

AUG Sub-Committee Meeting

14th January 2022



engage 

ELECTRICITY | GAS | INDUSTRY EXPERTS

Introductions



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Agenda

- ▶ **Methodology Recap**
- ▶ **Detailed Investigations**
- ▶ **Refinement Investigations**
- ▶ **Other Contributors**
- ▶ **Draft Weighting Factors**

Draft AUG Statement

Overarching Methodology

Recap

Our overarching methodology is founded on three key principles. These are

- ▶ **Bottom-up Determination:** we quantify UIG for each identified contributor and add these together, rather than estimating the overall UIG and apportioning it or using it as a means of differencing
- ▶ **'Polluter Pays':** we interpret "fair and equitable" to mean that UIG should be allocated in the same proportions as it is created. As the UNC does not permit the allocation of UIG at a Supply Point level, the best current attainment of this principle is that each position on the matrix of EUC Band and Class attracts its appropriate proportion
- ▶ **Line in the Sand:** we only include in our calculation of Weighting Factors the UIG that will exist at the Line in the Sand (the final Settlement position) and not UIG that exists temporarily prior to this

Statement and Stakeholder Engagement

Background

- ▶ At the introductory meeting we presented the output of the Initial Assessment
- ▶ Our Initial Assessment prioritised the contributors to UIG and identified the four that warranted further investigation
 - ▶ Detailed Investigation - Meters with By-Pass Fitted
 - ▶ Detailed Investigation - Isolated Sites
 - ▶ Refinement Investigation - Theft of Gas in relation to AMR sites
 - ▶ Refinement Investigation - No Read at the Line in the Sand
- ▶ In the Early Engagement meeting in September, we provided an update on the investigations. Today we are presenting a summary of the outcomes of the investigations and the draft Weighting Factors

140 – Meters with By-Pass Fitted

Definition

- ▶ For some limited reasons, a small number of meters are fitted with by-passes so that operations can continue at a Supply Meter Point when a meter is being exchanged/recalibrated
- ▶ If the by-pass is used, then a Consumption Adjustment is required once the by-pass is closed to correct the energy within Settlement as the gas will not be recorded through the meter
- ▶ If the by-pass is used and an accurate Consumption Adjustment is not submitted, then UIG is created

140 – Meters with By-Pass Fitted

Proposed methodology

▶ Our intended methodology was as follows:

- ▶ Gather available data
- ▶ Validate all datasets for completeness and credibility
- ▶ Identify the occasions when a meter by-pass had been operated
- ▶ Match records of Consumption Adjustments against identified meter by-pass operations
- ▶ Determine meter by-pass operations with no matching Consumption Adjustment. Of these:
 - ▶ a. Determine likely consumption while the by-pass was open
 - ▶ b. Determine the likelihood that this consumption will not be adjusted before the Line in the Sand
- ▶ Aggregate the UIG associated with missing Consumption Adjustments
- ▶ Allocate the total UIG to Matrix Positions

140 – Meters with By-Pass Fitted

Assumptions

▶ The assumptions are as follows

- ▶ A recorded meter by-pass means that there is one in situ, if none is recorded then one is not on site
- ▶ A meter by-pass is in situ for a reason, and so its existence at a Supply Meter Point is indicative that it will be used
- ▶ When a meter by-pass is operated, consumption continues at the Supply Meter Point at normal levels for that site
- ▶ A by-pass cannot be “partially” operated so that the meter continues to record some, but not all, actual consumption
- ▶ A by-pass is operated for meter maintenance and exchange
- ▶ Meter maintenance is undertaken reasonably frequently, given the nature of the meter population associated with larger and continuously consuming sites
- ▶ A meter exchange is undertaken only occasionally

140 – Meters with By-Pass Fitted

Data Files

- ▶ **Meter by-pass Portfolio (last snapshot October 2021)**
- ▶ **Historical by-pass view**
- ▶ **Accepted Read Report**
- ▶ **Rejected Reads Report**
- ▶ **AQ Corrections**

140 – Meters with By-Pass Fitted

Identifying and Validating the Baseline Population

- ▶ The baseline population of 12,491 sites with a by-pass recorded is provided in the table opposite
- ▶ There are a material number of domestic sites with a meter by-pass recorded as present. This is surprising as there are limited reasons why a by-pass would be required at a domestic premises
- ▶ Review group 0763 has concluded that there are sites where by-passes have been fitted but are not recorded on the CDSP system

		CLASS			
		1	2	3	4
EUC BAND	1ND	-	-	37	2,341
	1PD	-	-	-	57
	1NI	-	-	174	6,355
	1PI	-	-	-	1
	2ND	-	-	6	213
	2PD	-	-	-	-
	2NI	-	3	112	1,676
	2PI	-	-	-	-
	3	1	2	95	603
	4	-	6	87	391
	5	-	6	13	135
	6	1	7	6	67
	7	2	9	6	27
	8	4	10	-	8
9	28	-	-	2	

140 – Meters with By-Pass Fitted

Ongoing By-pass Operations

- ▶ To create UIG there needs to be a by-pass operation
- ▶ There are two types of by-pass operation:
 - ▶ Ongoing by-pass operations – the status indicator is currently recorded as open on the CDSP system. The count of these is provided in the table opposite
 - ▶ Completed by-pass operations – the by-pass status indicator is currently recorded as closed, but at some point in the past it has been set to open. This may have happened more than once at the same Supply Meter Point
- ▶ We analysed the reads history. Only a small number of these have static reads which could indicate an active by-pass operation

Year	Count of Supply Meter Points
Pre 1970	2
1970-1980	1
1980-1990	4
1990-2000	47
Post 2000	2

140 – Meters with By-Pass Fitted

Completed By-pass Operations

- ▶ We defined a completed by-pass operation as a changed in status from open to closed
- ▶ The data indicated that only a small proportion of the meters have had a completed by-pass operation
- ▶ It is more likely that the CDSP system is not being updated with completed by-pass operations

EUC Band	Count of sites with meter by-pass fitted	Count of known completed by-pass operations	Proportion of sites
1ND	2,378	1	0.0%
1PD	57	-	-
1NI	6,529	12	0.2%
1PI	1	-	-
2ND	219	-	-
2PD	-	-	-
2NI	1,791	7	0.4%
2PI	-	-	-
3	701	10	1.4%
4	484	12	2.5%
5	154	1	0.6%
6	81	3	3.7%
7	44	3	6.8%
8	22	3	13.6%
9	30	4	13.3%
Total	12,491	56	0.4%

140 – Meters with By-Pass Fitted

Consumption Adjustments as an Indicator of Completed By-pass Operations

- We investigated whether Consumption Adjustments could be a better indicator of a completed by-pass operation

EUC Band	Count of sites with meter by-pass fitted	Count of sites with Consumption Adjustments 2017-2021	Count of sites with multiple Consumption Adjustments 2017-2021
1ND	2,378	54	7
1PD	57	-	-
1NI	6,529	225	13
1PI	1	-	-
2ND	219	11	2
2PD	-	-	-
2NI	1,791	125	11
2PI	-	-	-
3	701	106	9
4	484	81	9
5	154	32	5
6	81	17	7
7	44	11	5
8	22	7	3
9	30	12	6
Total	12,491	681	77

EUC Band	Count of known completed by-pass operations	Consumption Adjustment matches to a known by-pass operation period 2017-2021	Consumption Adjustment overlaps known by-pass operation period 2017-2021
1ND	1	-	-
1PD	-	-	-
1NI	12	-	2
1PI	-	-	-
2ND	-	-	-
2PD	-	-	-
2NI	7	-	1
2PI	-	-	-
3	10	-	2
4	12	-	5
5	1	-	1
6	3	-	2
7	3	-	1
8	3	-	1
9	4	-	1
Total	56	0	16

140 – Meters with By-Pass Fitted

Consumption Adjustments

- ▶ The count of positive and negative adjustments are provided below. We would normally assume that all the adjustments would be positive
- ▶ The length and average volume did not align with our expectations
- ▶ We therefore concluded that a completed Consumption Adjustment is not a good indicator of a completed by-pass operation

Total Consumption Adjustments	Positive Adjustments	Negative Adjustments	Blank (No Adjustment)
681	566	109	6

EUC Band	Average Volume (kWh)	Average Length of Time (Days)	Unique Count
1ND	226	40	42
1PD	-	-	-
1NI	580	59	244
1PI	-	-	-
2ND	1,188	14	9
2PD	-	-	-
2NI	1,620	18	136
2PI	-	-	-
3	7,065	22	98
4	13,501	28	86
5	281,357	105	32
6	63,010	6	16
7	745,211	74	12
8	406,484	29	9
9	266,360	1	11

