



# AUGE Response to the AUG Statement Consultation for Gas Year 2021-2022

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### INTRODUCTION

The draft AUG Statement was published by the Joint Office of Gas Transporters on 30<sup>th</sup> December 2020. Alongside this, we provided a consultation document requesting stakeholder views on the Weighting Factors, our overarching methodology and any assumptions, methodology aspects, calculations and results for each UIG Contributor within the draft Statement.

We thank all stakeholders for their responses. We have reviewed these carefully, considering the arguments made and the rationale presented, along with any evidence provided. We have not been influenced by any factors external to this. This is consistent with our terms of reference.

For all material points raised, we have noted any adjustments that we intend to make to the Statement, or we have recorded for future consideration. Where we have made no changes, we explain why.

### CONSULTATION RESPONDENTS

RESPONDENT	NO. OF PARTIES REPRESENTED
Anonymous Respondent	1
British Gas	1
ICoSS	13*
Scottish Power	1
Shell Energy	1
Total Gas & Power	1
Utilita	1
Utility Warehouse	1

\* Although an ICoSS member, a separate response was provided by Total Gas & Power

### SUMMARY OF STAKEHOLDER REPONSES AND AUG CONSIDERATIONS

Stakeholder views are summarised in the tables below, ordered by respondent for each consultation question, and directly followed by our consideration in response to the points made.

To address the points made clearly and efficiently, we have assessed and responded to them in logical groups. This means that a small number of points appear under a different consultation heading to where they appeared in the respondent's original document. We have been careful not to overlook any points raised.

At the end of each section, we list the actions resulting from our consideration of stakeholder views.



**Question 1**

Our overarching methodology is detailed within Section 4 (“Overarching Methodology”) of the draft AUG Statement. This methodology is based on the following principles:

- ▶ Polluter Pays – we interpreted “fair and equitable” to mean that UIG should be allocated in the same proportions as it is created;
- ▶ Line in the Sand – we only considered UIG that will exist at the Line in the Sand (the final Settlement position) and not UIG that exists temporarily prior to this; and
- ▶ Bottom-up Determination – we quantified UIG for each identified contributor and added these together, rather than estimating the overall UIG and apportioning it or using it as a means of differencing.

Please highlight any aspect of this methodology with which you disagree and which you believe materially affects the Weighting Factors contained within the AUG Table, providing your rationale and, wherever possible, supporting evidence.

Respondent	Points Raised
Anonymous Respondent	There is not yet enough data on the impact of COVID-19 on gas consumption to justify making any related assumptions for the Target Gas Year.
Anonymous Respondent	It is likely that there are Contributors which are not yet identified and therefore any methodology that derives a theft factor independently is a step forward.
Anonymous Respondent	Shippers with sites in Class 3 are not always capable of meeting the associated Code and Settlements requirements. Removal of the incentive created by previous UIG allocation may encourage correct site classification.
Anonymous Respondent	We supported the use of data at EUC band level for demand estimation modelling, however, we are now concerned that splitting of the EUC categories within the weighting factors may have introduced unnecessary complexity.
British Gas	We agree with the overarching methodology, which employs the available data and the AUG’s experience. We think that the AUG is performing its duties with skill, care and diligence.
British Gas	There are elements of judgement applied in the course of the modelling, several of which may provoke contention. The AUG should not feel compelled to modify its impartial and equitable assessments in order to satisfy the loudest voices.
ICoSS	AQ data are not an accurate reflection of consumption at large sites.
ICoSS	The AUG’s consumption forecast is higher than expected.
ICoSS	The way that the AUG has extrapolated consumption to the forecast year results in unusual outcomes in particular Classes and EUC Bands
ICoSS	The AUG should use a validation process which strips away outliers from all datasets.
ICoSS	The use of the draft Statement in its current form is detrimental.
ICoSS	The bottom-up methodology used by the AUG is not fit for purpose.



## AUGE Response to the AUG Statement Consultation for Gas Year 2021-2022

ICoSS	We agree with the principle of Polluter Pays.
ICoSS	The AUGE has ignored the effect of COVID-19 on future consumption, by assuming the new normal will be no different to pre-COVID-19. AUGE should quantify this.
ICoSS	The draft Statement provides no information on the amount of gas from telemetered Supply Meter Points.
Scottish Power	The methodology considers UIG that will exist at the Line in the Sand and not UIG that exists temporarily prior to this. Given initial cash flows are based on earlier views of UIG, it would be useful to see a version of the analysis that considers UIG that exists earlier at initial allocation stage. Initially this might be offered as Innovation under the CDSP-AUGE contract.
Scottish Power	We agree with the bottom-up approach to determine UIG.
Shell Energy	Welcome evolution of modelling of UIG, and we strongly agree with the AUGE's methodology principles.
Shell Energy	The draft Statement delivers an improved balance between Classes 3 and 4.
Total Gas & Power	Where there is no obvious reason to allocate to matrix position, could AUGE just allocate at a higher level e.g. AQ?
Total Gas & Power	The AUGE has used a consumption forecast that is too high.
Total Gas & Power	The AUGE's consumption forecast for Class 1 sites is over-inflated.
Utilita	The consumption forecast used understates the amount of consumption attributable to prepay meters. The result is that the relative percentage of UIG allocated to prepay categories is too high.
Utilita	Our concerns stem largely from what we consider to be a non-representative consumption forecast. The introduction of the new EUC 1 and 2 sub-bandings is a likely driver for this.
Utility Warehouse	AUGE weighting factors should not impact Shipper behaviours. For example, the proposed weighting factors may drive Shippers to classify Supply Meter Points to incorrect Profile Classes. This would erode the Nexus business case.
Utility Warehouse	The AUGE assumes too few Supply Meter Points will transfer from PC4 to PC3 during the gas year.
Utility Warehouse	The increased Weighting Factors in EUC 03-09 are welcome.



