



AUG Sub-Committee

2023-2024 Early Engagement Meeting

29th September 2023



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ELECTRICITY | GAS | INDUSTRY EXPERTS

In this session we aim to provide

- ▶ An overview of the initial assessment process and initial outputs for the Gas Year 2024/2025
- ▶ An opportunity to discuss process and direction of our analysis and our progress towards the AUG Weighting Factors for 2024/2025
- ▶ A view of next steps and process for the rest of the year
- ▶ An open forum for feedback and suggestions

1. Welcome
2. Update on ongoing investigations
 1. Unfound
 2. Shrinkage error
 3. Theft
 4. No-read
3. Repeat contributors and general progress
4. Market considerations
5. Next steps and feedback

Welcome: AUGÉ key contacts



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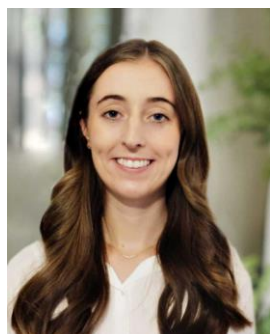
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Initial Assessment Results Recap

Contributor ID	Contributor	Score
010	Theft of Gas (total theft)	45
090	No meter read at the line in the sand	40
131	Consumption Adjustments (incomplete)	36
180	Unfound Unidentified Gas Contributors	35
150	Meterless Sites	22
080	Average Temperature Assumption	21
011	Theft of Gas (roll out)	18
210	Shrinkage Error	18
041	Consumption Meter Errors - Faulty Meter	16
042	Consumption Meter Errors - Extremes of Use	16
070	Average Pressure Assumption	16
160	Isolated Sites	16
200	Dead Sites	16
012	Theft Of Gas (last read)	13
120	Meter Exchanges	13
130	Consumption Adjustments (incorrect)	13
170	Incorrect Meter Technical details on UK Link	13
060	IGT Shrinkage	12
040	Consumption Meter Errors - Inherent Bias	11
110	CV Shrinkage	9
100	Incorrect Correction Factors	8
190	Issues with Xoserve system	7
050	Meter Errors at LDZ input	3
140	Meters with Bypass Fitted	3
020	Unregistered	3
025	Shipperless	3

- ▶ The output from this evaluation informs our early thinking on focus areas for the coming AUG year
- ▶ We consider potential approaches at a high-level and request and interrogate available data (or a limited cut of it)

INVESTIGATIONS

New investigation

180 – Unfound UIG contributor

210 – Shrinkage Error

Refinement investigations

010 – Theft of Gas (Total)

090 – No Read at the Line in the Sand

It is possible that our existing contributors do not identify everything that makes up total UIG.

The very nature of UIG makes it uncertain and hard to identify fully.

Recent industry activity on modifications suggests an appetite to recognise this.

- ▶ **Hypothesis:** There is an amount of final unidentified gas which we don't identify in our contributors. When actual final UIG is measured the scale of it is nearly always greater than the sum of identified contributors.
- ▶ As all actual UIG is allocated based on our factors in the AUG table it gets allocated in the proportions for the UIG we have calculated from identified sources. It has been argued this puts too much weighting on those identified elements.
- ▶ There may be justification to adjust allocation of UIG to recognize an element of total UIG whose source is unknown. This year we are looking at ways to recognise this principle within our methodology.
- ▶ **APPROACH:**
 - ▶ Review actual UIG levels over the past 6 years since Nexus go live and run comparisons to previous AUG statements.
 - ▶ Create a volume of UIG to allocate by throughput to rebalance the AUG table to recognise this uncertainty.

180 Unfound Contributor: Initial Analysis

- ▶ Although data fluctuates month to month and year to year, and continues to move for 4 years as per the industry reconciliation mechanism, final UIG has been running at ~2.5% of throughput since Nexus go-live.
- ▶ Each year we sense check our calculated UIG numbers by comparing it to 2.5% of the estimated throughput for the target year, and to previous years' actual UIG.

