AUG Sub-Committee Meeting

15th January 2021

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Introductions

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Purpose of Meeting

- The purpose of the meeting is to
  - Explain our draft Statement in support of the related Consultation
  - Provide our proposals for innovation

- To this end we will provide
  - A recap of our calculation methodology including our Consumption Forecast
  - Further details of the analysis we carried out for the investigation topics
  - The results from the investigations and other contributors' methodologies
  - A summary of the draft AUG Statement and Table issued to industry
  - An opportunity for attendees to ask questions on the draft Statement and Table
  - A description of the consultation process

- The slide deck builds on (rather than repeats) information provided at previous meetings

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Agenda

- Overview of the Consumption Forecast
- Update on the investigations and the results
- Update on the results from the other contributors
- Overview of the results from the benchmarking process
- Overview of the draft Weighting Factor Table
- Overview of the consultation process
- Overview of identified and initial scoring of the innovations

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Draft Statement

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Introduction

- The draft AUG Statement provides the draft Weighting Factors in the AUG Table for the Gas Year 2021-2022 and sets out in detail how we determined these, so that they can be consulted upon

- Following this consultation, we will publish the final AUG Statement, along with the final Weighting Factors, for approval by the UNC Committee. The final Weighting Factors will then be used in Settlement for the Gas Year commencing on 1st October 2021

- We have produced this draft Statement in our capacity as the AUGE

- The draft AUG Statement and accompanying consultation document was published on the website of the Joint Office of Gas Transporters on 30th December 2020 and can be found here: https://www.gasgovernance.co.uk/augenex2122

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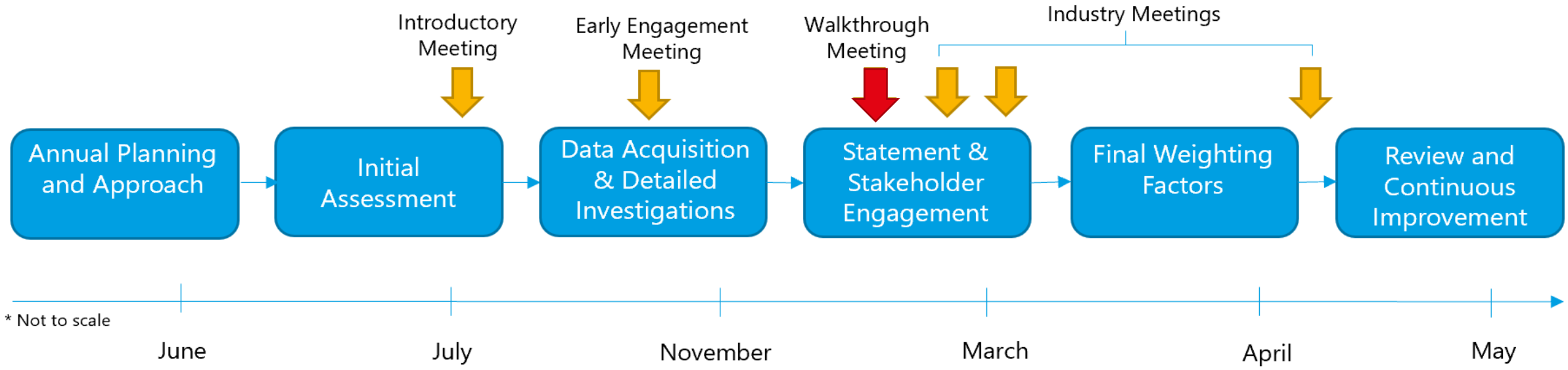
Delivery Timeline



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Calculation Methodology Recap

- Bottom-up calculation of the forecasted energy associated with each UIG contributor
- This forecast is the amount of UIG that will exist at the Line in the Sand
- The forecast UIG is allocated to the Matrix Position that creates the UIG
- Seasonal normal forecasts of the consumption for the year for each LDZ are calculated, which are based on the AQs and potential changes between Class and EUCs
- The Weighting Factors for each Matrix Position are calculated based on the aggregated forecasted UIG and the total forecasted consumption for that Matrix Position
- Modification 0711 is catered for within our methodology
- COVID was taken into consideration within the methodologies

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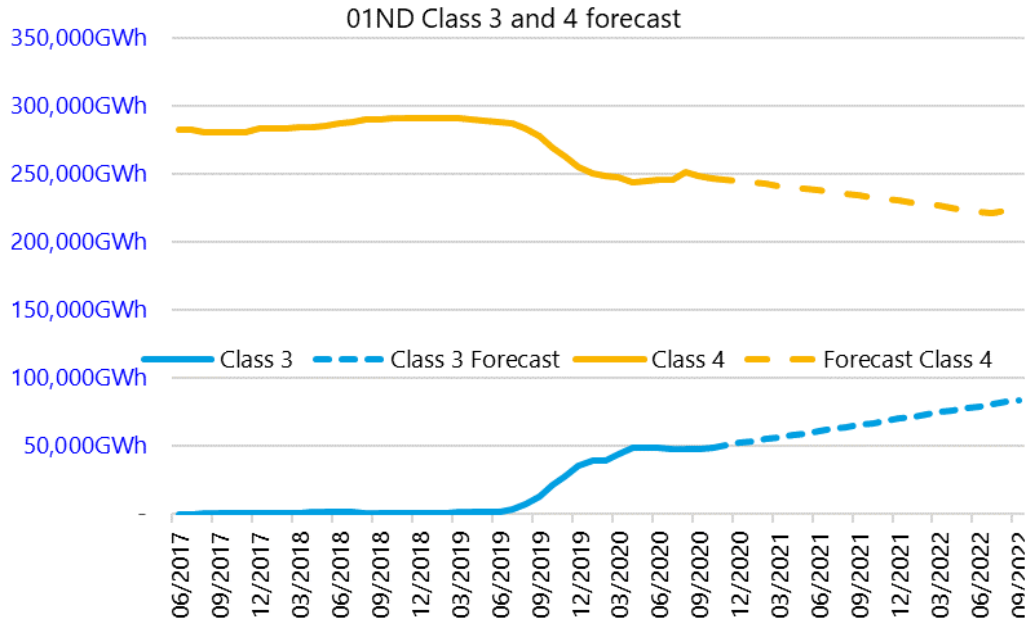
Consumption Forecast

- A key part of our methodology is a forecast of the number of Supply Meter Points and of the consumption for the target year
- We did this by applying an Exponential Triple Smoothing (ETS) algorithm to the historical number of Supply Meter Points and AQ data
- After the initial run, we included some amendments to take account of the AQ changes related to COVID and to cap the number of Class 3 Supply Meter Points



Consumption Forecast

Output tables for the target year (October 2021 – September 2022)

Supply Meter Points

		CLASS			
		1	2	3	4
EUC BAND	**1ND**	-	2	3,954,387	17,835,324
	1PD	-	-	45,613	2,173,084
	1NI	4	12	99,211	493,409
	1PI	-	-	34	3,513
	2ND	-	-	3,320	41,662
	2PD	-	-	26	1,613
	2NI	1	8	66,515	111,248
	2PI	-	-	22	52
	3	3	27	23,863	23,997
	4	1	45	7,817	11,544
	5	-	73	1,519	3,433
	6	20	257	266	1,183
	7	46	171	107	447
	8	72	212	26	360
	9	337	43	4	12
				Total	**24,904,945**

Consumption

		CLASS			
		1	2	3	4
EUC BAND	**1ND**	-	0	50,901	246,446
	1PD	-	-	517	21,446
	1NI	0	0	2,905	10,174
	1PI	-	-	1	42
	2ND	-	-	475	4,455
	2PD	-	-	3	129
	2NI	0	2	10,015	14,008
	2PI	-	-	3	6
	3	1	15	10,283	10,675
	4	0	75	9,382	14,294
	5	-	332	4,950	11,807
	6	50	2,465	2,374	10,880
	7	1,050	3,523	2,400	9,373
	8	2,649	8,530	1,081	14,827
	9	83,064	4,644	302	650
				Total	**571,208**

Note: "-" represents null and "0" is rounded to zero.

