

AUG Sub-Committee Meeting

2nd July 2021



engage 

ELECTRICITY | GAS | INDUSTRY EXPERTS

Introductions



David Speake

Lead Consultant
Service Delivery Lead



Jonathan Kiddle

Lead Consultant
Subject Matter Expert

Purpose of Meeting

- ▶ **The purpose of the meeting is to provide**
 - ▶ **An overview of our proposed approach and overarching methodology for the Gas Year 2022/2023**
 - ▶ **An overview of the results of our initial analysis and the contributors we propose to investigate this year**
 - ▶ **A summary of the innovation responses and which of these we are recommending are carried forward to business case for investigation stage**
 - ▶ **A recap of our Advisory Service**

Agenda

- ▶ **Proposed Approach and Overarching Methodology**
- ▶ **Initial Assessment**
- ▶ **Innovation Service**
- ▶ **Advisory Service**

AUG Statement for Gas Year 2022/2023

Approach

- ▶ **Open and transparent**
- ▶ **Utilise our expert gas industry knowledge**
- ▶ **Balanced judgement and impartiality**
- ▶ **Maintain a two-way dialogue with industry participants**

AUG Statement for Gas Year 2022/2023

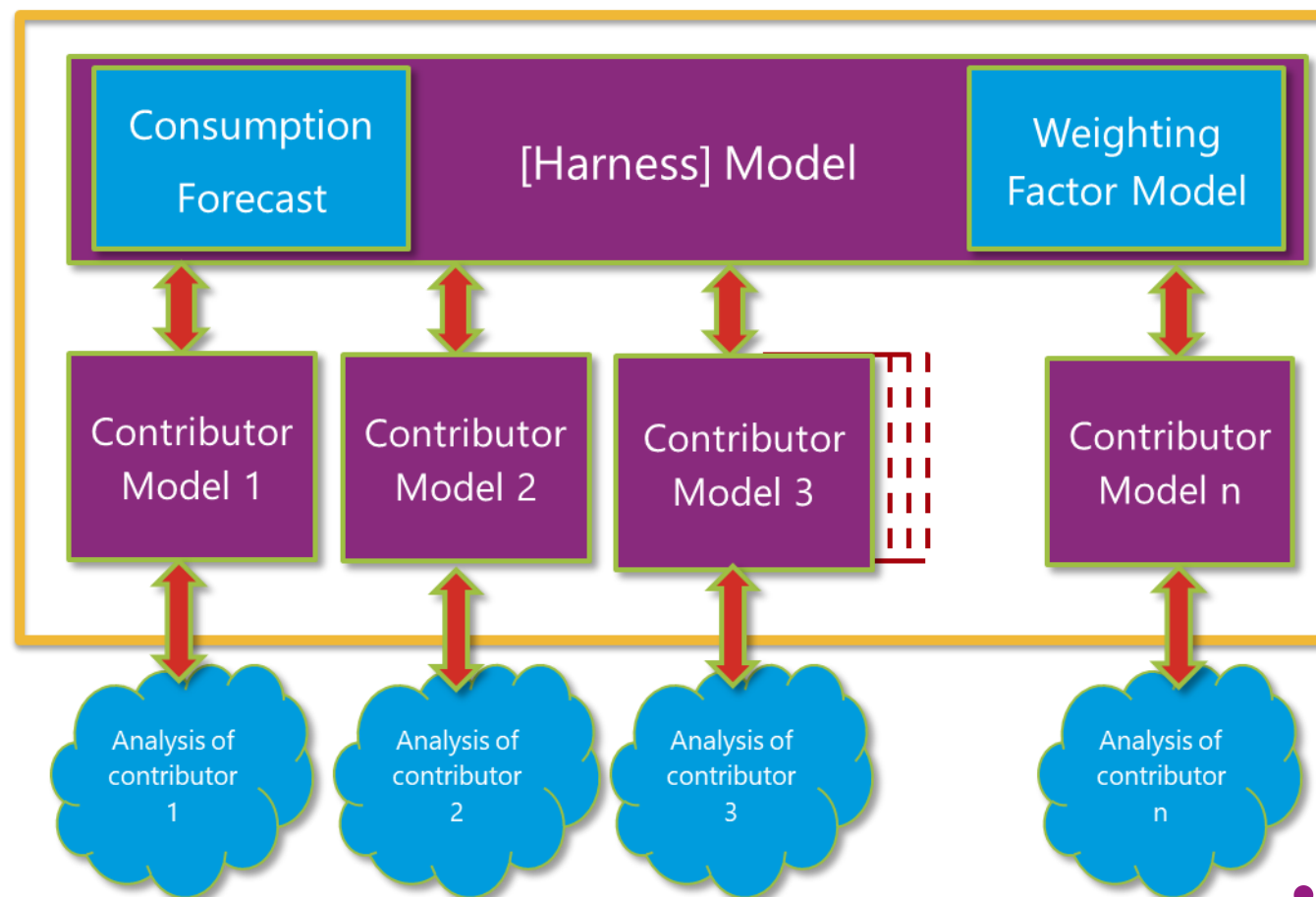
Overarching methodology

- ▶ **“Polluter Pays”, “Line in the Sand” and “Bottom-Up Determination” remain key principles and underpin our methodology, as was the case last year**
- ▶ **Polluter Pays – We interpret “fair and equitable” to mean that UIG should be allocated (to Matrix Positions) in the same proportions as it is created**
- ▶ **Line in the Sand – We will only consider UIG that will exist at the Line in the Sand (the final Settlement position) and not UIG that exists temporarily prior to this**
- ▶ **Bottom-Up Determination – We will quantify UIG for each identified contributor and add these together, rather than estimating overall UIG and apportioning it or using it as a means for differencing purposes**

AUG Statement for Gas Year 2022/2023

Model

- ▶ The existing model will continue to be used this AUG Year:
 - ▶ A contributor-based model comprising of an overarching harness model, linked to the separate contributor sub-models
 - ▶ The Weighting Factors are calculated within the harness model



