

UIG Task Force Update

Friday 12th October 2018

Dear Customers and Industry Colleagues,

In late September the Unidentified Gas (UIG) Task Force published an executive summary of their initial Sprint 1 findings. The team is now pleased to share the most recent findings from Sprint 2.

Background

Since the implementation of Project Nexus in June 2017, gas shippers have experienced much higher than expected absolute levels and volatility of UIG. This is severely affecting their ability to predict demand and commercially manage their businesses from an immediate cash-flow perspective, because UIG is reconciled (corrected) over an extended and unknown future period. In July 2018 Ofgem approved the UNC Modification 0658 to drive a more centralised and focussed approach to the resolution of UIG, mandating Xoserve as the Central Data Service Provider to take on a leadership role on behalf of the industry. I'm pleased to confirm that the second sprint of the UIG Task Force completed earlier this week.

Sprint 2 Findings

The priority focus for Sprint 2 was to carry out a more detailed examination of the Non Daily Metered (NDM) algorithm, to understand which components bore a correlation to UIG volatility.

The findings indicate that the NDM formula is particularly sensitive to certain components of the Composite Weather Variable (CWV) – particularly temperature (including the wind-chill coefficient: the proportion of wind speed incorporated into CWV), day-on-day weather changes and within-day weightings in the Composite Weather Variable formula. On the other hand, other components, including wind speed and cold weather parameters, displayed little or no sensitivity to UIG. Contrary to our initial findings from Sprint 1, using a wider date range, we established that holiday factors are indeed working as intended and therefore not a UIG contributor.

Taken together, these findings have enabled us to significantly narrow down the field of our investigation on the algorithm, and now present clear parameters for Sprint 3. As a next step, the team will introduce more detailed and complex modelling to delve further into the current components linked to historic UIG volatility as well as introduce new components to the model. Our target for the end of Sprint 3 is to pinpoint the problem areas that are driving volatility. From there on, the focus of Sprints 4 to 6 will then shift from what is causing UIG extreme volatility to how we solve the problem through the identification of practical improvements to the algorithm. To set expectations, the interactions between different algorithm inputs makes identifying exactly how to resolve issues, without causing knock-on unwanted effects, a difficult modelling challenge. However, the team's expertise is growing at an extremely fast pace and we do expect to make good progress through sprints 4 to 6 with the clear objective that the output will be actionable by Xoserve or through appropriate industry Modifications.

Other findings relating to base UIG indicate that known meter points in isolated status contribute only around 0.006% of throughput (these have now been passed to Xoserve's Service Development team). While our initial analysis of Standard Conversion Factors for smaller sites does not suggest a direct correlation with UIG, other evidence we have received from Customers has led us to carry this forward into Sprint 3.

Please see below for more detail on the full scope of Sprint 2.

We provide monthly updates at the DSC Change Management Committee. [The Investigation Log](#) on our website provides further detail on all Task Force activities, which from now on we will be publishing fortnightly on Fridays to coincide with the Executive Summaries of forthcoming sprints. If you have any further questions or comments, please contact us uigtaskforce@xoserve.com.

Kind regards

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Sprint 2 Findings (Ref # relates to the UIG Investigation Log)

Area	UIG Hypothesis	Findings to date	UIG Impact Peak Volatility %	UIG Impact Annual Average %	Confidence in %	Confidence rationale	Further Action to increase confidence/root cause (None / Sprint 3 / Later Sprint)	Associated UNC Modifications
Composite Weather Variable (Log Ref #13.2)	Inadequacies in the Composite Weather Variable (CWV) formula are contributing to daily UIG	CVW Formula Day-on-Day Weather Changes Whilst a significant relationship exists, a better fit could not be found by increasing, decreasing or removing the “memory” of previous days’ temps in the formula, there was no overall improvement to UIG	8%	N/A	LOW	Total UIG movements cannot be attributed to individual causes	Sprint 3: CWV - Expand CWV analysis, amend current values, include new variables (non-linear modelling), to identify which of these map to historic UIG volatility, to enable recommendations	UNC Mod 0659 (use of extra weather data items)
		CWV Formula Overall sensitivity analysis of the NDM Formula Sensitive to: <ul style="list-style-type: none"> - Temperature (including wind chill co-efficient) - Within Day weightings – the current set of weightings within the CWV formula may require review - Seasonal Normal Effective Temperature (moderate) Insensitive to: <ul style="list-style-type: none"> - Wind speed - Cold weather parameters 	4%	TBC	MEDIUM	Still unclear whether the linkage to UIG is due to the CWV formula or the make-up of the NDM sample, or a combination of both		
Accuracy of NDM Algorithm (Log Ref #13.1)	Any difference between actual and allocated usage derived using the NDM algorithm would contribute to UIG.	Holiday Factors Sprint 2 findings: 6 years of data has been modelled, it is understood that the holiday factors appear to be working correctly and the increase in UIG is aligned with actual energy being used.	N/A	N/A	N/A		Sprint 3: No further action required.	N/A

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Accuracy/ out-of-date AQs for Class 3 & 4 sites (Log Ref #3.2)	The difference between the live AQ and a more accurate figure contributes to UIG each day. Base and volatility	As per Sprint 1 - In Class 4, 32bn kWh of NDM AQ (7%) is overdue for a meter reading (against the UNC obligation of one read every 1 or 12 months, depending on AQ and nature of meter reading equipment).	TBC	TBC	TBC	Correct AQs are not known until meter readings are loaded. Could increase or decrease UIG	Customer Activity: Engage with individual customers to highlight the need to improve on the volume of actual reads for sites where the AQ is out of date. Ongoing to Sprint 3 Review AQ movements / trends since go-live of Nexus and numbers of rolled-over / corrected AQs to assess contribution to UIG.	UNC MOD 0672 (Incentivise Class 4 read performance)
DM Nomination Accuracy (Log Ref #9)	Inaccurate DM Nominations cause UIG in Nominations	Sprint 2 findings: Data set received w/c 8/10	TBC	TBC	TBC		Carried forward into Sprint 3 to validate data received, analyse data for relationship between DM Noms and UIG.	
Standard conversion factor (Log Ref 12.2)	Using a standard figure throughout the year could understate winter usage and overstate summer usage.	Results of previous 3rd party investigation mapped against %UIG for first 12 months post Nexus – evidence is scattered, no correlation found.	TBC	TBC	TBC		Carried forward to Sprint 3 to investigate individual shipper's previous findings and review external AUGE findings if they become available in sprint timescales.	
Suitability of NDM Sample site data (Log Ref 13.3)	Any difference between actual NDM usage and allocation based on the sample is a cause of UIG	Data not analysed	TBC	TBC	TBC		Carried forward to Sprint 3 to assess how well the NDM model predicts demand and whether it contributes to volatility. Investigate whether any outliers within the sample have undue influence.	UNC Mod 0654

Area	UIG Hypothesis	Findings to date	UIG Impact Peak Volatility %	UIG Impact Annual Average %	Confidence in %	Confidence rationale	Further Action to increase confidence/root cause (None / Sprint 3 / Later Sprint)	Associated UNC Modifications
Meter Point in isolated status which are registering consumption (Log Ref 18)	Isolated sites are all excluded from NDM Allocation, so any gas consumed by these sites will contribute to UIG.	Investigated reported sites which are isolated but Xoserve are receiving incremental meter readings. Low materiality found, has a significant correlation to UIG but small.	-	0.006%	HIGH	This figure represents the "known" sites only, further analysis required into "unknown" sites.	Carry issue forward to later Sprints to investigate unreported isolated sites, on the basis that it is a contributor to base UIG but at a very low level.	