UIG Task Force

3.2.2: Inaccurate / Out of date AQs - Sample Sites with different consumption patterns or levels compared with UK Link.

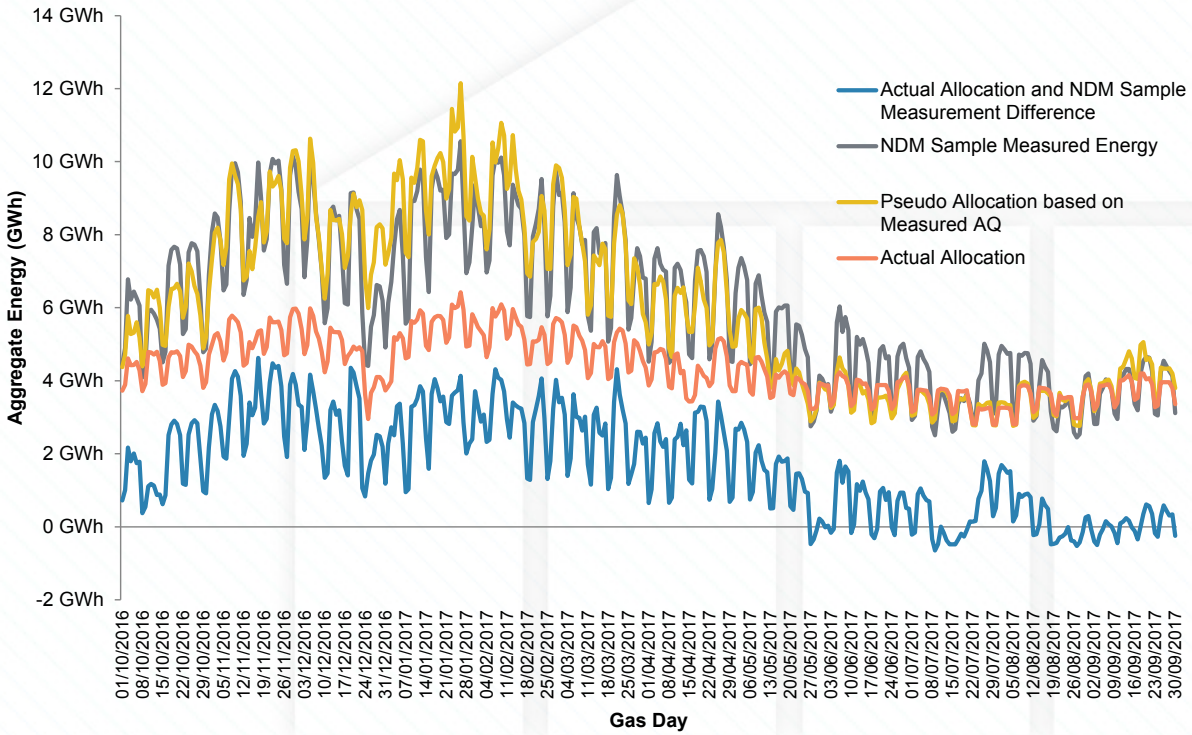
Summary of Findings

Area & Ref #	Inaccurate/ Out of date AQs - Sample Sites with different consumption patterns or levels compared with UK Link. (Ref#3.2.2)
UIG Hypothesis	If AQs have not been calculated for some time they may not be accurate. The difference between the live AQ and a more accurate figure would contribute to UIG.
Data Tree References	Annual Quantity

Findings Status	**Closed**
UIG Impact Peak Volatility %	**0.2%**
UIG Impact Annual Average %	**0.2%**
Confidence in Percentages	**H**