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Investigation Topics

Investigation Topics

- Four topics were identified for detailed investigation this year as part of our initial assessment
  - Theft of Gas
  - Consumption Meter Errors
  - LDZ Meter Errors
  - No Read at the Line in the Sand
- Analysis and initial results were provided at the previous AUG Sub-Committee meeting in November
- The following set of slides provides a summary of any additional analysis since the previous meeting, the methodology and the results

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010 - Theft of Gas

Overview

- The previous method of differencing results is too dependent on the accurate quantification of
  - Total UIG and
  - The accurate quantification of all other contributors to UIG
- We opted to use a bottom-up approach to quantify theft
- To calculate total theft, we considered more qualitative ways to assess the scale. We implemented a Fermi estimation technique using both empirical and non-empirical means

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010 - Theft of Gas

Calculation of Total Theft

- **We considered multiple sources of theft data. The key results were**
  - **Electricity – theft levels between 1% and 2.5%**
  - **Water – theft levels between 1% and 3%**
  - **Retail – theft between 1.1% and 1.62%**
- **We estimated that total theft for the whole network would be 1.5%**
- **After removing network related theft, which is accounted for in shrinkage, the remaining amount is 1.48%**
- **Based on this, we calculated total theft for the forecast year to be 8,454 GWh**

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010 - Theft of Gas

Methodology Summary

- **Estimate the total theft for the target year based on an assessment of the available information on retail theft in various like sectors**
- **Determine the levels of detected theft, from TOG and TRAS data, and the proportion of this that is adjusted for in Settlement. Use this to determine a forecast for the detected theft that will be adjusted for in the target year and the detected theft that will not**
- **Determine the level of undetected theft in the target year and the proportion of this that is typical (akin to detected theft) and the proportion that is advanced (more likely to be undertaken by organised criminals)**
- **Allocate these different categories of theft to the Matrix Positions using the selected allocation approach**

010 - Theft of Gas

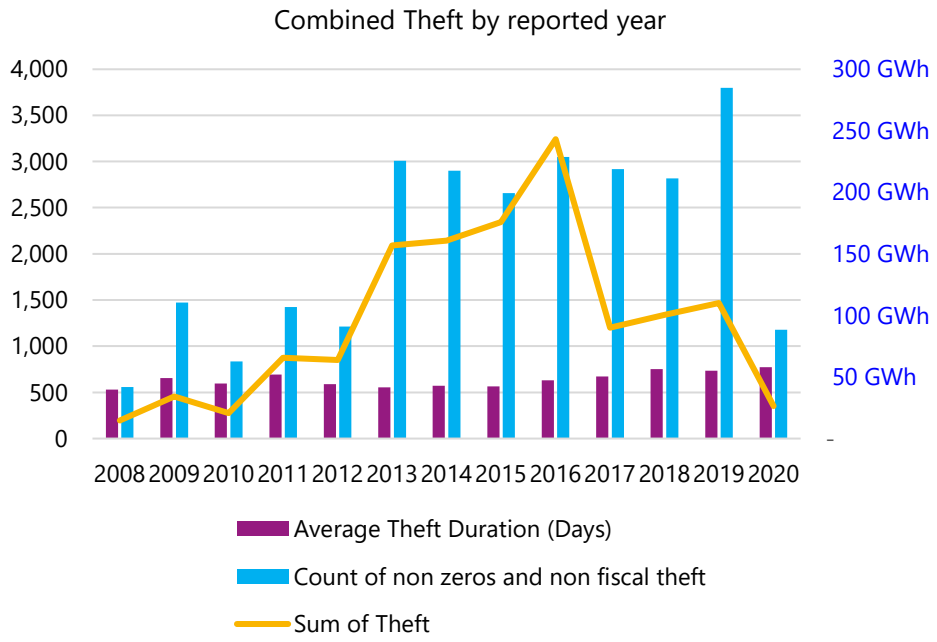
Theft Characteristics

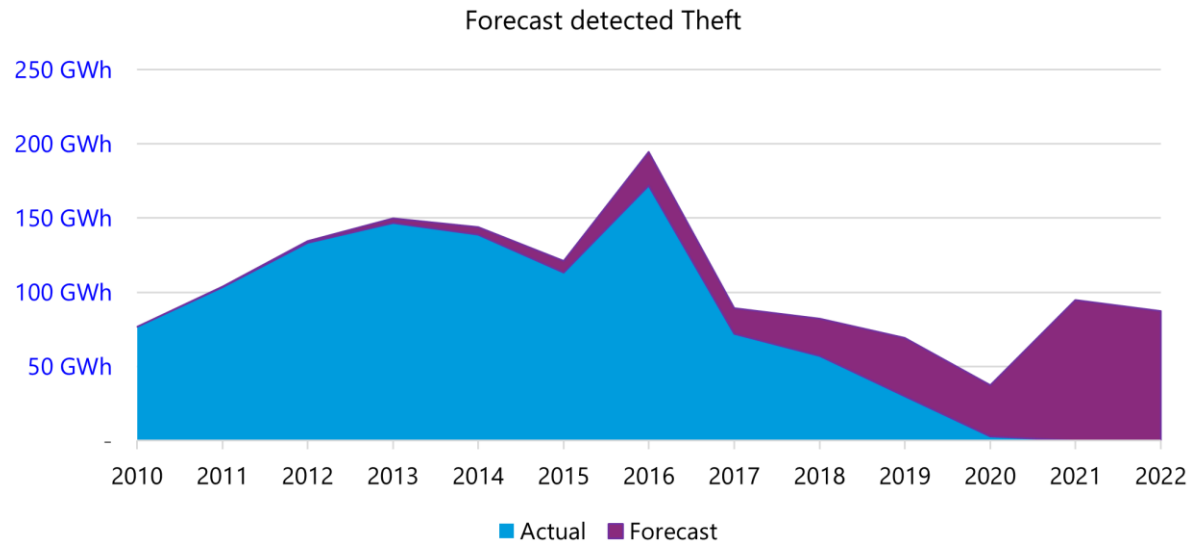
- **We split theft into four distinct areas**
  - **Detected theft adjusted for in Settlement**
  - **Detected theft not adjusted for in Settlement**
  - **Undetected theft which is similar in nature to detected theft**
  - **Undetected theft which is more advanced in nature to detected theft**

010 - Theft of Gas

Adjusted for Detected Theft

- **We combined the TRAS and TOG data to form a master set of theft data. This was used to forecast the adjusted for theft in the target year**
- **The updated value of adjusted for theft in Settlement for the target year is 58 GWh, which is less than 1% of our estimated total theft**





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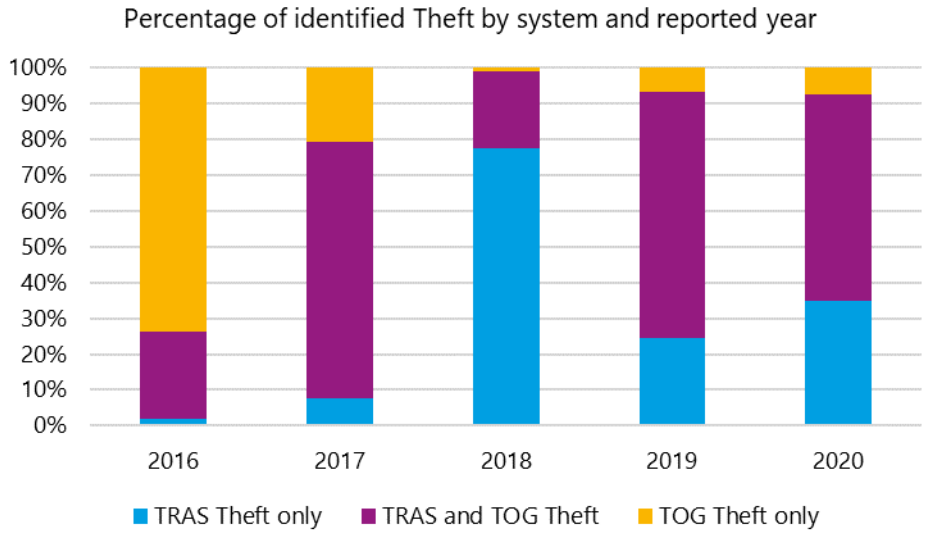
Unadjusted for Detected Theft

- **Unadjusted for theft was estimated to be 34.7% of the reported theft for the forecast year**
- **From Energy UK data, we considered that a further 25% of all detected theft will not be adjusted for in Settlement**
- **Therefore, we estimate the final unadjusted for theft in Settlement for the target year to be 53 GWh**
- **Again, this is less than 1% of our estimated total theft**



