

ALLOCATION OF UNIDENTIFIED GAS

# 2014 Allocation of Unidentified Gas Final Table for 2015/16

Xoserve Ltd

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#### Task and objective:

Provide the final estimate of Unidentified Gas volumes apportioned between the LSP and SSP market sectors and provide a forward estimate of the SAP price

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1	31 <sup>st</sup> December 2014	First issue	Tony Perchard Andy Gordon Mark Lingham	Clive Whitehand	Anthony Gilbert
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## 1 UNIDENTIFIED GAS ESTIMATES

This document provides a set of tables containing the final estimates of permanent Unidentified Gas (UG) calculated using the methods and data described in the 2014 Allocation of Unidentified Gas Statement for 2015/16 [1]. These values have been calculated using the methodology as approved by the UNCC on 2nd September 2014.

The estimates are also provided by LDZ in Appendix A, with each set of LDZ figures split into SSP and LSP market sectors, and also by each category of UG. The Scottish Independents are also included within the figures for SC LDZ, although their contribution to the overall UG figure has been negligible up to this point. These tables will therefore give a full breakdown of UG by source in each LDZ.

An example (unpopulated) table is shown below. The top section shows the breakdown of UG by category, with different columns for the SSP and LSP market sectors. The individual components of the Shipperless (Shipperless PTS, Shipperless SSrP and Without Shipper <12 months) and Unregistered (Shipper Activity, Orphaned, Unregistered < 12 months) categories are shown in grey, with the total for the category in black. The total of the directly measured components is shown, to which the Balancing Factor (i.e. Theft plus Other) is added to give the overall LDZ UG totals for the SSP and LSP sectors, which are shown in bold. All units are GWh. All values represent the permanent component of UG only.

**Table 1 Unidentified Gas Summary (GWh) – Example Table**

	XX LDZ		
	SSP	NDM LSP	DM LSP
iGT CSEPs	0.00	0.00	0.00
Shipperless/Unregistered	0.00	0.00	0.00
- Shipper Activity	0.00	0.00	0.00
- Orphaned	0.00	0.00	0.00
- Unregistered <12 Months	0.00	0.00	0.00
- Shipperless PTS	0.00	0.00	0.00
- Shipperless SSrP	0.00	0.00	0.00
- Without Shipper <12 Months	0.00	0.00	0.00
Meter Errors	0.00	0.00	0.00
Total Directly Measured	0.00	0.00	0.00
Theft + Other	0.00	0.00	0.00
<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

### 1.1 Estimation of SAP price

The estimation of SAP price has been based on the methods used for previous AUG years. Historical SAP price data has been taken from the National Grid industry website from November 2008 to December 14th 2014.

The 2015/16 SAP price is only used to provide a common basis for estimating the overall cost of UG in the coming gas year. In practice the SAP price actually used will be the daily average SAP price over the reconciliation billing period in question. This is described in the TPD section E 10.5 [3].



The following SAP price estimates have been calculated:

- 1) Annual average year on year SAP price based from 2011 onwards extrapolated to 2015/16 (1.72p/kWh) – this is lower than the figure produced for the interim table as data from 2014 can be added fully
- 2) Monthly trend based on data from April 2011 onwards (1.96p/kWh)
- 3) Daily trend based on data from April 2011 onwards (1.88p/kWh)

The average of these methods gave an estimated SAP rate of 1.85p/kWh for the period April 2015-March 2016. In previous years the SAP price has actually turned out slightly lower than these projections (typically ~5% less) and a further adjustment applied. In 2014 there was a significant reduction in SAP price in the first half of the year with an upward trend in recent months. There is also uncertainty with regards oil price which has dropped significantly and may have an impact on gas prices going forward.

DECC publish projected fuel prices across a range of commodities, the latest was published in September 2014[2]. The DECC projections gave a figure of 2.18p/kWh for a central scenario and 1.57 p/kWh for a low scenario.

Taking everything into account we recommend the SAP price to be used for the final rates table for 2015/16 should be 1.85p/kWh with no adjustment for previous years over estimates.

## 1.2 Final AUG Table

The Final AUG table is provided below showing overall permanent UG volumes by market sector and source of UG. Due to rounding error, the sum of the individual values do not always match the total, however, the totals are correct. This applies to the gas volumes, rates shown below and the UG by LDZ summary tables in Appendix A.