### AUGE Consideration

#### **Summary and outcomes**

We welcome the valuable engagement and feedback that this consultation has provided regarding the approach we have taken to forecast UIG for the Target Gas Year. We note the comments provided represent a range of opposing views. We do not propose any fundamental changes to our bottom-up methodology as a result of the responses received. We are, however, investigating further the inputs to our consumption forecast in light of the feedback provided by some respondents.

#### **Principles and bottom-up approach**

We were pleased to see strong support for our methodology principles.

One group of respondents suggested that the bottom-up approach we use is not fit for purpose. By contrast, several other respondents are supportive of this approach. We explained our intended approach at AUG Sub-Committee meetings on more than one occasion during 2020 and no fundamental concerns were raised at these times. In future years, we would expect stakeholders to use this agreed process to make us aware of any concerns they may have. As the impact of this methodology approach manifests principally in Theft UIG, we have commented further on this matter in our consideration of responses to Theft under Question 2.

We note the comment from one respondent that using the Statement in its current form is “detrimental”. We acknowledge that, by their very nature, changes to Weighting Factors have differing impacts across the market. However, we are satisfied that the resultant factors have been determined robustly and that they will allocate UIG equitably.

#### **Accuracy of consumption forecast**

At the highest level, some respondents expressed a view that the consumption forecast we used as a core input to the UIG calculation is too high. We have decided to undertake further investigation into this, and we are re-validating the datasets used in collaboration with the CDSP.

Similarly, one respondent noted our consumption extrapolation methods could be perceived as unusual given the outcomes for some Classes and EUC Bands noted in the draft AUG Statement. We thank the respondent for the examples provided, and we are undertaking further investigation and validation.

In both cases we hope to share the outcome of this investigation with stakeholders at the next AUG Sub-Committee meeting on 12<sup>th</sup> February.

#### **Treatment of outliers in the data**

We can confirm that we have used a consistent validation process to assess the value and robustness of the data provided to us by the CDSP. That includes an assessment of outliers and a judgement on whether they should be removed on a case-by-case basis. On occasion, there has been sufficient justification to reject datasets outright and source one or more alternative datasets to ensure the quality of inputs to our calculations.

#### **Allocation to EUC Bands and complexity**

We note the comments about the additional complexity arising when allocating across EUC Bands. This element of the methodology results from the implementation of UNC Modification 0711.



### COVID-19 assumptions

The potential impact of COVID-19 was a live but new consideration in producing the target Gas Year's forecast. Our approach was to take it into account where we judged it appropriate to do so. This means that it was not ignored, nor has it impacted our calculations across the board. Generally, our approach was to exclude data relating to the first lockdown period from our datasets to prevent distortion. We agree that this will need to be monitored and we will continue to take COVID-19 into account where it is appropriate to do so.

### Impact of AUGS on market incentives

A number of respondents commented on the impact of the Statement on Classes 3 and 4. We understand that Shippers will evaluate the AUG Table on the basis of perceived commercial incentives. However, we make no consideration of the potential impact of UIG allocation on Shipper behaviours as our Terms of Reference are to solely produce Weighting Factors that allocate UIG equitably.

We have provided additional background information on the allocations to Classes 3 and 4, this year and previously, in Question 2 under Theft.

### Validity of datasets used

With reference to the more specific comments received about consumption in particular Classes, EUC Bands, or meter types, we can only re-state that we have used definitive and validated industry data to inform our forecasts. However, we welcome market participants' continued efforts to update CDSP data to reflect what they know about the Supply Meter Points in their portfolios, as it will result in the improved accuracy of our forecasts.

Telemetered sites are among the data used to make our overall assessment, and so these sites attract a share of UIG based on their Class and EUC Band. They were not treated as a separate category as we judged this was unnecessary.

### Other considerations

We are happy to discuss the potential provision of UIG levels at initial allocation stage. The methodology for this has been established in the past but owing to our bottom-up approach it no longer forms a necessary part of the UIG calculation. We suggest this would be best considered as part of our Advisory Service.

### AUGE Action

1a	We will continue to consider the impact of COVID-19 for forecasts in subsequent years. This is already captured in the industry issues log.
1b	We will re-validate the relevant consumption forecast and the datasets used to derive it, making any adjustments to inform the 2021-2022 UIG forecast as appropriate.
1c	We will investigate those outcomes of our consumption extrapolation method perceived as unusual by one respondent, making any adjustments to inform the 2021-2022 UIG forecast as appropriate.





1d Data receipt dependent, we will report the outcome of our investigations in Actions 1b and 1c to the AUG Sub-Committee meeting on the 12<sup>th</sup> of February. If not, we will do so as soon as possible thereafter.

**Question 2**

Our results for the four contributors under detailed investigation are contained within Section 5 (“Detailed Investigations”) of the draft AUG Statement. For each of these contributors, please highlight any assumptions, methodology aspects, calculations and results with which you disagree and which you believe materially affect the Weighting Factors contained within the AUG Table, providing your rationale and, wherever possible, supporting evidence.

010 – Theft of Gas

Additional context and clarification

**Summary**

It is understandable that this Contributor has been subject to a high degree of scrutiny and comment among respondents. We note that several respondents have stated their support for our theft methodology, but others believe that the assumptions informing our theft UIG forecast are unsubstantiated.