	CLASS		
EUC BAND		3	4
	1ND	18%	30%
	1NI	0%	15%
	1PD	0%	29%
	2ND	0%	1%
	2NI	4%	3%
	2PD	0%	0%
	3	0%	1%

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Undetected Theft

- To calculate the undetected theft, the detected theft is subtracted from the estimated total theft amount
- From the values of total theft and detected theft, undetected theft is calculated as follows
  - 8,454 GWh – 58 GWh – 53 GWh = 8,343 GWh
- Previously all theft was split according to non supplier identified TRAS theft
- We decided that this should be split in two parts
  - Theft that is similar in nature to detected theft
  - Theft that is more advanced in nature than detected theft

010 - Theft of Gas

Undetected Theft Which is More Advanced in Nature Than Detected Theft

- **We believe that there is a sub-set of theft which is more advanced and very difficult to detect happening across the market**
- **Retail Crime Costs in the UK – Centre for Retail Research estimated organised crime as 21.97% of all theft across the retail sector and employee related crime as 22.10%**
- **We believe that it is reasonable to assume that the levels of advanced and very difficult to detect theft that exist across the gas sector are equivalent to at least half of the organised crime theft percentage, which is 10.98%**
- **Based on this figure, we have estimated undetected theft which is more advanced in nature to detected theft to be 928 GWh**
- **As this theft is operating across the market, the UIG is split by Matrix Position proportionately based on the forecast consumption**

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Undetected Theft Similar in Nature to Detected Theft

- **The remaining amount of theft is undetected theft similar in nature to detected theft. This is 7,414 GWh or 87.70% of estimated total theft**
- **We concluded that using ten years' worth of theft data would be a more accurate way to split the theft between Matrix Positions. EUC bands 03-08 were combined to get a valid set. No theft has yet been identified for EUC band 09**
- **This was split further between traditional and smart meters**
  - **Traditional meter theft was split as per the table below. From historical theft from smart meters, we calculated that the smart meter theft percentage would be 15% in the target year and this is split between Supply Meter Points with smart meters**

EUC	Traditional Theft Percentage	EUC	Traditional Theft Percentage
1BND	29%	**3**	3%
1BNI	28%	**4**	3%
1BPD	17%	**5**	2%
1BPI	0%	**6**	2%
2BND	3%	**7**	2%
2BNI	9%	**8**	2%
2BPD	0%	**9**	0%
2BPI	0%		

Year	2017	2018	2019
Smart Theft Percentage	5.55%	7.48%	10.22%
Smart AQ Percentage	5.6%	10%	15%

Please note that although 1BPI is rounded to 0% of Traditional Theft approximately 2% of Supply Meter Points in this EUC band have a detected theft which creates a larger factor

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010 - Theft of Gas

Theft Proportion Summary

Proportion of theft by type of theft

Type of Theft	Sub Type	Settlement Allocation	Proportion of Total Theft	
Adjusted for Theft	Theft in TOG (and optionally TRAS also)	Correct	0.69%	1.32%
	Theft has not yet but will be detected and put into TOG	Correct		
Unadjusted for Theft	Theft in TRAS but not in TOG	UIG	0.63%	
	Theft detected but not put in TRAS or TOG	UIG		
	Theft has not yet but will be detected, but will not be put into TOG	UIG		
Undetected Theft	Akin to detected theft	UIG	87.70%	98.68%
	Advanced, harder to detect theft	UIG	10.98%	

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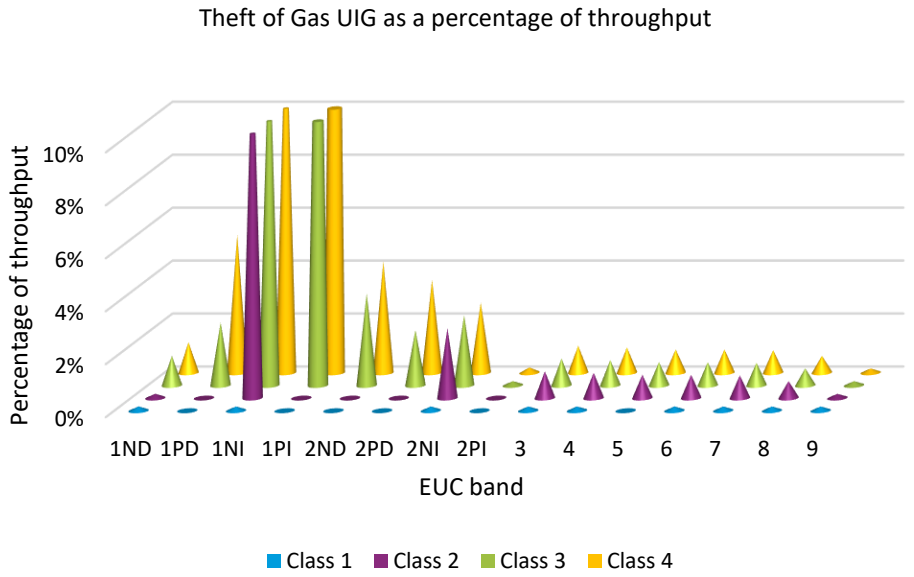
010 - Theft of Gas

Results

- **The forecast UIG associated with Theft of Gas for the target year is 8,396 GWh, compared to 7,159 GWh in the previous Statement**

		CLASS			
		1	2	3	4
EUC BAND	1ND	0	0	568	2,844
	1PD	0	0	12	1,121
	1NI	0	0	397	1,418
	1PI	0	0	0	15
	2ND	0	0	17	188
	2PD	0	0	0	5
	2NI	0	0	267	371
	2PI	0	0	0	0
	3	0	0	105	109
	4	0	1	90	137
	5	0	3	44	105
	6	0	22	21	96
	7	2	30	21	81
	8	4	55	7	96
	9	135	8	0	1



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040 - Consumption Meter Errors

Summary of Data Analysis

- **We received in-service testing data from which we were able to assess inherent accuracy bias and calculate UIG for Ultrasonic and Diaphragm meters. We could not identify a source for rotary and turbine meters**
- **We identified that faulty meters are likely to be creating UIG, as very little is going back into Settlement via consumption adjustments. However, we were unable to quantify this**
- **We recommend that this issue be taken forward by the industry and it will be added to our industry issues log**
- **We assessed the previous method which calculated UIG associated with extremes of use. This was a broad-brush approach and we have not included this in this year's assessment. We plan to use a sampling approach to quantify this in the future**

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040 - Consumption Meter Errors

Calculation Methodology

- **Determine the inherent error bias for each meter type from in-service testing results**
- **Forecast the number of meters of each type for each EUC band 01-02 Matrix Position for the target year**
- **Determine the proportion of meters of each type in each Matrix Position**
- **Apply these meter type proportions and the relevant inherent error bias to our Consumption Forecast to determine the UIG for each Matrix Position**

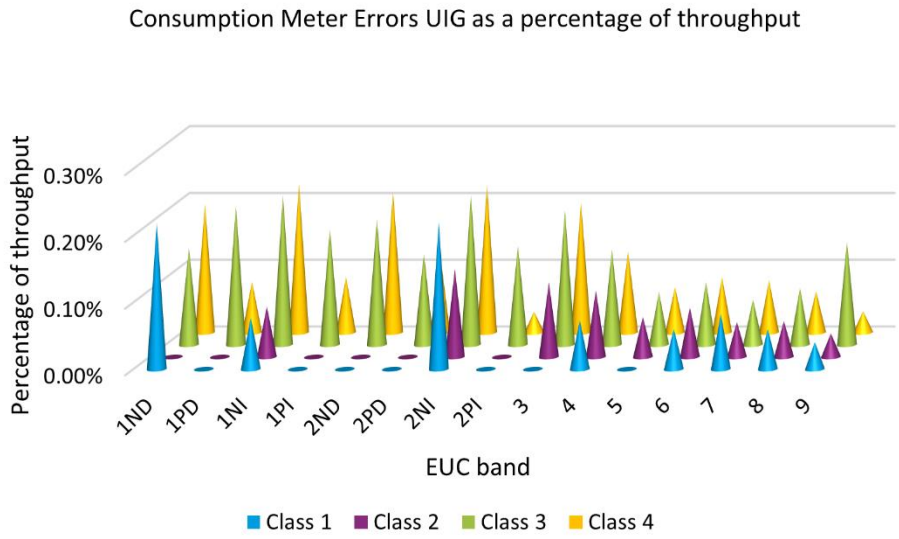
040 - Consumption Meter Errors

Results

- **The forecast UIG associated with Consumption Meter Errors for the target year is 819 GWh, compared to 25 GWh in the previous Statement**