140 – Meters with By-Pass Fitted

Conclusions

- ▶ **The two main conclusions from the investigation are:**
 - ▶ **The meter by-pass status indicator is not properly maintained. This indicator is the primary means by which our methodology identifies completed meter by-pass operations that might be giving rise to UIG**
 - ▶ **There is no reason given when a Consumption Adjustment is submitted, and we have been unable to identify any reasonable alternative approach to matching Consumption Adjustments with completed meter by-pass operations. We therefore have no way to identify the frequency of the “missing” Consumption Adjustments that would contribute to positive UIG**
- ▶ **Therefore, we have not calculated any UIG associated with this contributor for the target Gas Year**
- ▶ **We plan to re-assess this contributor as part of the Initial Assessment for the 2023-2024 Gas Year with an alternative methodology. This is likely to required additional sources of data**

160 – Isolated Sites

Definition

- ▶ **An Isolated Site is a registered Supply Meter Point with a meter fitted that has had additional equipment fitted to prevent the supply of gas**
- ▶ **These sites remain live on the system but are not allocated gas**
- ▶ **If the sites are offtaking gas, then this will not be recorded in Settlement and therefore creates UIG**

160 – Isolated Sites

Data Files

- ▶ **Isolated Sites Portfolio**
- ▶ **Accepted Reads**
- ▶ **Rejected Reads**
- ▶ **Historical Isolated Sites and their meter reads**

160 – Isolated Sites

Establishing Current Population of Isolated Sites

- ▶ We identified that most of the sites with a meter recorded in isolation status were isolated in the last 3 years
- ▶ Almost all EUCs have an Isolated Site

Year of Isolation	Count of Sites	Year of Isolation	Count of Sites	Year of Isolation	Count of Sites
1987	1	2000	51	2011	212
1988	1	2001	125	2012	151
1989	1	2002	260	2013	189
1992	1	2003	192	2014	262
1993	3	2004	371	2015	227
1994	1	2005	690	2016	437
1995	1	2006	179	2017	448
1996	3	2007	192	2018	574
1997	11	2008	170	2019	1777
1998	34	2009	111	2020	3690
1999	27	2010	108	2021	6937

		CLASS			
EUC BAND	Count	1	2	3	4
	1ND	-	-	1,325	12,315
	1PD	-	-	15	975
	1NI	-	-	131	2,120
	1PI	-	-	4	52
	2ND	-	-	12	94
	2PD	-	-	-	4
	2NI	-	-	7	303
	2PI	-	-	1	6
	3	-	-	3	47
4	-	-	-	12	
5	-	-	-	8	
6	-	-	-	2	
7	-	-	-	-	
8	-	-	-	-	
9	1	-	-	-	

160 – Isolated Sites

Determining Future State

- ▶ We took the pre 2019 Isolated Sites as a proxy for the target year
- ▶ Out of those, we identified the count and sum of AQ of the advancing sites based on accepted or rejected meter reads
- ▶ Any Isolated Site that had a theft recorded was removed from the dataset
- ▶ The one Isolated Site in Class 9 became live in December 2021 which is likely to have an impact on the final Statement

		CLASS							
		1 Count	1 AQ	2 Count	2 AQ	3 Count	3 AQ	4 Count	4 AQ
EUC BAND	1ND	-	-	-	-	31	331	1,585	17,315
	1PD	-	-	-	-	-	-	107	648
	1NI	-	-	-	-	1	4	96	1,426
	1PI	-	-	-	-	-	-	3	24
	2ND	-	-	-	-	-	-	6	683
	2PD	-	-	-	-	-	-	-	-
	2NI	-	-	-	-	2	240	22	2,956
	2PI	-	-	-	-	1	102	-	-
	3	-	-	-	-	1	331	3	1,392
	4	-	-	-	-	-	-	2	2,364
	5	-	-	-	-	-	-	-	-
	6	-	-	-	-	-	-	-	-
	7	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	
9	1	77,188	-	-	-	-	-	-	

160 – Isolated Sites

Extrapolation of Initial Results to Include Sites with Insufficient Read Data

- ▶ We identified many sites where we could not determine whether the site was advancing or not
- ▶ We assumed that for these sites they would advance in the same proportion as the ones that we could calculate
- ▶ We used only the proportions for pre 2019 Isolated Sites when extrapolating the data

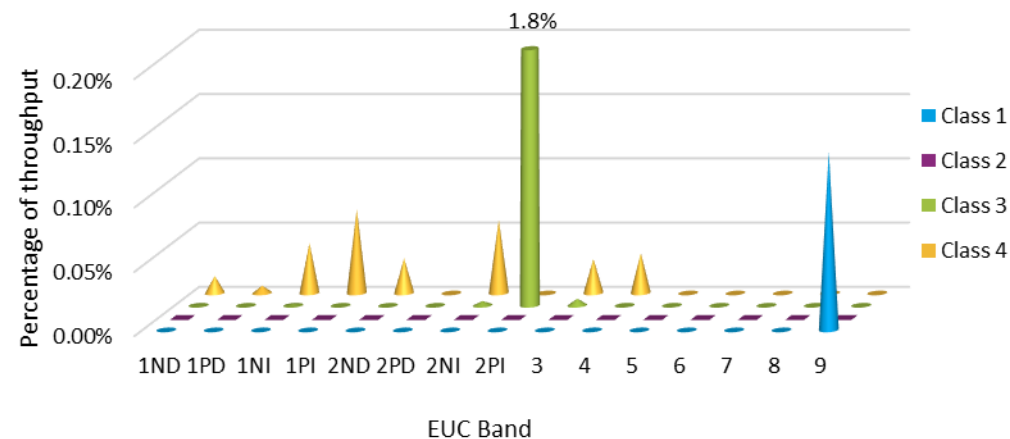
EUC Band	Advancing	Not Advancing	Insufficient Reads
1ND	38%	9%	53%
1PD	53%	16%	31%
1NI	21%	17%	63%
1PI	75%	25%	0%
2ND	30%	15%	55%
2PD	-	-	-
2NI	33%	11%	56%
2PI	100%	0%	0%
3	36%	9%	55%
4	40%	20%	40%
5	0%	0%	100%
6	-	-	-
7	-	-	-
8	-	-	-
9	100%	0%	0%

160 – Isolated Sites

Results

- ▶ We calculated the UIG associated with Isolated Sites to be 131 GWh
- ▶ The breakdown by Matrix Position and as a percentage of throughput for each Matrix Position is as follows

EUC BAND	CLASS			
		1	2	3
1ND	-	-	0	32
1PD	-	-	-	1
1NI	-	-	0	3
1PI	-	-	-	0
2ND	-	-	-	2
2PD	-	-	-	-
2NI	-	-	0	7
2PI	-	-	0	-
3	-	-	0	3
4	-	-	-	4
5	-	-	-	-
6	-	-	-	-
7	-	-	-	-
8	-	-	-	-
9	77	-	-	-



Existing Contributors

Refinement Investigations

- ▶ **We identified two contributors with existing methodologies which had potential for improvement based on known data sources**
 - ▶ **010 – Theft of Gas with a specific investigation into AMR**
 - ▶ **090 – No Read at the Line in the Sand**

010 – Theft of Gas (Only AMR)

Background and Data Files

- ▶ The refinement investigation on theft of gas focusses on splitting out any theft detected at sites with an AMR fitted from the traditional theft segment
- ▶ The remaining methodology is the same as described in the AUG Statement for Gas Year 2021-2022
- ▶ The data files received for this analysis are:
 - ▶ TOG Data
 - ▶ AMR Snapshot
 - ▶ Telemetered Sites report
 - ▶ TRAS Data
 - ▶ Historical AMR data
 - ▶ Embedded AMR data

010 – Theft of Gas (Only AMR)

AMR Meter Percentage

- ▶ We first identified the Supply Meter points that have AMR fitted. We did this by:
 - ▶ Using the AMR flag
 - ▶ Using the telemetered report
 - ▶ Using meter type where the AMR is embedded (those starting E016, 25, 40, 65, 100 and 160)