Gas Year	Latest % Actual UIG	Latest View of final UIG (TWh)	Predicted identified UIG (TWh)	% of identified UIG
GY 17/18	3.81%	21.6		
GY 18/19	2.19%	11.7		
GY 19/20	2.69%	14.5		
GY 20/21	2.90%	16.5		
GY 21/22	2.50%	12.5	11.0	88%
GY 22/23	1.95%	8.3	10.7	

Gas Year	Predicted % Actual UIG at time of AUG statement	View of actual final UIG (TWh) at time of AUG statement	Predicted identified UIG (TWh)	% of identified UIG
GY 21/22	2.42%	12.7	11.0	86%
GY 22/23	2.43%	12.7	10.7	84%
GY 23/24	2.50%	11.7	8.5	73%

Calculation of the volume for the unfound contributor is the challenge

- ▶ **Option 1** - Use the one year we have actual data for GY 21/22 (12%)
 - ▶ Only one year into its reconciliation process, so another three years until we get a more accurate view
 - ▶ Changing methodology for identified UIG contributors since the AUGS for that year was created

- ▶ **Option 2** – Wait until final Statement production to get the latest view of current UIG %s and use results from our sense check
 - ▶ No certainty on outcome
 - ▶ Actual UIG will not be the same as our predicted number – potentially invalidating approach

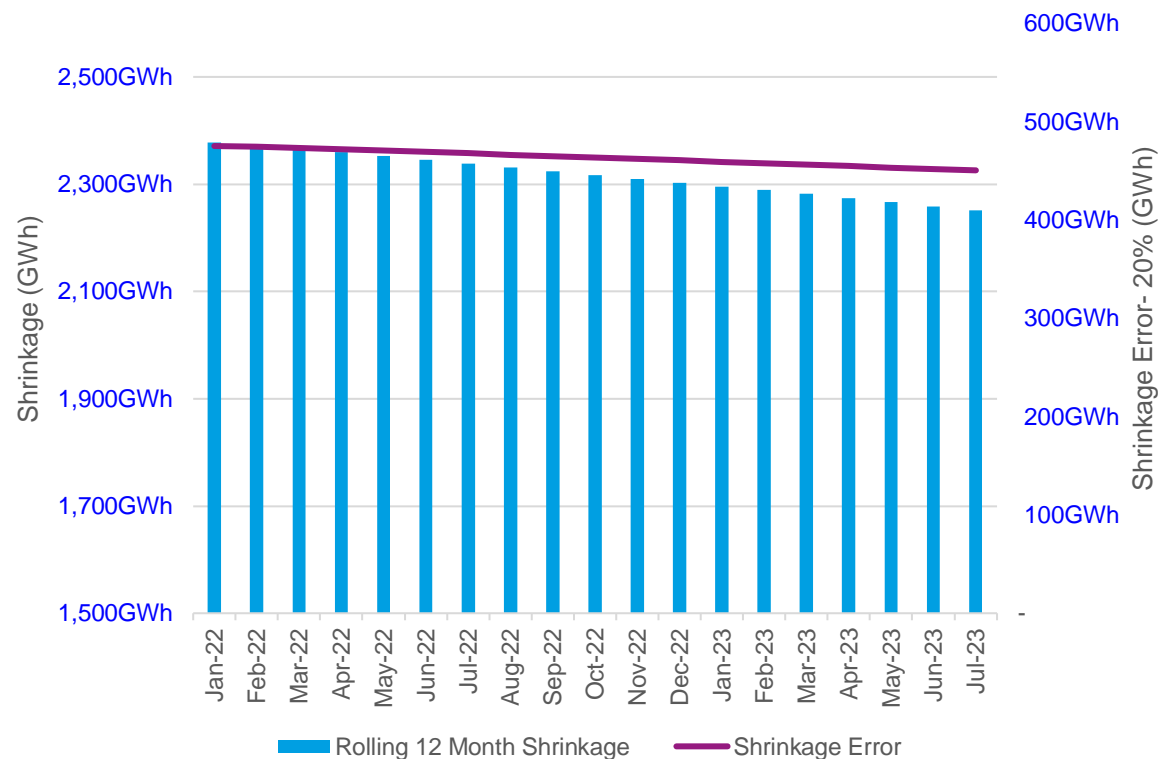
- ▶ **Option 3** – Arbitrary number/average of past differences
 - ▶ Is this justifiable?
 - ▶ Robust methodology?
 - ▶ Lack of evidence

