AQ following the acceptance of a meter read, so we want to understand whether AQs that calculate less often are more volatile and so contribute to UIG risk.	UIG Impact Peak Volatility %	N/A
		UIG Impact Annual Average %	3% of NDM AQ at risk
Data Tree References	Annual Quantity	Confidence in Percentages	M

Findings	Approach to analysis
<p>As of 01/10/2018, nearly 23 million Meter Points have had at least 1 AQ calculation since 01/06/2017. Our analysis of the full market shows similar volatility trends to the analysis presented by Scottish Power in the UNC Modification 0672 documentation, in that the longer the interval between AQ calculations, the bigger the change between prevailing and recalculated AQ. The percentage of the market with an AQ change greater than 50% is only around 4% of meter points but these meter points account for nearly 40% of AQ volatility. 79% of Meter Points have had an AQ change lower than 10%. 83% of Meter Points calculated in the 6 months prior to 01/10/2018 which shows us that the majority of the market is reading meters relatively frequently. The risk appears to be in sites that do not read often, with AQ volatility clearly increasing with the interval between meter reads.</p> <p>AQs have generally increased since Nexus Go Live, and we do not see the same annual drops in total NDM AQ which we saw following the legacy AQ review process. This suggests that AQs could have been artificially low in legacy systems and that the AQ is now returning to a level more reflective of actual consumption. This corresponds with the lower level of UIG we see from Autumn 2018 onward (excluding the impact of the NDM uplift factors applied to the 18-19 demand models), and would suggest that lower levels of reconciled energy may be observed in the future.</p>	<p>We extracted all Rolling AQs effective between 1/7/2017 and 1/10/2018. We then identified the prevailing AQ, and the previously calculated AQ effective date. We used a dummy date where the AQ has only calculated once post-Nexus.</p> <p>We then binned the meter points by the absolute level of AQ volatility: Less than 10% change, between 10 and 50% Change, and More than 50% Change.</p> <p>We removed MPRNs that have been impacted by AQ defects from the analysis where the source data was at MPRN level.</p>

Supporting Evidence (1 of 6)

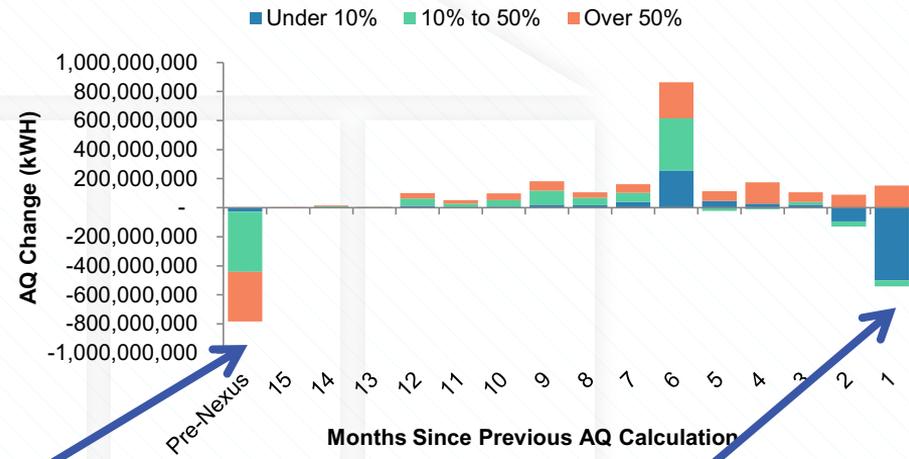
AQ Volatility vs Previous Calculation Date - Xoserve Analysis



The Longer the interval since the previous AQ calculation, the more volatility in AQ Level

The direction of change in AQ Movements is very different for sites only calculated once since Nexus go-live. These AQs have generally decreased, and by a significant margin. This is the reverse of the general trend – what will happen with the ~750k MPRNs not read since Nexus Go-Live?