		CLASS			
		1	2	3	4
EUC BAND	1ND	-	-	0%	0%
	1PD	-	-	0%	0%
	1NI	0%	20%	76%	30%
	1PI	-	-	57%	4%
	2ND	-	-	26%	10%
	2PD	-	-	0%	0%
	2NI	0%	46%	79%	50%
	2PI	-	-	48%	10%
	3	-	41%	78%	58%
	4	-	73%	82%	62%
	5	0%	28%	84%	55%
	6	0%	13%	80%	51%
	7	0%	14%	81%	39%
	8	0%	13%	47%	37%
	9	0%	0%	0%	17%

010 – Theft of Gas (Only AMR)

AMR Theft Percentage

- ▶ We compared the AMR data with our master theft dataset from the last 10 years to identify the sites that had a theft recorded when an AMR was fitted
- ▶ The percentage of detected theft when an AMR was fitted is 1.13%
- ▶ This is split by EUC band as per the table
- ▶ This indicated that Supply Meter Points with AMR fitted have a lower theft rate
- ▶ Our methodology was updated to remove AMR Supply Meter Points from Supply Meter Points with traditional meters fitted

EUC Band	Theft whilst AMR fitted
1ND	0.1%
1PD	-
1NI	34.5%
1PI	-
2ND	1.3%
2PD	-
2NI	46.2%
2PI	-
3	-
4	18.0%
5	-
6	-
7	-
8	-
9	-

010 – Theft of Gas

Updated Traditional Theft Percentages

- ▶ We updated the traditional theft dataset by removing any Supply Meter Point which had a theft when an AMR was fitted or has subsequently been fitted
- ▶ We also added the most recently available data to the theft dataset from the last 10 years
- ▶ The updated percentages that were used to split the traditional theft portion of undetected theft is provided in the table opposite
- ▶ This has reduced the traditional theft percentage for 01NI, 02NI, 02ND and has increased it for 01ND and 01PD

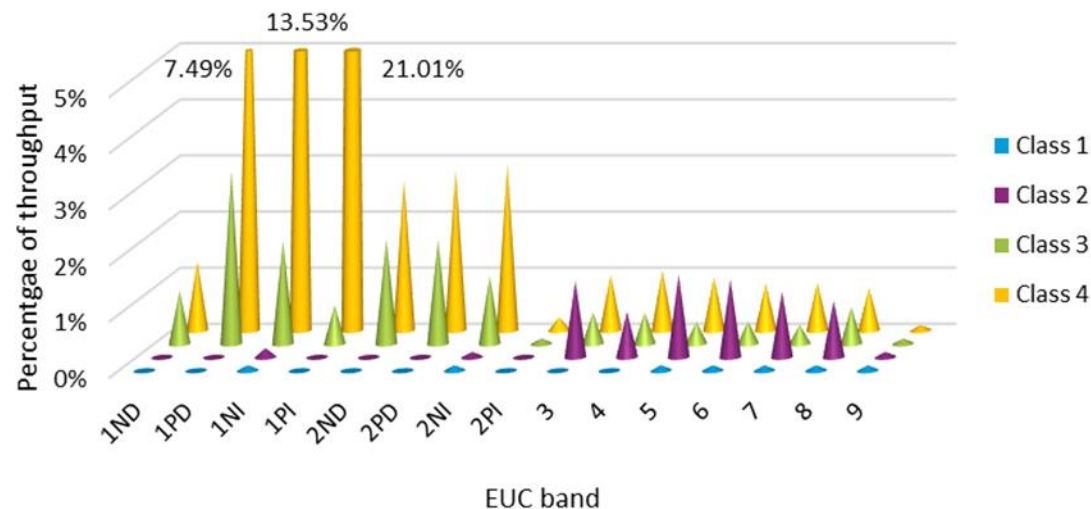
EUC Band	Traditional Theft Percentage
1ND	35%
1PD	22%
1NI	22%
1PI	0%
2ND	2%
2PD	0%
2NI	6%
2PI	-
3	2%
4	3%
5	2%
6	2%
7	2%
8	2%
9	-

010 – Theft of Gas

Results

- ▶ The forecast for the Theft Of Gas contributor is 7,753 GWh
- ▶ The breakdown by Matrix Position and as a percentage of throughput for each Matrix Position is as follows

	CLASS				
		1	2	3	4
EUC BAND	1ND	-	-	591	2,995
	1PD	-	-	54	1,336
	1NI	0	0	47	1,197
	1PI	-	-	0	8
	2ND	-	-	8	157
	2PD	-	-	0	5
	2NI	0	0	88	350
	2PI	-	-	0	0
	3	-	0	37	125
	4	-	1	35	150
	5	0	3	12	99
	6	0	22	8	86
	7	1	31	7	78
	8	5	66	15	77
	9	55	1	0	3



090 – No Read at the Line in the Sand

Background and Data Files

- ▶ **The Initial Assessment identified two areas where our methodology for No Read at the Line in the Sand could be enhanced**
 - ▶ Additional read rejection reasons
 - ▶ Update the forecast unreconciled percentage based on observed reconciliation percentages
- ▶ **The data files received for this analysis are:**
 - ▶ Sites with No Reads after April 2019
 - ▶ Read Rejections
- ▶ **The data file that has not been provided is:**
 - ▶ Additional Reconciliation Information

090 – No Read at the Line in the Sand

Rejection Reason	Count of Cases
A convertor serial number has been supplied where no convertor is fitted	1
Asset Status is not live	4
Convertor corrected read has been supplied where no convertor is fitted	2
Convertor Round the Clock Count should not be provided where a convertor is not fitted	2
Convertor uncorrected read has been supplied where no convertor is fitted	1
Meter not found for Meter Point	2
Meter point has no read to be replaced	362
Meter Point is isolated	1
Meter Read Reason invalid for a Shipper Provided Estimated read	2
Meter Serial Number Provided is for previous meter	143
MPRN received in an incorrect file based on its class on the read date	31
New corrected reading is less than previous corrected reading	3
New meter reading is less than previous meter reading	13,795
Non-opening reading received outside the read receipt window	284
Override tolerance passed and override flag provided	107
Read date lies within a consumption adjusted period	1
Reading Breached the lower Outer Tolerance	14,194
Reading Breached the upper Inner Tolerance value and no override flag provided	1,085
Reading Breached the upper Outer Tolerance	3,249
Reading is higher than a subsequent actual valid meter reading	1
The convertor corrected read has not been supplied where there is a convertor fitted and the convertor reads are usable	5
The convertor Round the Clock Count has not been supplied	8
The convertor serial number has not been supplied where there is a convertor is fitted	5
The convertor serial number on the read does not agree with the convertor serial number held on the Transporter Database	8
The Meter Point already has a read for this date	5
The Meter Point has no previous read	19
The meter read has a future read date	1
The meter read reason is invalid	2
The meter read source is invalid	1
The meter serial number on the read does not agree with the meter serial number held on the Transporter Database	4,168

Analysis

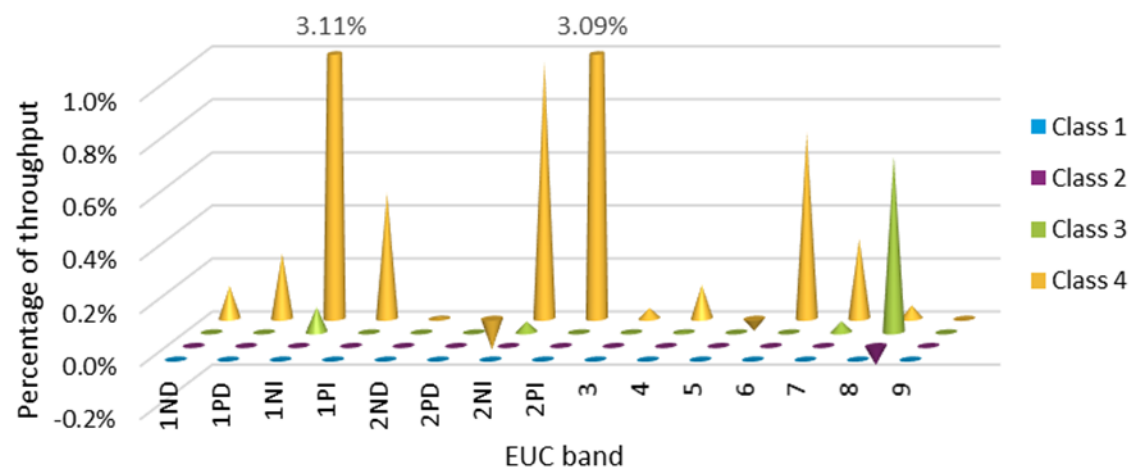
- ▶ We identified several additional rejection reasons which could be used to calculate the potential UIG for sites with no read
- ▶ From these rejection reads we were able to calculate an additional 18,964 meter advances
- ▶ As there are now multiple rejection reads, the most recent rejection pair is used to account for up-to-date consumption
- ▶ The new codes identified an additional 38% of error