AUG Statement for Gas Year 2022/2023

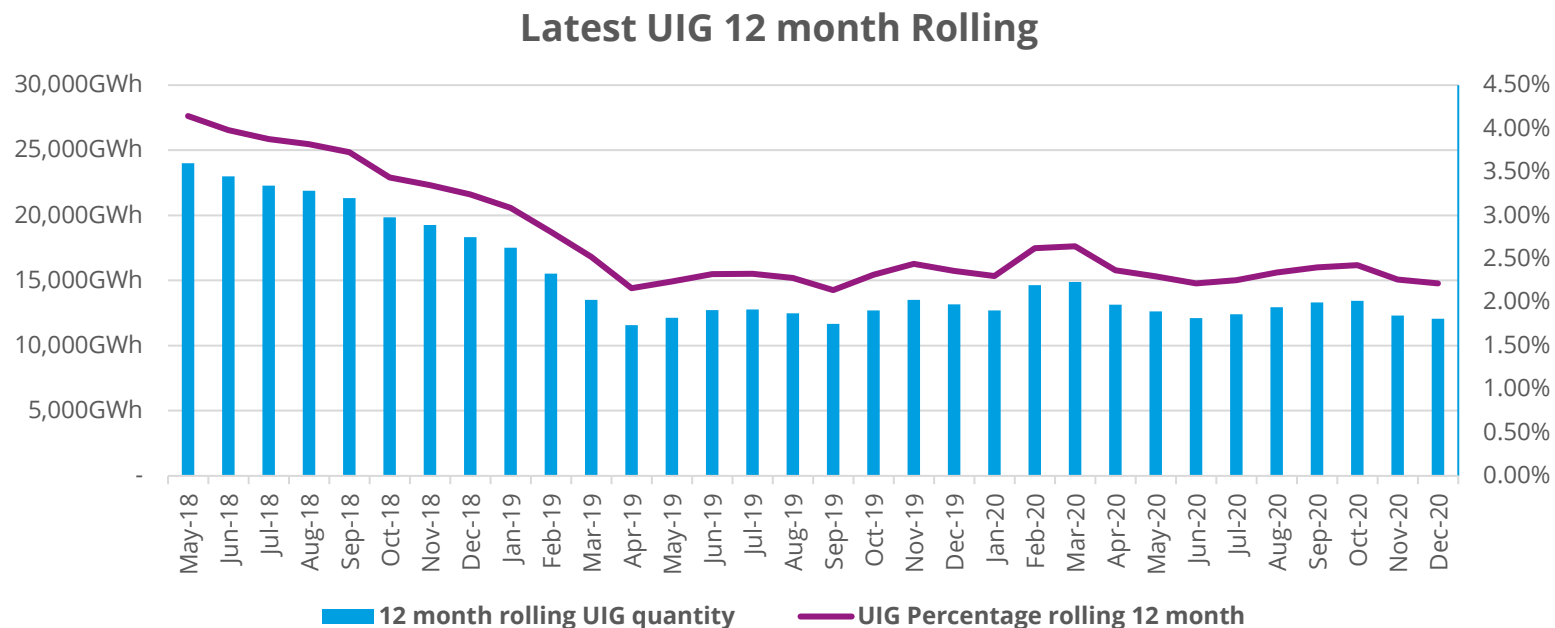
Consumption Forecast

- ▶ **A consumption forecast is an integral part of our model and is used in the calculation of certain contributors**
- ▶ **As per last year, we will calculate a national forecast for the Line in the Sand based on historical AQ values for each Matrix Position**
- ▶ **This is then split into individual LDZ forecasts**
- ▶ **Where possible we will take account of any COVID effects**

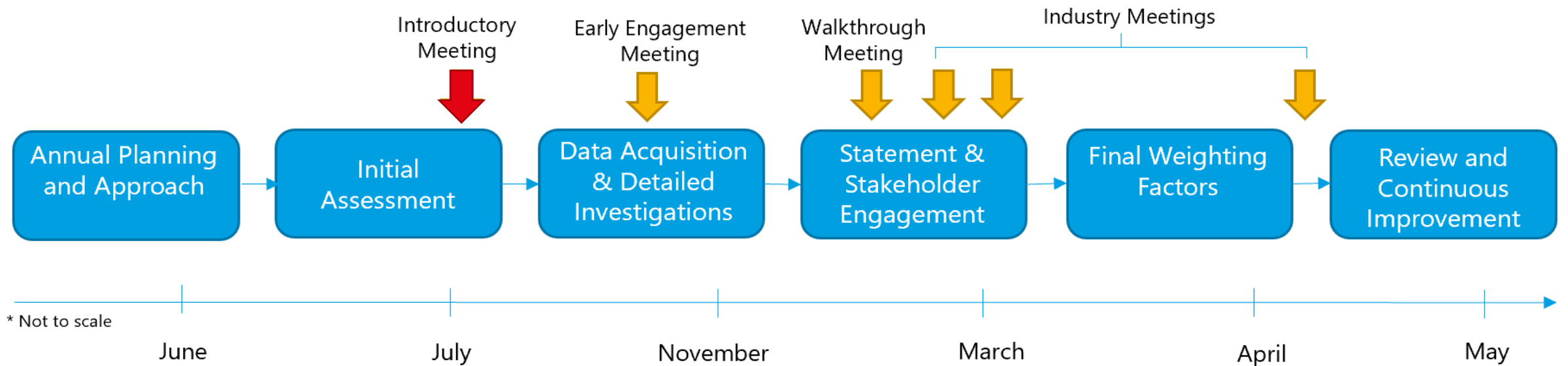
AUG Statement for Gas Year 2022/2023

Comparison with Observed levels of UIG

- ▶ To validate our bottom-up approach, we will continue to compare the sum of the UIG calculated for the contributors with current observed values, as per last year
- ▶ This is likely to remain as the 18-month average of the rolling twelve-month percentage of throughput