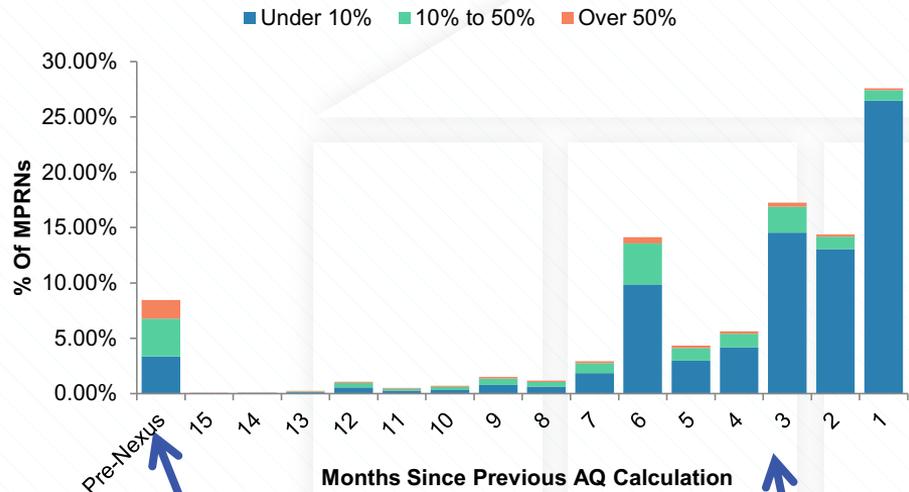
AQ Energy Volatility vs Previous Calculation Date - Xoserve Analysis



The average decrease in Month -1 is small at around -62 kWh per meter point, or a 0.25% decrease in the total AQ for ~6m MPRNs. This could be because the AQ calculated following a very warm Summer so seasonal consumption reduction could be magnified in the AQ Calculation.

Supporting Evidence (2 of 6)

Percentage of AQs calculated over time

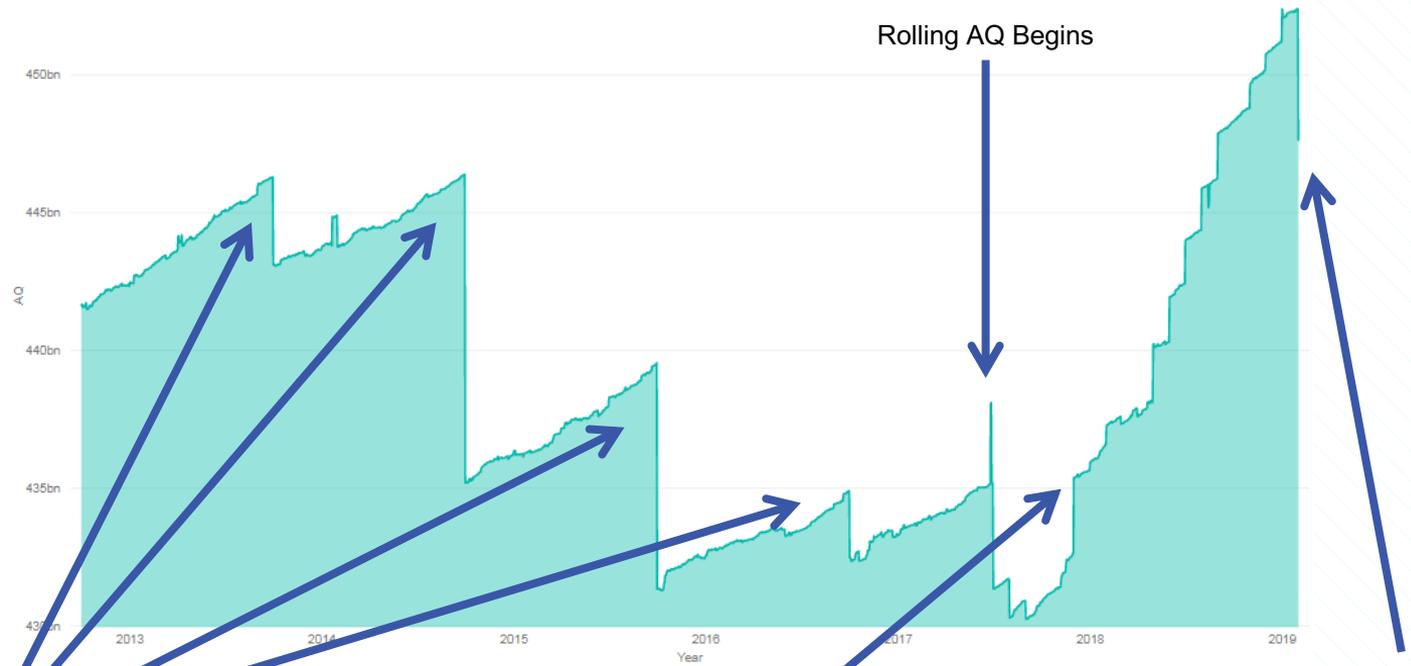


- The 8.5% of sites only calculated once post-Nexus are responsible for 21% of AQ volatility
- The 4% of sites with an AQ change greater than 50% are responsible for 37% of AQ volatility
- 79% Of AQs changed by < 10% and account for 29% of AQ volatility.