090 – No Read at the Line in the Sand

Results

- ▶ The forecast for this contributor is 871 GWh
- ▶ The breakdown by Matrix Position and as a percentage of throughput for each Matrix Position is as follows

EUC BAND	CLASS			
		1	2	3
1ND	-	-	0	298
1PD	-	-	0	44
1NI	-	-	2	275
1PI	-	-	-	0
2ND	-	-	-	0
2PD	-	-	-	-0
2NI	-	-	3	114
2PI	-	-	-	0
3	-	-	0	5
4	-	-	0	18
5	-	-	-0	-5
6	-	-	-	72
7	-	-	1	27
8	-	-5	15	5
9	-	-	-	-



Other Contributors

Summary

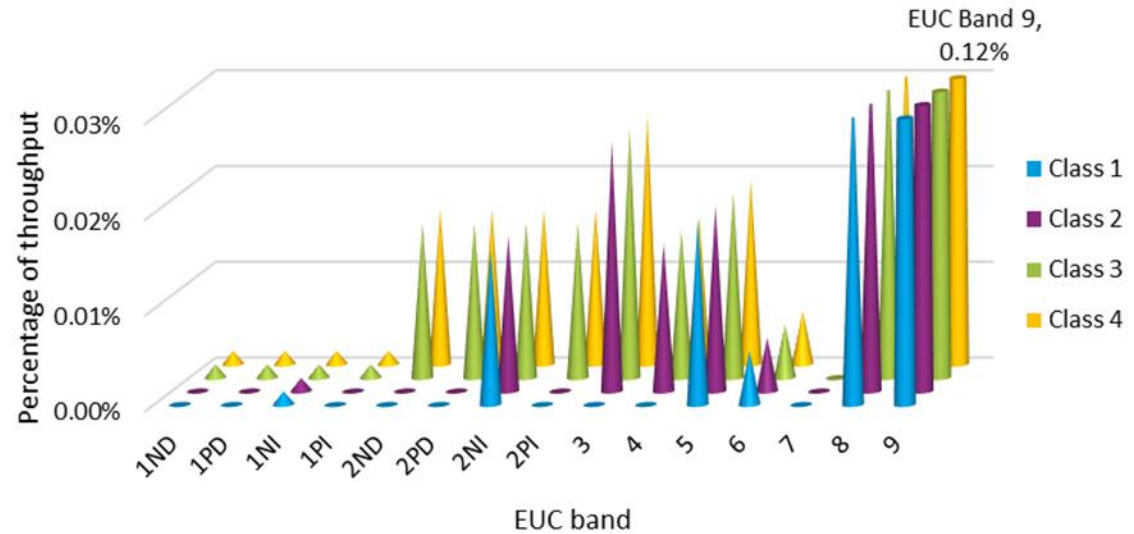
- ▶ Data refreshes took place for the other eight Contributors
- ▶ In some cases, small improvements have been made to a step in the methodology or calculations and these are highlighted in the draft AUG Statement
- ▶ The following slides provide the updated results for Gas Year 2022-2023

020 – Unregistered Sites

Results

- ▶ An additional step added to the methodology: For Unregistered Sites that are eventually registered by the Shipper, registered AQs are often different to their initial default values. We now reflect actual AQ values post-registration, rather than assuming they adopt default values
- ▶ The forecast for this contributor is 101 GWh. The breakdown by Matrix Position and as a percentage of throughput for each Matrix Position is as follows

		CLASS			
		1	2	3	4
EUC BAND	1ND	-	-	1	3
	1PD	-	-	0	0
	1NI	0	0	0	0
	1PI	-	-	0	0
	2ND	-	-	0	1
	2PD	-	-	0	0
	2NI	0	0	1	2
	2PI	-	-	0	0
	3	-	0	2	3
	4	-	0	1	2
	5	0	0	1	2
	6	0	0	0	1
	7	-	-	-	-
	8	2	2	1	3
	9	67	1	0	4

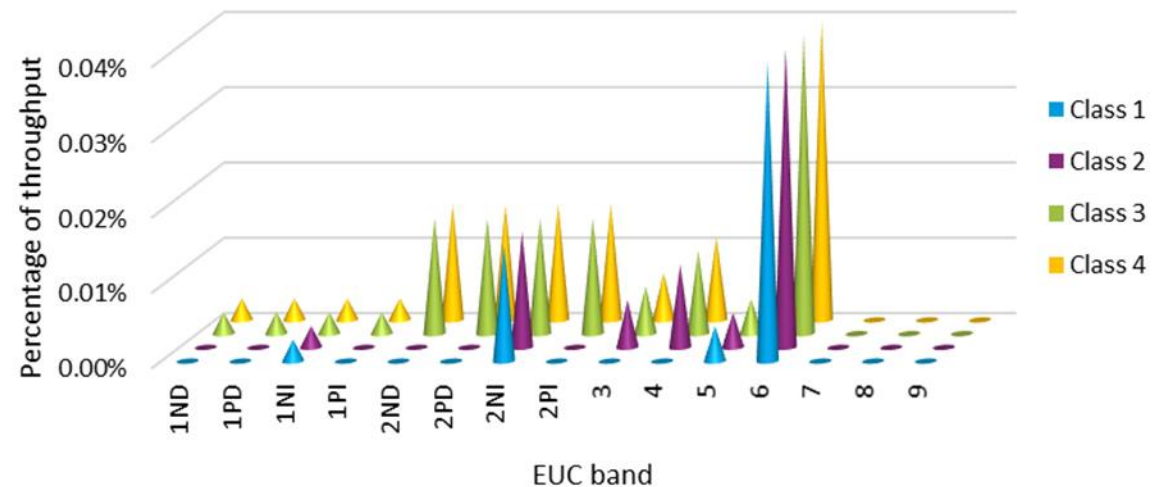


025 – Shipperless Sites

Results

- ▶ An additional step added to the methodology: For Shipperless Sites that are subsequently registered by the Shipper, registered AQs are often different to their initial default values. We now reflect actual AQ values post-registration, rather than assuming they adopt a default value
- ▶ The forecast for this contributor is 23 GWh. The breakdown by Matrix Position and as a percentage of throughput for each Matrix Position is as follows

		CLASS			
		1	2	3	4
EUC BAND	1ND	-	-	2	7
	1PD	-	-	0	1
	1NI	0	0	0	0
	1PI	-	-	0	0
	2ND	-	-	0	1
	2PD	-	-	0	0
	2NI	0	0	1	2
	2PI	-	-	0	0
	3	-	0	0	1
	4	-	0	1	2
	5	0	0	0	0
	6	0	1	1	4
	7	-	-	-	-
	8	-	-	-	-
9	-	-	-	-	

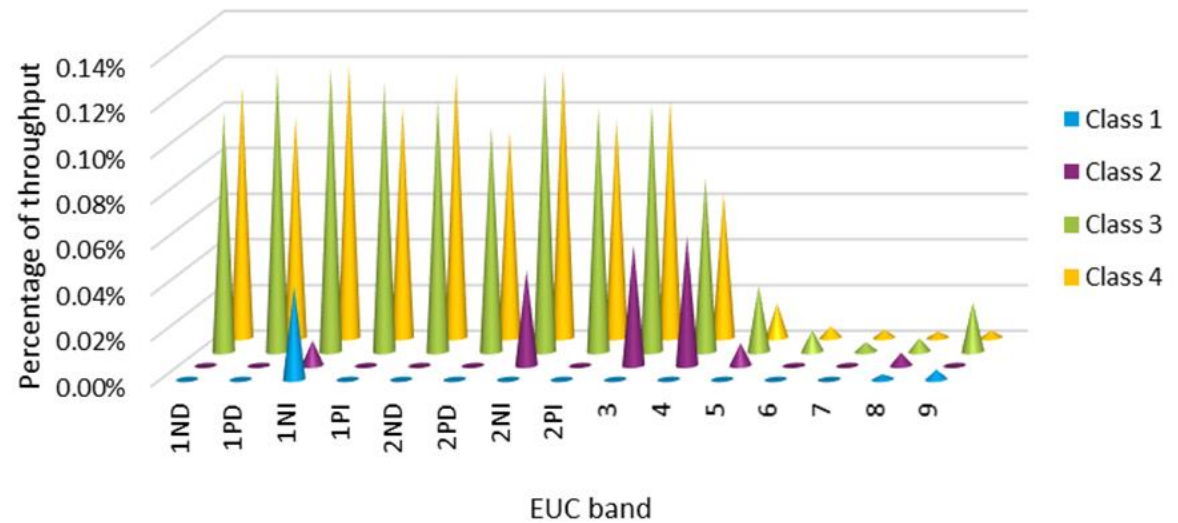


040 – Consumption Meter Error – Inherent Bias

Results

- ▶ The forecast for this contributor is 435 GWh. The reduction is due to the number of ultrasonic meters replacing Synthetic Diaphragm and the latest in-service testing results
- ▶ The breakdown by Matrix Position and as a percentage of throughput for each Matrix Position is as follows