Delivery Timeline



Initial Assessment



Initial Assessment

Background

- ▶ **The Initial Assessment identifies the contributors to UIG that warrant further investigation. Potential contributors can be identified by us, by the industry or by any other third party**
- ▶ **The Initial Assessment scores the contributors based on their scale, our uncertainty of the scale assessment and our ability to increase the certainty in the scale assessment**
- ▶ **The top scoring contributors are taken forward to investigation stage. If no methodology exists, then a full investigation will take place. If a methodology already exists, a refinement investigation focussing on part of the method will occur**
- ▶ **For other contributors not subject to investigation their existing methodologies will be used to estimate the UIG using a recent data refresh**
- ▶ **Any contributor that is not selected, and does not have an existing methodology, will be reevaluated in future Initial Assessments**

Initial Assessment

Identified Contributors

- ▶ **20 contributors were identified for Initial Assessment this year**
- ▶ **Consumption Meter Errors has been split into three separate contributors (40, 41 and 42) to better reflect the three distinct UIG contributors identified as part of the work undertaken on the 2021/2022 Statement**
- ▶ **There are six new potential contributors this year (130-180)**

Contributor ID	Contributor Description
10	Theft Of Gas
20	Unregistered Sites
25	Shipperless Sites
40	Consumption Meter Errors - Inherent Bias
41	Consumption Meter Errors - Faulty Meter
42	Consumption Meter Errors - Extremes of Use
50	LDZ Meter Errors
60	IGT Shrinkage
70	Average Pressure Assumption
80	Average Temperature Assumption
90	No Read at the Line in the Sand
100	Incorrect Correction Factors
110	CV Shrinkage
120	Meter Exchanges
130	Consumption Adjustments
140	Meters with By-Pass Fitted
150	Meterless Sites
160	Isolated Sites
170	Incorrect Meter Technical details on UK Link
180	Unfound Unidentified Gas Contributors
190	Issues with Xoserve system

130 – Consumption Adjustments

Definition

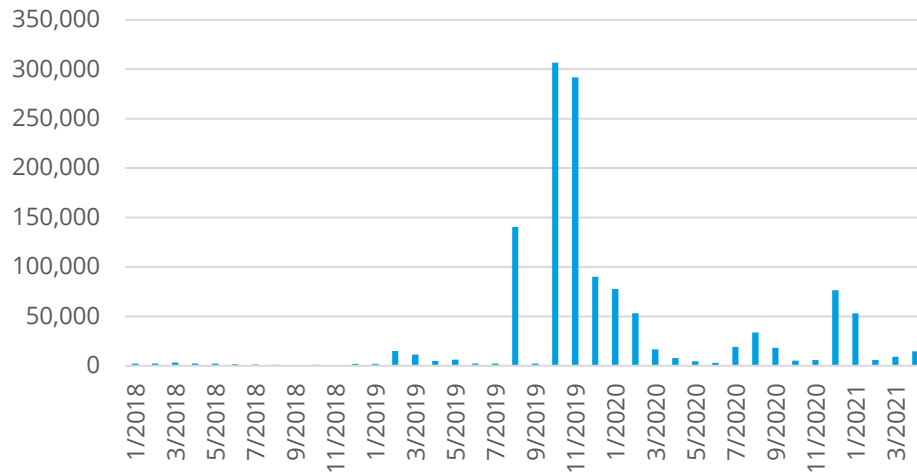
- ▶ **Consumption Adjustments are submitted by Shippers to correct the volume that has been allocated to a site based on meter reads or the AQ**
- ▶ **It is a last resort process where the energy can't be corrected by updating a read or meter technical details**
- ▶ **Consumption Adjustments are submitted through Xoserve's Contract Management System which can only perform limited validation on the scale of the corrected volume**
- ▶ **If there is any error or bias in the Consumption Adjustments submitted by Shippers, then this will create UIG**

130 – Consumption Adjustments

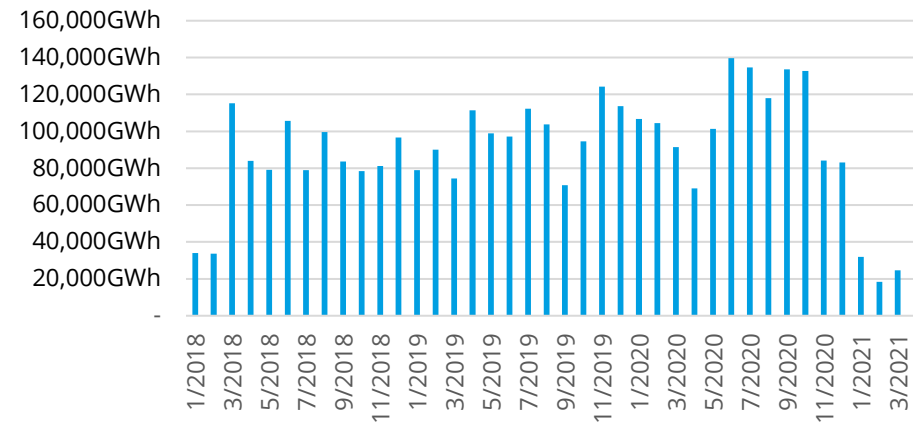
Initial Findings

- ▶ There have been almost 1.3 million Consumption Adjustments submitted since January 2018
- ▶ The total volume of the Consumption Adjustments is 13 TWh
- ▶ If there was a 1% error with the Consumption Adjustments, then the energy associated with this is 132 GWh

Consumption Adjustment Count



Sum of the AQ of Sites with a Consumption Adjustment



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

Initial Findings

- ▶ There are 107 sites with an open By-Pass and if, for example, they were open for a year then over 1 TWh would be consumed
- ▶ Less than 25% have had a Consumption Adjustment at some point in the past therefore it is likely that some Consumption Adjustments are not being submitted