Discussion of Shrinkage is no longer out of scope for AUGÉ

UNC 0843 is looking to establish an independent Shrinkage Expert

- ▶ **Hypothesis:** Gas taken from the LDZ system, but not attributed to a supply point or Shrinkage is Unidentified Gas. If Shrinkage error is underestimated, UIG will be inflated.
- ▶ DN's use the Shrinkage and Leakage Model (SLM), to quantify Shrinkage. The 2008 model takes pre-determined leakage rates from a sample-based study conducted in 2002/03, and annual inputs of asset record and average network pressures.
- ▶ We are considering the possibility of error/bias in the SLM, underestimating of Shrinkage. Unaccounted for Shrinkage will be included in the UIG figure.
- ▶ **APPROACH:**
 - ▶ Review SLM Shrinkage Levels and calculate an error/bias.
 - ▶ Create a volume of UIG to allocate by throughput.

Shrinkage



- ▶ The 'Energy UK Gas Retail Group Study into the effect of shrinkage on domestic customers' stated, 'it could easily be argued that the shrinkage estimate error is at least 20%'.
- ▶ Based on an error of 20% and a rolling average Annual Shrinkage, Shrinkage Error is likely to sit between **400-500 GWh**.
- ▶ Based on the 23/24 AUG statement this would be the third largest contributor following Theft and Temperature.
- ▶ The AUG Statement 17/18 followed a similar methodology. There has been no updated calibration study in over 20 years, limiting any advances in our approach.

➤ **Option 1 – Allocate 20% of Shrinkage as Shrinkage Error and share UIG by throughput**

- ‘Energy UK Gas Retail Group Study into the effect of shrinkage on domestic customers’ – is the 20% error justifiable?
- Is there a more appropriate forum to address the Shrinkage Model bias?
- Risk – how would we ensure the appropriate mechanism is in place to recover Shrinkage Error costs through the AUG factors.

➤ **Option 2 – The unfound Contributor would create a volume of UIG to allocate by throughput**

- Similarly to Shrinkage Error, Unfound UIG by would be shared by throughput. Unfound is likely to be a larger contributor.
- The consensus is an underreporting of Shrinkage, supported by the Imperial CH4 measurement studies. Yet there is little certainty around the % error, so would Unfound be more appropriate?

Minded-to position: consider ‘Shrinkage Error’ only if the ‘Unfound’ Contributor is not taken forward

We are reviewing all aspects of our theft contributor...

It has been suggested that:

- ▶ The overall theft forecast used in our methodology is too high
- ▶ The theft contributor has a disproportionate impact on the Weighting Factors

... and the investigation is ongoing

- ▶ We have reviewed TEM and continue to gather views on retail (and other) theft
- ▶ There is a clear relationship between Theft Contributor and a potential unfound contributor
- ▶ We need to be able to justify a change to the methodology in line with achieving a more equitable allocation of UIG.

Changes could address:

- ▶ Overall theft forecast
 - ▶ TEM
 - ▶ Retail theft data
 - ▶ Cost of living impact
 - ▶ Link to consumption forecast
 - ▶ Link to Unfound
- ▶ The allocation methodology
 - ▶ Alternatives to TRAS data
 - ▶ Perceived bias in TRAS data
 - ▶ Sophisticated (organised) theft
 - ▶ Smart vs. traditional assumptions

We are investigating ways to improve the existing No Read at the Line in the Sand methodology.