		CLASS			
		1	2	3	4
EUC BAND	1ND	-	-	66	265
	1PD	-	-	2	17
	1NI	0	0	3	11
	1PI	-	-	0	0
	2ND	-	-	0	7
	2PD	-	-	0	0
	2NI	-	0	9	14
	2PI	-	-	0	0
	3	-	0	7	13
	4	-	0	5	9
	5	-	0	1	2
	6	-	-	0	1
	7	-	-	0	0
	8	0	0	0	0
9	2	-	0	0	



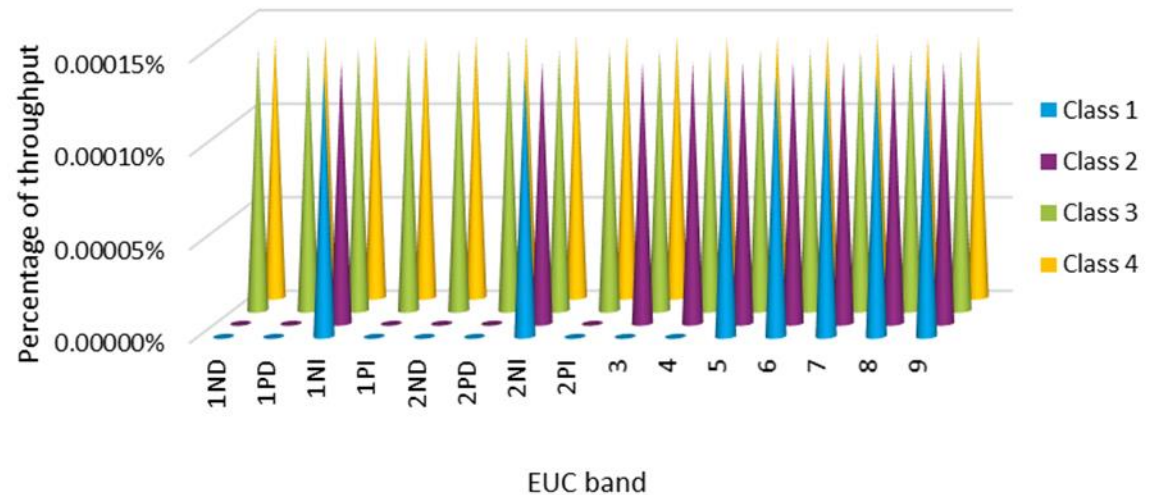
050 – LDZ Meter Error

Results

► The forecast for this contributor is 1 GWh

► The breakdown by Matrix Position and as a percentage of throughput for each Matrix Position is as follows

		CLASS			
		1	2	3	4
EUC BAND	1ND	-	-	88	338
	1PD	-	-	2	25
	1NI	0	0	4	12
	1PI	-	-	0	0
	2ND	-	-	1	8
	2PD	-	-	0	0
	2NI	0	0	10	17
	2PI	-	-	0	0
	3	-	0	9	17
	4	-	0	9	19
	5	0	0	4	15
	6	1	2	3	14
	7	1	4	3	13
	8	7	9	3	14
	9	78	1	1	5

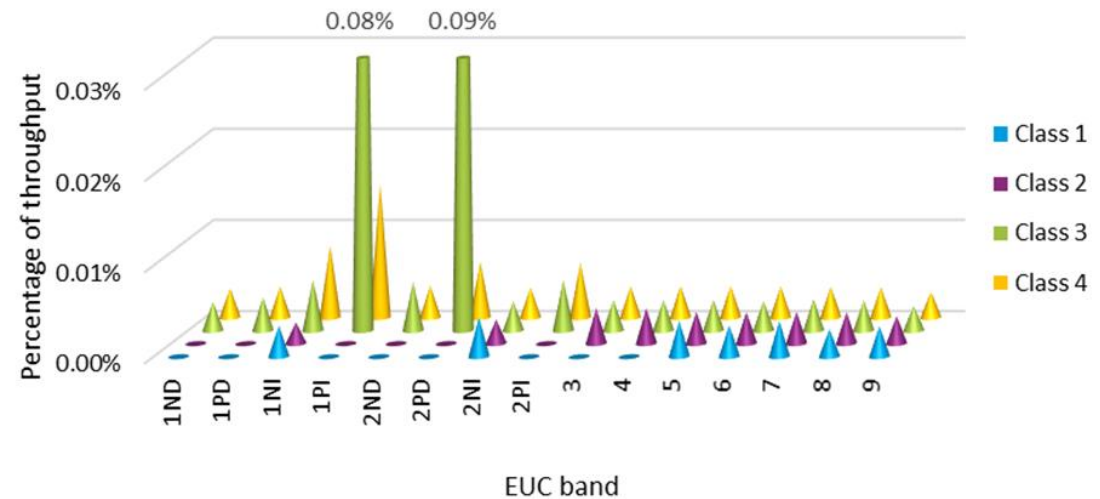


060 – IGT Shrinkage

Results

- ▶ Our calculation is now based on actual average IGT main length - this data was unavailable for the 2021-2022 Statement
- ▶ The forecast for this contributor is 18 GWh. The breakdown by Matrix Position and as a percentage of throughput for each Matrix Position is as follows

		CLASS			
		1	2	3	4
EUC BAND	1ND	-	-	2	8
	1PD	-	-	0	1
	1NI	0	0	0	1
	1PI	-	-	0	0
	2ND	-	-	0	0
	2PD	-	-	0	0
	2NI	0	0	0	0
	2PI	-	-	0	0
	3	-	0	0	0
	4	-	0	0	0
	5	0	0	0	0
	6	0	0	0	0
	7	0	0	0	0
	8	0	0	0	0
	9	2	0	0	0



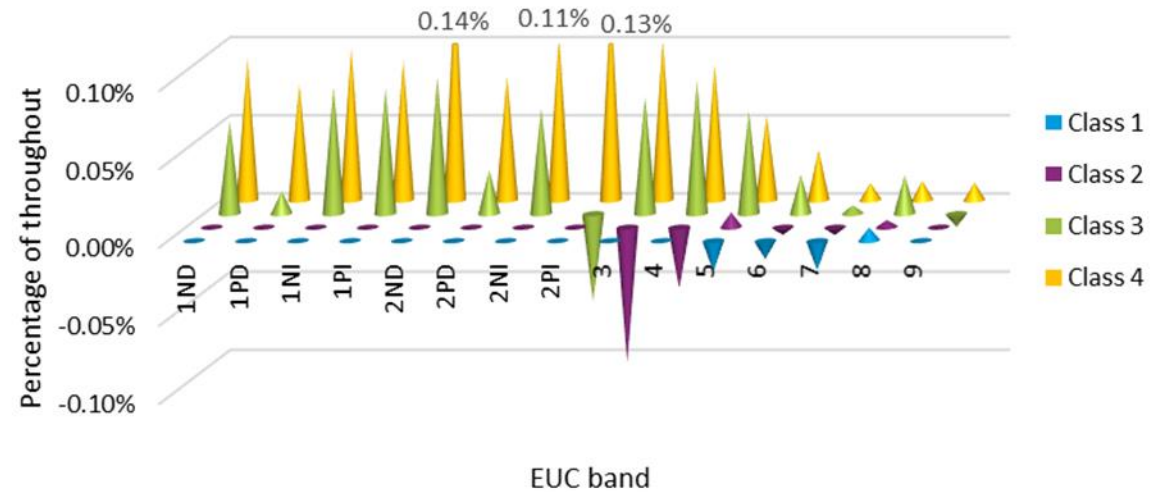
070 – Average Pressure Assumption

Results

► The forecast for this contributor is 358 GWh

► The breakdown by Matrix Position and as a percentage of throughput for each Matrix Position is as follows