The 8.5% of AQs Calculated once since Nexus Go-Live are responsible for a disproportionate percentage of AQ volatility.

Over 83% of analysed MPRNs (c. 19m MPRNs) calculated within 6 months of the snapshot date.

Supporting Evidence (3 of 6) NDM AQ Movements over time – October 2012 to February 2019

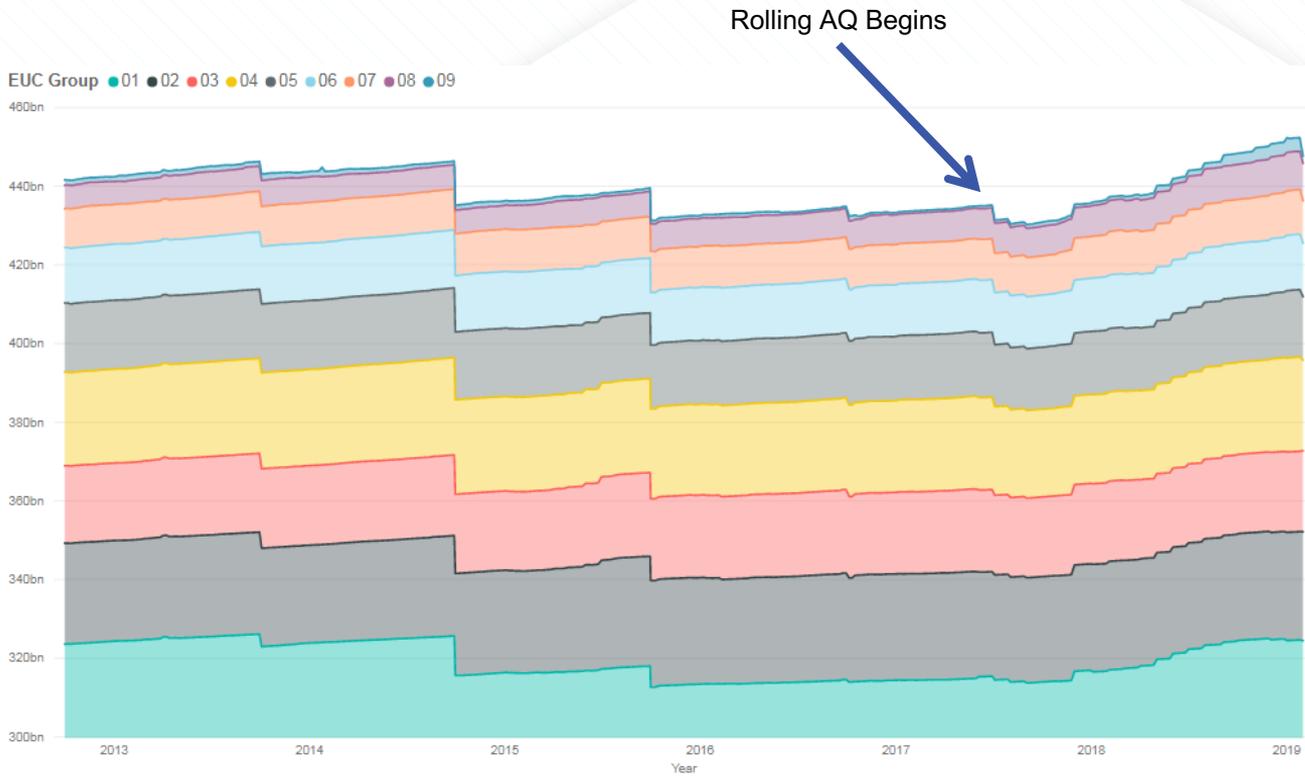


Note AQ Drops Each October following the AQ review amendments process.

