

AUG Sub-committee of UNCC

Proposed AUGS Walkthrough

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10 January 2020

Agenda

- Meeting Purpose
- Project Overview
- Project Status
- Analysis Summary and Methodology changes from previous year
- Methodology Overview
 - Overall Unidentified Gas estimation
 - EUC/Product split
 - Conversion to factors
 - Directly estimated Unidentified Gas components
 - Balancing Factor
 - UIG factors
- Modifications & Industry updates
- Innovation
- Next Steps
- AOB

Meeting Purpose

- AUG Expert to update AUG Sub-Committee on
 - Overall project status
 - Findings from analysis work during 2019/20 AUG year
 - Updates to methodology
 - Latest view of UIG Factors

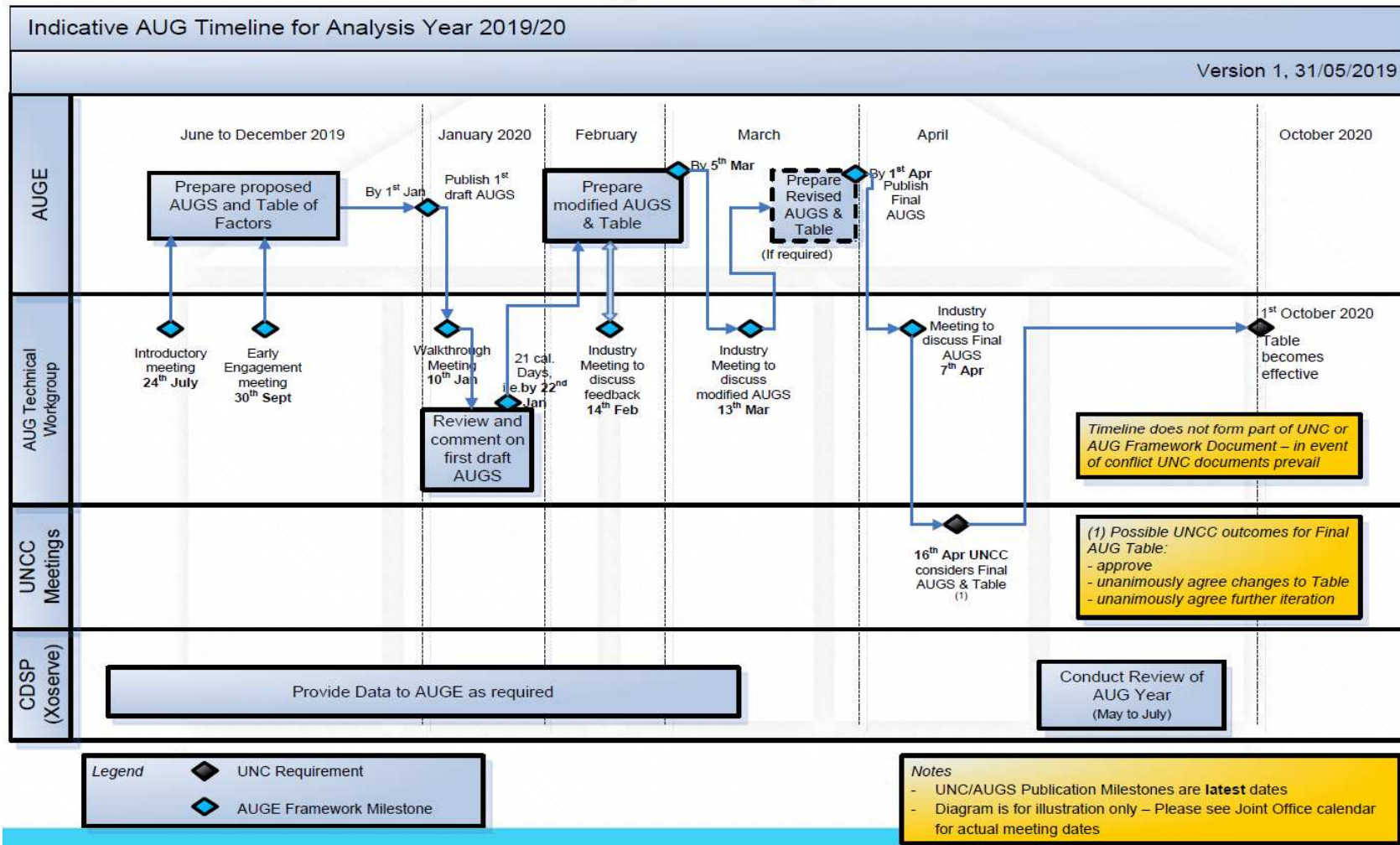
- Prepare AUG Sub-Committee for consultation period
 - Early opportunity to raise questions & seek clarification
 - Prompt discussion

Project Overview

- AUG Expert appointed July 2016
 - Develop a methodology to calculate Weighting Factors to apportion UIG by EUC/Product Class
 - Populate table of Weighting Factors to apportion UIG by EUC/Product Class

- Mod639R - Review of AUG Framework and Arrangements
 - New Timeline
 - Generic Terms of Reference

Project Overview



Project Status

- Overall **ON TARGET**
 - Proposed AUGS published 24 Dec

- Data Update
 - Resolved
 - Additional 13m+ meter reads with NULL LDZ field
 - Corrected meter reads provided for meters with Volume Converters
 - Outstanding
 - TRAS Lead data
 - Offline adjustments (workaround required to apportion between gas years)
 - Unknown (rejected) IGT CSEPs
 - One response from IGT confirming data available

Project Status

- UIG Topic Status
 - New Topics identified and assessed
 - Analysis completed for all but 4 Topics (35, 55, 65 & 66)
 - Awaiting additional information/data

- Other Activities
 - Joint Theft Workgroup (Mod0677R)
 - LDZ level UIG factors assessment
 - Paper published
 - AUG sub-committee telecon

Analysis Summary

- Theft Analysis (Topic 8)
 - Analysis complete based on updated Outcome file data
 - Methodology Updated
 - New method for estimating level of fiscal theft
 - All valve tampers on ETM now assumed to be fiscal theft
 - Dedicated fiscal theft tamper code will be available in future
 - TIG agreed in principle that full Leads data could be released for assessment
 - AUGÉ to formally request data
 - Assess fitness for purpose and share results with industry

Analysis Summary

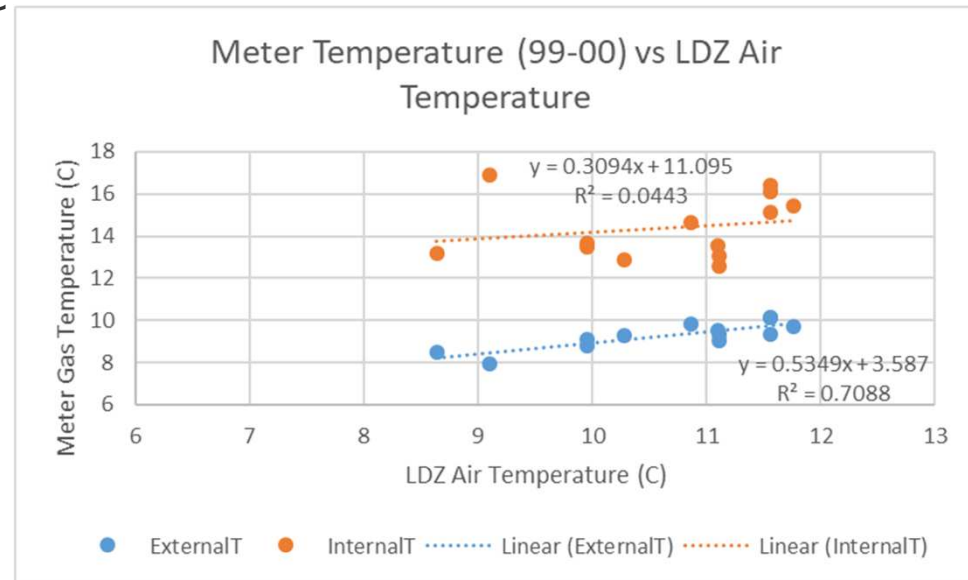
- Use of Static Correction Factors (Topic 25)
 - Proposed approach document published on JoT
 - No feedback received
 - Analysis complete and documented in Proposed AUGS
 - Temperature related UIG now included
 - Pressure related UIG now calculated at LDZ level

Analysis Summary – Gas Temperature

- Metered Gas Temperature Data Obtained and Analysed
 - Domestic Meter Temperature Survey (DMTS)
 - 2 Summary Reports (1999 and 2000)
 - Measured Temperatures by LDZ and Meter Location based on 3,083 valid measurements (5,900 meters installed)
 - 3 Sets of Temperatures
 - ‘1999-2000 Common Set’ most appropriate
 - Temperature measured over 13 months
 - I&C Temperature Study (ICTS)
 - Summary Report in 2000
 - Gas Temperatures by LDZ (not meter location) for ~7,500 daily read meters
 - Temperatures inferred from Corrected and Uncorrected reads
 - Sample included DM, Large I&C and Small I&C
 - Temperature measured over 4 Gas Years