In response to these general points, and because of the relative size of the Theft UIG Contributor, we have provided additional information about the inputs and assumptions used in our calculation. We have also undertaken a comparison to previous years to provide additional rationale for our approach.

We have provided a list of references to the sources of the data we reviewed when deciding on the assumptions behind our forecast. We then respond to any points made that are not already addressed, to provide further clarification.

Respondents’ specific points, our consideration of them, and the actions arising are set out in the same format as for other Contributors immediately after this additional context and clarification.

**Data sources and assumptions**

There is no single authoritative source of the amount of theft in retail sectors, including the gas sector. A common characteristic across all theft is that thieves operate covertly and only a small percentage of their theft is detected. It is therefore impossible to quantify the amount or source of gas theft precisely. However, the data that is available can be used to make a reasoned estimate of the amount and sources of gas theft and this is what we have sought to do.

We chose to consider the electricity and water sectors in developed countries as these have strong analogies with the gas sector. We also chose to consider other retail sectors. We accept that each of these sectors have differences, but we are also of the view that they have many commonalities.

We identified and used five authoritative sources of electricity theft estimates. These are referenced below. The theft estimates in these ranged from 1.0% to 2.5% with an average of 1.65%.

We also identified several sources that provide estimates of water theft (in metered jurisdictions), although most of these were opaque and less authoritative than the electricity information. The most



relevant is referenced below. This estimates water theft and public supplies (such as water used in firefighting) as 3.0% but does not provide a ratio between these.

Finally, we identified two authoritative sources of more general retail theft. Again, these are referenced below. They estimated retail theft as 1.06% and 1.21% respectively (after taking into consideration staff errors). Importantly, these two sources provided an informative insight into the types of theft in operation across the retail sector, notably theft attributable to organised crime which the former estimates at 13.34% of all theft.

### **Overall gas theft**

In establishing an estimate of gas theft from these figures, we placed significantly more weight on the electricity data than the water data. This is because the data sources are more authoritative, there are not the same safety issues associated with water theft and many jurisdictions do not meter water. The more general retail figures are useful as a comparator. We also acknowledge that electricity theft is likely to be higher than gas theft because of the former's use in the cultivation of marijuana plants.

Based on these figures, we are satisfied that our assertion in our draft Statement that gas theft is likely to be in the range of 1.25%-1.75% is correct - although we accept that, based on the figures above, it would appear to be below the mid-point of this range.

One respondent suggested that the "top-down" differencing methodology employed by the previous AUGE should be used to quantify overall theft in favour of our bottom-up methodology. Several of their comments implied that the quantification of theft using a top-down method was "robust". We found this not to be the case. It took a robust number (the sum of non-theft contributors) and differenced this from an extremely equivocal number (an under-estimate of close-out UIG) to provide an equally equivocal quantification of theft. This is not "robust".

We have replicated this methodology, as a comparator. The previous AUGE's results for previous years and our calculation using the previous AUGE's method for the Gas Year 2021-2022 are shown in the table below.

This shows that a top-down differencing method of quantifying theft would result in a figure for the Gas Year 2021-2022 that is:

- ▶ 36% higher than our bottom-up quantification; and
- ▶ 2.0% of throughput (less shrinkage) compared to the figure we used of 1.48%.

On this basis, we are satisfied that our figure of gas theft of 1.48% of throughput less shrinkage is reasonable, given the spectrum of data that is available.





Table 2.1: Previous years' methodology output applied to our calculation of Total UIG

Gas Year	2017/18	2018/19	2019/20	2020/21	2021/22*
Observed Volume of Close-out UIG (GWh)	20,827	11,589	11,713	Not available	14,109 <sup>†</sup>
Statement Estimate of Total UIG (GWh)	Not provided	3,837	5,958	7,846	14,109
Balancing Factor	Not Provided	98.4%	95.9%	89.6%	80.5%
Statement Estimate of Theft (GWh) [implicit]	3,000	3,775	5,713	7,032	11,362
Resulting Quantification of Theft (GWh)	Not derivable	11,401	11,230	Not derivable	11,362
Throughput less Shrinkage (GWh)	562,671	531,202	537,255	Not available	569,140
Resulting post ECV Theft Percentage	Not derivable	2.2%	2.1%	Not derivable	2.0%
Resulting Top-down Differencing Quantification of Theft as a Percentage of Our 8,396 GWh Bottom-up Quantification	Not derivable	<b>136%</b>	<b>134%</b>	Not derivable	<b>135%</b>

\* Our data processed using the previous AUGE's method

<sup>†</sup> One respondent's consultation comment citing final UIG as 1.8% of throughput (or 9,022 GWh) was incorrect as it was based on a simple rather than weighted average

### Allocation of gas theft

It is a fact that only a very small percentage of gas theft is detected. The precise percentage can be debated, but it is certainly less than 1.5% of overall theft. This makes it impossible to determine the sources of all theft precisely.

Our allocation methodology differs from that employed by the previous AUGE in three significant areas. These are:

- ▶ "Advanced theft" which we allocate based on throughput;
- ▶ Use of TOG and TRAS data as the basis for allocating other theft; and
- ▶ An updated method for splitting theft between Class 3 and 4.

#### Advanced Theft

The two authoritative sources of more general theft (referenced) both cite "organised crime" as being a significant and rising percentage of overall theft, employing a range of advanced and sophisticated methods to avoid detection.

They estimate that organised crime accounts for 13.34% of overall theft. We acknowledge the error in our draft Statement which reported this at 21.97%<sup>1</sup>.