EUC	Count of Sites	AQ	Consumption Adjustment Count	Count of Sites (Open)	AQ (Open)	Consumption Adjustment Count (Open)
1ND	1973	38GWh	30	8	0GWh	1
1PD	60	1GWh	0	1	0GWh	0
1NI	7214	154GWh	203	28	0GWh	5
1PI	2	0GWh	0	0	-	0
2ND	144	19GWh	5	3	0GWh	0
2NI	1989	286GWh	111	18	3GWh	4
3	730	337GWh	91	12	6GWh	2
4	490	616GWh	76	9	9GWh	3
5	152	523GWh	29	4	14GWh	1
6	81	753GWh	14	7	69GWh	1
7	49	1,009GWh	14	3	61GWh	1
8	25	1,054GWh	11	4	156GWh	1
9	28	4,392GWh	12	10	754GWh	4
Total	12937	9,179GWh	596	107	1,073GWh	23

150 – Meterless Sites

Definition

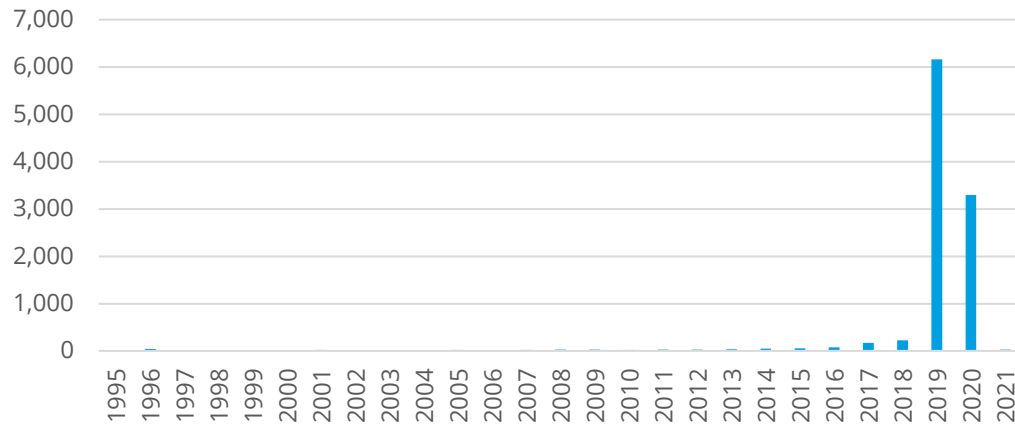
- ▶ A Meterless Site is a Supply Meter Point that has a Shipper registered to it, does not have a meter held on UK Link and there has been an indication of metering activity taking place
- ▶ The Shipper of the Supply Meter Point will be allocated gas according to the AQ until a meter is attached to the Supply Meter Point and reads are accepted and the energy is reconciled
- ▶ If the registration is before the meter installation date, then negative UIG is created. This will be reconciled if a meter read is accepted prior to the Line in the Sand, otherwise UIG persists
- ▶ If there is a meter on site but not held on UK Link, and the AQ is not a fair representation of the usage, then UIG will be created and will be permanent if this period is prior to the Line in the Sand

150 – Meterless Sites

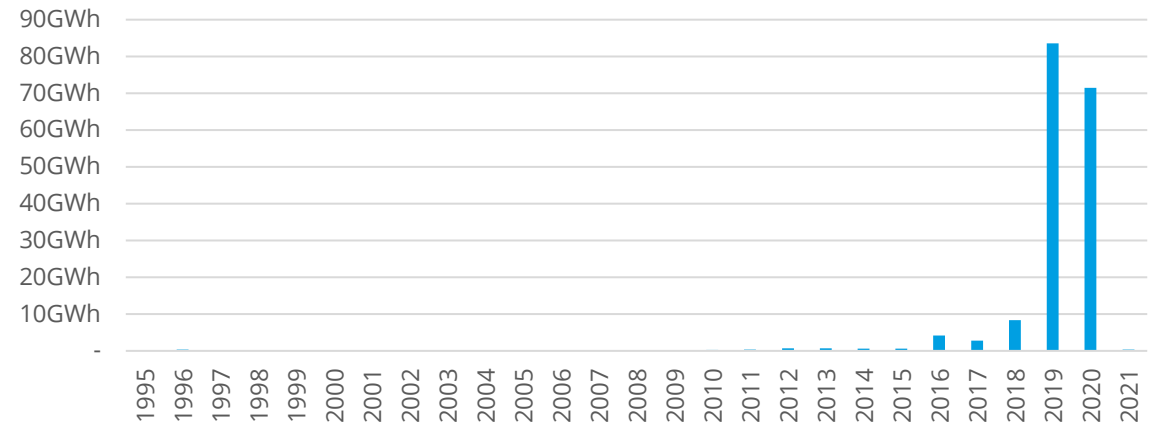
Initial Findings

- ▶ There are 10,429 Meterless Sites with an associated AQ of 176 GWh however only 754 before the Line in the Sand with an associated AQ of 14 GWh

Count of Meterless Sites by Registration Date (May 2021 Snapshot)



Sum of Meterless Sites AQ by Registration Date (May 2021 Snapshot)



160 – Isolated Sites

Definition

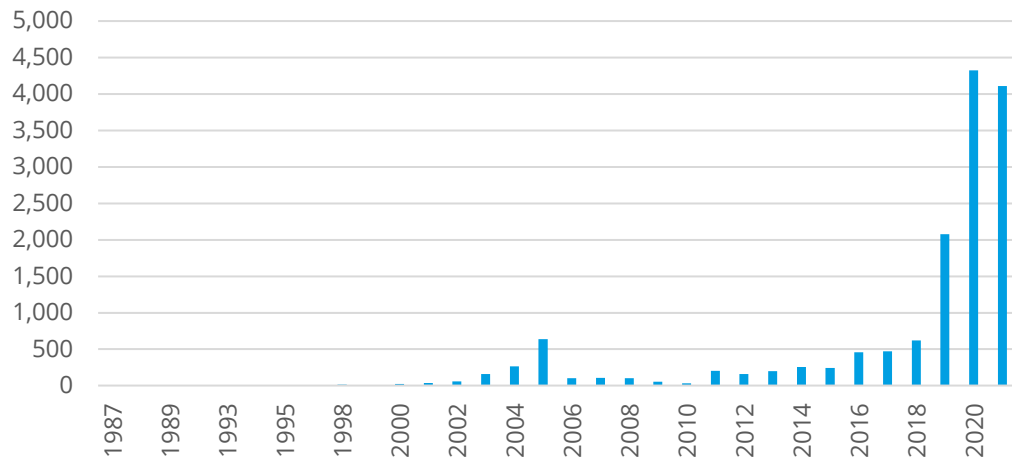
- ▶ **An Isolated Site is a registered Supply Meter Point with a meter fitted that has had additional equipment fitted to prevent the supply of gas**
- ▶ **These sites remain live on the system but are not allocated gas**
- ▶ **If the sites are offtaking gas, then this will not be recorded in Settlement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