Analysis Summary – Gas Temperature

- Domestic Meter Temperature Survey (DMTS)
 - Good relationship between Gas Temperature in External Meters & Air Temperature
 - Insufficient number of meters to separate unheated spaces – included within internal
 - Impact of using 13 months rather than 12 months to estimate Flow weighted Average Temperature is negligible



Analysis Summary – Gas Temperature

- Domestic Meter Temperature Survey (DMTS)
 - Sample sizes smaller for Internal meters (larger Temperature uncertainty)
 - Lab Tests will provide additional useful information/understanding
 - Propose using DMTS temperatures for EUC01B allowing for meter location

LDZ	Meter Location	FWAGT	Standard Deviation	Sample Size	Error (±)
EA	External	9.37	1.31	170	0.2
	Internal	15.12	4.1	34	1.38
EM	External	9.11	1.57	236	0.2
	Internal	13.7	3.29	112	0.61
NE	External	8.79	1.27	97	0.25
	Internal	13.47	2.64	54	0.7
NO	External	8.5	1.33	97	0.26
	Internal	13.19	2.98	27	1.13
NT	External	10.13	1.62	173	0.24
	Internal	16.43	3.48	236	0.44
NW	External	9.01	1.23	296	0.14
	Internal	13.07	2.87	230	0.37
SC	External	7.95	1.12	215	0.15
	Internal	16.92	3.98	58	1.02

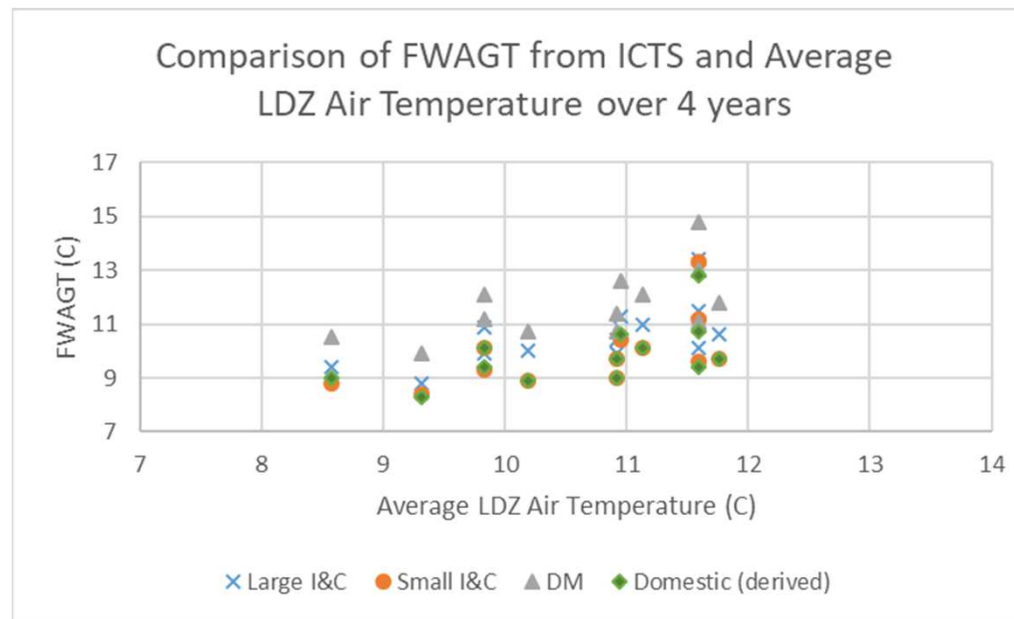
Analysis Summary – Gas Temperature

- I&C Temperature Study (ICTS)
 - No Meter Location split
 - Split by DM, Large I&C, Small I&C
 - ICTS derived Domestic Temperatures for validation against DMTS

LDZ	Domestic (derived)	Small I&C	Large I&C	DM
EA	9.40	9.60	10.10	11.10
EM	10.10	10.10	10.90	12.10
NE	9.40	9.30	9.90	11.20
NO	9.00	8.80	9.40	10.50
NT	12.80	13.30	13.40	14.80
NW	9.70	9.70	10.40	11.40
SC	8.30	8.40	8.80	9.90
SE	10.70	11.20	11.50	13.00
SO	9.70	9.70	10.60	11.80
SW	10.10	10.10	11.00	12.10
WM	8.90	8.90	10.00	10.70
WN	9.00	9.00	9.90	10.70
WS	10.60	10.40	11.30	12.60

Analysis Summary – Gas Temperature

- I&C Temperature Study (ICTS)
 - Good relationship between Gas Temperature & Air Temperature
 - Temperatures consistent with DMTS (External meters)
 - Higher Temperatures in higher consumption sites
 - Less seasonality -> Higher Flow Weighted Average Temperature



Analysis Summary – Gas Temperature

- UIG Factors required for SN conditions
- Comparison of LDZ air temperatures over years used in DMTS/ICTS
 - Periods of data collection for DMTS and ICTS are close to SN conditions

	Avg Temperature (deg C)	Difference from 20yr Average
5yr Average	10.76	0.18
10yr Average	10.43	-0.15
20yr Average	10.58	0.00
DMTS year 1*	10.46	-0.11
DMTS year 2*	10.81	0.23
DMTS overall*	10.65	0.08
ICTS (4 years)	10.63	0.05

*Temperatures measured over a period < 1year have been adjusted to a 12 month equivalent

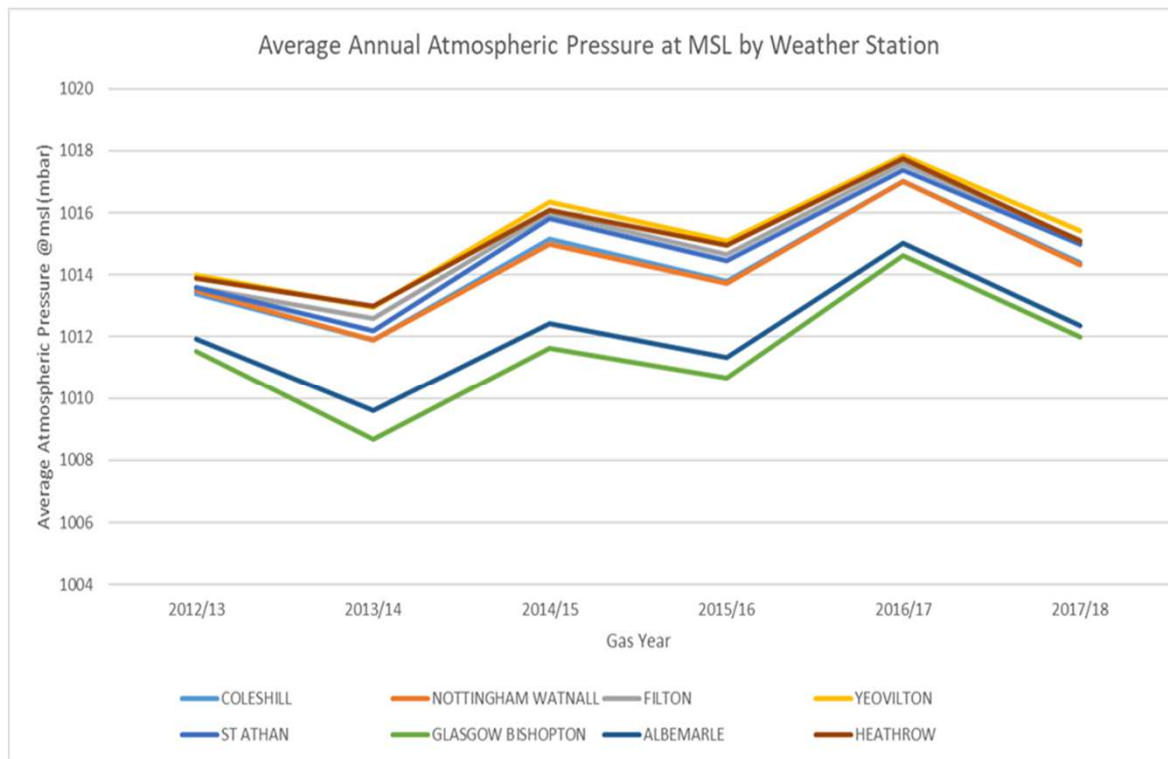
Analysis Summary – Gas Temperature Selection

- EUC01B
 - Use temperatures from DMTS
 - Weighted Average of internal/external based on known meter locations
- Small I&C (EUC02-03)
 - As EUC01B
 - ICTS temperatures biased to external meters
- Large I&C (EUC04-08)
 - Use ICTS Large I&C temperatures
- DM
 - Use ICTS DM temperatures