- **Our value came exclusively from inherent bias in meter accuracy**

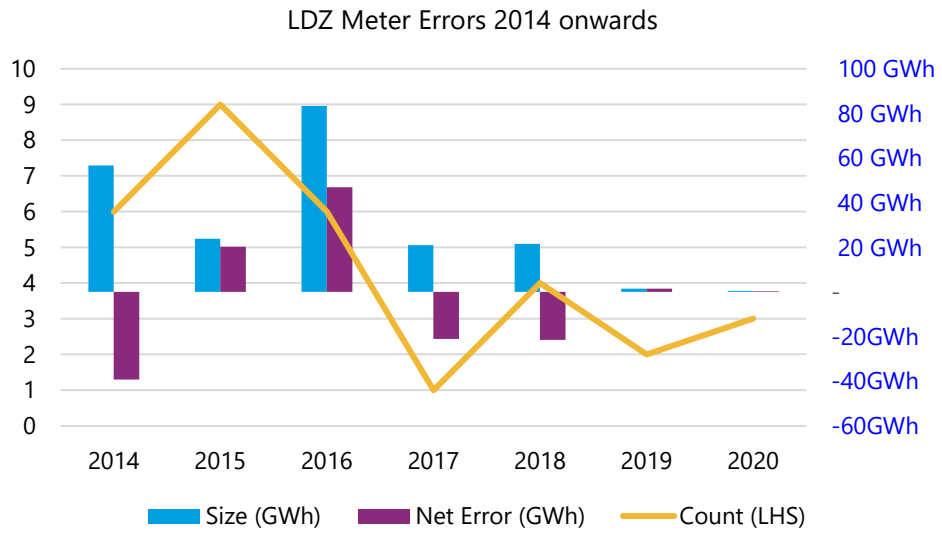
		CLASS			
		1	2	3	4
EUC BAND	1ND	0	0	74	473
	1PD	0	0	1	16
	1NI	0	0	7	23
	1PI	0	0	0	0
	2ND	0	0	1	9
	2PD	0	0	0	0
	2NI	0	0	22	31
	2PI	0	0	0	0
	3	0	0	21	21
	4	0	0	13	17
	5	0	0	4	8
	6	0	2	2	9
	7	1	2	2	7
	8	2	5	1	9
	9	34	2	0	0



050 – LDZ Meter Errors

Methodology Update

- Our original methodology used the absolute meter error rather than the net. We updated this to the net value
- This reduced the average annual error to 1.21 GWh
- We continued to estimate the unidentified meter error as 10% of all meter errors
- There was an absence of data available to assess any inherent bias in LDZ meters



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050 – LDZ Meter Errors

Methodology Update

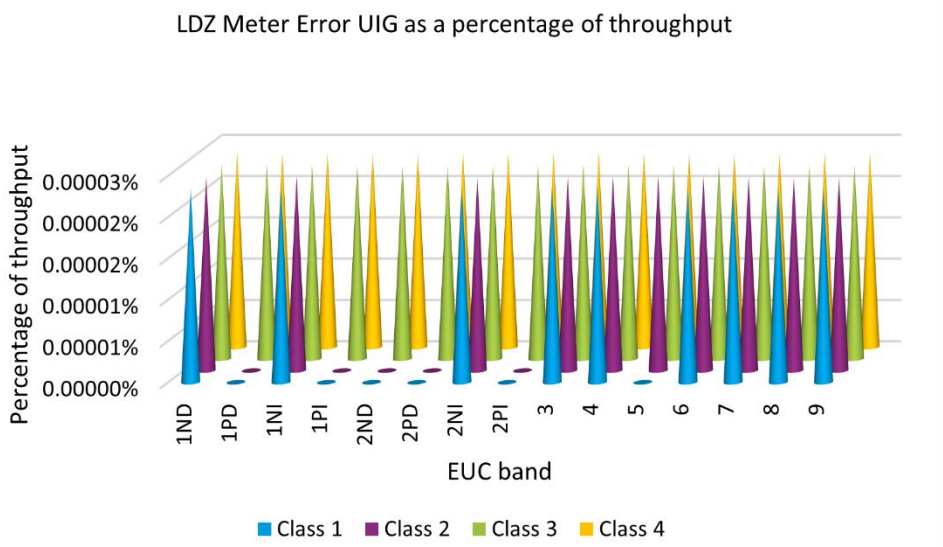
- **Determine the average number and net annual energy error across all identified LDZ meter errors over the last 5 years**
- **Estimate the probability of an LDZ meter error going undetected**
- **From the identified annual energy error and the probability of an error being undetected, determine the annual error across all undetected LDZ meter errors**
- **Allocate this error to the Matrix Positions in the respective consumption proportions in our Consumption Forecast for the target year**

050 – LDZ Meter Errors

Results

- **The forecast UIG associated with LDZ Meter Errors at the Line in the Sand for the target year is 134 MWh**
- **The previous Statement did not quantify this contributor, so no comparison is available**
- **Because this UIG is small, UIG shows as 0 GWh across every Matrix Position**
- **The risk remains that any unidentified error has the chance to create a large UIG impact**

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



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090 - No Read at the Line in the Sand

Analysis

- **The analysis was split into two stages**
  - **To investigate how much consumption is likely to remain unreconciled to valid meter reads at the Line in the Sand**
  - **To investigate how closely the consumption derived from AQs and used in allocation is reflective of the actual consumption (AQ error)**

090 - No Read at the Line in the Sand

Unreconciled Consumption

- Rather than use the AQ values from the sites with no read since 2018 report, we decided to look at historical levels of reconciliation
- To do this, we were provided with the allocation and the allocation reconciled values for each month since June 2017
- From this, we were able to derive the percentage of allocation that has been reconciled
- We increased this percentage for each month from June 2017 to March 2018, based on recent trends of read acceptances, and then converted it to an annual percentage
- Due to the limited number of Supply Meter Points in Classes 1, 2 and 3, we derived the unreconciled allocation using the Consumption Forecast and the AQ from the sites with no read since April 2018 report

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090 - No Read at the Line in the Sand

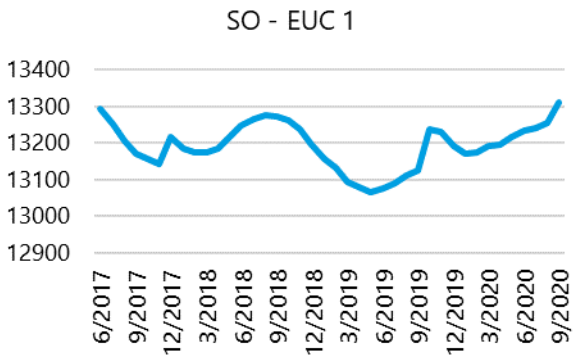
AQ Error Percentage

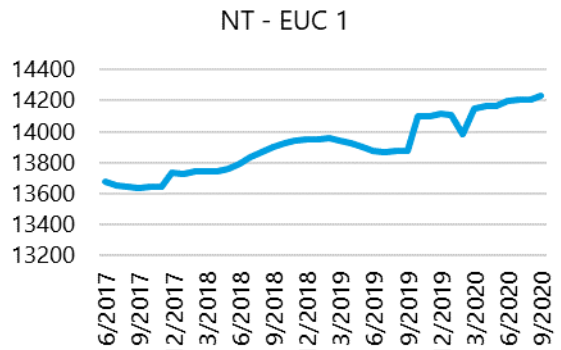
- **To investigate the AQ error percentage we investigated four different areas**
  - **AQ change trends**
  - **Read rejection reasons**
  - **AQ corrections**
  - **Must reads**

090 - No Read at the Line in the Sand

AQ Trends

- **We identified positive AQ trends in many LDZ Matrix Positions**
- **This shows that the AQ values would be understated for Supply Meter Points that do not have a read at the Line in the Sand**
- **The positive error percentages were calculated by LDZ for each main EUC band**





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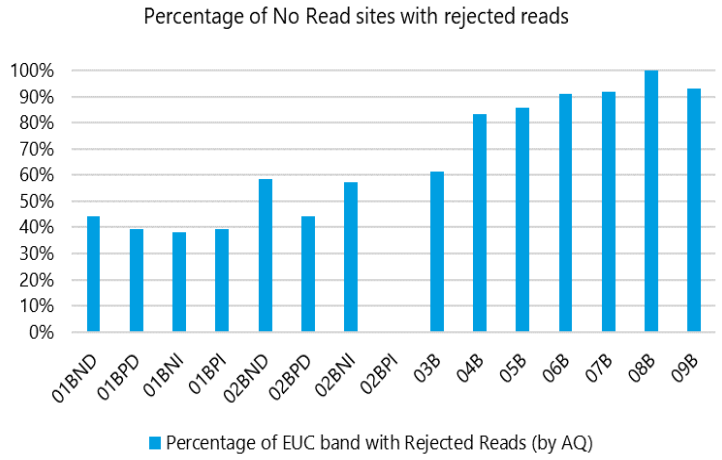
090 - No Read at the Line in the Sand