**Table 2 Unidentified Gas Volumes for 2015/16**

Unidentified Gas source	Aggregate Quantity of Unidentified Gas/GWh	Unidentified Gas Quantity/GWh		
		Larger DM SPCs	Larger NDM SPCs	Smaller SPCs
iGT CSEPs	487	0	0	487
Shipperless/Unregistered	93	0	69	24
- Shipper Activity	0	0	0	0
- Orphaned	9	0	7	2
- Unregistered <12 Months	0	0	0	0
- Shipperless PTS	4	0	2	1
- Shipperless SSrP	74	0	54	20
- Shipperless <12 Months	6	0	5	1
Meter Errors	21	0	21	0
Balancing Factor (Theft + Other)	5,816	0	1,546	4,270
Total (inc Independents)	6,417	0	1,636	4,781

Using a SAP price of 1.85p/kWh results in the following final rates table. These are calculated using the UG volumes prior to rounding from the above table.

**Table 3 Unidentified Gas Rates 2015/16**

Unidentified Gas source	Aggregate Estimated cost of Unidentified Gas/£M	Unidentified Gas Costs/£M		
		Larger DM SPCs	Larger NDM SPCs	Smaller SPCs
iGT CSEPs	9.01	0.00	0.00	9.01
Shipperless/Unregistered	1.72	0.00	1.28	0.44
- Shipper Activity	0.00	0.00	0.00	0.00
- Orphaned	0.17	0.00	0.14	0.03
- Unregistered <12 Months	0.00	0.00	0.00	0.00
- Shipperless PTS	0.07	0.00	0.05	0.02
- Shipperless SSrP	1.38	0.00	1.00	0.38
- Shipperless <12 Months	0.10	0.00	0.09	0.01
Meter Errors	0.39	0.00	0.39	0.00
Balancing Factor (Theft + Other)	107.59	0.00	28.60	78.99
Total (inc Independents)	118.71	0.00	30.27	88.44

Note that these rates are not the amounts that will actually be levied in practice. The SAP price will be calculated as defined in the TPD section E10.5 [3].

The AUG tables above are in the format provided in previous years by the AUGE. However, a slightly different format is specified in the Uniform Network Code [3], Section E10. Table 4 below provides the final estimates of the permanent component of UG volumes in this alternative format.

**Table 4 Unidentified Gas Volumes for 2015/16 – UNC Format**

Unidentified Gas source	Aggregate Quantity of Unidentified Gas/GWh	Unidentified Gas Quantity/GWh		
		Larger DM SPCs (A)	Larger NDM SPCs (B)	Smaller SPCs (C)
iGT CSEPs	487	0	0	0
Shipperless/Unregistered	93	0	69	-69
- Shipper Activity	0	0	0	0
- Orphaned	9	0	7	-7
- Unregistered <12 Months	0	0	0	0
- Shipperless PTS	4	0	2	-2
- Shipperless SSrP	74	0	54	-54
- Shipperless <12 Months	6	0	5	-5
Meter Errors	21	0	21	-21
<b>Total Directly Measured</b>	601	0	90	-90
Balancing Factor (Theft + Other)	5,816	0	1,546	-1,546
<b>Total</b>	6,417	0	1,636	-1,636

This table contains UG adjustments to the post-RbD market sector totals rather than the value of UG assigned to each market sector. Therefore  $C=-(A+B)$ .

### 1.3 Differences from Interim AUG Table

This section contains details of changes from the interim to the final figures and the reasons for them.

The total permanent UG estimate has risen from 6,060 GWh in the interim figures to 6,417GWh in the final figures, a rise of 357GWh. This rise is almost entirely in the SSP sector, which is responsible for 337GWh of this difference. The remaining rise of 20GWh comes from the NDM LSP sector. Note that in the final figures there is no UG assigned to the DM market sector. The reasons for these changes are due to improvements in the data available as described below.

#### 1. Shipperless Sites

Data regarding the proportion of Shipperless sites that are actually flowing gas (rather than simply being capable of flowing gas) became available for the first time. For all previous analyses, including the production of the interim figures, it was necessary to assume that all Shipperless sites capable of flowing gas were actually doing so due to the lack of this information. This improvement necessarily reduces the Shipperless UG estimate for both the training and forecast periods. Note that for the training period, any such reduction in the level of Shipperless UG leads to an equal and opposite increase in the magnitude of the Balancing Factor.



## **2. Unregistered Sites**

Additional post-Mod 410A snapshot data was available for the production of the final figures, allowing the effects of the Mod to be estimated more accurately than was previously possible.

## **3. iGT CSEPs**

Additional CSEP data snapshots were also available. This allowed the CSEP UG trend over time to be calculated more robustly, leading to extrapolation both back to the training period and forward to the forecast period being more accurate. In addition, a new dataset regarding Unregistered sites on known CSEPs was made available.

## **4. DM Consumer Meter Over-Read**

The effect of DM consumer meters over-reading due to operating at the highest end of their range has been included in calculations due to the supply of new data that the AUGÉ considered robust enough to warrant inclusion in the figures. This results in an overall increase in UG for the training period of 71GWh.