LDZ	01B	02-03	04-08	09B
EA	11.70	12.29	10.10	11.10
EM	11.30	11.64	10.90	12.10
NE	11.03	11.71	9.90	11.20
NO	11.05	11.26	9.40	10.50
NT	13.96	14.28	13.40	14.80
NW	11.54	11.43	10.40	11.40
SC	10.79	11.11	8.80	9.90
SE	13.52	13.16	11.50	13.00
SO	11.97	12.18	10.60	11.80
SW	10.94	11.43	11.00	12.10
WM	11.29	11.23	10.00	10.70
WN	10.49	10.58	9.90	10.70
WS	12.41	12.45	11.30	12.60
Average	11.69	11.90	10.55	11.68

Analysis Summary – Atmospheric Pressure

- Atmospheric Pressure varies with Latitude
- Actual Historic Pressure data available for 8 Weather Stations
- Assignment of Weather Stations for Pressure based on Latitude not Proximity



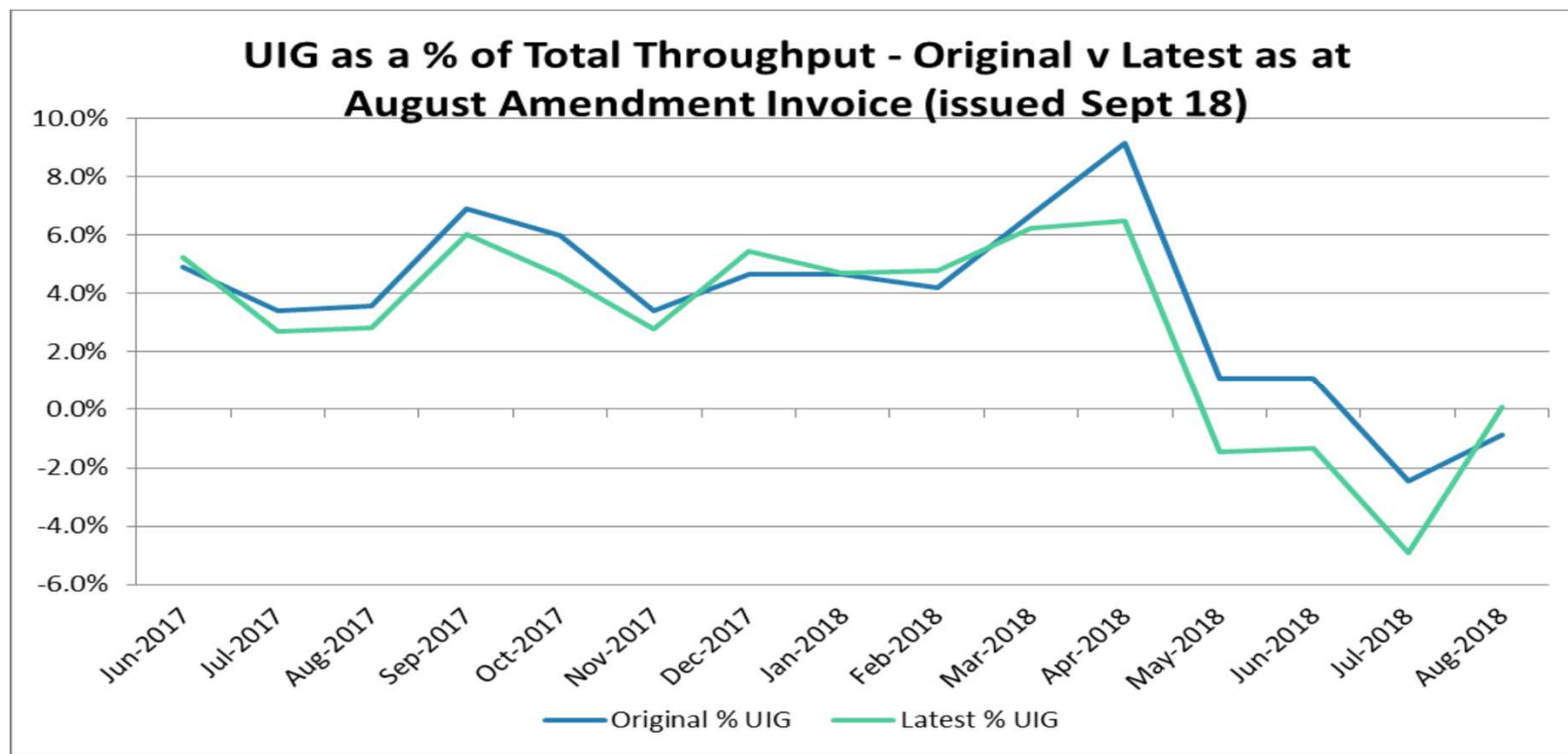
LDZ	Weather Station
EA	Heathrow
EM	Nottingham
NE	Average of Nottingham & Albemarle
NO	Albemarle
NT	Heathrow
NW	Nottingham
SC	Glasgow
SE	Heathrow
SO	Filton
SW	Yeovilton
WM	Coleshill
WN	Nottingham
WS	St Athan

Analysis Summary

- Standard Correction Factors (Topic 27)
 - Volume Conversion error due to use of standard CF for supply points in EUC04 and above updated based on latest data
 - Assumes no further significant numbers of CF updates

Analysis Summary

- Topic 33 – Level of Permanent (Final) UIG Post-Nexus
 - UIG Taskforce Update to Ofgem, Nov 2018
 - 15 months since Nexus, UIG reduced from 4.65% to 4% through reconciliation



Analysis Summary

- Topic 33 – Level of Permanent (Final) UIG Post-Nexus

- UIG Tracking, Nov 2019

- First Year

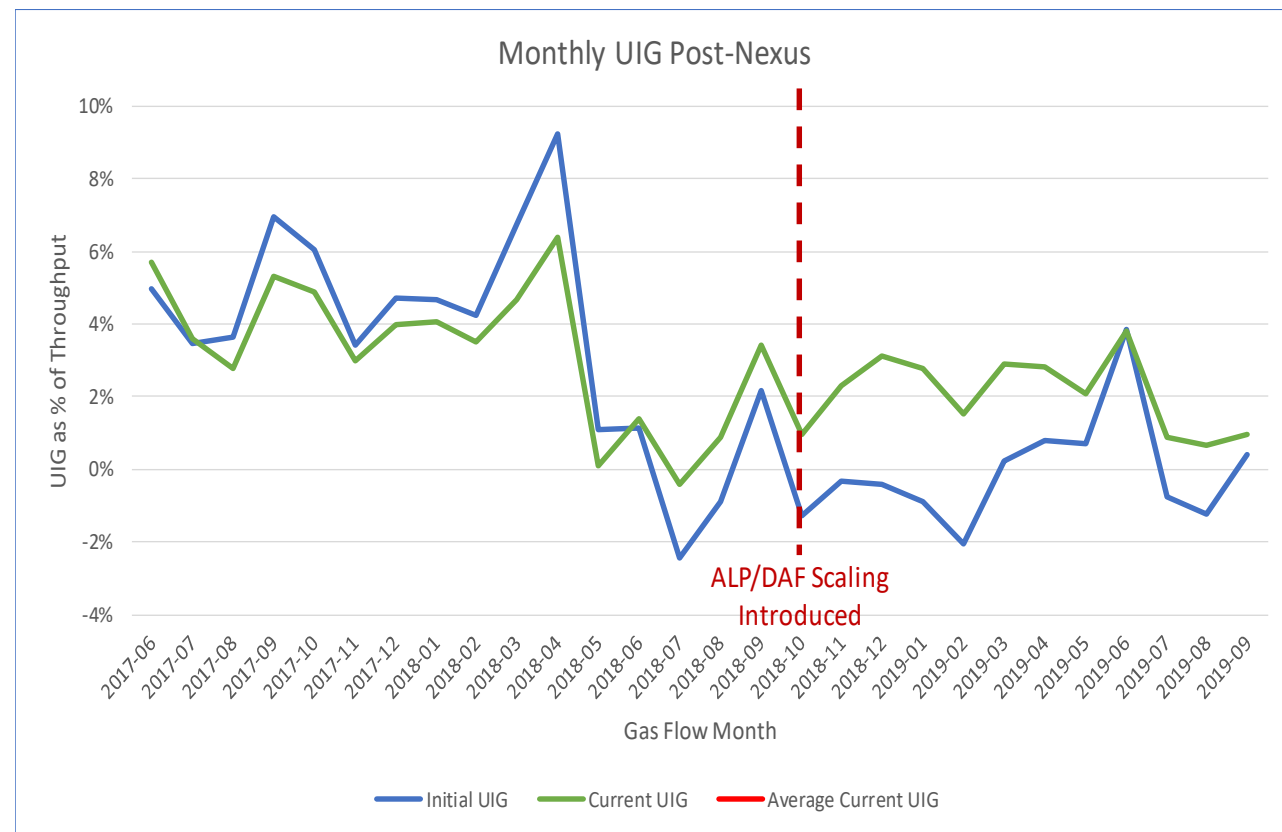
- Initial UIG 5.3%
- 4.4% after (partial) reconciliation