Read Rejections

- We were provided with a report of the rejected reads for sites with no read since April 2018
- The report contained over 2.1 million rejected reads
- There were rejected reads for almost all EUC bands where there was a Supply Meter Point without an accepted read since April 2018
- Approximately 40% of Supply Meter Points without an accepted read since April 2018 had at least one rejected read
- Larger Supply Meter Points had proportionally more rejected reads
- Over 10% of rejected reads were due to the resulting AQ being outside the upper tolerance



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090 - No Read at the Line in the Sand

Outside Upper Tolerance

- We investigated the reads rejected due to the resulting AQ being outside the upper tolerance
- We found that Supply Meter Points with multiple rejections were caused by the last accepted read being incorrect or the AQ being too low
- From the rejected reads of approximately a year apart, we were able to estimate a new AQ
- We compared this new AQ to the current AQ to calculate the difference
- This was compared to the original AQ of Supply Meter Points with rejected reads and then increased to cover the Supply Meter Points with no rejected read
- This error percentage was combined with the AQ trend percentage to form the AQ error percentage

090 - No Read at the Line in the Sand

AQ Corrections and Must Reads

- **There have been significant reductions in AQ of 68 GWh in 2020 for Supply Meter Points without a read available - which is anomalous**
- **However, we could not determine if the old or revised AQs were correct without a read**
- **We suggest that the rules around this are considered to avoid any incorrect corrections without an associated read**
- **For must reads, we initially thought we could identify any data issues if there was a significant number of successful must reads that are not going into Settlement**
- **The report only contained 2 reads therefore we could not confirm any UIG from successful must reads**
- **There are still a significant number of monthly read Supply Meter Points that do not have a read**

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090 - No Read at the Line in the Sand

Calculation Methodology Summary

- **For each LDZ Matrix Position, we calculated the unreconciled consumption at the Line in the Sand for the target year**
- **The AQ error percentage was calculated based on AQ trends and read rejections**
- **We then multiplied the unreconciled consumption by the AQ error percentage to calculate the UIG**

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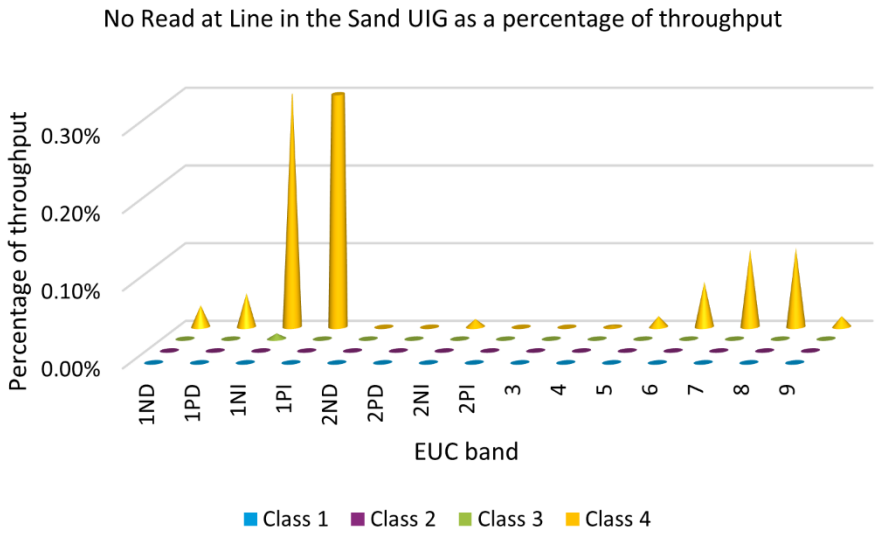
090 - No Read at the Line in the Sand

Results

- The forecast UIG associated with No Read at the Line in the Sand for the target year is 144 GWh
- The previous Statement did not quantify this contributor, so no comparison is available
- All the UIG was calculated for Class 4 Matrix Positions. There is still a risk that the Supply Meter Points in EUC band 09 with no read are creating UIG

		CLASS			
		1	2	3	4
EUC BAND	1ND	0	0	0	69
	1PD	0	0	0	9
	1NI	0	0	0	32
	1PI	0	0	0	0
	2ND	0	0	0	0
	2PD	0	0	0	0
	2NI	0	0	0	1
	2PI	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0
	5	0	0	0	2
	6	0	0	0	6
	7	0	0	0	9
	8	0	0	0	15
	9	0	0	0	0



Detailed Investigation Key Points

Key Points

- Theft is the largest contributor and we now have a more stable method to use year on year
- 2 new sources of UIG were identified amounting to almost 1 TWh
  - Inherent bias of Consumption Meters
  - No Read at the Line in the Sand
- UIG for LDZ Meter Errors appears to be small but there is still a risk associated with this due to
  - The volume of gas flowing through the meters
  - No available information on inherent meter bias

Other Contributors

Other Contributors

- The other contributors are
  - IGT Shrinkage
  - Unregistered Sites
  - Shipperless Sites
  - Average Pressure Assumption
  - Average Temperature Assumption
  - Incorrect Correction Factors

- Last time we provided the initial results for contributors where we had the data. The following slides provide the updated methodology for IGT Shrinkage and the latest results for the other 5 contributors

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060 – IGT Shrinkage

Methodology

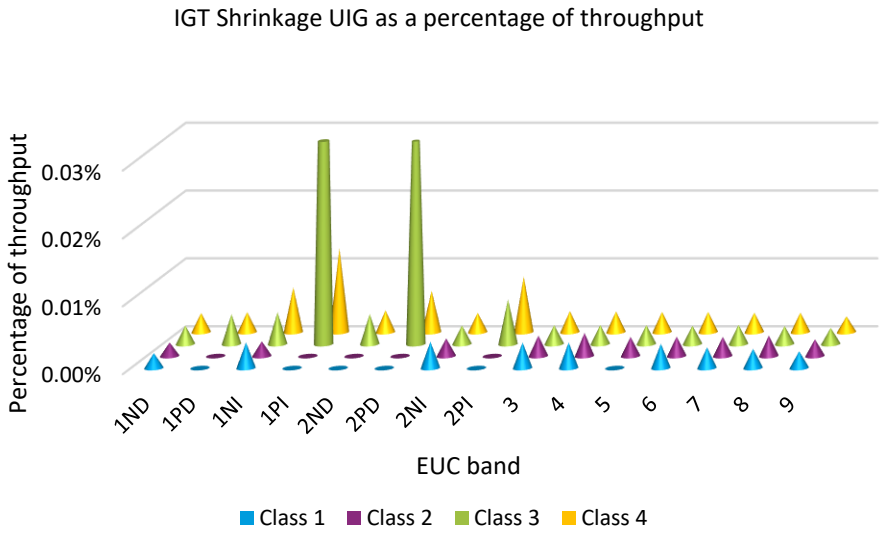
- The IGTs were unable to provide us with data in time to include this in the draft Statement
- Our method was updated to use a single main length estimate and used the CDSP's records to estimate the number of connections
- The UIG was calculated by
  - Estimating the length of IGT mains in each LDZ for the target year, based on a forecast number of Supply Meter Points (from trend analysis) and the average length of main per Supply Meter Point
  - Forecasting the associated leakage volume for these IGT mains by applying the leakage rate for PE mains by the forecast lengths of IGT main
  - Converting these leakage volumes into energy values using the LDZ CV

060 – IGT Shrinkage

Results

- **The forecast UIG associated with IGT Shrinkage for the target year is 16 GWh, compared to 11.4 GWh in the previous Statement**
- **The variation is due to the different average main length, the growth in the number of IGT Supply Meter Points, the forecast consumption for the target year and the fact that we did not reduce the forecast IGT Shrinkage in line with the reduction trends in LDZ shrinkage**

		CLASS			
		1	2	3	4
EUC BAND	1ND	0	0	1	7
	1PD	0	0	0	1
	1NI	0	0	0	1
	1PI	0	0	0	0
	2ND	0	0	0	0
	2PD	0	0	0	0
	2NI	0	0	0	0
	2PI	0	0	0	0
	3	0	0	0	0
	4	0	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