We assert that the gas sector is highly unlikely to be different from other retail sectors in this respect and that it too has some level of organised crime across the 98.5+% of undetected theft. It is impossible to quantify how much and so, in recognition of the differences associated with the gas sector, in particular the additional complexity in monetising gas theft, we took a conservative estimate of half of that quantified for the general retail sector in our draft Statement. Allowing for the correction noted above, this figure would now be 6.67% of overall theft.

We estimate that the figure we used previously of 10.98% for advanced theft and allocating this in proportion to throughput, accounts for 7.7% of the allocation difference compared to the previous methodology. This will reduce when we use the revised figure of 6.67% for advanced theft.

### **TOG and TRAS data**

#### *Duration of data*

Our analysis of the TOG and TRAS datasets shows that less than 90% of detected gas theft is identified within 5 years of it first taking place. The remaining 10% is identified in the following 5 years.

Furthermore, theft is detected so infrequently in some parts of the market that a prolonged assessment period is required to establish a meaningful probability of it existing. For example, consider a hypothetical scenario where a theft is discovered for a particular part of the market once in every 5 years. If a ten-year period was used to assess this probability, 2 thefts would be found and the analysis would correctly conclude detection was a 1 in 5 year occurrence. If a one-year period was used, 0 thefts would be found in 4 of the years and the analysis would incorrectly conclude detection was non-existent; and 1 theft would be found in 1 of the years and the analysis would incorrectly conclude detection was once every year.

Our conclusion was that the assessment period needs to be more than 5 years and up to 10 years for it to be a reasonable basis for allocating theft. TRAS theft data starts from late 2015, which means there is only 4 full years' worth of data available, one of which has been affected by COVID-19. Our view is that this is insufficient for it to be representative of all sectors of the market.

#### *Completeness of data*

As we outlined in our draft Statement, the TOG and TRAS datasets indicate that there has been inconsistent use of these regimes, with some Shippers using both and others using one more than the other. This is likely to relate to changing Shipper practices resulting from the TRAS service being introduced in April 2016, the GTDIS incentive scheme being introduced in June 2017 and the introduction of individual reconciliation for all Supply Meter Points from June 2017.

We acknowledge that, prior to 2017, it is likely that some theft on Small Supply Points was not reported via TOG as it should have been, on the basis that these were settled by difference at that point in time. Equally, post 2015, the GTDIS scheme almost certainly resulted in a predominance of

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<sup>1</sup> We incorrectly determined this as 28.2% of all non-employee related losses, including theft, whereas it should have been derived as 28.2% of external theft alone.



Small Supply Point thefts being reported in TRAS, as this is where the “easy pickings” incentive payments were to be obtained.

We note that the previous AUGE did not use TOG data. We also note that they removed 62% of TRAS data as they considered it introduced an inherent bias, although that does pre-suppose a known target unbiased position. This means that, of the industry theft data available, only 9.5% of it was used as the basis of allocating all theft. This is against the unavoidable backdrop of industry theft data representing less than 1.5% of all theft.

Several comments from one respondent imply that allocation was done previously with precision and that we have introduced imprecision. However, the data available to use as the basis of allocating theft is far from perfect and, until this changes, any method – past, present or future – will be imprecise. We have sought to achieve the fairest method possible within these constraints.

Whilst there are arguments for and against using TOG data and, likewise, for using only a subset of TRAS data, we consider it fairer to use all of the industry theft data available, for the reason discussed above.

We estimate that:

- ▶ using the TOG data, in addition to the TRAS data, accounts for 38.3% of the allocation difference compared to the previous AUGE’s methodology;
- ▶ using all TRAS data instead of just the “bias corrected” TRAS data, accounts for 5.3% of the allocation difference compared to the previous AUGE’s methodology; and
- ▶ the availability of an extra year’s worth of TRAS data accounts for 2.4% of the allocation difference compared to the allocation based on the TRAS data that was available last year.

### **Class 3 and 4 differences including smart and traditional meter theft**

In summary, the previous AUGE’s methodology:

- ▶ determined the number of thefts in Class 3 from the theft dataset, along with their average volume, and determined this number of thefts as a percentage of the population of Class 3;
- ▶ applied this percentage to the forecast number of Supply Meter Points in Class 3 to forecast the number of thefts in Class 3 in the target Gas Year; and
- ▶ applied the average volume theft (described above) to forecast the volume of theft in Class 3.

Using this method, the number of thefts in Class 3 in the theft dataset used, was just 3. We do not consider this statistically robust given the role it has in the subsequent calculations. Furthermore, all 3 were traditional meters. Scaling to a much larger number, based on such a small number, produces results that suggest that Class 4 meters are more than 3 times more likely to have theft than Class 3 meters. As a consequence, the previous methodology underestimated theft in Class 3 considerably. This is why we chose not to use it.

Instead, we quantified theft separately for smart and traditional meters in Class 3 and did the same in Class 4. We did this by:

- ▶ taking the undetected theft forecast for the target Gas Year;



- ▶ establishing what percentage of it would be based on smart meters and what proportion would be on traditional (based on the different theft propensities that we established from the theft datasets);
- ▶ allocating the percentage on traditional meters across matrix positions, based on the volume proportions in our theft dataset; and
- ▶ allocating the percentage on smart meters across matrix positions, based on the numbers of smart meters in our smart meter forecast (as there was insufficient data in the theft dataset for this to be used as the basis of the allocation).

We remain of the view this is a fairer and more equitable approach.

Compared to the previous AUGE's methodology, we estimate that:

- ▶ the different basis of determining Class 3 and Class 4 theft accounts for 40.7% of the allocation difference; and
- ▶ differentiating between smart and traditional meters accounts for 5.6% of the allocation difference.