After initially decreasing, Rolling AQ shows a steady increasing trend when AQ Ammendments are no longer possible

The drop on 01/02/19 is the result of a defect fix – this is now closer to the 'true' NDM AQ level, which is the highest AQ level we have seen since October 2013

Supporting Evidence (4 of 6) AQ Trends over time by EUC Group



Increased proportion of EUC 09 AQ identified under Investigation item 3.2.1 (Sites with AMR defects were removed from that analysis)

The majority of the AQ reduction in February 2019 is in EUC Bands 4 and above.

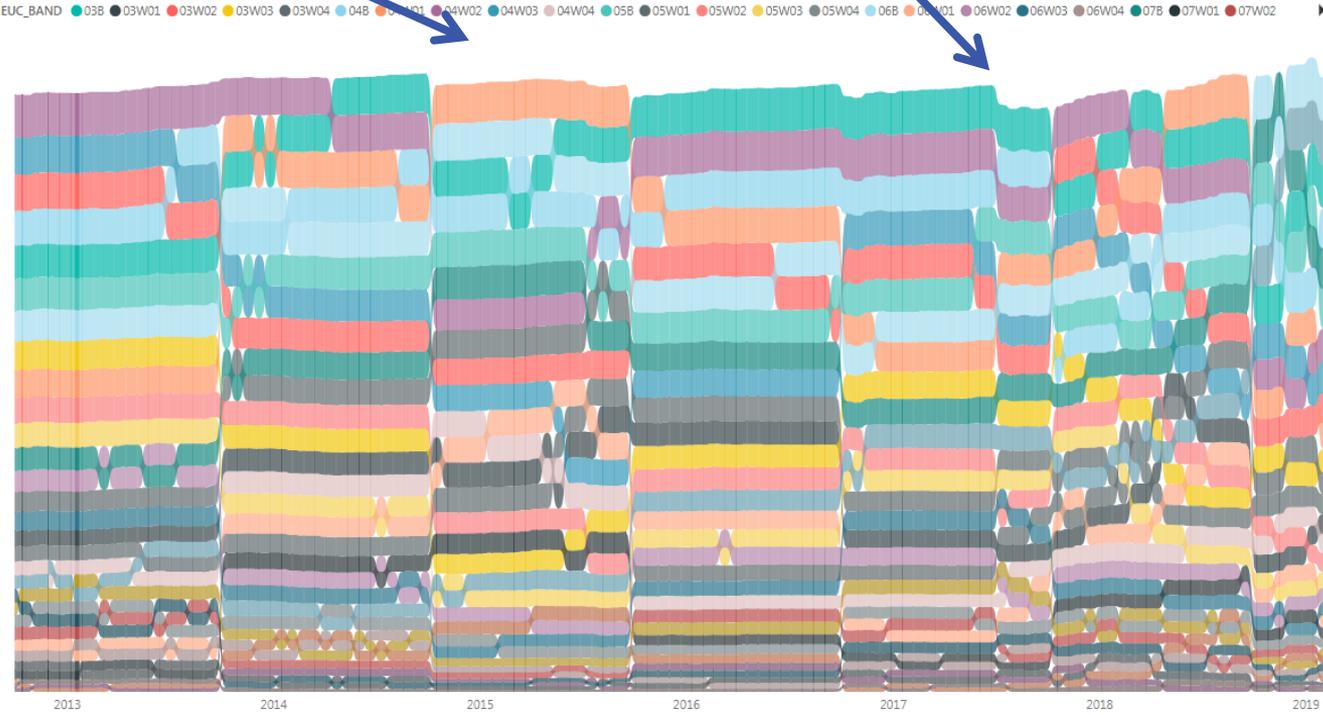
EUC 1, 2 and 3 AQ appears largely stable over Winter 2018-19

The rest of EUC 01 is truncated from chart – EUC 01 makes up the largest proportion to total NDM AQ

Supporting Evidence (5 of 6) – NDM AQ proportion by WAR Band: EUCs 3-8

Relative AQ contributions of each EUC band are generally stable over time, with any big changes effective at the annual AQ review