160 – Isolated Sites

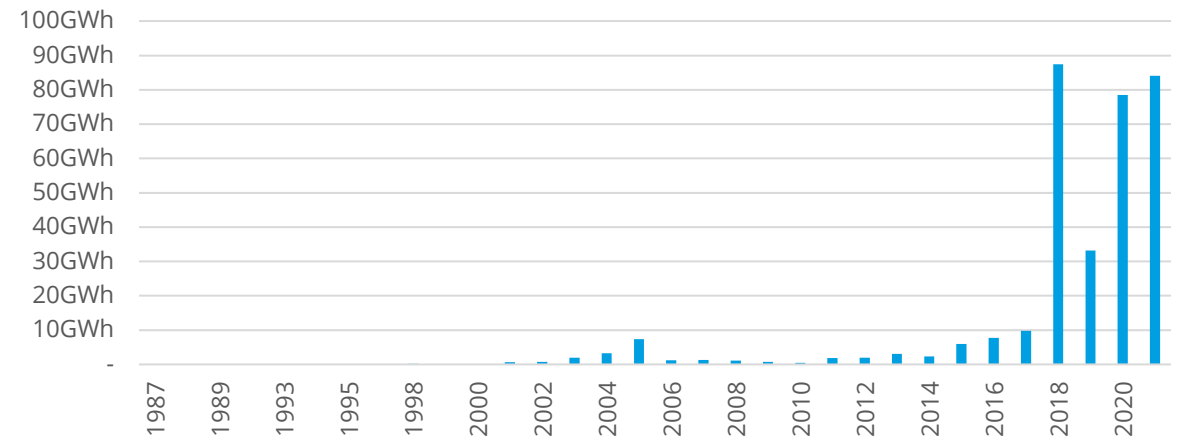
Initial Findings

- ▶ There are 14,734 Isolated sites with an AQ of 335 GWh. If 10% are consuming gas then UIG will be 34 GWh

Count of Isolated Sites by Isolation Year
(May 2021 Snapshot)



Sum of Isolated Sites AQ by Isolation Year (May 2021 Snapshot)



170 – Incorrect Meter Technical Details on UK Link

Definition

- ▶ **Meter technical details are used to transform the reading of the display into the units (cubic meters or cubic feet)**
- ▶ **Historically there was very little validation on the meter technical details and therefore incorrect units or factors could be associated with some meters**
- ▶ **If the units or factors are too low then this would create positive UIG, if they are too high then this would create negative UIG**

170 – Incorrect Meter Technical Details on UK Link

Initial Findings

- ▶ We investigated whether the meter details matched the allowable values for one LDZ
- ▶ The matched are likely to be correct; the unmatched might be wrong
- ▶ Only 86 sites were unmatched
- ▶ Without individual assessment it will be very hard to validate the accuracy of the unmatched meter technical details

	Count	AQ
No Match	86	109 GWh
Match	272,443	12,434 GWh
Total	272,529	12,542 GWh

180 – Unfound Unidentified Gas Contributors

Definition

- ▶ In the 2021/2022 AUGS we identified a difference between our calculated UIG total and the observed levels of UIG
- ▶ This is due to either the contributors not being identified, an error in the UIG estimate or an error in the estimate of the observed levels of UIG
- ▶ Any difference in the calculation needs to be equitably shared between Shippers so that the UIG is charged to the correct market participant
- ▶ Currently this UIG will be apportioned to the industry based on the identified contributors

180 – Unfound Unidentified Gas Contributors

Initial Findings

- ▶ **The difference between the calculated UIG and the observed levels in the Statement for the 2021/2022 Gas Year was 1,753 GWh**
- ▶ **We have not yet identified any Matrix Position or contributor which can be associated with this difference**
- ▶ **We have not identified an indisputably more equitable methodology to apportion the difference between the two values for the 2022/2023 AUG Statement**

Existing Contributors

Refinement Investigations

- ▶ **As part of the initial analysis, we assessed the existing contributors' methodologies to identify any areas that could be refined**
- ▶ **If the potential improvements score highly enough within the Initial Assessment, then the contributor would be subject to a refinement in part of the methodology rather than a full re-investigation**
- ▶ **We identified two contributors with existing methodologies which had a potential for improvement:**
 - ▶ **010 – Theft of Gas specific investigation into AMR; and**
 - ▶ **090 – No Read at the Line in the Sand**

010 – Theft of Gas (Only AMR)

Initial Findings

- ▶ As part of the initial analysis, we requested details of the current AMR population
- ▶ The below is the current snapshot, we have additionally requested the details of other sites with daily read equipment fitted which is not AMR or smart
- ▶ We will use this data to investigate whether historical proportions of AMR sites are a suitable proxy for future proportions in the modelling of theft from AMR sites, or whether any adjustments are required

		CLASS			
		1	2	3	4
EUC BAND	1BND	0%	0%	0%	0%
	1BPD	0%	0%	0%	0%
	1BNI	0%	1%	39%	25%
	1BPI	0%	0%	14%	3%
	2BND	0%	0%	17%	7%
	2BPD	0%	0%	0%	0%
	2BNI	0%	22%	50%	39%
	2BPI	0%	0%	61%	6%
	3B	0%	59%	48%	53%
	4B	0%	73%	65%	62%
	5B	0%	18%	72%	58%
	6B	5%	11%	67%	52%
	7B	16%	11%	70%	44%
	8B	11%	15%	40%	33%
9B	2%	29%	0%	52%	