## **5. Manual verification of sites failing the 5×AQ validation tests**

At the AUGÉ information meeting on 10 December 2014, the AUGÉ agreed to carry out manual investigations of sites failing the automated 5×AQ test in the consumption method. The purpose of this was to ascertain whether there were any cases where this was due to the AQ no longer being representative of the true consumption at the site, and hence causing the calculated consumption from the site to be wrongly excluded from the analysis. This process allowed manual data updates to be made in order to allow such sites to validate successfully. The AUGÉ's investigation in this area led to calculated consumption from 38 additional sites being included, which resulted in a reduction in the calculated total UG of 100GWh. Note that the magnitude of this figure is considerably lower than the estimate put forward by Phidex in their document of August 2014. This is due to the improvements in the 2014 meter read and consumption datasets over the 2013 versions used by Phidex for their analysis.

## **6. Updated meter correction data**

Additional meter correction data became available after the publication of the interim figures, covering the period April-Oct 2014. This has reduced the total UG estimate by approximately 20GWh.

## **7. Results of Xoserve investigation into Unregistered DM sites**

Results from Xoserve's detailed investigations into the three sites that contributed UG from the DM market sector in the interim figures became available. These resulted in all three sites being removed from the analysis for the 2015/16 forecast period, for reasons given in the record of the AUGÉ meeting held on 10 December 2014. Therefore DM UG is zero in the final UG estimates.

These areas have a combined effect on the UG figures for the training period and the forecast period as shown in the tables 5 and 6 below.

For the training period, Shipperless UG has reduced by 230GWh and iGT CSEP UG has reduced by 129GWh. This has a combined effect of increasing the balancing factor by 359GWh. The total UG has

also changed due to the effects of DM consumer meter over-reads, the manual 5×AQ failure data corrections and the updated meter correction data. The overall effect is that the balancing factor has increased by 311GWh.

**Table 5 Change in UG for Training Period**

<b>Source</b>	<b>Effect</b>
Shipperless (PTS, SSrP, No Shipper <12 Months)	-230 GWh
SSP element	-61 GWh
LSP element	-169 GWh
iGT CSEPs	-129 GWh
Combined Effect on Balancing Factor	+359 GWh
DM Consumer Meter Over-Read	+71 GWh
Manual 5×AQ Failure Data Corrections	-100 GWh
Updated Meter Correction Data	-19 GWh
<b>Total Effect on Balancing Factor</b>	<b>+311 GWh</b>

For the forecast year, the Shipperless UG has decreased by 153GWh and there has been an increase in the iGT CSEPs UG of 199GWh. Taken together with the increase in the balancing factor, there is an overall increase in the permanent UG estimate for the forecast year of 357GWh.

**Table 6 Change in UG for Forecast Year (2015/16)**

<b>Source</b>	<b>Effect</b>
Shipperless (PTS, SSrP, No Shipper <12 Months)	-153 GWh
SSP element	-41 GWh
LSP element	-112 GWh
iGT CSEPs (SSP only)	+199 GWh
Change in Balancing Factor (as above)	+311 GWh
<b>Total Effect on Permanent UG Estimate for Forecast Year</b>	<b>+357 GWh</b>



## 2 CONTACT DETAILS

Questions can be raised with the AUGE at [AUGE.software@dnvgl.com](mailto:AUGE.software@dnvgl.com)



### 3 REFERENCES

- [1] 2014 Allocation of Unidentified Gas Statement for 2015/16, 16th September 2014, Report Number 15118 Rev. 3, DNV GL
- [2] DECC Fossil Fuel Price Projections, URN 14D/351, September 2014, DECC
- [3] Uniform Network Code - Transportation Principal Document

## GLOSSARY

AUGE	Allocation of Unidentified Gas Expert
AUGS	Allocation of Unidentified Gas Statement
Balancing Factor	An aggregate of the combined unidentified gas of various items calculated by subtraction. This includes theft, errors in the Shrinkage estimate, open bypass valves, meters "Passing Unregistered Gas", unknown sites, and additional Common Cause variation.
DECC	Department of Energy and Climate Change
DM	Daily Metered
iGT	Independent Gas Transporter
LSP	Larger Supply Point
LDZ	Local Distribution Zone
NBP	National Balancing Point
NDM	Non-Daily Metered
PTS	Passed To Shipper
SAP	System Average Price
SPC	Supply Point Component
SSP	Smaller Supply Point
SSrP	Shipper Specific rePort
TPD	Transportation Principal Document
UG	Unidentified Gas
UNC	Uniform Network Code

## APPENDIX A UNIDENTIFIED GAS BY LDZ

This appendix contains a breakdown of UG by LDZ. Note that the LDZ level UG does not sum exactly to the total national UG in the final tables (Table 2 and Table 4). This is because a correction of ~70GWh has been applied at the national level to account for DM meter over-reads. This correction has not been apportioned across the LDZs. The LDZ values are not used to allocate UG costs and are provided here solely for information.