- After Step Change

- Initial UIG 0.0%
- 1.8% after (partial) reconciliation

- AUGE estimate of UIG(f) is 1.4%

- More stringent validation
- Approach to unreconciled sites



Analysis Summary

- **UIG from Meter Exchange (Topic 35)**

- In 2018/19, a number of examples of UIG from meter exchange were identified
 - Closing read but no opening read can result in negative volume
 - Opening read but no closing read can result in missing volume
 - Opening and closing reads with gap can result in missing volume
- These issues are far less prevalent based on the latest meter read data (additional 13m+ reads)
- A number of queries have been raised with CDSP around specific meter exchange examples.
- Working with CDSP to understand issues

Analysis Summary

- Accuracy of NDM Algorithm (Topic 39)
 - Will continue to monitor changes to assess impact
 - ‘Ongoing’ Topic closed. Specific Topics will be raised as required e.g. new CWV definition
 - New CWV, SNCWV, WAALPs etc requested from CDSP when available
 - WAALPs not available until Sept 2020

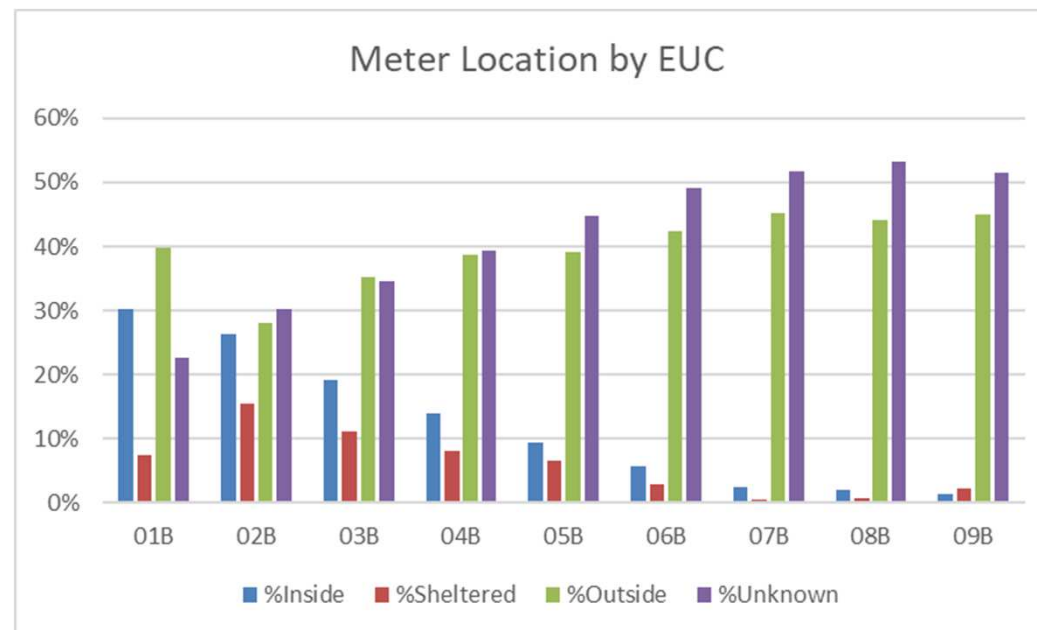
Analysis Summary

- Creation of New EUCs (Topic 55)

- AUGE has data required to generate UIG factors based on new EUCs
- UNC change required
- Current AUGE Framework would not allow for the update to occur this AUG year

Analysis Summary

- More detailed analysis of Meter Locations (Topic 58)
 - Meter locations now by EUC to support gas temperature methodology
 - Approx. 23% of meters with no location information
 - Higher proportion with meter locations in lower EUC bands
 - Proposed methodology only uses meter location for EUCs 01-03



Analysis Summary

- Review of CSEP methodology (Topic 59)
 - Pre-Nexus, no Meter Point level information
 - High degree of uncertainty in Consumption estimate
 - Based on AQ
 - Post-Nexus, meter read information available
 - Opportunity to re-assess CSEP contribution to UIG
 - Review methodology going forward
 - Analysis completed and documented in Proposed AUGS
 - Consumption Successfully calculated for 76% of CSEP meters
 - Difference between SN Consumption and prevailing AQ found to be 333GWh

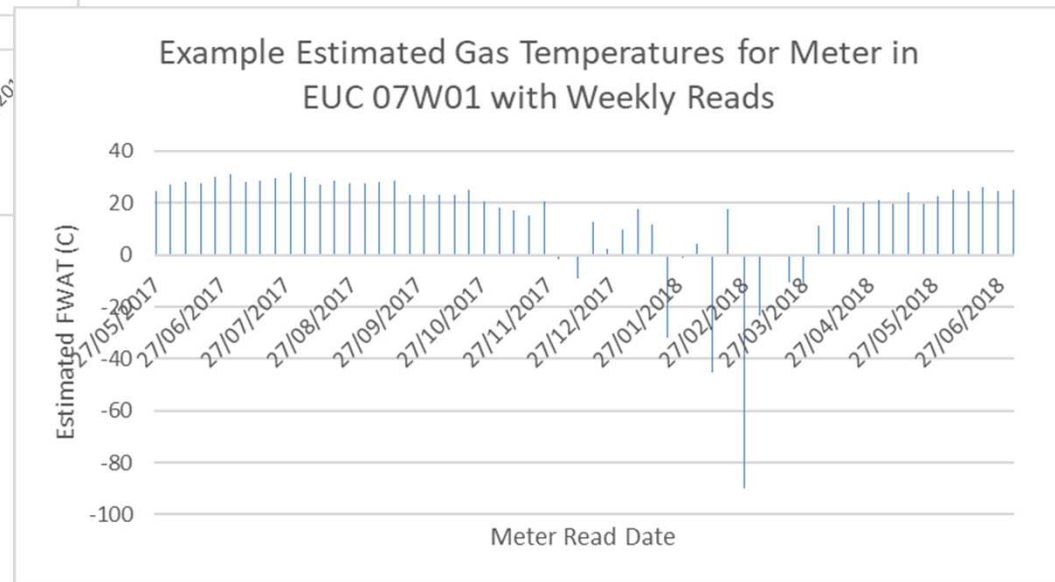
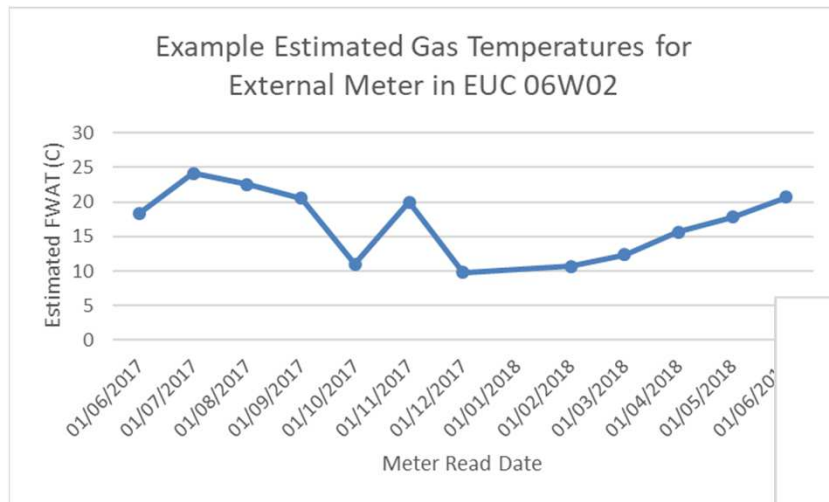
Analysis Summary

- Use of temperature data from volume converters (Topic 60)
 - Results now available from previous temperature studies
 - AUGE believes no further action required

- Use of corrected vs uncorrected meter reads (Topic 61)
 - Topic closed
 - Insufficient useable data from NDM sites
 - Infrequent reads, unreliable reads & asset information
 - Assessment of Daily Read data may be useful but would require a separate project as this would be a large undertaking

Analysis Summary

- Corrected/Uncorrected Reads Examples
 - Temperature estimated from Corrected & Uncorrected Volumes and Site-Specific CF (assumed $P=1013.25\text{mbar}$)



Analysis Summary

- VLDMC/DM Meter Maintenance (Topic 63) & Use of Volume Converters without Z Conversion (Topic 64)
 - AUGE issued industry data request but no response
- Topics on hold awaiting data
 - Impact of changes to CWV/SNCWV definition (Topic 65)
 - Assessment of TRAS Leads data (Topic 66)