090 – No Read at the Line in the Sand

Initial Findings

- ▶ During the Initial Assessment we revisited the rejected read data and identified more reasons that could be used to calculate AQ error
- ▶ Additionally, a change in the Line in the Sand has occurred for a date past 1st June 2017. This could result in a more accurate method of calculating the unreconciled allocation percentage

Rejection Reason	Count	AQ error
Non-opening reading received outside the read receipt window	3492	1,334GWh
Meter point has no read to be replaced	893	246GWh
Confirmation not owned by requesting System User	605	11,634GWh
Override tolerance passed and override flag provided	414	21GWh
Point of Sale read date is outside the permitted read window	56	1GWh

Scoring

Scoring Mechanism

- ▶ **The Initial Assessment was based on the 2021/2022 AUG Statement and analysis of files requested in the Initial Assessment Data Request**
- ▶ **The level of contribution is assessed on a scale of 1-5 where 5 is the highest and 1 is the lowest. The energy boundaries for the size are as follows; 1 - 0-10 GWh, 2 - 10-100 GWh, 3 - 100-500 GWh, 4 - 500 GWh-2.5 TWh and 5 - Greater than 2.5 TWh**
- ▶ **Uncertainty in the level and/or source of contribution is assessed against three different criteria based on the 2021/2022 AUG Analysis and available data sources. Each element of knowledge of issue, quality of data and strength of current assessment methodology is scored out of 5 where 1 is certain and 5 is uncertain. The results are then summed and divided by 3 to provide a certainty score out of 5**
- ▶ **Credible and cost-effective means to increase certainty is assessed against the likelihood to improve in the next gas year. This is on a scale of 1-5 where 1 is low likelihood and 5 is high**
- ▶ **These scores are combined to identify the ones that should be investigated for the 2022/2023 Gas Year**

Initial Assessment

Results

Contributor ID	Contributor	Score	Existing Methodology	Recommendation
140	Meters with By-Pass Fitted	44	N	Y
160	Isolated Sites	35	N	Y
10	Theft of Gas (AMR only)	33	Y	Y
90	No Read at the Line in the Sand	32	Y	Y
130	Consumption Adjustments	24	N	N
41	Consumption Meter Errors - Faulty Meter	22	N	N
70	Average Pressure Assumption	21	Y	N
170	Incorrect Meter Technical Details on UK Link	20	N	N
40	Consumption Meter Errors - Inherent Bias	19	Y	N
120	Meter Exchanges	14	N	N
80	Average Temperature Assumption	13	Y	N
10	Theft of Gas (full re investigation)	12	Y	N
150	Meterless Sites	9	N	N
42	Consumption Meter Errors - Extremes of Use	9	N	N
180	Unfound Unidentified Gas Contributors	7	N	N
100	Incorrect Correction Factors	6	Y	N
60	IGT Shrinkage	5	Y	N
50	Meter Errors at LDZ Input	5	Y	N
20	Unregistered Sites	4	Y	N
25	Shipperless Sites	3	Y	N
110	CV Shrinkage	2	N	N

Initial Assessment

Proposed Investigation

- ▶ **The following contributors are proposed for detailed investigation:**
 - ▶ Meters with By-Pass fitted
 - ▶ Isolated Sites
- ▶ **It's proposed the following existing contributors are subject to a refinement investigation:**
 - ▶ Theft of gas (AMR only)
 - ▶ No Read at the Line in the Sand
- ▶ **Eight other contributors will have their existing methodologies used to estimate the UIG using a recent data refresh**
- ▶ **Eight contributors will remain on the list for Initial Assessment next year**

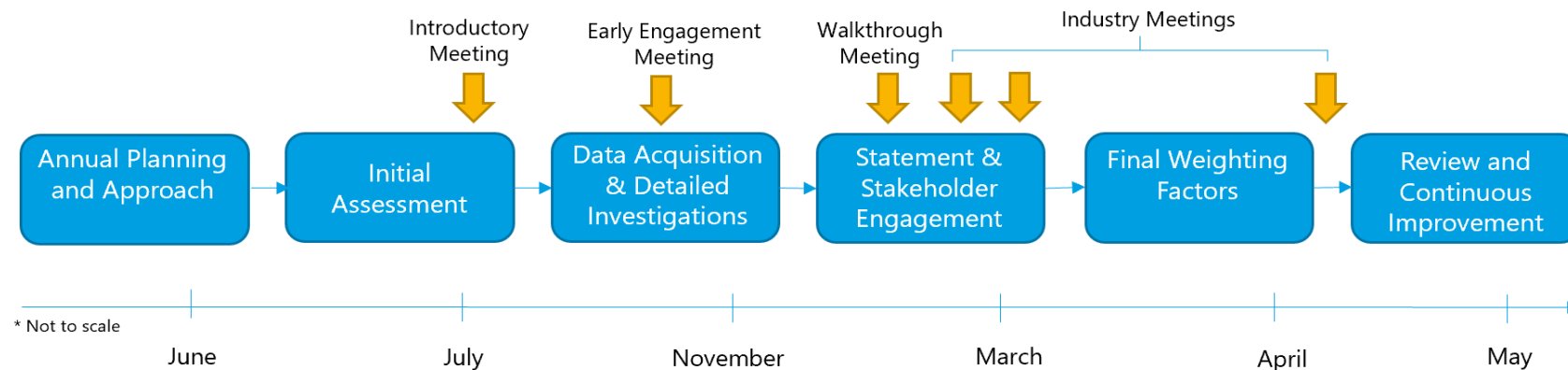
Prioritised Data Request

Summary

- ▶ **The Prioritised Data Request was submitted to Xoserve on 8th June**
- ▶ **The request to other industry parties was submitted w/c 7th June**
- ▶ **Updates on the progress of the delivery of the reports will be provided within the monthly industry update**

Next Steps

- ▶ Initial analysis from our investigations will be shared with the industry at the early engagement meeting in September
- ▶ Monthly updates will be provided to the industry via the Joint Office
- ▶ Engagement with stakeholders will continue throughout the process. We can be contacted at auge@engage-consulting.co.uk