**Table 7 Unidentified Gas Summary (GWh) – EA, EM, NE, NO AND NT**

	EA		EM		NE		NO		NT	
	SSP	LSP	SSP	LSP	SSP	LSP	SSP	LSP	SSP	LSP
iGT CSEPs	5.41	0.00	151.58	0.00	6.09	0.00	146.05	0.00	12.57	0.00
Shipperless/Unregistered	1.75	5.09	2.01	10.17	1.26	7.39	0.54	2.88	4.49	9.18
- Shipper Activity	0.00	0.02	0.00	0.01	0.00	0.03	0.00	0.02	0.00	0.03
- Orphaned	0.12	0.75	0.13	0.60	0.07	0.53	0.07	0.31	0.32	1.54
- Unregistered <12 Months	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
- Shipperless PTS	0.12	0.15	0.10	0.07	0.05	0.19	0.05	0.14	0.19	0.26
- Shipperless SSrP	1.47	4.03	1.71	9.37	1.09	4.45	0.40	2.35	3.87	6.90
- Shipperless <12 Months	0.04	0.14	0.08	0.11	0.05	2.18	0.02	0.06	0.11	0.45
Meter Errors	0.00	1.36	0.00	2.56	0.00	1.39	0.00	1.55	0.00	2.60
Total Directly Measured	7.17	6.45	153.59	12.73	7.34	8.78	146.59	4.43	17.06	11.78
Balancing Factor (Theft + Other)	381.12	124.13	305.37	103.88	537.53	184.57	292.57	94.93	441.80	188.76
Total Permanent UG	388.28	130.58	458.97	116.61	544.88	193.34	439.17	99.36	458.87	200.54

**Table 8 Unidentified Gas Summary (GWh) – NW, SC, SE, SO and SW**

	NW		SC		SE		SO		SW	
	SSP	LSP	SSP	LSP	SSP	LSP	SSP	LSP	SSP	LSP
IGT CSEPs	13.49	0.00	35.88	0.00	32.46	0.00	21.18	0.00	29.65	0.00
Shipperless/Unregistered	3.04	5.57	1.03	3.78	4.73	6.92	1.50	9.88	0.66	1.40
- Shipper Activity	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
- Orphaned	0.21	0.88	0.14	0.40	0.19	0.72	0.06	0.56	0.08	0.38
- Unregistered <12 Months	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
- Shipperless PTS	0.20	0.20	0.09	0.23	0.10	0.19	0.06	0.23	0.04	0.04
- Shipperless SSrP	2.51	4.15	0.78	1.74	4.37	5.91	1.35	9.08	0.50	0.96
- Shipperless <12 Months	0.13	0.33	0.02	1.40	0.07	0.10	0.03	0.01	0.04	0.02
Meter Errors	0.00	0.43	0.00	2.54	0.00	2.28	0.00	1.74	0.00	1.71
Total Directly Measured	16.53	6.01	36.91	6.32	37.19	9.20	22.68	11.62	30.31	3.11
Balancing Factor (Theft + Other)	588.50	191.78	308.39	118.02	160.98	41.50	418.10	145.26	248.24	83.66
Total Permanent UG	605.03	197.78	345.30	124.34	198.18	50.69	440.77	156.88	278.56	86.77

**Table 9 Unidentified Gas Summary (GWh) – WM, WN and WS**

	WM		WN		WS	
	SSP	LSP	SSP	LSP	SSP	LSP
iGT CSEPs	17.00	0.00	10.35	0.00	5.13	0.00
Shipperless/Unregistered	1.85	5.84	0.23	0.13	0.63	0.91
- Shipper Activity	0.00	0.00	0.00	0.00	0.00	0.00
- Orphaned	0.12	0.53	0.01	0.05	0.04	0.15
- Unregistered <12 Months	0.00	0.00	0.00	0.00	0.00	0.00
- Shipperless PTS	0.11	0.70	0.01	0.03	0.03	0.03
- Shipperless SSrP	1.57	4.43	0.20	0.03	0.54	0.74
- Shipperless <12 Months	0.05	0.18	0.00	0.02	0.02	0.00
Meter Errors	0.00	2.29	0.00	0.27	0.00	0.58
Total Directly Measured	18.85	8.13	10.58	0.39	5.76	1.49
Balancing Factor (Theft + Other)	232.62	86.40	66.21	26.29	288.51	85.89
Total Permanent UG	251.47	94.53	76.79	26.69	294.27	87.39





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