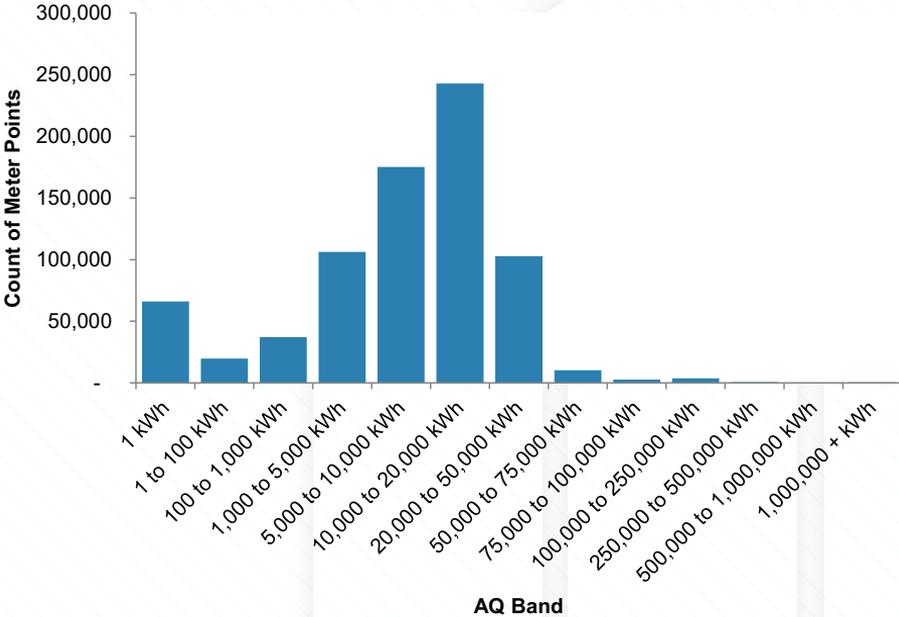
Rolling AQ Begins



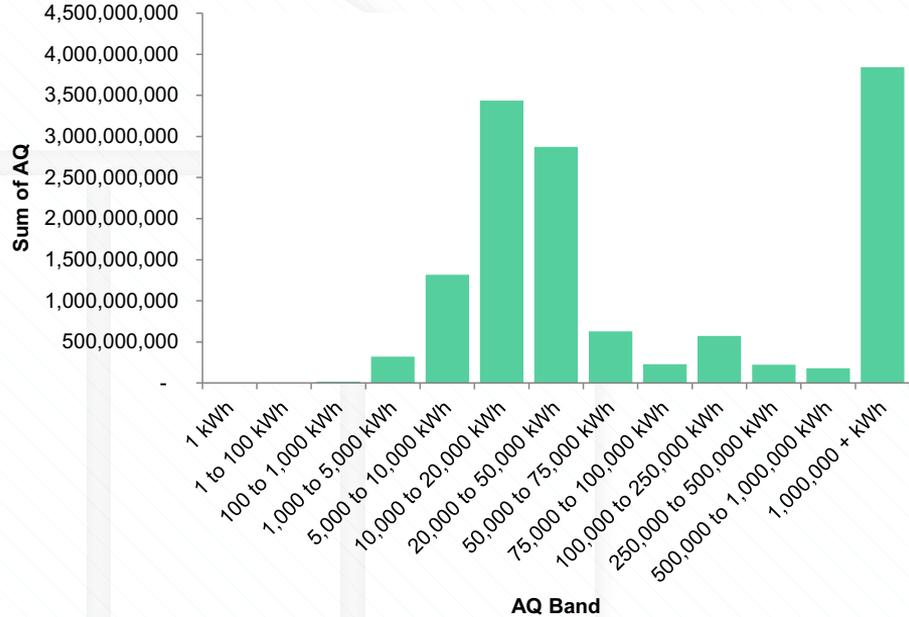
Since Rolling AQ the mix of LSP AQ has become much more volatile. This will be subtly changing the weather sensitivity of overall Allocation, and if the EUC 3-8 allocation profiles are not representative of actual usage then this changing AQ mix **could be another contributor to unexpected UIG volatility.**

Supporting Evidence (6 of 6) – Meter Points Unread since Nexus go-Live

Count of Meter Points



Sum of AQ



770,000 Class 3 and 4 MPRNs with a total AQ of 14bn kWh of AQ have not been read since nexus go live. That's 3.2% of NDM Meter Points and 3.1% of NDM LDZ AQ at risk.