



**Item 16: Accuracy of metering
equipment at Meter Point offtake**

Summary of Findings

Area & Ref #	Accuracy of metering equipment at Meter Point offtake (Ref # 16)
UIG Hypothesis	If metering equipment is not accurate, metered consumption will be incorrect. If the issue persists, the AQ will also be affected. This will result in UIG at allocation, and potential permanent UIG if meter equipment inaccuracy is widespread.
Data Tree References	Annual Quantity, Meter Asset.

Findings Status	Closed
UIG Impact Peak Volatility %	N/A
UIG Impact Annual Average %	Up to 0.22% est.
Confidence in Percentages	M

Findings

This analysis is based on a number of assumptions and intends to demonstrate the level of base UIG that could be accounted for by metering equipment.

Disputed meter statistics suggest that on average around 12% of disputed meters are operating outside of their design limits, and that more meters are over recording than under recording. This sample is likely biased as it comprises meters that the end consumer suspects are faulty, and it is likely that the error would be biased to over-recording.

If we assume that on average the meters are over-recording by 4%, and that 1 in 100 faulty meters are disputed, then the amount of energy over-recorded equates to 0.001% of throughout and so is not a material contributor to UIG.

Research into domestic G4 meter accuracy¹ indicates that in general, the difference between actual and metered gas usage is between -0.36% and 0.01% of actual use, with an average error of -0.15%. This analysis is limited to 240 relatively new meters (less than 10 years old) from two manufacturers and so is not directly comparable to the UK meter portfolio, but can give us an indication of how much UIG may be attributable to normal metering error. Extrapolated to national LDZ throughput, this could explain up to 0.22% of throughput allocated to UIG, and the average error would mean that 0.1% of LDZ throughput could be under-recorded and therefore allocated to UIG. As this error is within the operating accuracy of the meter, it is important to note that this is a base level of UIG which would be permanently present in the UK market.

Approach to analysis

We consolidated the National Measurement Office’s reported accuracy results for disputed Gas Meter tests, and extrapolated the number of faulty meters to the full market level to try and project the potential impact to UIG.

We also used research on the accuracy of G4 domestic gas meters to estimate the level of energy difference between actual usage and metered usage given the accuracy specifications for domestic metering.

¹ [The Effect of Measurement Error of the Gas Meter to the Calculation of Gas Consumption, Zlatko Tonković, Damir Fekete, Pero Raos, Technical Gazette 23, 5\(2016\)](#)