Innovation Service



Identified Innovation Assessment

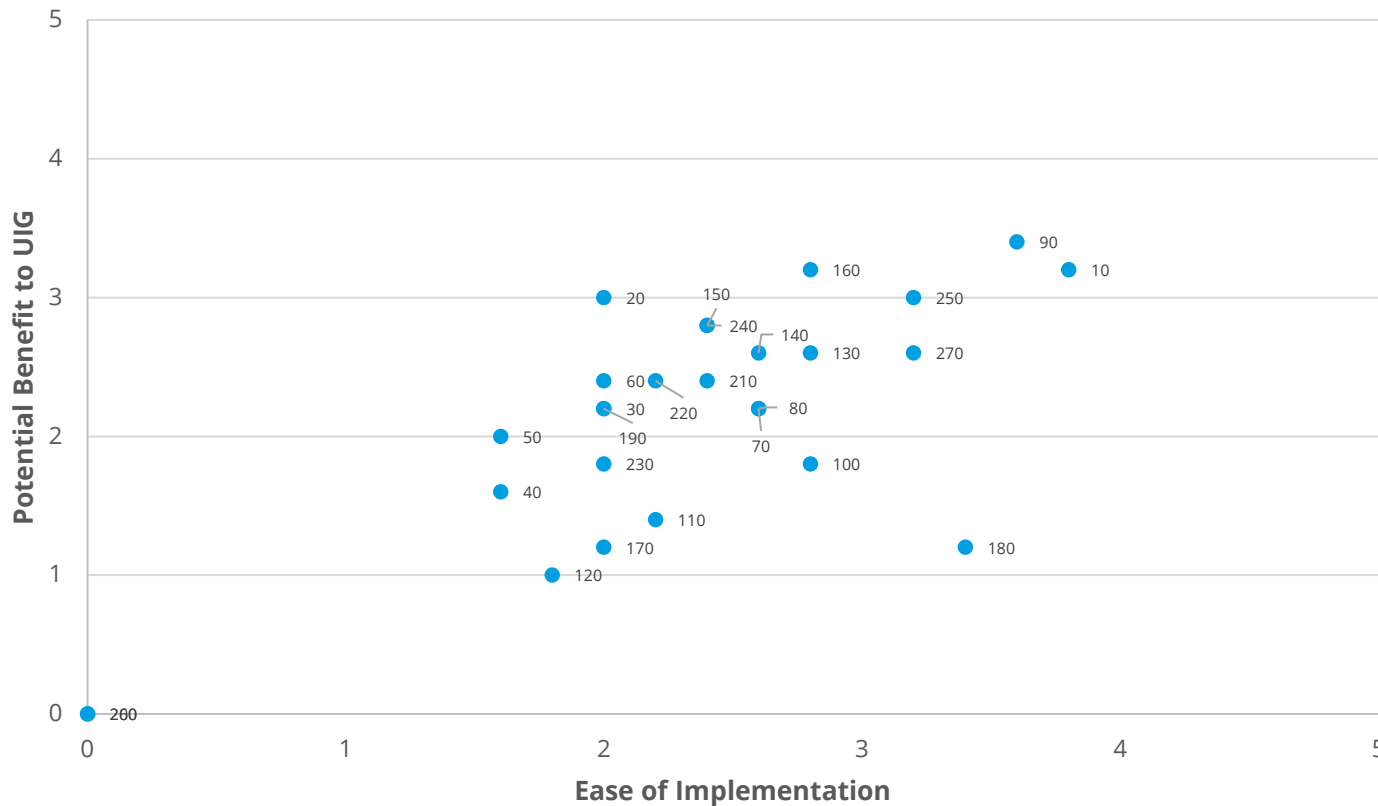
Summary

- ▶ **At the AUG Sub-Committee meeting on 13th May we presented the 27 innovations that we have identified**
- ▶ **Our scoring of the potential benefit to the industry and a high-level assessment of the ease of implementation from the perspective of the central system was provided**
- ▶ **We asked Shippers to provide us with their scores, based on their assessment of the UIG benefit and their ease of implementation**
- ▶ **We were provided with five varying responses from a mix of Shippers**
- ▶ **The scoring was combined and then averaged over the five responders**

Identified Innovation Assessment

Results

Average Shipper Scores



Innovation ID	Innovation Name
10	LDZ Specific Factors
20	Different Factors for the EUC WAR bands
30	Different Factors for Allocation and Reconciliation (transient UIG)
40	Seasonal Factors
50	Fixed and Floating Weighting Factors
60	Dynamic Weighting Factors linked to the throughput
70	Temperature and pressure actuals feeding into the Weighting Factors
80	Recalculate the UIG and Weighting Factors at the Line in the Sand
90	Changing the residual reconciliation redistribution process (UGR)
100	Re-reconciling the whole month
110	Factors linked to performance assurance measures
120	Factors specific to Shippers
130	Investigation into the temperature of gas in the meter
140	Investigation into the accuracy (bias) of all types of meter
150	Leakage investigation of IGT sites
160	Audit of the Correction Factors
170	Weighting Factors used to Incentivise
180	All meters must have volume conversion equipment fitted
190	Optimum meter capacity
210	Direct reporting ability
220	Split EUC bands 1 and 9
230	Portfolio Optimisation effects
240	Additional central reporting
250	In service testing for LDZ offtake meters
270	Dimension relating to the last accepted read