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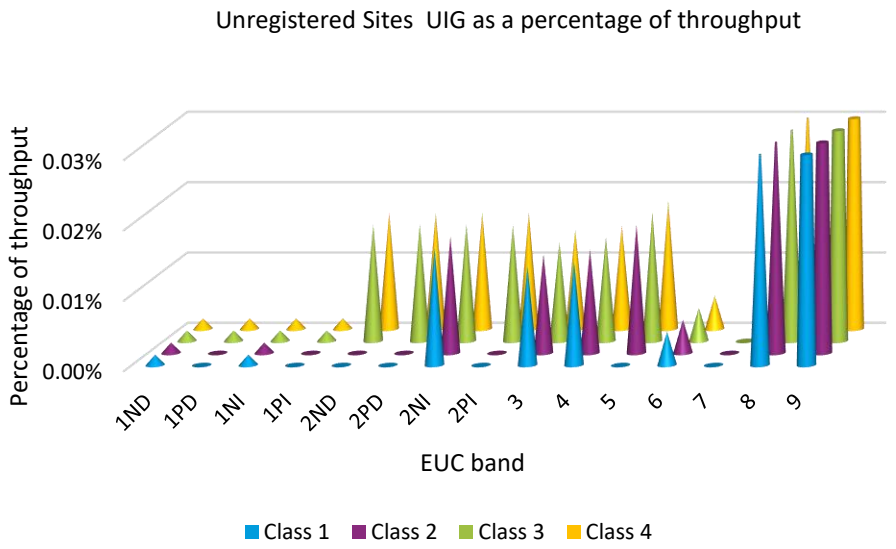
020 – Unregistered Sites

Results

- **The forecast UIG associated with Unregistered Sites for the target year is 101 GWh, compared to 2.2 GWh in the previous Statement**
- **Most of the variance is due to the different way EUC band 09 is treated and the identified Unregistered Site in EUC band 09 which was creating UIG**

		CLASS			
		1	2	3	4
EUC BAND	1ND	0	0	1	4
	1PD	0	0	0	0
	1NI	0	0	0	0
	1PI	0	0	0	0
	2ND	0	0	0	1
	2PD	0	0	0	0
	2NI	0	0	2	2
	2PI	0	0	0	0
	3	0	0	1	1
	4	0	0	1	2
	5	0	0	1	2
	6	0	0	0	1
	7	0	0	0	0
	8	1	3	0	5
	9	68	4	0	1



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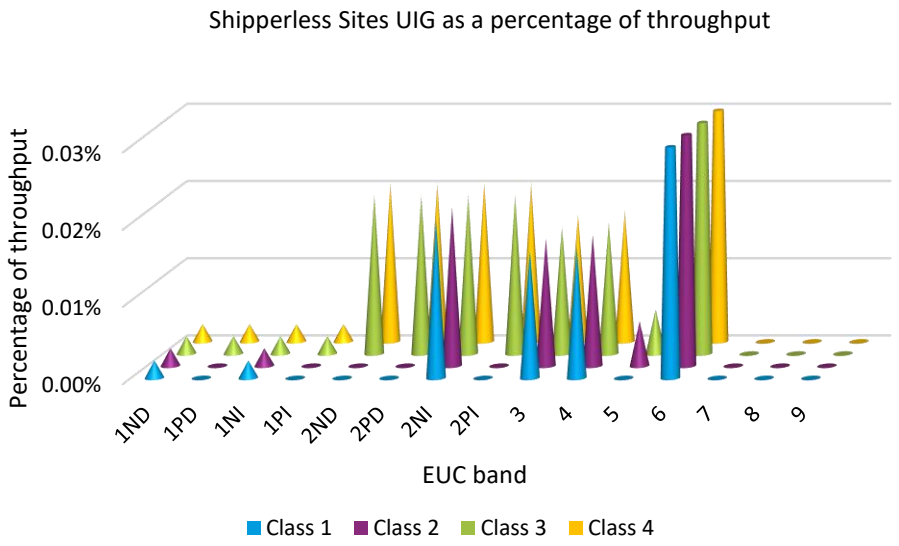
025 – Shipperless Sites

Results

- **The forecast UIG associated with Shipperless Sites for the target year is 32 GWh, compared to 29 GWh in the previous Statement**

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



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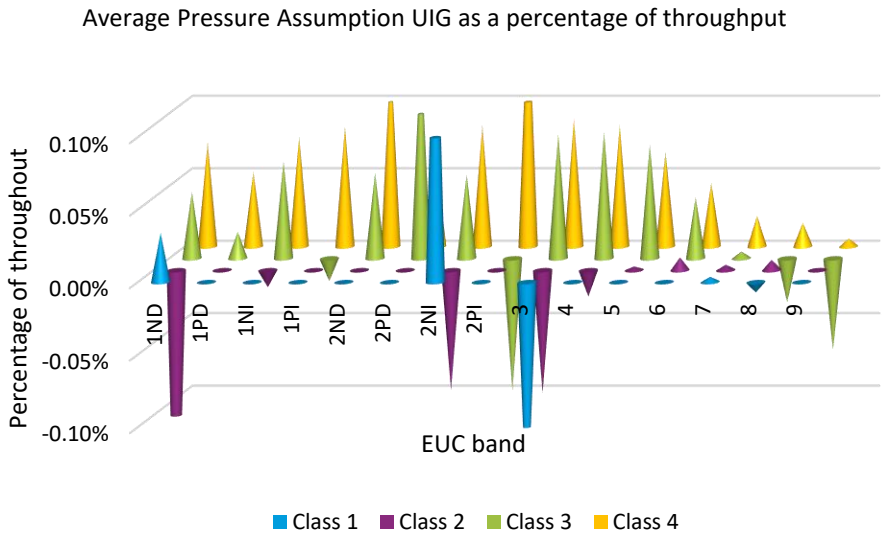
070 - Average Pressure Assumption

Results

- **The forecast UIG associated with Average Pressure Assumption for the target year is 307 GWh, compared to 55.3 GWh in the previous Statement**
- **This difference is down to including an altitude variance and the difference in our Consumption Forecast**

		CLASS			
		1	2	3	4
EUC BAND	1ND	0	0	23	178
	1PD	0	0	0	11
	1NI	0	0	2	8
	1PI	0	0	0	0
	2ND	0	0	0	6
	2PD	0	0	0	0
	2NI	0	0	6	12
	2PI	0	0	0	0
	3	0	0	9	9
	4	0	0	8	12
	5	0	0	4	8
	6	0	0	1	5
	7	0	0	0	2
	8	0	1	0	2
	9	0	0	0	0



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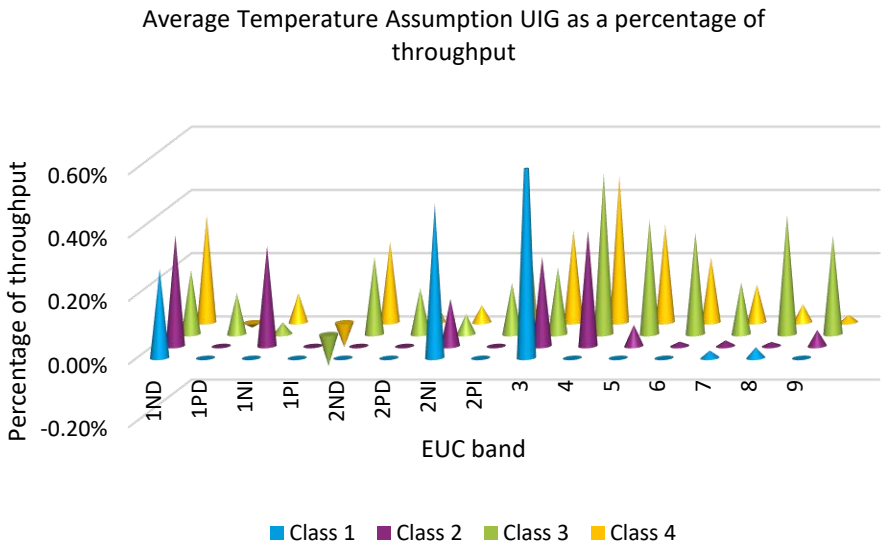
080 – Average Temperature Assumption

Results

- **The forecast UIG associated with Average Temperature Assumption for the target year is 1,263 GWh, compared to 555 GWh in the previous Statement**
- **We have not been provided with access to the full detail of the calculation used for the previous Statement**