- ▶ The existing process to calculate a view of how much gas will contribute to Final UIG from sites which do not receive a valid meter read before the period crystallises has had multiple updates over the last two years. We think the methodology could be streamlined.
- ▶ This year's focus is to align periods of analysis together to look at a volume of the amount of UIG present for the most recent period frozen in April 2023; **Apr19-Mar20**.
- ▶ Two-strand approach employed:
 - ▶ 1) Take a snapshot of the final reconciliation position in May 2023 aligned with the portfolio of sites which have not received a read for 4 years.
 - ▶ 2) Calculate the amount of actual energy difference between the AQ and suggested consumption (from rejected reads) for that period Apr19-Mar20.

Data inputs

- ▶ Portfolio of sites with no accepted meter read since April 2020 (as of 1st April 2023).
- ▶ Rejected Reads for those sites since April 2019.
- ▶ Percentage of original AQ reconciled for the period Apr19-Mar20 (as of 1st April 2023).

Process Summary 1 – Calculate Reconciliation Percentage

1. Create reconciliation percentages for each month Apr19-Mar20 for each matrix position by taking the aggregated position reported by CDSP and breaking it down into matrix position.
2. Aggregate data together to get an annual view to apply to the target gas year.

Process Summary 2 – Calculate Energy Error Percentage

1. Choose a suitable set of rejected reads to calculate the actual energy for as many meter points as possible for unreconciled months Apr19-Mar20.
2. Calculate the view of the allocated volume for the same meter points and the percentage difference to the above.
3. Apply the relevant percentage error for each matrix position to all sites in the portfolio where no reads are available.

Process Summary 3 – Determine UIG for target year

1. Apply two percentages from above to the consumption Forecast to calculate final UIG for the target year.

Reconciliation Percentage

- ▶ Complete, and validated against this part of last AUG year's process where we were forecasting this position for the same period and was calculated at a higher level.

Energy Error Percentage

- ▶ Similar % of sites can be used to create this error percentage compared to existing process.
- ▶ Work is still ongoing to decide the most appropriate set of reads to use.
- ▶ Ongoing analysis of energy calculations and comparison to similar calculations in last year's process.

Comparison with existing methodology

- ▶ Too early to say - waiting for the next snapshot of data in October.