		CLASS			
		1	2	3	4
EUC BAND	1ND	-	-	37	220
	1PD	-	-	0	13
	1NI	-	-	2	9
	1PI	-	-	0	0
	2ND	-	-	0	8
	2PD	-	-	0	0
	2NI	-	-	5	12
	2PI	-	-	-0	0
	3	-	-0	5	13
	4	-	-0	5	12
	5	-0	0	2	6
	6	-0	-0	1	3
	7	-0	-0	0	1
	8	0	0	1	1
9	0	0	-0	0	



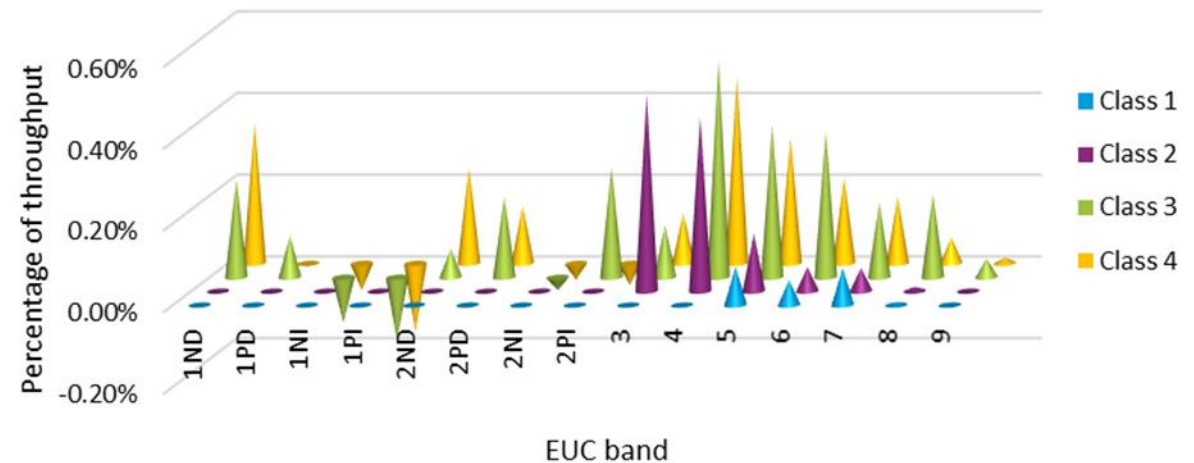
080 – Average Temperature Assumption

Results

► The forecast for this contributor is 1,208 GWh

► The breakdown by Matrix Position and as a percentage of throughput for each Matrix Position is as follows

		CLASS			
		1	2	3	4
EUC BAND	1ND	-	-	151	830
	1PD	-	-	2	-1
	1NI	-	-	-3	-6
	1PI	-	-	-0	-0
	2ND	-	-	0	14
	2PD	-	-	0	0
	2NI	-	-	-2	-5
	2PI	-	-	0	-0
	3	-	0	8	15
	4	-	1	33	64
	5	0	0	11	32
	6	0	1	7	22
	7	1	1	4	15
	8	0	1	5	6
	9	-1	0	0	0



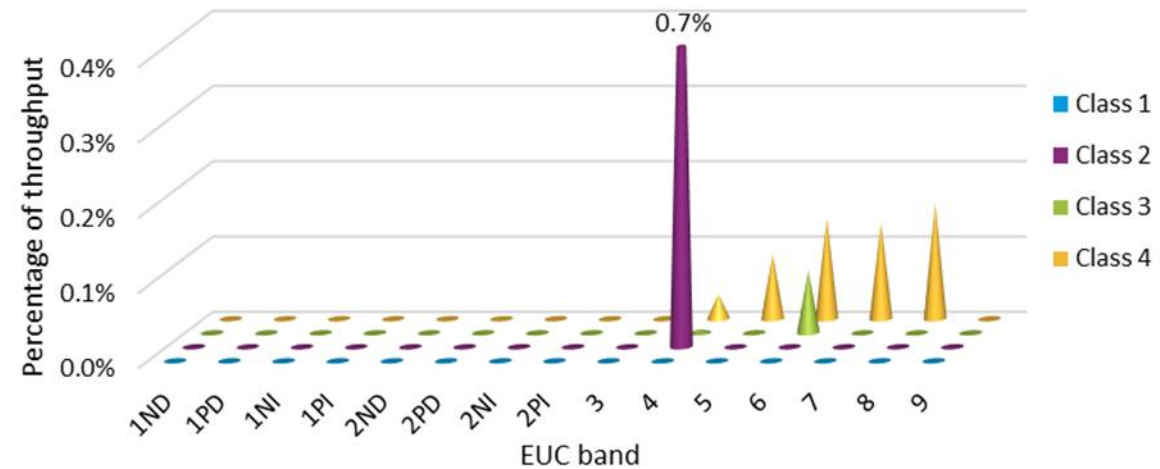
100 – Incorrect Correction Factors

Results

► The forecast for this contributor is 57 GWh

► The breakdown by Matrix Position and as a percentage of throughput for each Matrix Position is as follows

		CLASS			
		1	2	3	4
EUC BAND	1ND	-	-	-	-
	1PD	-	-	-	-
	1NI	-	-	-	-
	1PI	-	-	-	-
	2ND	-	-	-	-
	2PD	-	-	-	-
	2NI	-	-	-	-
	2PI	-	-	-	-
	3	-	-	-	-
	4	-	1	0	5
	5	-	-	0	9
	6	-	-	2	14
	7	-	-	-	12
8	-	-	-	16	
9	-	-	-	-	



Total UIG Estimate

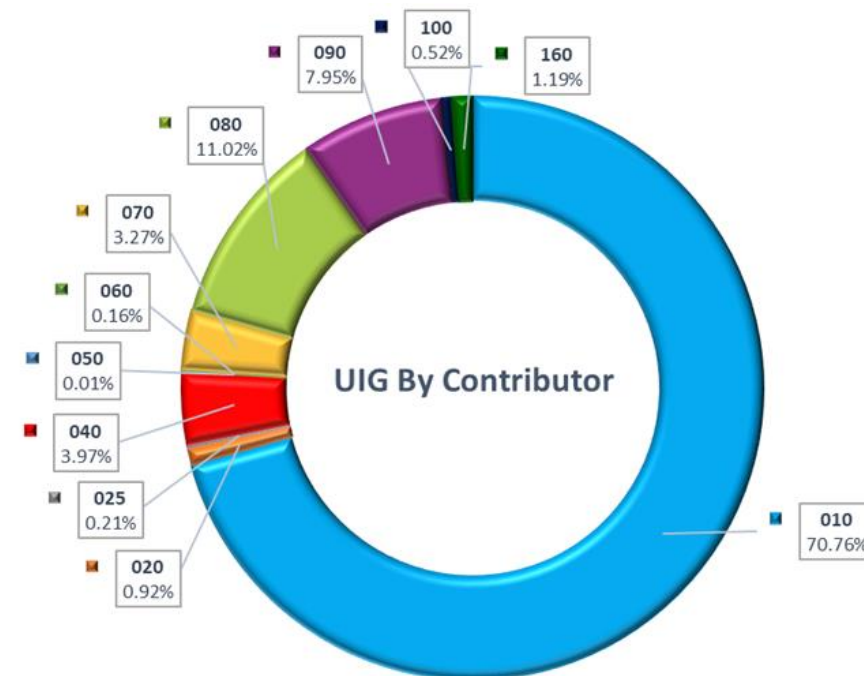
Sum of UIG and Comparison with 2021-2022 Gas Year