		CLASS			
		1	2	3	4
EUC BAND	1ND	0	0	104	837
	1PD	0	0	1	-4
	1NI	0	0	1	10
	1PI	0	0	0	0
	2ND	0	0	1	11
	2PD	0	0	0	0
	2NI	0	0	6	8
	2PI	0	0	0	0
	3	0	0	22	31
	4	0	0	48	66
	5	0	0	18	36
	6	0	0	8	22
	7	0	1	4	11
	8	1	1	4	9
	9	0	2	1	0



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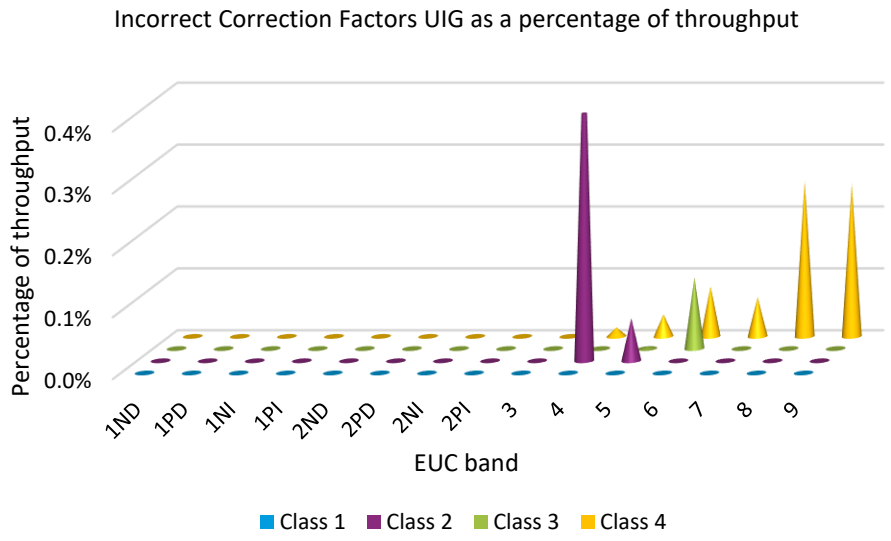
100 – Incorrect Correction Factors

Results

- **The forecast UIG associated with Incorrect Correction Factors for the target year is 64 GWh, compared to 32 GWh in the previous Statement. 63.18 GWh is due to incorrect (but feasible) Correction Factors and 414 MWh is due to unfeasibly low Correction Factors**
- **Differences in calculation included exclusion of the altitude error not fully addressed by the Standard Correction Factor and calculating an average Specific Correction Factor for each LDZ and Matrix Position**

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



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Other Contributors Key Points

Key Points

- **Average Temperate Assumption was larger at 1,263 GWh**
- **Average Pressure Assumption was larger at 307 GWh**
- **Unregistered Sites was larger at 101 GWh – including one unregistered site in EUC band 09**
- **The UIG for the other three contributors UIG is 112 GWh in total**
- **We now have stable methodologies to reuse in future years until the contributor is investigated in detail**

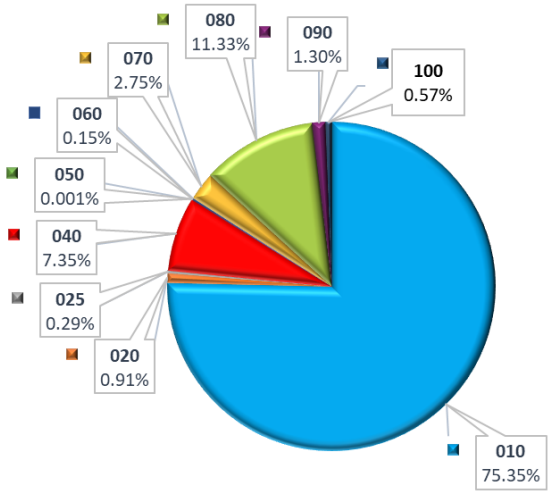
Total UIG Estimate

Methodology

- **The total UIG figure calculated for the target year is 11,143 GWh**
- **We validated this value against previous UIG calculations and carried out a benchmarking process against current observed UIG levels**

UIG by Contributor

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



Contributor	Related UIG Volume (GWh)	Previous AUGE (GWh)	Change
Theft of Gas	8,396	7,159	↑
Average Temperature Assumption	1,263	555	↑
Consumption Meter Errors	819	25	↑
Average Pressure Assumption	307	55.3	↑
No Read at the Line in the Sand	144	-	↑
Unregistered Sites	101	2.2	↑
Incorrect Correction Factors	64	32	↑
Shipperless Sites	32	29	→
IGT Shrinkage	16	11.4	↑
LDZ Meter Errors	0	-	→
Total UIG	**11,143**	**7,846**	↑

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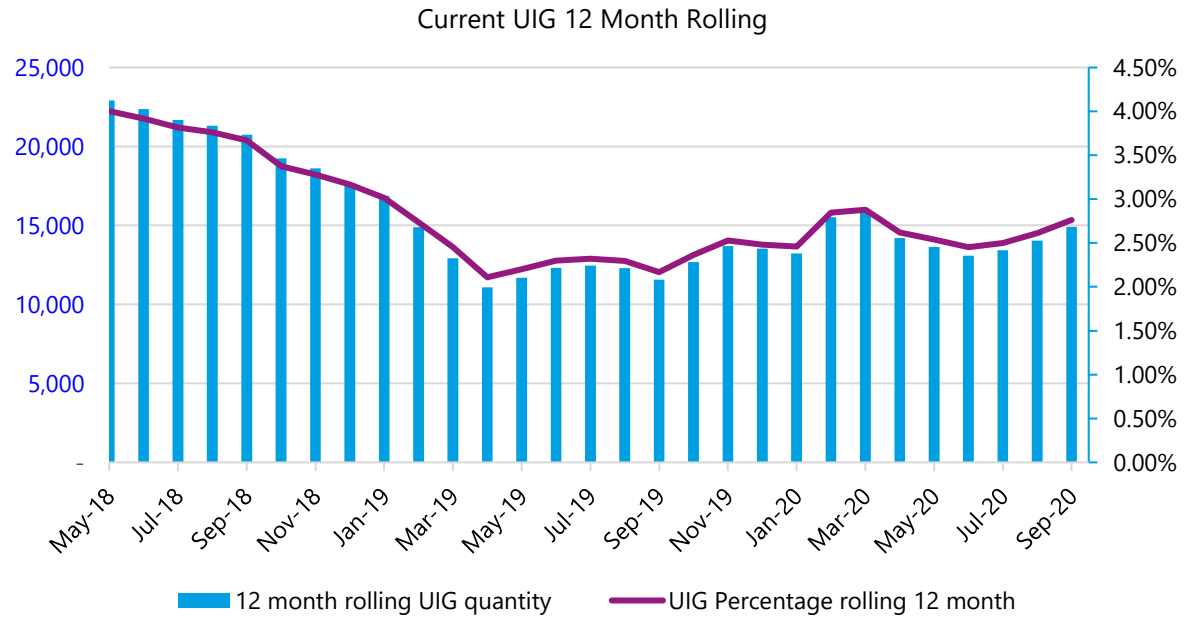
Results Validation

Benchmarking Against Observed UIG

- **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 2.47%**
- **Using this 2.47% and our Consumption Forecast, we calculated benchmark UIG close out to be 14,109 GWh**
- **This is 3 TWh more than our calculation and is due to either underestimation within our values, unidentified contributors or an overestimate of the benchmark**



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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 values will be comparable year on year

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Weighting Factor Table

Draft AUG Table

- **The draft AUG Table for 2021-2022 Gas Year is shown below**

- **Please note the relative numbers are comparable with previous Statements, the absolute numbers are not**

	CLASS				
EUC BAND		1	2	3	4
	1ND	53.76	53.76	53.76	63.48
	1PD	97.39	97.39	97.39	190.93
	1NI	10.20	508.78	496.53	518.99
	1PI	791.19	791.19	791.19	1,298.17
	2ND	141.85	142.18	141.85	170.80
	2PD	92.60	92.60	141.85	170.80
	2NI	10.20	102.11	108.27	108.27
	2PI	15.06	15.06	108.27	108.27
	3	10.20	55.27	57.22	58.24
	4	10.20	60.88	57.69	57.27
	5	10.20	47.13	51.87	52.51
	6	10.20	40.31	48.58	49.09
	7	10.20	36.29	39.96	44.58
	8	10.20	28.04	34.72	37.34
	9	10.20	20.80	25.49	27.41