Summary of Methodology Changes

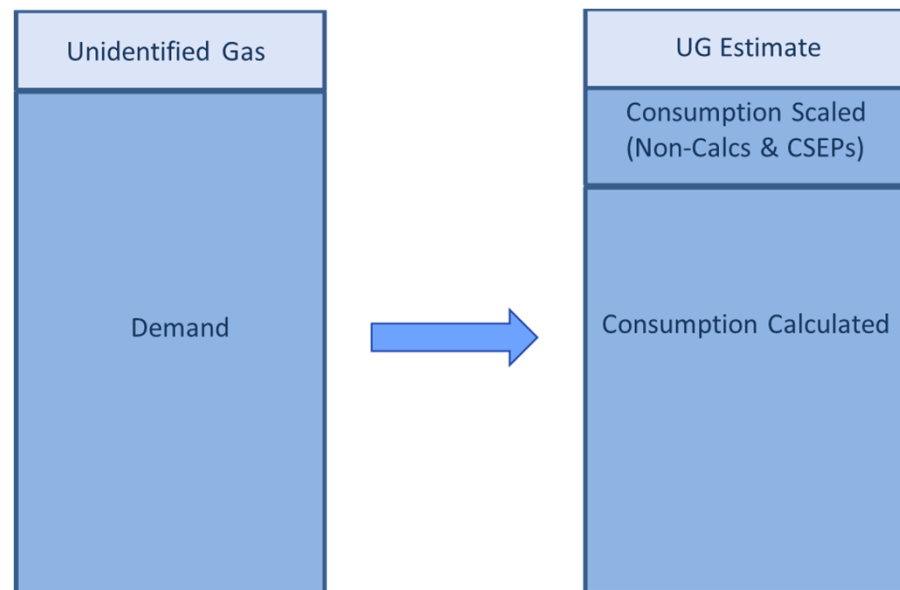
- New method for estimation of fiscal theft levels
- Volume Conversion Errors
 - Gas Temperature UIG
 - Atmospheric Pressure UIG now by LDZ
 - Use of Std CF for EUC04 and above
- Product Class Population/AQ – extrapolation method
 - Regression with flexible training period
 - Apply PC3 cap based on notifications of shipper intent sent to the CDSP
- Update of Consumption Methodology
 - Missing/Overlapping LSP meter reads
 - Previously calculated correction as there was a significant number
 - Additional meter reads provided mean this is no longer required (consumption calculation now fails in these cases)
 - Uses additional gas year of history

Methodology Overview

- Evolving methodology
 - Similar methodology to previous years
 - Estimate Total Unidentified Gas & Split by EUC/Product class
 - More post-Nexus data available

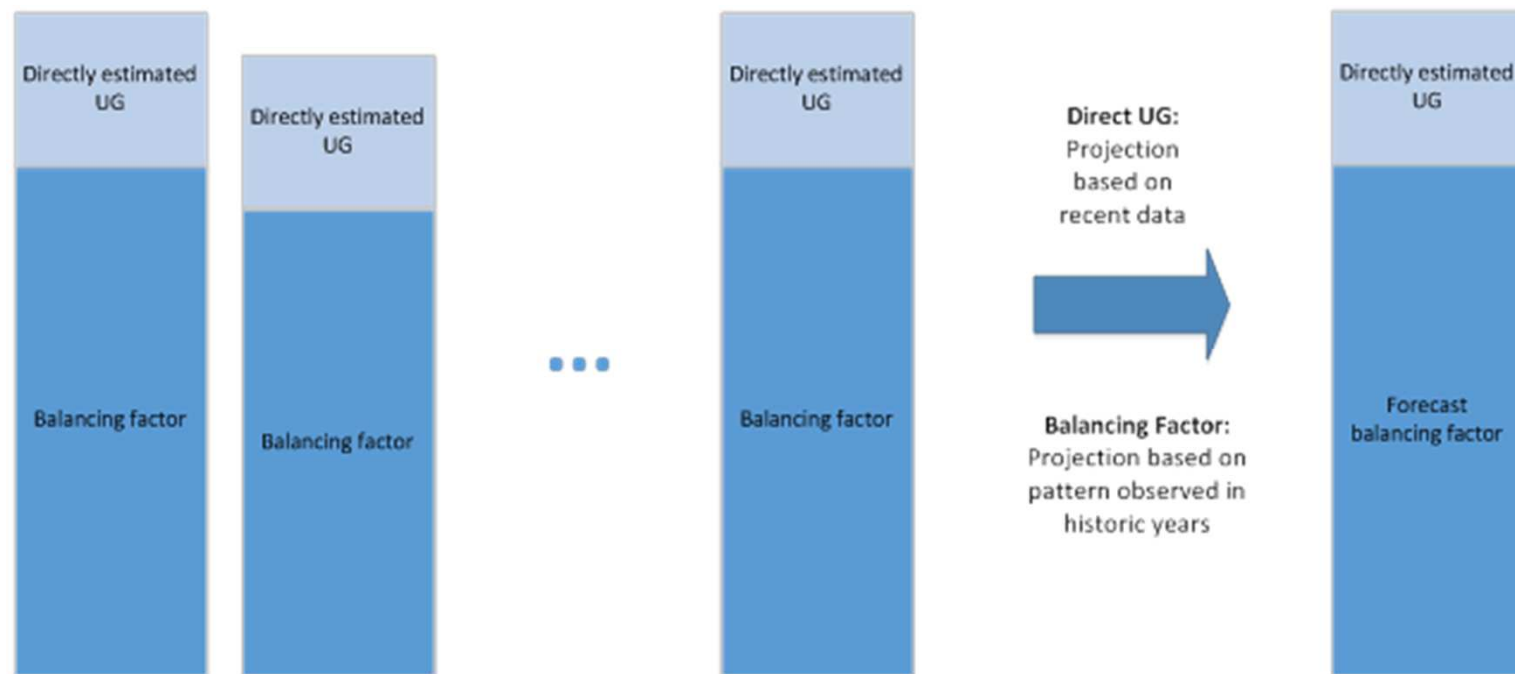
Total Unidentified Gas Estimation

- Need estimate of Total Unidentified Gas to calculate factors (Consumption Method)
- Estimate Total Unidentified Gas = LDZ Input – Sum of Consumption for all MPRs
 - LDZ Input Metered
 - Consumption is estimated based on meter reads, AQ etc.

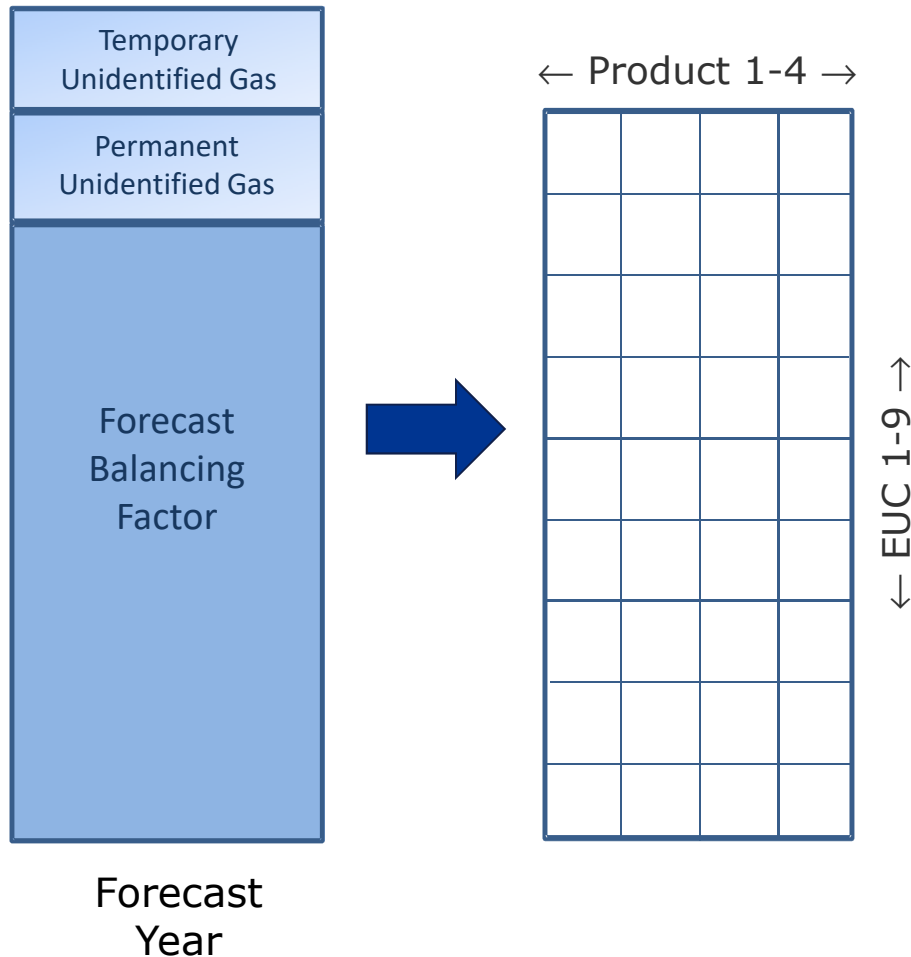


Forecast Unidentified Gas

- Balancing Factor
 - $BF = \text{Total Unidentified Gas} - \text{Directly estimated Unidentified Gas}$
 - Projected forward using data up to 2016/17 Gas Year
- Directly estimated Unidentified Gas
 - Most recent data available