► The total estimate for the 2022-2023 Gas Year is 10,982 GWh

► This is 25 GWh less than last year

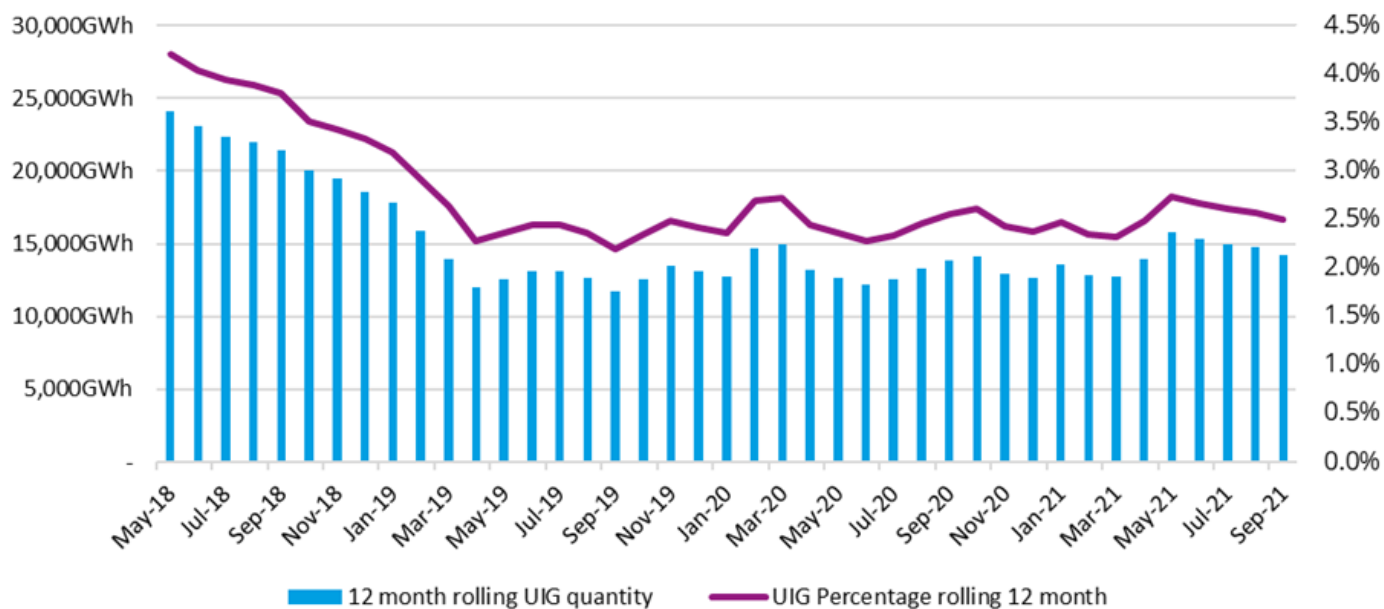
Contributor	Related UIG Volume	2021-2022 Gas Year UIG Volume	Change
Theft of Gas	7,753 GWh	7,730 GWh	→
Average Temperature Assumption	1,208 GWh	1,249 GWh	↓
No Read at the Line in the Sand	871 GWh	643 GWh	↑
Consumption Meter Error	435 GWh	789 GWh	↓
Average Pressure Assumption	358 GWh	371 GWh	↓
Isolated Sites	131 GWh	-	↑
Unregistered Sites	101 GWh	101 GWh	→
Incorrect Correction Factors	57 GWh	48 GWh	↑
Shipperless Sites	23 GWh	32 GWh	↓
IGT Shrinkage	18 GWh	18 GWh	→
LDZ Meter Errors	1 GWh	0 GWh	→
Total	10,957 GWh	10,982 GWh	→

- 010 Theft of Gas
- 020 Unregistered Sites
- 025 Shipperless Sites
- 040 Consumption Meter Errors
- 050 LDZ Meter Errors
- 060 IGT Shrinkage
- 070 Average Pressure Assumption
- 080 Average Temperature Assumption
- 090 No Read at the Line in the Sand
- 100 Incorrect Correction Factors
- 160 Isolated Sites



Comparison with Observed Levels

- ▶ We compared our results with observed levels of UIG since June 2017 for benchmarking purposes
- ▶ Over the latest 18 months, the average 12 month rolling UIG percentage is 2.48%
- ▶ Using this 2.48% and our Consumption Forecast, we calculated benchmark UIG close out to be 13,090 GWh
- ▶ Our calculated figure is 83.7% of UIG and therefore has passed our check with observed levels



Consumption Forecast

- ▶ We carried out a similar process to calculate the Consumption Forecast
- ▶ We used the ETS function to forecast the AQ and count of Supply Meter Point for the target year
- ▶ For all Matrix Positions, except Class 1 EUC 9, we based our forecast on the trend observed in data from June 2017 to September 2021
- ▶ For Class 1 EUC 9 we used the latest value as the trend was not valid

		CLASS			
		1	2	3	4
EUC BAND	1ND	-	-	4,825,803	17,376,926
	1PD	-	-	157,732	1,738,282
	1NI	1	17	92,427	489,958
	1PI	-	-	42	3,119
	2ND	-	-	3,811	52,654
	2PD	-	-	20	1,552
	2NI	1	15	47,373	86,306
	2PI	-	-	27	97
	3	-	33	14,596	27,278
	4	-	95	5,452	12,461
	5	1	64	909	3,064
	6	1	158	230	1,135
	7	3	130	107	437
	8	56	154	56	249
9	349	10	6	39	
				24,943,236	

		CLASS			
		1	2	3	4
EUC BAND	1ND	-	-	62,975	242,057
	1PD	-	-	1,729	17,833
	1NI	0	0	2,566	8,851
	1PI	-	-	1	37
	2ND	-	-	412	5,853
	2PD	-	-	2	161
	2NI	0	3	7,263	11,813
	2PI	-	-	6	11
	3	-	16	6,477	12,470
	4	-	132	6,181	13,949
	5	26	228	3,009	10,458
	6	493	1,558	2,043	10,306
	7	889	2,612	2,173	9,098
	8	5,018	6,553	2,276	10,133
9	55,614	682	375	3,466	
				527,808	

Considered Modifications

We considered the following modifications this year in the production of the statement

- ▶ **0734S - Reporting Valid Confirmed Theft of Gas into Central Systems – This modification is out for consultation at the time of publication, but implementation date and impacts remain uncertain**
- ▶ **0763R – Review of Gas Meter By-Pass Arrangements – Although no findings have been published, this has been considered as part of the review for Meters with a By-pass Fitted (140)**
- ▶ **0723 (Urgent) – Use of the Isolation Flag to identify sites with abnormal load reduction during COVID-19 period – This has been implemented and we have reviewed this modification. This has had no impact on the UIG calculation for Isolated Sites (160) but may do in subsequent years**
- ▶ **0691S – CDSP to convert Class 2, 3 or 4 Supply Meter Points to Class 1 when G1.6.15 criteria are met – This has been implemented and we have reviewed this modification. This has had no impact on the Consumption Forecast for the target Gas Year**
- ▶ **Other identified modifications that have not impacted this statement for the target Gas Year but will be reassessed for future impacts are 0664, 0778, 0781 and 0782**

Weighting Factor Calculation Process

Methodology

- ▶ We calculated the Weighting Factors as a proportion of UIG relative to throughput in our Consumption Forecast for each Matrix Position within the AUG Table
- ▶ Some cells had a very small number or no Supply Meter Points so we substituted values
- ▶ We smoothed the values in EUC bands 03-09 for class 2-4 to dampen any spikes across like groups with similar characteristics
- ▶ After these processes, the factors were normalised so that no UIG was created by the substitution or smoothing process
- ▶ We then scaled these factors such that the average of all the Matrix Positions is 100
- ▶ We did this to standardise the factors so that the relative values will be comparable year on year

Weighting Factor Table

Draft AUG Table

- ▶ The draft AUG Table for 2022-2023 Gas Year is shown below
- ▶ Please note the relative numbers are comparable with previous Statements, the absolute numbers are not

		CLASS			
		1	2	3	4
EUC BAND	1ND	77.59	77.59	77.59	110.62
	1PD	192.42	192.42	192.42	454.91
	1NI	19.69	10.55	117.28	968.82
	1PI	46.82	46.82	117.28	968.82
	2ND	124.52	124.52	124.55	186.28
	2PD	124.55	131.99	124.55	186.28
	2NI	19.69	10.04	83.21	241.66
	2PI	83.21	127.20	83.21	241.66
	3	19.69	93.15	74.99	80.57
	4	19.69	94.89	80.36	88.67
	5	19.69	85.49	70.64	80.02
	6	19.69	73.20	64.88	86.60
	7	19.69	67.26	55.14	77.43
	8	19.69	50.95	67.74	55.00
	9	19.69	33.88	31.86	35.50

Year on Year Comparison

UIG as a Percentage of Consumption Forecast

- ▶ **UIG as a percentage of Consumption Forecast for 2021-2022 and 2022-2023 are provided below**

		CLASS			
		2021-2022	1	2	3
EUC BAND	1ND	0.0%	0.0%	1.5%	1.9%
	1PD	0.0%	0.0%	2.3%	5.4%
	1NI	0.3%	13.7%	13.4%	14.8%
	1PI	0.0%	0.0%	13.4%	14.8%
	2ND	0.0%	0.0%	4.4%	5.3%
	2PD	0.0%	0.0%	4.4%	5.3%
	2NI	0.3%	3.6%	3.8%	3.8%
	2PI	0.0%	0.0%	3.8%	3.8%
	3	0.3%	1.4%	1.6%	1.9%
	4	0.3%	1.5%	1.6%	2.1%
	5	0.3%	1.2%	1.5%	1.5%
	6	0.3%	1.1%	1.3%	1.4%
	7	0.3%	1.0%	1.1%	1.3%
	8	0.3%	0.9%	1.0%	1.2%
9	0.3%	0.6%	0.7%	0.8%	