REPEAT CONTRIBUTORS and GENERAL PROGRESS

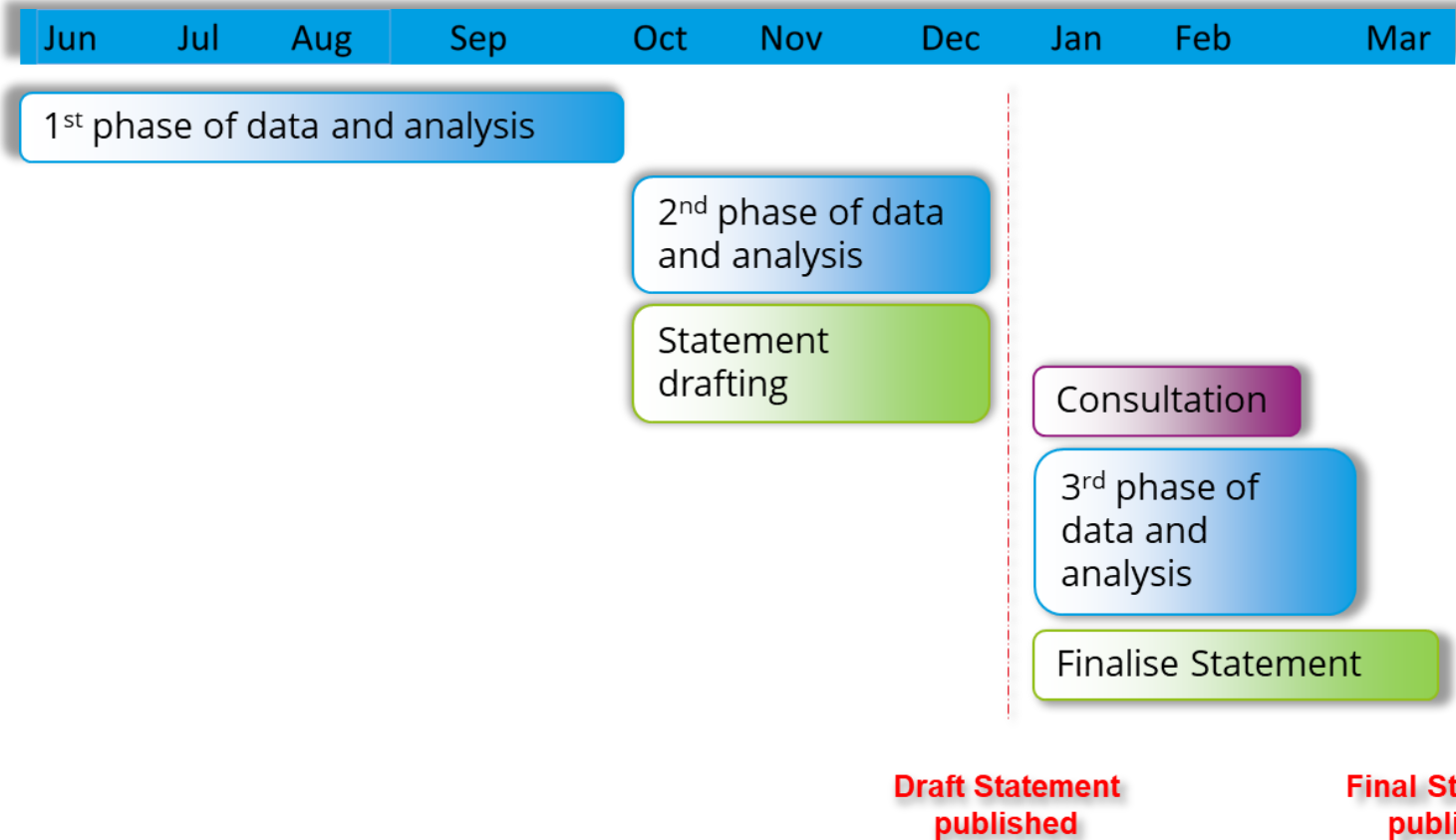
Repeat analysis for 2024/2025 Gas Year



All previous contributors are re-run using refreshed data

We also re-assess our assumptions and methodology in light of new information or developments in our thinking

Contributor	2022-2023 Gas Year UIG Volume	Change	2023-2024 Gas Year UIG Volume
Theft of Gas	7,602 GWh	↓	6,823 GWh
Average Temperature Assumption	1,220 GWh	↓	1,021 GWh
Average Pressure Assumption	359 GWh	↓	326 GWh
No Read at the Line in the Sand	861 GWh	↓	162 GWh
Incorrect Correction Factors	53 GWh	→	53 GWh
Unregistered Sites	35 GWh	↑	53 GWh
Isolated Sites	47 GWh	↓	19 GWh
Dead Sites	-	↑	19 GWh
IGT Shrinkage	18 GWh	→	19 GWh
Shipperless Sites	26 GWh	↓	17 GWh
Consumption Meter Error	432 GWh	↓	-15 GWh
Total	10,652 GWh	↓	8,497 GWh



- ▶ On track for moving to Q4 activities of analysis and Statement production
- ▶ KEY: TRAS data is now with us for analysis

We have three phases to process the data, although it is increasingly clear that there is little material movement between analysis phases

▶ Progress made on:

- ▶ 020 Unregistered
- ▶ 025 Shipperless
- ▶ 040 Consumption Meter Error
- ▶ 090 No Read at the Line in the Sand
- ▶ 160 Isolated Sites

▶ Focus in October/November on:

- ▶ 010 Theft of Gas
- ▶ 070 Average Pressure Assumption
- ▶ 080 Average Temperature Assumption
- ▶ 100 Incorrect Correction Factors
- ▶ 200 Dead sites
- ▶ 060 IGT Shrinkage

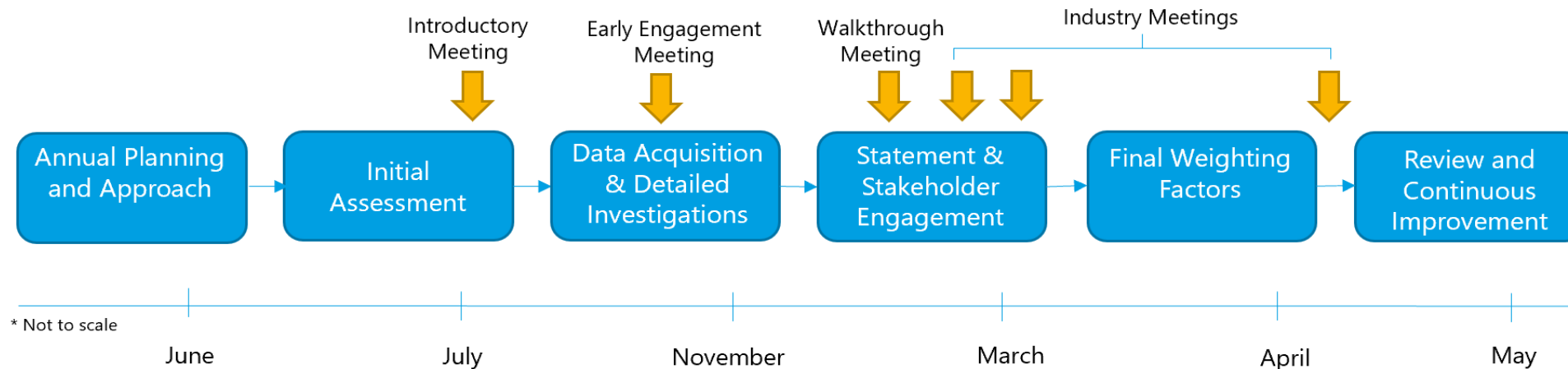
At the end of the last AUG cycle we said we wanted to review the use of historical data to inform our forecast of usage for the target year

- ▶ We changed the baseline of our forecast to only go back to the start to Oct-19 rather than Nexus go-live (Jun-17).
- ▶ This aligns with the start of the new sub-bands introduced with Data Services Contract (DSC) Change Proposal XRN4665 Creation of New End User Categories, meaning there is no need for assumed back filling which was previously happening for those sub-bands.
- ▶ This also brings all forecasts into line with a couple of other sub-bands which had already had their date moved forward last year (e.g. Class 3, EUC 01ND).
- ▶ Has the advantage of ignoring those first couple of years post Nexus when shippers were still getting used to the introduction of the new product classes and the smart meter rollout was still trying to gather momentum.
- ▶ Class 1 & 2, EUC 09 continues to have a date of Apr-21 due to significantly large historical positions in 19-20 which give an unrealistic view for the target year based on current trends.
- ▶ Impact has not been significant for most profile classes. A few do have some unusual historical movements still being included influencing the forecast, however, we will continue to review and monitor how things change over the next few months.

NEXT STEPS and feedback



- ▶ The draft AUG Statement, including the draft AUG Table, will be provided to the AUG Sub-Committee by the end of December
- ▶ This will be formally presented to industry at the January AUG Sub-Committee Meeting
- ▶ Engagement with stakeholders will continue throughout.



- ▶ November PAC; draft Statement; 12 January Sub-Committee



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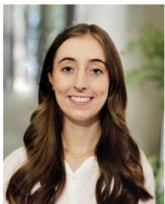
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- ▶ All further discussion and suggestions are welcome. We can be contacted at auge@engage-consulting.co.uk



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