Findings	Approach to analysis
The analysis under Ref #13.3.2 identified around 300 sites in the NDM Sample data which had a materially different AQ to their measured usage. This analysis models the impacts of the discrepancy on UIG. There are 240 sites in the NDM Sample which have a materially higher usage than suggested by their AQ, and 60 sites which have materially lower usage. In aggregate, the effect of this is a significant understatement of UIG during the analysis period. The difference between allocated and measured energy for these outliers accounts for 4% of UIG over the modelled period (circa 0.2% of throughput). The pseudo Allocation matches reasonably well with the measured energy suggesting that the incorrect AQ has a far bigger impact than any differences in allocation profile. The measurement has a pattern typical of more weather sensitive profiles than the pseudo allocation. 87% of the erroneous AQ is in EUC bands 6 and above suggesting that the sites are not in the appropriate WAR Band. The analysis shows how a small number of sites which have incorrect AQs can have a significant impact on UIG levels. If the Sample is representative of the market then the overall impact to allocation and UIG would be material.	Create daily meter point level allocation using historic AQs and factors. Compare the allocated value to the measured energy to show the impacts on UIG. Use the measured usage to create a Pseudo AQ and then rerun historic allocation using the Pseudo AQ and historic factors. Compare this Pseudo allocation with actual and measured energy to see if the AQ level or potentially incorrect profile has a larger impact on UIG.

Supporting Evidence (1/1)



The Orange series is the actual allocated energy for the 300 sites.

The Grey Series is the measured energy for these sites taken from the NDM Sample.

The Blue series is the difference between measurement and allocation and is a direct contributor to UIG.

The yellow series is the Pseudo allocation illustrating that the NDM algorithm achieves a reasonable fit to actual demand when the correct AQ is uses as an input.