		CLASS			
		2022-2023	1	2	3
EUC BAND	1ND	0.0%	0.0%	1.4%	1.9%
	1PD	0.0%	0.0%	3.4%	8.0%
	1NI	0.3%	0.2%	2.1%	17.0%
	1PI	0.0%	0.0%	2.1%	17.0%
	2ND	0.0%	0.0%	2.2%	3.3%
	2PD	0.0%	0.0%	2.2%	3.3%
	2NI	0.3%	0.2%	1.5%	4.2%
	2PI	0.0%	0.0%	1.5%	4.2%
	3	0.0%	1.6%	1.3%	1.4%
	4	0.0%	1.7%	1.4%	1.6%
	5	0.3%	1.5%	1.2%	1.4%
	6	0.3%	1.3%	1.1%	1.5%
	7	0.3%	1.2%	1.0%	1.4%
	8	0.3%	0.9%	1.2%	1.0%
9	0.3%	0.6%	0.6%	0.6%	

Year on Year Comparison

Differences Between the Tables

- ▶ The change in absolute values is provided in the table opposite
- ▶ The reasons for the changes are
 - ▶ 1ND: due to the change in traditional theft proportions due to the TOG/TRAS data refresh, and an increase in UIG relating to no read at the Line in the Sand (Class 3 reduced due to increase in population size)
 - ▶ 1PD: change in traditional theft proportion due to the TOG/TRAS data refresh
 - ▶ 1NI: Class 3 decrease due to AMR change to theft methodology
 - ▶ 1NI: Class 4 increase due to the delta of the AMR methodology, the traditional theft percentages due to the TOG/TRAS data refresh, and UIG related to No Read at the Line in the Sand
 - ▶ 2ND and 2PD: due to the traditional theft percentage due to the TOG/TRAS data refresh
 - ▶ 2NI and 2PI: due to the AMR theft methodology refinement
 - ▶ EUC band 3-8 class 2: due to the AMR theft refinement
 - ▶ Class 1: increase due to an Isolated Site in Class 1

		CLASS			
		1	2	3	4
EUC BAND	1ND	0.0%	0.0%	-8.4%	2.3%
	1PD	0.0%	0.0%	45.3%	47.0%
	1NI	35.5%	-98.7%	-84.6%	15.1%
	1PI	0.0%	0.0%	-84.6%	15.1%
	2ND	0.0%	0.0%	-50.1%	-38.9%
	2PD	0.0%	0.0%	-50.1%	-38.9%
	2NI	35.5%	-95.2%	-61.3%	12.0%
	2PI	0.0%	0.0%	-61.3%	12.0%
	3	-100.0%	16.8%	-18.0%	-25.2%
	4	-100.0%	8.9%	-11.9%	-24.5%
	5	35.5%	23.0%	-14.9%	-8.1%
	6	35.5%	18.3%	-13.8%	11.9%
	7	35.5%	15.4%	-14.9%	7.5%
	8	35.5%	3.9%	16.7%	-19.8%
9	35.5%	5.2%	-15.1%	-17.4%	

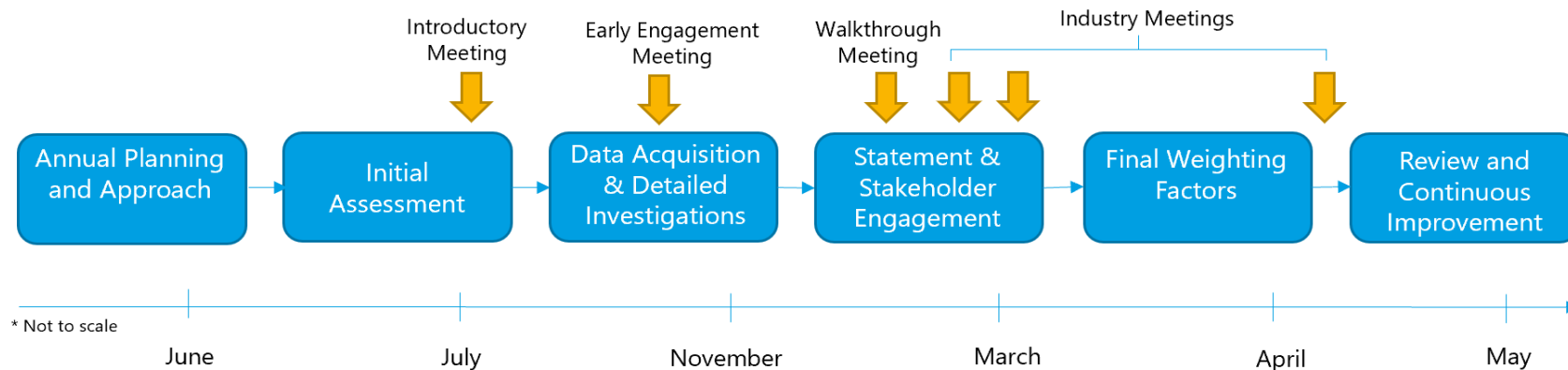
Consultation Process

Timeline

- ▶ The draft AUG Statement was provided to the industry via the Joint Office on 22nd December 2021, following prior review by the CDSP
- ▶ The draft AUG Statement was accompanied by a consultation document
- ▶ Responses to the draft AUG Statement consultation will be required by 21st January 2022
- ▶ Please send these to analytical.services@xoserve.com, copying us at auge@engage-consulting.co.uk
- ▶ Our assessment of the responses received will be presented at the AUG Sub-Committee Meeting on 18th February 2022

Next Steps

- ▶ Any revision of the draft AUG Statement following consideration of responses received will be provided to the AUG Sub-Committee by 4th March 2022
- ▶ An updated explanation of the Weighting Factors methodology, including sources of data and quantification of any changes to the draft AUG Statement (if required) will be presented at the AUG Sub-Committee Meeting on 11th March 2022
- ▶ The final AUG Statement will be provided to the AUG Sub-Committee by 31st March 2022 and presented at the 6th April AUG Sub-Committee Meeting, prior to consideration at the UNCC Meeting on 15th April 2022
- ▶ Engagement with stakeholders will continue throughout the process. We can also be contacted at auge@engage-consulting.co.uk



Industry Issues



Industry Issues Log

Issue Number	Issue	Latest Update	Status	Date Opened	Date Closed
1	Modification 0711 - Update of AUG Table to reflect new EUC bands	Approved by the CDSP, work to reflect this in the AUGS and Table is ongoing	Closed	01/06/2020	30/12/2020
2	COVID	Potential impacts assessed and included in the 2021/2022 Statement where appropriate. We have considered the impact of COVID-19 in the 2022-2023 draft Statement	Live	01/06/2020	
3	Changes to theft arrangements due to REC v1.1	RECCo have appointed Capgemini to quantify the scale of theft in Great Britain which will feed into the development of a Theft Reduction Strategy and theft methodology. We will consider any ensuing impact on our methodology for future years	Live	22/10/2020	
4	Faulty Meters	Potential issue around energy associated with faulty meters not entering Settlement. Identified as part of the 2021-2022 Gas Year Investigation	Live	01/03/2021	
5	Must Reads on Supply Meter Points with no read	Our investigation into must reads provided very limited results. Therefore, we would suggest a more detailed review into why must reads for monthly read sites were not being completed before the Line in the Sand. Recent outcome of must reads could also be used as a feed into the error percentage	Live	01/03/2021	
6	AQ corrections on Supply Meter Points with no read	A review group 0783S (Review of AQ Correction Processes) has been set up who will hopefully progress the issue	Live	01/03/2021	

Future Considerations

Future Considerations

Action Number	Future Consideration	Latest Update	Status	Date Opened	Date Closed
2f	We will consider the potential impact of flow rates on Consumption Meter errors for subsequent years.	This will require individual site data. This data has not been requested this AUG Year.	Live	05/02/2021	
3f	We will consider the potential inclusion of Shipperless sites awaiting their GSR visit in our data and analysis for subsequent years.	We were not provided with the data this AUG Year. Once the data is available, we will be able to progress the consideration.	Live	05/02/2021	



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