These differences are almost all confined to Class 3 and 4/EUC Band 1 and 2 matrix positions.

### References used in theft assumptions

Theft of Electricity (Illegal Abstraction) - Terry Keenan BSc., MSc., C.Eng., FIEE – 2004 [Theft of Electricity \(Illegal Abstraction\)](#)

Theft Detection and Smart Metering Practices and Expectations in the Netherlands - P. Kadurek ; J. Blom ; J.F.G. Cobben ; W.L. King – 2010 [Theft Detection and Smart Metering Practices and Expectations in the Netherlands](#)

Electricity Theft Detection Using Smart Meter Data - S. Sahoo ; D. Nikovski ; T. Muso ; K. Tsuru – 2015 [Electricity Theft Detection Using Smart Meter Data](#)

Electricity Theft: A Comparative Analysis - T.B. Smith - 2004 [Electricity Theft: A Comparative Analysis](#)

Theft of Electricity and Gas – Discussion Document - Ofgem - 2004 [Theft of Electricity and Gas - Discussion Document](#)

Water: Theft - Question for the Department for Environment, Food and Rural Affairs - Lord Kennedy of Southwark; Lord Gardiner of Kimble - 2018 [Water: Theft - Question for the Department for Environment, Food and Rural Affairs](#)

What is the Cost of Retail Crime in the UK? – Centre for Retail Research – 2019 [What is the Cost of Retail Crime in the UK?](#)

National Retail Security Survey 2020 – National Retail Federation – 2020 [National Retail Security Survey 2020](#)



## AUGE Response to the AUG Statement Consultation for Gas Year 2021-2022

Respondent	Points Raised
Anonymous Respondent	We believe that the differencing model was not accurate and is likely to have been incorrect since AUG Statement inception. We are pleased to see this modelling evolve but recognise further development might be required in future years.
Anonymous Respondent	The assumption deriving the 1.5% is logical, based on the comparators and ranges outlined in the draft Statement.
Anonymous Respondent	We strongly agree with the view that previous estimates of total UIG were too low and expect to see this supported as we get towards close out.
British Gas	It seems premature to assume that smart meters are less likely to have theft undertaken on them.
British Gas	Supplier capability in using smart data to find theft is still in development. As the smart portfolio is relatively new, it could be years before we truly understand how smart meters impact theft.
British Gas	Smart meters are as easily tampered as legacy meters, although index tamperers are not possible.
British Gas	The level of "advanced" theft included (10.98%) is highly likely to be understated and should be reviewed.
British Gas	Weighting for EUC01PI non-domestic prepayment sub-band is based on a small base volume of 15 GWh AQ - which is possibly miscategorised. It would be a suitable smoothing approach to align this category with non-domestic credit (EUC01NI), in line with the approach taken with EUC Band 02 (02PI and 02NI).
ICoSS	The AUG uses subjective and unsubstantiated assumptions to generate its UIG forecast attributed to theft.
ICoSS	The theft calculation methodology used by the AUG has been considered and dismissed by Ofgem and Shippers in the past.
ICoSS	The information used to assess downstream theft does not distinguish between downstream and midstream theft sources.
ICoSS	Total theft UIG is based on an arbitrary percentage rather than derived using a data-driven calculation. This is counter to the AUG's terms of reference.
ICoSS	The sources of the information used for the assumptions about water and electricity theft have not been provided. This creates a lack of transparency.
ICoSS	The theft split calculation should be updated to recognise AMR sites as a separate population.
Shell Energy	The use of comparison with other industries to estimate theft is intuitive, and it provides a more realistic view on consumer propensity to steal.



Total Gas & Power	The draft Statement suggests that 1 in 7 small businesses is stealing all of their gas. Is this true?
Total Gas & Power	Can the AUGE show the varying materiality in impact of the different elements associated with theft UIG?
Total Gas & Power	Has theft at dataloggers has been separately assessed?
Total Gas & Power	SPC1 theft allocation is unsubstantiated.
Utilita	The AUGE has used a credit and prepay split that is different to what TOG and TRAS use. This means that the calculation for splitting undetected theft is erroneous.
Utilita	The AUGE has not justified the allocation of relatively more theft UIG to EUC band 1PD.
Utilita	The AUGE has (probably) allocated undetected theft across EUC bands based on an inaccurate smart meter forecast.
Utilita	Why are different rates of theft allocation used for PCs 1, 2 and 3?
Utilita	The draft Statement output for theft UIG contradicts our own findings and TRAS reporting.
Utility Warehouse	The AUGE assumes too much theft from smart meters. This impacts the economic signals necessary to the success of the SMIP.
Utility Warehouse	AUGE should provide a more detailed explanation of the theft Weighting Factors.

### AUGE Consideration

#### Impact of smart meters on undetected theft

Respondents took opposing views about the impact of smart meters on undetected theft. We note that our estimate of levels of theft from smart meters has been derived from TOG and TRAS data, validated using other relevant data provided to us by the CDSP. We think this is currently the most authoritative data available but expect that more data sources will be available in future years, with the establishment of the Retail Energy Code, as suppliers become accustomed to the alerts provided by smart meters, and as Government seeks to further validate its smart metering benefits case.

#### Separate consideration of dataloggers and AMR

Theft at Supply Meter Points with dataloggers installed has not been contemplated as part of our determinations, but we will consider this as part of our theft investigations next year. However, we note that the situation with AMR meters is not like the situation with smart meters in that AMR meters do not form a highly variable proportion of any matrix positions.