Identified Innovation Assessment

Top 5 Combined Scores

Innovation ID	Innovation Name	Innovation Description	Combined Original Score	Combined Shipper Score
10	LDZ Specific Factors	LDZs have varying levels of UIG, they also have different proportions of domestic and commercial properties. The current method of having national Factors could lead to UIG being allocated to the incorrect party. The investigation would determine whether LDZ specific Weighting Factors would apportion UIG more equitably.	7	7
90	Changing the residual reconciliation redistribution process (UGR)	Currently, the market rules split the residual reconciliation energy pot for each reconciliation run equally between the previous 12 months. These volumes are then allocated to Shippers based on their energy position following direct reconciliations. An investigation would be carried out to see if this is the most equitable mechanism to distribute residual UIG or whether there is a more appropriate mechanism.	5	6
160	Audit of the Correction Factors	Site specific Correction Factors are used to take account of the altitude of a site, the average temperature assumption of the gas and inlet pressure of the gas. We have identified a small number of Correction Factors which are lower than the regulations allow and a larger number that have been set to the standard Correction Factor. However, there is currently no mechanism to identify any other erroneous Correction Factors. The investigation would assess the value of carrying out a one off audit of all Correction Factors.	7	6
130	Investigation into the temperature of gas in the meter	The temperature studies that are used for the temperature contributor are almost 20 years old and the details of the conditions of the study are limited. The investigation would determine the benefits of organising a study into the temperature of gas under different conditions including, air temperature, meter location and service material type.	8	6
140	Investigation into the accuracy (bias) of all types of meter	We have been provided with in service testing of domestic sized meters. This has identified that there is an inherent bias with them. The investigation would determine if there is any inherent bias for other types of meters and if there are any impacts caused by the meter manufacturer, the year of manufacture and how long the meter has been in service.	7	5

Innovation Service

Recommendation

- ▶ **We recommend that the innovations taken forward to business case for investigation stage are:**
 - ▶ 10 - LDZ Specific Factors; and
 - ▶ 90 - Changing the residual reconciliation redistribution process (UGR)
- ▶ **Subject to approval at today's meeting the chosen innovation(s) will be recommended to be progressed at the July UNCC**
- ▶ **Once approved we will commence drafting of the business case(s) for investigation and these will be provided in advance of the Early Engagement meeting in September**

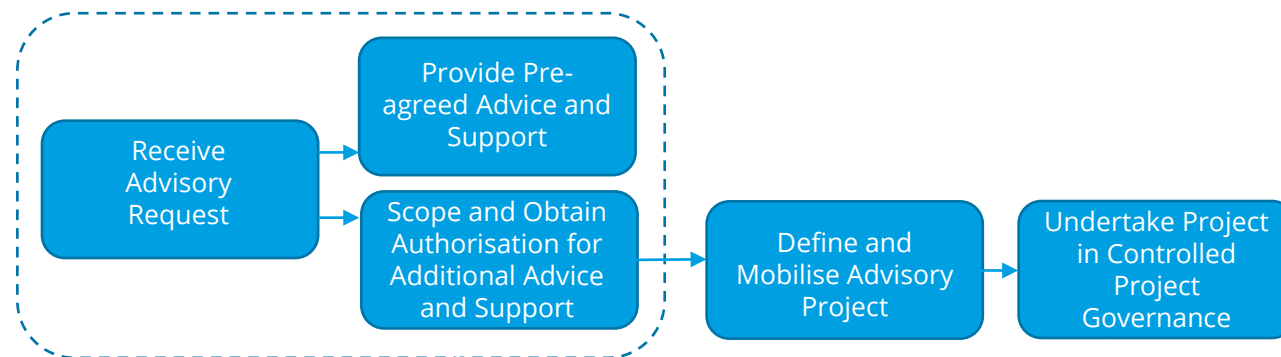
Advisory Service



Advisory Service

Remit

- ▶ Our Advisory Service is designed to provide stakeholders, including relevant industry groups, with expert advice from the AUGE
- ▶ Last AUGE year, the Advisory Service was used once to participate in a fact-finding workshop with RECCo on reporting and use of theft of gas data
- ▶ One potential use for the Advisory Service requested by the industry is to provide a forecast of the monthly breakdown of UIG for a Gas Year. This is outside of the terms of the Core Service; however we can define the scope of this work subject to committee approval
- ▶ We can also provide additional analysis of other areas which do not fall under the Core Service or the Innovation Service



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 will continue to consider the impact of COVID-19 in the 2022/2023 Statement	Live	01/06/2020	
3	Changes to theft arrangements due to REC v1.1	Beyond a minor impact of TRAS data not being available for 6 months of this year there is no immediate impact on our existing methodology. However, we will await further information as to RECCo's progress in the development of a Theft Reduction Strategy and theft methodology	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	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	Supply Meter Points with no read for a substantial amount of time are allowed to submit AQ corrections for change of use with no validation	Live	01/03/2021	

Future Considerations

Future Considerations (1)

Action Number	Future Consideration	Latest Update	Status	Date Opened	Date Closed
2c	We will consider splitting the theft calculation to treat Supply Meter Points with AMR meters as a separate population as part of our theft investigations next year.	A refinement investigation will explore this.	Closed	05/02/2021	09/06/2021
2f	We will consider the potential impact of flow rates on Consumption Meter errors for subsequent years.	This will require individual site data. We are investigating the feasibility of this data request.	Live	05/02/2021	
3d	We will consider the use of newly available AQ data for unregistered Supply Meter Points that have since been registered for subsequent years.	We have requested the data as part of the initial data request.	Live	05/02/2021	
3e	We will consider for subsequent years the comparison of Requested AQs and actual AQs where data is available. This consideration will be made for the Unregistered Sites and Shipperless Sites Contributors.	We have requested the data as part of the initial data request.	Live	05/02/2021	

Future Considerations (2)

Action Number	Future Consideration	Latest Update	Status	Date Opened	Date Closed
3f	We will consider the potential inclusion of Shipperless sites awaiting their GSR visit in our data and analysis for subsequent years.	We have requested the data as part of the initial data request.	Live	05/02/2021	
3h	We will try again to obtain mains length data from the IGTs next year for consideration in estimating IGT Shrinkage UIG.	We have requested the relevant data from the IGTs	Live	05/02/2021	
4a	We will consider UIG caused by Meter Bypass Arrangements in line with our Initial Assessment procedure, for subsequent years.	Included in the Initial Assessment	Closed	05/02/2021	09/06/2021
4b	We will consider UIG attracted by Consumption Adjustment Errors in line with our Initial Assessment procedure, for subsequent years.	Included in the Initial Assessment	Closed	05/02/2021	09/06/2021



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