Forecast Unidentified Gas Components (GWh)



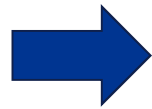
- Split of directly calculated Unidentified Gas categories is part of this calculation
- Balancing Factor is nearly all undetected theft
 - Split by throughput, amended for relative difficulty of stealing from different meter types and metering regimes
 - Smart meter, AMR, traditional meter
 - Daily meter readings, periodic meter readings

Energy → Factors

Energy (GWh) ... divide by ... **Throughput (TWh)** ... x100 ... **Factors**

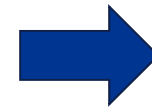
← Product 1-4 →

← EUC 1-9 →



← Product 1-4 →

← EUC 1-9 →



← Product 1-4 →

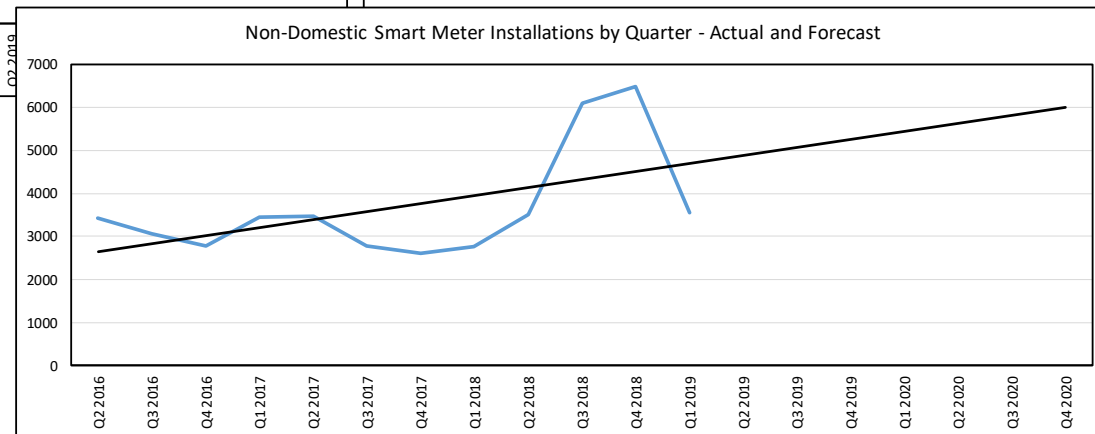
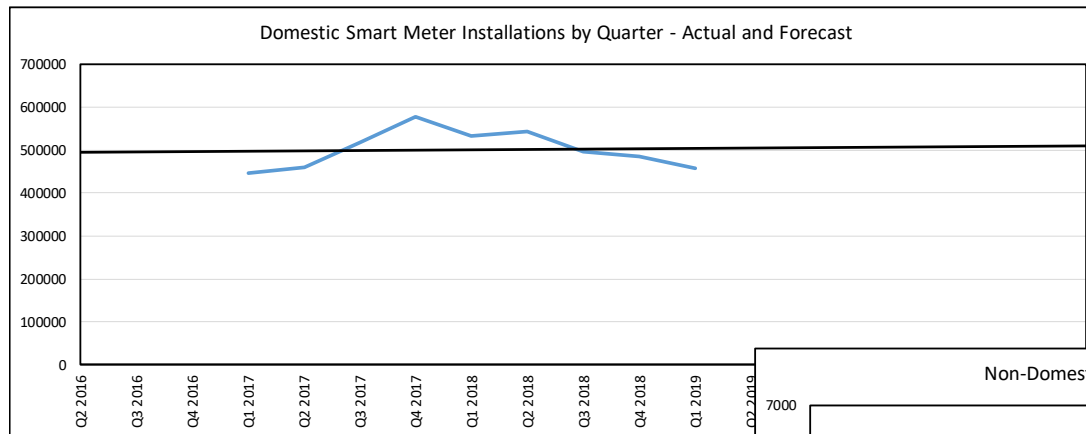
← EUC 1-9 →

Population/Throughput Calculations

- Based fully on post-Nexus data
 - Actual Product Class
- Xoserve have supplied data for a number of points in time
 - Earliest is June 2017
 - Latest is November 2019
- Establish trends and extrapolate to April 2021
 - Full 36-way Product/EUC split
 - Avoid duplicating effects of step changes
- Total Smart Meter population (large suppliers) from BEIS Q1 2019 Report
- AMR population (small suppliers, EUC 02B and 03B) from ICoSS
 - Split Product Class 4 into Smart and traditional meters
 - All sites in EUCs 04B and above are required to have AMR

Population/Throughput Calculations

Market Sector	Smart Meter / AMR Population 30/03/2019	Smart Meter Population 31/03/2021	Smart Meter Percentage 31/03/2021
Domestic	5,830,867	9,896,100	46.5%
Non-Domestic	170,790	244,720	46.6%



Population Forecast by EUC and Product Class

1st April 2021

Number of Sites

	01B	02B	03B	04B	05B	06B	07B	08B	09B	Total
Product 1	0	0	0	0	0	0	0	0	311	311
Product 2	31	7	23	52	49	192	157	212	0	723
Product 3	3,983,947	60,707	16,083	5,501	1,165	131	65	28	0	4,067,627
Product 4	20,449,463	158,633	29,904	13,468	3,572	1,379	481	250	0	20,657,150
Total	24,433,441	219,347	46,010	19,021	4,786	1,702	703	490	311	24,725,811

Number of Sites (Percentage by EUC)

	01B	02B	03B	04B	05B	06B	07B	08B	09B
Product 1	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
Product 2	0.00%	0.00%	0.05%	0.27%	1.02%	11.28%	22.33%	43.27%	0.00%
Product 3	16.31%	27.68%	34.96%	28.92%	24.34%	7.70%	9.25%	5.71%	0.00%
Product 4	83.69%	72.32%	64.99%	70.81%	74.63%	81.02%	68.42%	51.02%	0.00%

Based on CDSP asset data from Jun 2017 – Nov 2019 extrapolated to April 2021

Throughput (AQ) Forecast by EUC and Product Class

1st April 2021

Aggregate AQ (GWh)

	01B	02B	03B	04B	05B	06B	07B	08B	09B	Total
Product 1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	39,698.0	39,698
Product 2	0.1	1.0	11.1	72.2	193.3	2,024.3	3,348.3	8,956.6	0.0	14,607
Product 3	52,760.9	8,935.9	7,091.4	6,442.9	3,797.0	1,194.0	1,301.1	1,014.8	0.0	82,538
Product 4	277,580.0	20,622.1	13,282.5	16,244.7	12,208.8	12,381.3	9,735.5	9,762.6	0.0	371,817
Total	330,341.0	29,559.0	20,385.0	22,759.8	16,199.1	15,599.6	14,384.9	19,734.0	39,698.0	508,660.4

Aggregate AQ (Percentage of Total)

	01B	02B	03B	04B	05B	06B	07B	08B	09B
Product 1	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.80%
Product 2	0.00%	0.00%	0.00%	0.01%	0.04%	0.40%	0.66%	1.76%	0.00%
Product 3	10.37%	1.76%	1.39%	1.27%	0.75%	0.23%	0.26%	0.20%	0.00%
Product 4	54.57%	4.05%	2.61%	3.19%	2.40%	2.43%	1.91%	1.92%	0.00%