### **Impact of AUGS on market incentives**

As noted under Question 1, the purpose of the Weighting Factors is to apportion UIG, not to influence the commercial incentives on market participants. Our Terms of Reference are to solely produce Weighting Factors that allocate UIG equitably.

### **Use of comparators from other industries**

We note the comment by one respondent that our methodology for forecasting UIG attributable to theft has previously been considered and dismissed by industry. We are aware of several modifications that historically have sought to define an appropriate theft allocation. These were all rejected before the existence of the AUGE, largely because they proposed no enduring solution to the problem and lacked an explicit or traceable methodology.

The AUGE is now in place, and guidance from Ofgem's impact assessment at the time of UNC Modification 0229 suggested that allocation of UIG should be based on a replicable methodology, using publicly available data sampled over a consistent timeframe and with a view to updating the distribution of Unidentified Gas at fixed constant intervals. This also exactly describes the approach required by the AUGE Framework, which we have followed and described within the draft Statement.

### **Theft at small businesses**

The draft Statement does not make any claim about the number of small businesses that are stealing gas. The 1 in 7 figure stated by the respondent is only one possible inference of what the data tells us. AQs at small business Supply Meter Points vary greatly within a far broader band than domestic Supply Meter Points. The figures we have shown relate to the proportion of overall small business consumption rather than the proportion of small businesses themselves. This estimated proportion is based on the extrapolation of data from the master dataset in accordance with our Polluter Pays principle. This is done at an energy level rather than a Supply Meter Point level.

### **Combination of prepay and credit populations**

We agree with the suggestion of combining EUC01PI non-domestic prepayment with EUC01NI non-domestic credit. This is consistent with our approach for EUC Band 02 02PI and 02NI and is a reasonable approach given the limitations of extrapolating the theft forecast from a small number of Supply Meter Points. This adjustment will be reflected in the final Statement.

### **Prepayment TOG/TRAS data vs CDSP data**

While our split between credit and prepayment meters for the purposes of estimating theft may differ from those outlined in TOG and TRAS, our determination is based on data provided by the CDSP, which is the basis of settlements, and which we consider definitive for the purposes of our calculations. We welcome Shippers' continued efforts to update the CDSP where they are aware of inaccuracies and anomalies on their database, as it will result in the improved accuracy of our forecasts.

We have provided a general assessment of the usefulness of TOG/TRAS datasets in the section above.

### **Midstream vs downstream theft**

We can clarify that the information we have used to assess downstream theft does not distinguish between downstream and midstream theft sources, but we have removed the amount associated



with transporter theft to reach our final determination. As this forms part of LDZ Shrinkage and is outside our scope as AUGÉ, we are unable to comment further on this area.

### Data provision and sharing

One respondent requested that we illustrate the varying materiality in impact of the different elements associated with UIG. We note that we have taken actions from the AUG Sub-Committee to provide further detail on our assumptions and judgements in relation to theft. We will give an update on this at the AUG Sub-Committee meeting scheduled for 12th February.

We have no objections in principle in sharing any data or calculation results. However, we note that some of the data is confidential and so cannot be shared without the permission of the source. We also note that, in conjunction with Xoserve, we would need to determine the service line and arrangements under which any such additional works were progressed.

AUGE Action	
2a	We will provide further detail on our assumptions and judgements in relation to theft. We will give an update on this at the AUG Sub-Committee meeting scheduled for 12th February.
2b	We will consider UIG caused by dataloggers as part of our theft investigations next year.
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.
2d	We will update the draft Statement to reflect a revised view on the proportion of theft attributable to organised crime.
2e	We will combine EUC01PI non-domestic prepayment with EUC01NI non-domestic credit for reflection in the AUG Table for Gas Year 2021-2022.

040 – Consumption Meter Errors	
Respondent	Points Raised
Anonymous Respondent	The impact of flow levels on Consumption Meter Errors should be considered in the future.
ICoSS	The AUGÉ's identification and analysis of Consumption Meter errors is a positive development.
ICoSS	The use of in-service test data from OPSS is a positive step and this should continue for future years.



AUGE Consideration

We welcome the positive response to our work in this area. We will add the potential impact of flow rates on Consumption Meter errors to our list of areas to be considered for investigation in future years.

AUGE Action

2f	We will consider the potential impact of flow rates on Consumption Meter errors for subsequent years.
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050 – LDZ Meter Errors

Respondent	Points Raised
ICoSS	We agree that there is unlikely to be a significant amount of permanent UIG from this source.
Scottish Power	We disagree that it is possible to infer that there is an effective assurance regime in place from a static trend in Meter Error Reporting.

AUGE Consideration

We note the relatively low contribution that LDZ Meter Errors make to UIG but will revisit the data for this Contributor each year, given the potential material impact of a large and sustained meter error at LDZ level.

It was not our intention to infer that LDZ Meter Error reporting was stable thanks to a robust assurance regime. We will adjust the wording in the AUG Statement to prevent this inference from being drawn. We note the important point that the rate of LDZ Meter errors detected in recent years has shown little variation, and this is the reason that we assume a similar and stable future trend for this Contributor.

AUGE Action

2g	We will update the relevant section in the AUG Statement to reflect a neutral position to Meter Error Reporting and existing assurance processes.
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090 – No Read at the Line in the Sand

Respondent	Points Raised
ICoSS	The No Read at the Line in the Sand analysis fails to account for a peak of read submissions occurring as the Line in the Sand approaches.
ICoSS	The dataset used for analysis should be thoroughly analysed to verify that it is of sufficient quality for use in the UIG calculations.