Consultation Process

Timeline

- **The draft AUG Statement was provided to the industry via the Joint Office on 30th December, 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 22nd January**
- **Please send these to analytical.services@xoserve.com, copying us at auge@engage-consulting.co.uk**
- **Our assessment of responses received will be presented at the AUG Sub-Committee Meeting on 12th February**

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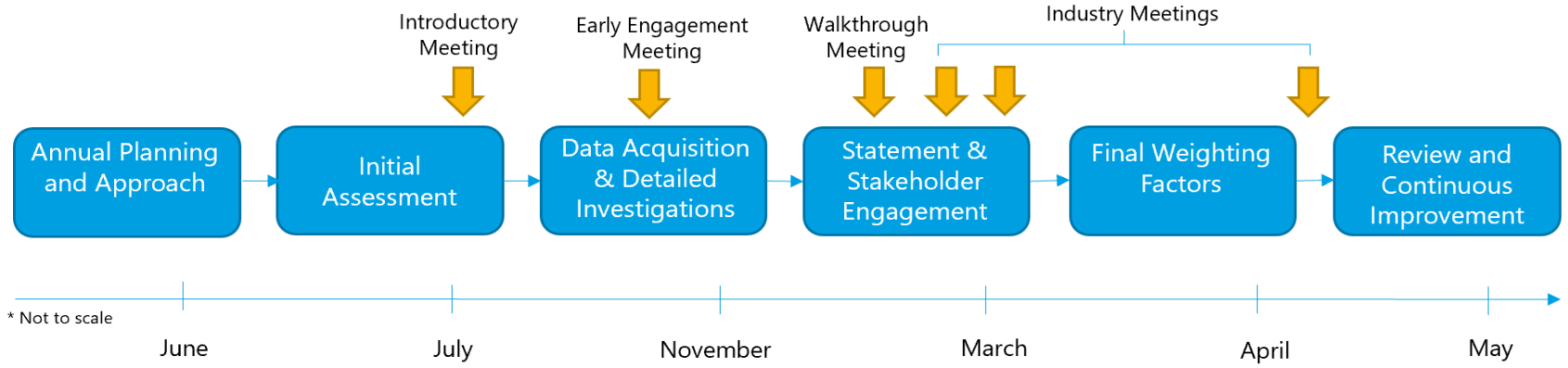
Next Steps

- Any revision of the draft AUG Statement following consideration of those responses will be provided to the AUG Sub-Committee by 5th March
- 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 12th March AUG Sub-Committee Meeting
- The final AUG Statement will be provided to the AUG Sub-Committee by 31st March and presented at the 6th April AUG Sub-Committee Meeting, prior to consideration at the UNCC Meeting on 15th April
- Engagement with stakeholders will continue throughout the process. We can also be contacted at auge@engage-consulting.co.uk



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Innovation Service

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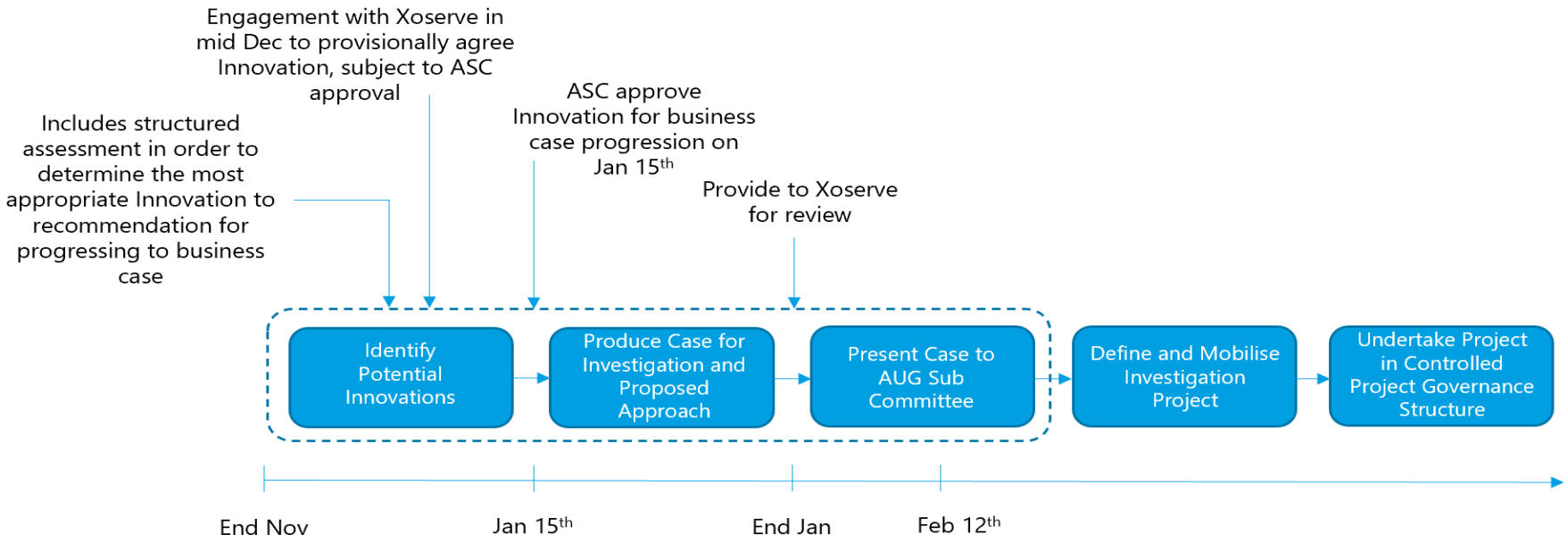
Innovation Service

The proposed timeline for our innovation service is provided below



Identification and Scoring Process

- The Innovation Service enables us to identify, assess and report on changes to the current rules and processes that will result in a reduction in UIG and/or fairer and more equitable ways of allocating UIG
- We created a list of potential innovations that we felt would result in better assessment and targeting of UIG, thus resulting in more equitable division of UIG between Shippers
- These were based on our evaluation of
  - Whether each proposed innovation was within our scope as AUGE
  - The size of UIG attributable to the relevant contributor
  - The feasibility of each proposed innovation, both for industry participants and Xoserve's systems
  - The likely timescale for delivery of each proposed innovation
  - The likely industry appetite for each proposed innovation
  - The likely improvement in quantification of UIG if each proposed innovation was implemented

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Identification and Scoring Process (2)

- We conducted a scoring process for each potential innovation, based on the criteria listed on the previous slide, with our scores then being compared with those of Xoserve, who conducted a similar process based on the same criteria

- Following the completion of these independent scoring exercises, we then compared our scores with those of Xoserve and agreed upon three potential innovations as those best meeting the criteria. These are shown on the next slide

- We seek to agree with the AUG Sub-Committee which of these three innovations should be taken forward for investigation business case development. Where such agreement is provided, the investigation business case will be presented at the AUG Sub-Committee meeting scheduled for 12th February

Identified Innovations

Proposed Innovation	Detail	Investigation
Investigation into the Temperature of Gas in the Meter	The temperature studies used for the Average Temperature Assumption contributor were conducted almost 20 years ago and details of the conditions of those studies are limited.	Any investigation would consider the benefits of organising a study into the temperature of gas under different conditions including air temperature, meter location and service material. Given that we identified this as the second largest contributor to UIG after Theft of Gas, we believe that this would potentially provide the greatest benefit to UIG reduction of the three proposed innovations described if the temperature was used in the Settlement process.
Audit of the Correction Factors	Site-specific correction factors are used to take account of the altitude of a site, the average temperature assumption and the inlet pressure of the gas.	We have identified that there are a small number of correction factors that are too low and a larger number that have incorrectly been set to the standard correction factor. Any investigation would assess the benefit to UIG reduction of conducting an audit.
LDZ-Specific Weighting Factors	LDZs have varying levels of UIG, as well as different proportions of domestic and commercial properties.	The current usage of national-level weighting factors could be leading to inaccurate allocation of UIG. Any investigation would assess whether the usage of LDZ-specific weighting factors would be likely to result in more equitable allocation. However, there may be a potential issue in obtaining a significant sample size due to potentially small datasets. This will also not lead to any direct reduction in UIG.

Industry Issues

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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 draft Statement where appropriate	Closed	01/06/2020	06/01/2021
3	Changes to theft arrangements due to REC v1.1	Situation is being monitored, currently reviewing final Ofgem decision issued on 17th December 2020	Live	22/10/2020	

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