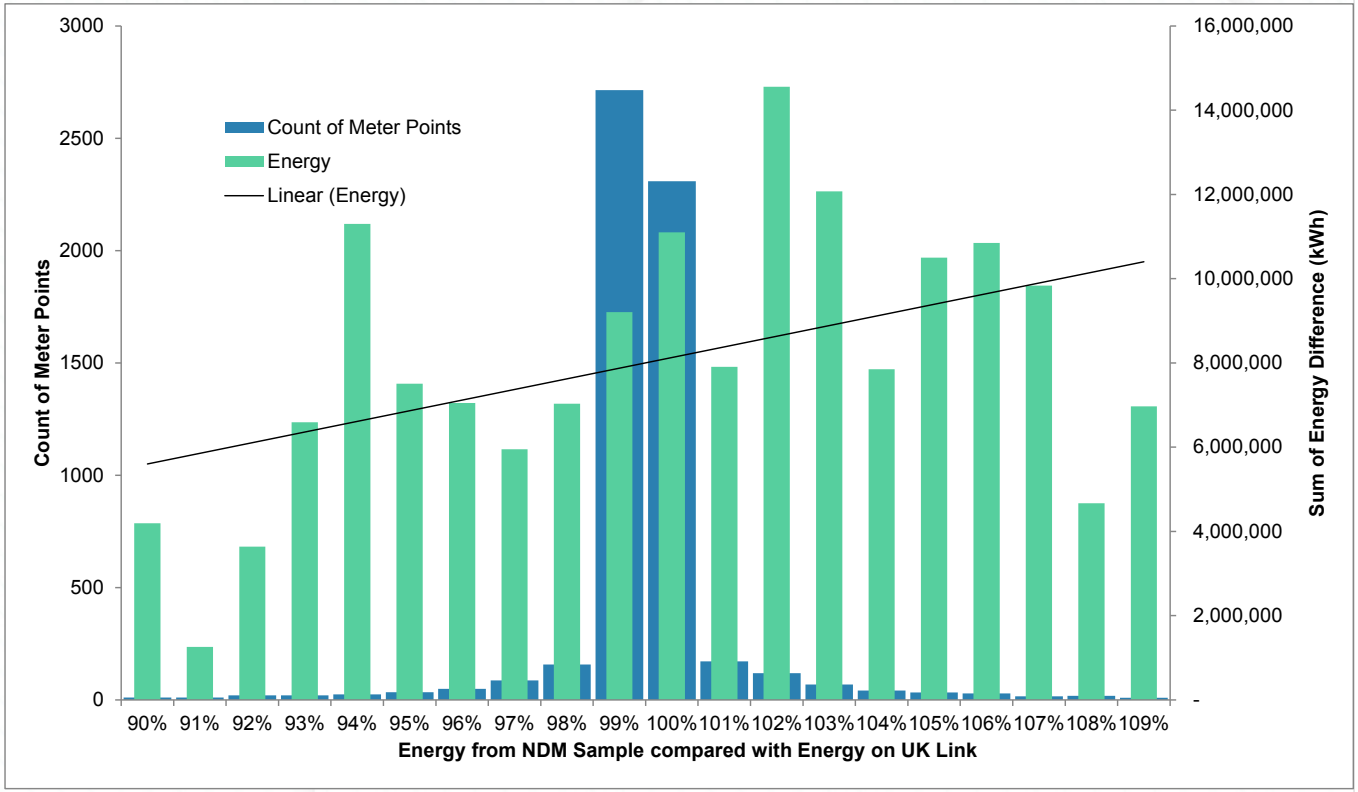
Summary of Findings

Area & Ref #	Inaccurate/ Out of date AQs - Sample Sites with different consumption patterns or levels compared with UK Link. (Ref 3.2.2)
UIG Hypothesis	The difference between the live AQ and a more accurate figure would contribute to UIG.
Data Tree References	AQs

Findings Status	**Closed**
UIG Impact Peak Volatility %	**N/A**
UIG Impact Annual Average %	**0.25%**
Confidence in Percentages	**M**

Findings	Approach to analysis
The net difference in consumption between sites consuming between 90% and 110% of the energy recorded by the NDM Sample (93% of sites analysed) is small at 0.25% of their total energy. This potentially under-recorded energy could account for around 5% of permanent UIG for these sites. The UIG impact annual average % assumes the NDM sample is representative and this variance scales linearly. The absolute size of the energy difference in kWh tends to be larger where the UK Link metered consumption is lower than the metered consumption from the NDM sample, and the larger the consumption of the site, the larger the percentage error between the energy from the NDM Sample data and the consumption recorded on UK Link. Of the 7% of the sample sites with greater than +- 10% difference from the NDM Sample consumption, 80% of them are (or have been) LSP, and 83% of them have a Market Sector Code of I. The net impact of the difference suggests that the sites and meters consumption may be under recorded by around 15%. Several outliers with significant consumption differences have been excluded from this total and detailed investigation of the sites suggests the effects of complex legacy site setups which have now been superseded may be a contributor to current AQ uncertainty. The analysis assumes the data in the NDM Sample is correct. If that is the case, the analysis shows that differences in consumption between the NDM Sample and UK Link consumption derived from meter readings trend towards a net under recording of consumption on UK Link in the order of 3% for the sites analysed. This difference will be permanent UIG as this energy difference is in data calculated after read submission, and therefore reconciliation. It will also result in understated AQs and therefore increased base UIG levels at Allocation. Confidence in percentages is medium as we have identified differences between datasets and modelled the UIG impact on the basis that the daily dataset is correct. While we actively monitor the daily data, we cannot be 100% sure that all energy is correct.	Extract a meter read history from UK link and compare the metered energy with the Demand Estimation Sample data consumption for the same period. Exclude the outliers identified from previous analysis from this work.

Supporting Evidence (1/1)



The chart illustrates the distribution of the difference in consumption between the NDM sample data and the data as held on UK Link (blue series) and the total difference in energy for the sites in each of those groups (green series).

We can see that the larger the percentage difference between the two energies, the greater the total energy for each meter point suggesting that sites with bigger AQs have larger relative differences between the two datasets.

The black trend line shows how the sites which are potentially under recorded on UK Link (the columns on the right half of the chart) trend towards bigger energy differences, suggesting that where a site may be under recording on UK Link the amount of energy difference is greater then where a site is under recording.

This analysis is based on actual recorded consumption from UK link and NDM sample data for identical sites and periods. Around 6,000 sites and 4 years of consumption data were analysed.