ICoSS	The AUGE’s approach is flawed in that it is based on a short period of time where the reconciliation rate will be relatively low.
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**AUGE Consideration**

**Peak of read submission prior to Line in the Sand**

We have considered the claim that Shippers materially increase their read submission activity for sites where the Line in the Sand is approaching. We have revisited our data to corroborate this suggested effect.

Following our review of the data available, we can see no strong evidence that the proximity of the Line in the Sand increases read submissions for affected Supply Meter Points. We have decided therefore to make no adjustments to our assumptions following this further investigation.

**Quality of dataset**

We note one respondent’s concern about the quality of the dataset used for this Contributor. We have already validated and updated our dataset since industry discussions were held earlier in the draft Statement creation process, and we believe it is now sufficiently robust to support the conclusions we have drawn. We can also confirm that the stated flaw in our approach was identified and corrected for earlier in the process and is not reflected in the output of the draft Statement.

**Other considerations**

As part of our ongoing data review process, we have identified an additional rejection code used to calculate potential error, the ‘outside inner tolerance’ code. This will be considered for inclusion in next year’s dataset.

**AUGE Action**

2h	We will include the ‘outside inner tolerance’ code in data requests for subsequent forecast years.
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**Question 3**

Our results for the six contributors not under detailed investigation are contained within Section 6 (“Other Contributors”) of the draft AUG Statement. For each of these contributors, please highlight any assumptions, methodology aspects, calculations and results with which you disagree and which you believe materially affect the Weighting Factors contained within the AUG Table, providing your rationale and, wherever possible, supporting evidence.

**070 – Average Pressure Assumption**

Respondent	Points Raised
ICoSS	The AUGE should use an adjusted value for average altitude and pressure reduction per metre of altitude gain.

## AUGE Response to the AUG Statement Consultation for Gas Year 2021-2022

ICoSS	Question the proportion by AQ of volume converters in Class 1 EUC 09, communicated as 76.35%. We would expect this to be at or near 100%. Should the former figure be incorrect, too much UIG is being attributed to these sites in the draft Statement.
ICoSS	The proposed approach is at a more granular level than was used for previous AUGE analyses (by LDZ and matrix position), which is considered an enhancement, subject to data quality at this level.

### AUGE Consideration

#### Adjusted altitude value

We believe our methodology in relation to this Contributor is robust, being based on the universal gas constant and the ideal gas law. The figure used to reflect altitude was that provided to us, although we acknowledge that there is a more accurate figure available. We thank the respondent for the additional information and we will update our calculation accordingly.

#### Proportion of volume converters

With regard to the population of volume converters in Class 1, EUC 09, the 76.35% figure is largely the result of what appears to be low numbers of converters in one LDZ. We are currently verifying the data received from the CDSP to establish whether this figure is correct and, depending on the outcome of the verification, will update the AUG Statement if required.

### AUGE Action

3a	We will change our calculation based on the updated altitude information.
3b	We will re-validate data received from the CDSP in relation to volume converter installation levels within the LDZ in question and, depending on the outcome of the verification, will update the AUG Statement if required.

## 080 – Average Temperature Assumption

Respondent	Points Raised
Anonymous Respondent	The average temperature difference is surprising. Having reviewed the methodology outlined, we believe it seems sensible and will not challenge the outcome.
ICoSS	We question the proportion by AQ of volume converters in Class 1 EUC 09, communicated as 76.35%. We would expect this to be at or near 100%. Should the former figure be incorrect, too much UIG is being attributed to these sites in the draft Statement.

### AUGE Consideration

The low overall incidence of volume converters in Class 1, EUC 09 is attributable to low installation levels within one particular LDZ. We are currently verifying the data received from the CDSP to establish whether this figure is correct.



AUGE Action

3c	We will re-validate the data relating to volume converter installation levels and, depending on the outcome of the verification, will update the AUG Statement if required.
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100 – Incorrect Correction Factors

Respondent	Points Raised
ICoSS	The methodology described in the draft Statement appears to be suitable. The increase in UIG from previous estimates is likely due to an increase in the estimated consumption and any differences in the proportion of the consumption which is subject to volume conversion errors.

AUGE Consideration

We welcome the support provided for the methodology used for this Contributor. We agree that any differences to last year’s figure derive from our consumption estimate in the target Gas Year and differences in the proportion of that consumption subject to volume conversion errors, although we consider our conclusions to be robust.

AUGE Action

None.

020 – Unregistered Sites

Respondent	Points Raised
ICoSS	The UIG from unregistered sites is over-stated because the AUGE has assumed all unregistered sites are consuming gas, large erroneous AQs have not been corrected, and Requested AQs have been used an indicator of actual site consumption.
ICoSS	The unregistered mandatory DM site that the AUGE identified should be excluded from UIG calculations because it will not remain unregistered for long.

AUGE Consideration

We have reviewed responses received and consider that the amount of UIG attributable to Unregistered Sites is reasonable and allocated in an equitable way.

We have not assumed that all unregistered sites are consuming gas and our calculations account for this. This is described in Step 6 of our Unregistered Sites calculation, where these Supply Meter Points are described as “legitimate unregistered sites” (i.e. with no gas being consumed).

With regard to erroneously large AQs, our overarching approach has been to treat the datasets provided to us by the CDSP as a definitive source. These datasets are sourced from the industry’s





central database used for registration and settlement. However, in all cases, we have used our skill and experience to validate these datasets to ensure they form a robust basis for our UIG forecast.

Our validation of the unregistered sites data identified no Supply Meter Points that we felt should be excluded from the calculations because of erroneously large AQ values.