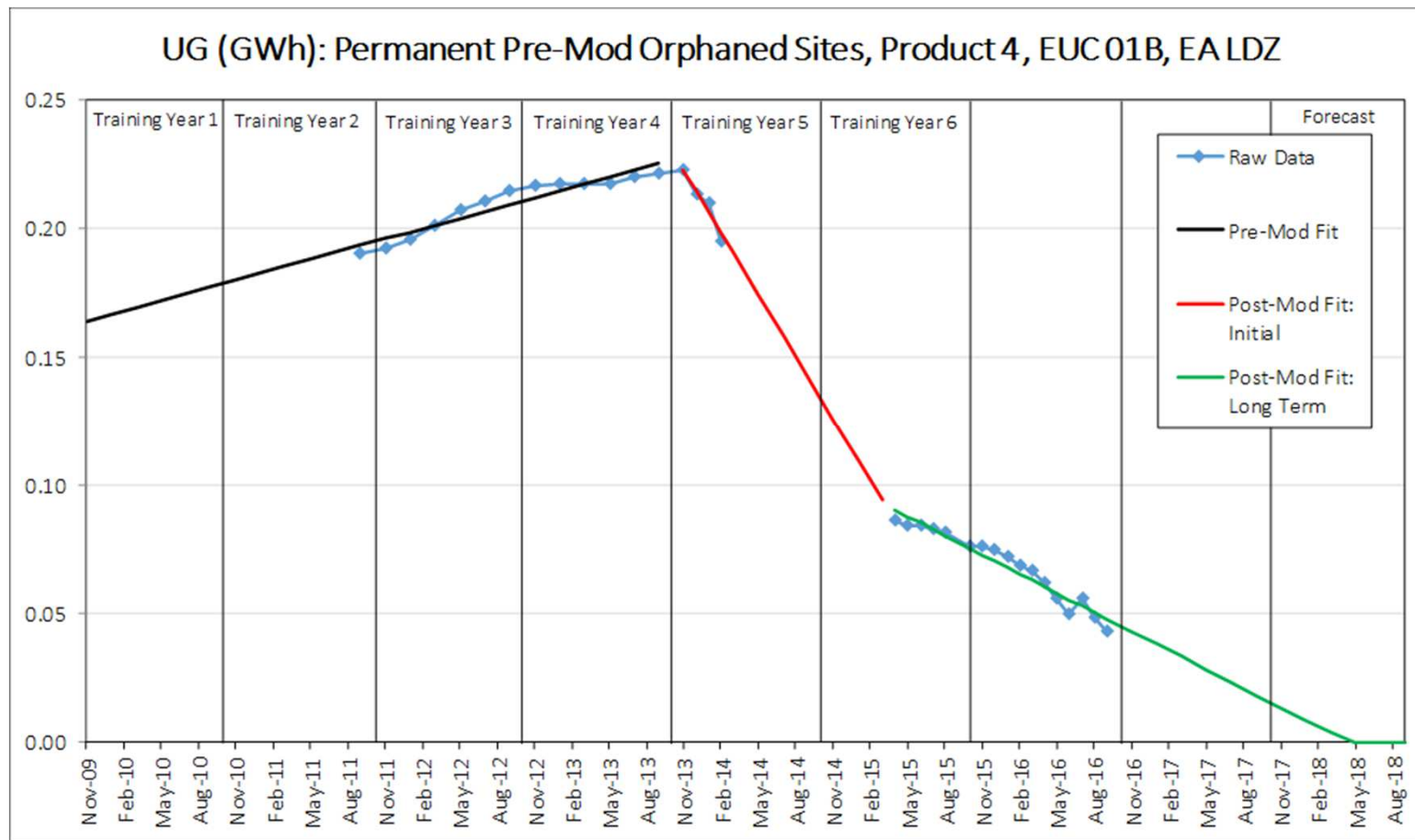
Based on CDSP asset data from Jun 2017 – Nov 2019 extrapolated to April 2021

Shipperless/Unregistered Sites

- Snapshots Sep 2011 – Sep 2019
- EUC from AQ (supplied in snapshots)
- Split as appropriate for
 - Pre/post Mod 410A (using Effective Date)
 - Pre/post Mod 424 (using Isolation Date)
 - Pre/post Mod 425 (using Isolation Date)
- Split between Temporary and Permanent using existing rules
- Split between Products for each EUC
 - These sites do not have a defined Product Class
 - Therefore split using tables in previous slides
- Trend over time → extrapolate to forecast year

Shipperless/Unregistered Sites – Example Trend

- Each trend needs to be constructed using a piecewise approach
- Effects of relevant Mod over time



Shipperless/Unregistered Sites

- All relevant Mods well established
 - Latest is Mod 425, effective from 01/04/2014
- Effects can be tracked with the set of snapshots available
 - Construct piecewise trends
- Split each Unidentified Gas category into
 - Pre- and post-Mod sites
 - Permanent/Temporary
 - LDZ
 - EUC
 - Product Class
- 1872 trends for each main Shipperless/Unregistered Unidentified Gas category

iGT CSEPs

- Snapshots Jan 2015 – Jun 2017 (Unknown Projects – new data source needed)
- Unregistered sites on known CSEPs
- Registered sites on known CSEPs

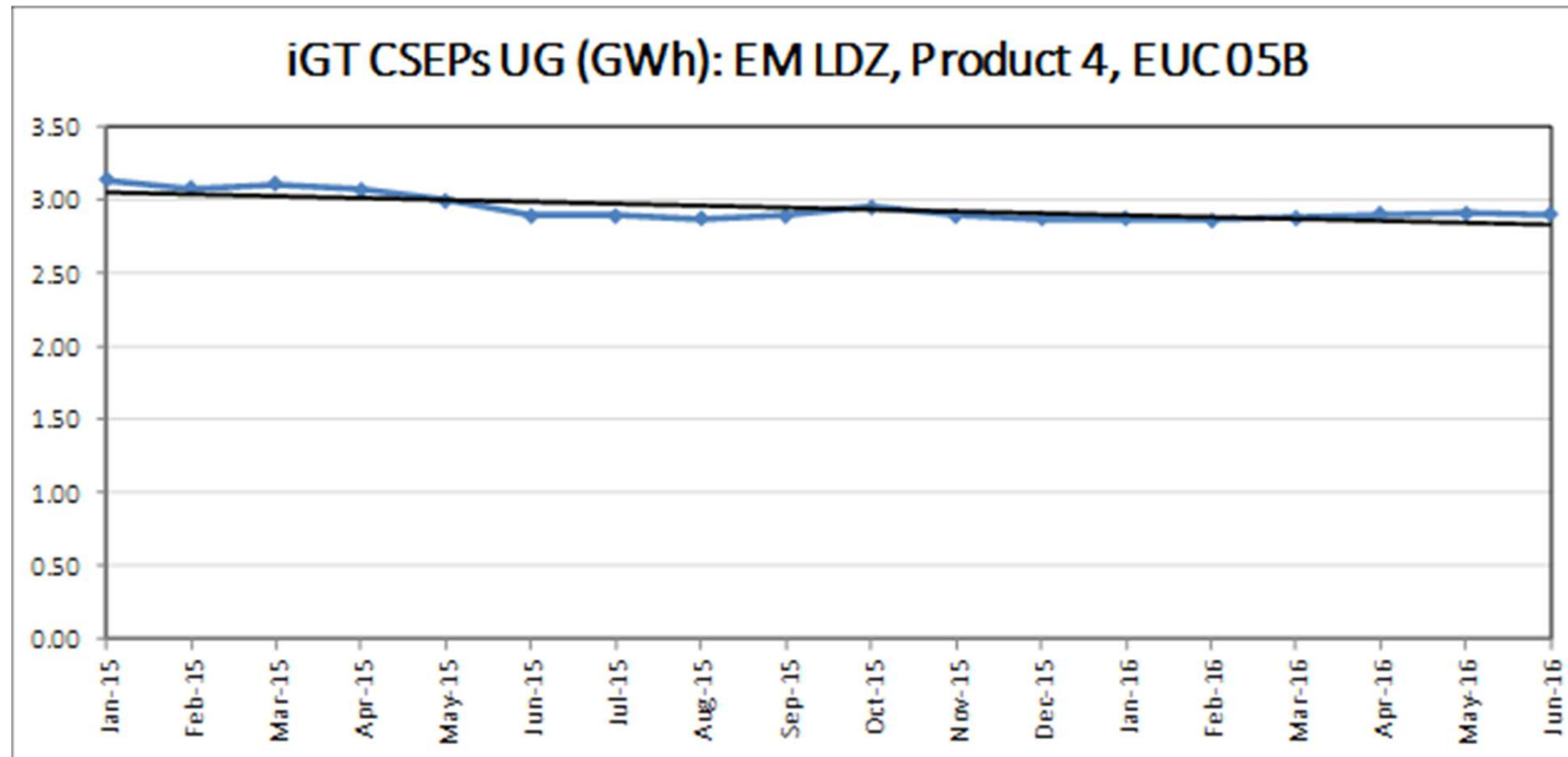
- EUC split taken from Registered sites on known CSEPs
 - Applied to Unknown Projects
- Add Unidentified Gas from Unregistered sites on known CSEPs

- Split between Product Class for each EUC
 - Site-by-site information not available for Unknown Projects and unregistered sites
 - Therefore split using tables in previous slides

- Split between Temporary and Permanent using existing rules
- Trend over time → extrapolate to forecast year

iGT CSEPs – Example Trend

Example from EM LDZ – one of 468 trends for iGT CSEPs Unidentified Gas



Consumer Meter Errors

- Meter capacity report
- Identify meters operating at extremes of their range
- Use AQ and Meter Capacity from report
 - Under 1% of capacity → under-read
 - Over 95% of capacity → over-read
- EUC from AQ
- Look up Product Class from asset data

Consumer Meter Errors

- Calculate net over/under read for each EUC/Product Class combination
- Unidentified Gas from this source all Permanent
- Data limited to one snapshot per year
 - Trends are limited but there is now enough data to calculate them
 - EUC/Product Class split, individual trend for each
 - Extrapolate to forecast year