We are also comfortable that Requested AQs will generally form a sound basis for estimation of likely future gas consumption. However, we note the respondent’s point. We did examine the assessment carried out by the previous AUGGE and determined that this issue was of low materiality. We have recorded the respondent’s point to consider further next year as part of our assessment process. In doing so, any methodology change would also need to be considered for the Shipperless Sites Contributor.

We are happy to consider for future years whether the use of newly available AQ data for unregistered sites that have since been registered would improve the accuracy of the UIG forecast.

**Treatment of unregistered Daily Metered sites**

We acknowledge that the existence of unregistered Supply Meter Points in Class 1, EUC Band 09 is surprising. However, the specific Supply Meter Point that the respondent refers to did contribute to UIG for a period of time. We therefore disagree that such Supply Meter Points should be dismissed as anomalous and so ignored in our UIG calculation.

There is no industry process to prevent the existence of unregistered DM Supply Meter Points. Our investigations have identified one such Supply Meter Point that has historically contributed to UIG, and several others that have the potential to do so in the Target Gas Year 2021-2022. Therefore, it is reasonable for our forecast to reflect the probability of new unregistered DM Supply Meter Points being created.

We welcome Shippers’ continued efforts to update the CDSP where they are aware of inaccuracies and anomalies on their database. This will make data validation easier and improve the accuracy of future UIG forecasts.

AUGE Action	
3d	We will consider the use of newly available AQ data for unregistered Supply Meter Points that have since been registered for subsequent years.
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.

025 – Shipperless Sites	
Respondent	Points Raised
ICoSS	Shipperless sites awaiting their GSR visit have been omitted from the AUGGE’s analysis.

AUGE Consideration

We thank the respondent for their suggestion. We do not believe the omission of these sites will have had a sufficiently material impact to justify further investigation at this stage, but we will consider the value of including these sites in our datasets and analysis for subsequent years.

AUGE Action

3f We will consider the potential inclusion of Shipperless sites awaiting their GSR visit in our data and analysis for subsequent years.

060 – IGT Shrinkage

Respondent	Points Raised
ICoSS	The AUGE was unable to obtain up-to-date figures for total mains length from the IGTs and so should use the previous year's values for average mains length instead.
ICoSS	The total CSEP Shrinkage figure should be split between market sectors using CSEP throughput only.
ICoSS	For this category of UIG, a similar method to the previous one is proposed. It has been modified to link UIG from this source to total CSEP population rather than the annual estimate of Shrinkage calculated by the network using the Shrinkage and Leakage Model. This is a positive development.

AUGE Consideration

We note the constructive points made about our methodology for this Contributor. We have updated inputs to our calculation as suggested by one respondent.

Although the IGT mains length values we used came from an expert source within an IGT Trade Body, they were provided only through informal discussion without full backing data. We therefore agree that it would be justified to re-use the values applied in previous years. This figure of 8.6m was derived previously using data from DNOs and will be used instead of our initial figure of 8m average IGT mains length. Adjustments to the forecast have now been made to reflect this change. This resulted in around 1.2 GWh of additional UIG. We will again request an up-to-date dataset directly from IGTs next year.

We disagree that the IGT Shrinkage figure should be allocated differently to our methodology. Supply Meter Points located on IGT networks pay towards the cost of shrinkage on DNO networks, and so we considered it a more equitable approach to split the UIG attributable to this Contributor across the market as a whole, particularly as the IGT Supply Meter Points are not themselves the polluter.



AUGE Action	
3g	We will recalculate our assumptions in relation to this Contributor on the basis of a mains length of 8.6m, in line with the suggestion made by the respondent.
3h	We will try again to obtain mains length data from the IGTs next year for consideration in estimating IGT Shrinkage UIG.

**Question 4**

If there is any other relevant matter in relation to this consultation that you would like to raise which you believe materially affects the Weighting Factors contained within the AUG Table, please explain this and provide your rationale and, wherever possible, supporting evidence.

Respondent	Points Raised
ICoSS	In the past, all data and calculations requested by the industry were provided on UK Link Secure Docs. It is important for the industry to be able to scrutinise the UIG calculations, and it would appear to be a backward step in terms of the transparency of the AUG process for this to no longer be possible for all areas of the analysis.
Scottish Power	There are a number of root causes of UIG that have not yet been adequately addressed. In particular, AUGE should include analysis of the potential UIG attracted from Meter Bypass and Consumption Adjustment errors in their work plan for 2022/23 factors.

**AUGE Consideration**

We have no objections in principle in sharing any data or calculation results. However, we note that some of the data is confidential and so cannot be shared without the permission of the source. We also note that, in conjunction with Xoserve, we would need to determine the service line and arrangements under which any such additional works were progressed.

We welcome all suggestions for additional areas of investigation. We have noted for consideration next year two additional potential UIG Contributors from one respondent: UIG caused by Meter Bypass arrangements and UIG attributed to Consumption Adjustment Errors.

**AUGE Action**

4a	We will consider UIG caused by Meter Bypass Arrangements in line with our initial assessment procedure, for subsequent years.
4b	We will consider UIG attracted by Consumption Adjustment Errors in line with our initial assessment procedure, for subsequent years.



### NEXT STEPS

We will present our views described in this document at the AUG Sub-Committee meeting scheduled for 12<sup>th</sup> February. A link to the documentation for that meeting can be found here:

<https://www.gasgovernance.co.uk/aug/120221>

We will then consider feedback provided by stakeholders at that meeting and whether any further amendments to the AUG Statement, additional to those listed in this document, should be made.

Should you require clarification on the consultation, please do not hesitate to contact us at: [auge@engage-consulting.co.uk](mailto:auge@engage-consulting.co.uk).





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