Volume Conversion Errors – Atmospheric Pressure

- Pressure Correction

- Calculate Correction to Standard CF for each LDZ and Gas Year

$$CF_{err}^{std} = \left[\frac{(P_{av} - 1013.25)}{1013.25} \right] * 1.0098/1.02264$$

- Apply to (SN Consumption x proportion of Meters without Volume Conversion) to get UIG_{press} for each LDZ and Gas Year
- Sum UIG_{press} by LDZ to get National UIG_{press}
- Calculate additional adjustment for Meters with High CF (higher operating pressures) at National level
 - Found to be negligible (~ 0.033 GWh/annum)

Volume Conversion Errors – Gas Temperature

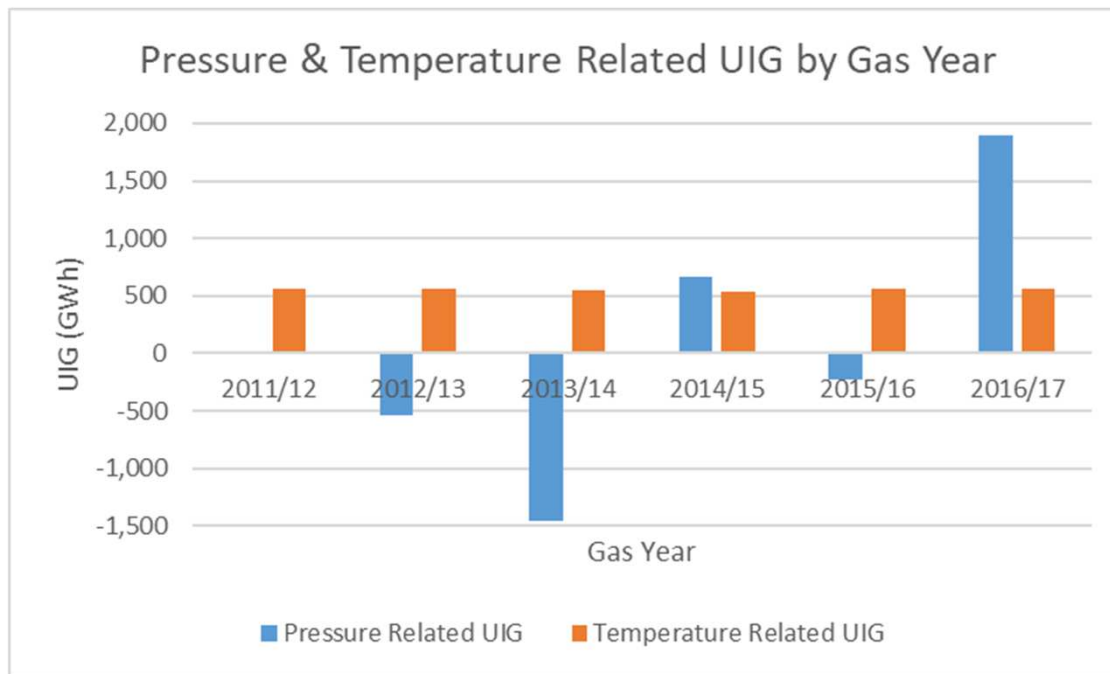
- Temperature Correction
 - Calculate Correction to Standard CF for each LDZ and EUC Group

$$CF_{err}^{std} = 1 - \left[\frac{288.15}{(273.15 + T_{av}) * 1.0098} \right]$$

- Apply to (SN Consumption x proportion of Meters without Volume Conversion)
- Sum to get National UIG_{temp}

LDZ	01B	02-03	04-08	09B
EA	11.70	12.29	10.10	11.10
EM	11.30	11.64	10.90	12.10
NE	11.03	11.71	9.90	11.20
NO	11.05	11.26	9.40	10.50
NT	13.96	14.28	13.40	14.80
NW	11.54	11.43	10.40	11.40
SC	10.79	11.11	8.80	9.90
SE	13.52	13.16	11.50	13.00
SO	11.97	12.18	10.60	11.80
SW	10.94	11.43	11.00	12.10
WM	11.29	11.23	10.00	10.70
WN	10.49	10.58	9.90	10.70
WS	12.41	12.45	11.30	12.60
Average	11.69	11.90	10.55	11.68

Volume Conversion Errors



- Pressure UIG
 - Average 55.5GWh
 - Actual pressure varies significantly by gas year
- Temperature UIG
 - Average 555.2GWh
 - Constant gas temperatures assumed across all gas years

Volume Conversion Errors

- Total Volume Conversion Error Projected to Forecast Year
 - UIG due to Pressure, Temperature & use of Standard CF (04B+)
 - Total projected UIG is average of Training years
 - UIG by EUC/PC changes in proportion to projected AQ
 - No information on changes to numbers of volume converters by PC/EUC

CSEP Shrinkage Calculation

- Data from DNs
 - Mains populations and number of customers (aggregate LP)
 - Network models (Cadent)
 - Mains populations and number of customers by network

- Estimate of mains length per customer from network models
 - Network sections selected using polygons
 - Similar composition to CSEPs
 - Small, non-rural, heavily domestic
 - Sense check using aggregate data from other DNs

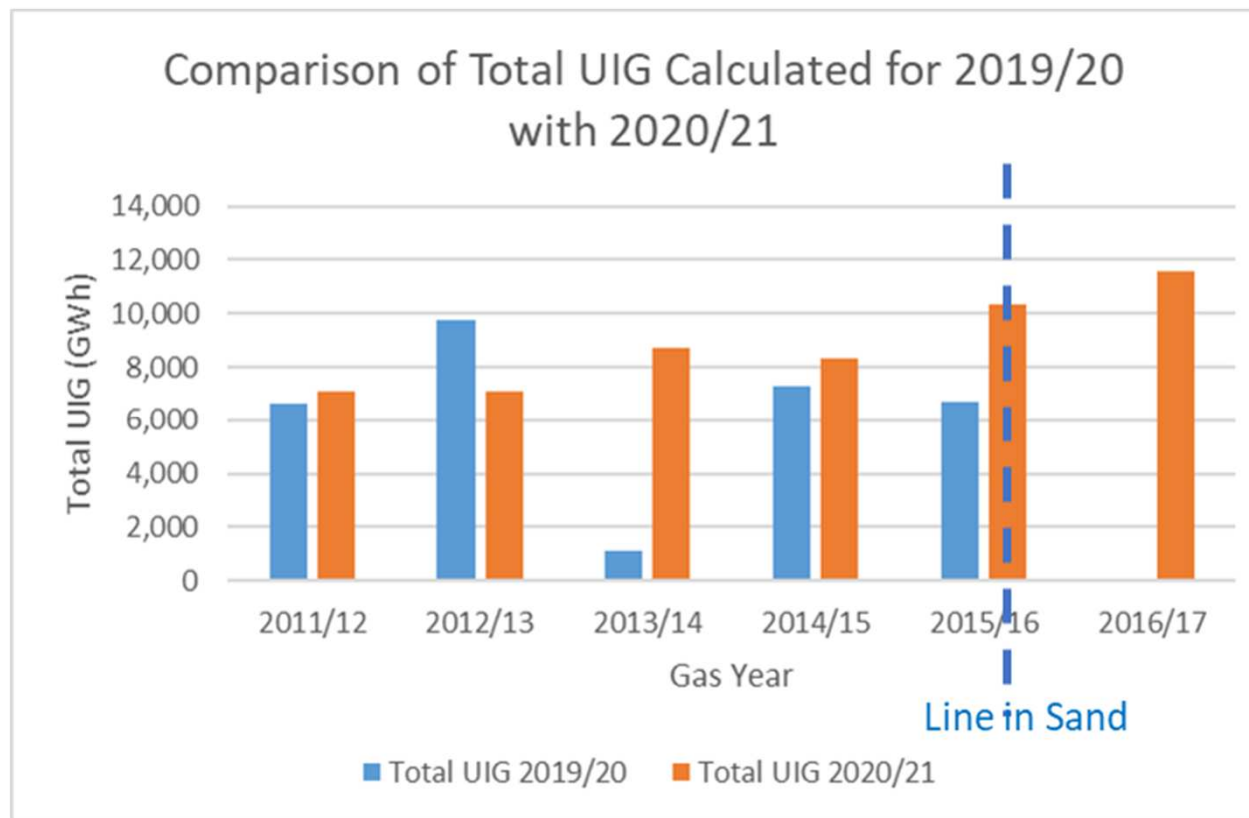
- Use CSEP customer numbers to estimate mains length
- Leakage rates from NLT used to estimate leakage
 - Assume CSEPs are all PE

Theft

- Undetected Theft is assumed to be the main component of the Balancing Factor
- Historic detected Theft affects the total Unidentified Gas calculation for the training period
- Theft data for full training period available
- Required as aggregate figure for each LDZ only
 - Individual figures for each training year
- Most Unidentified Gas from detected Theft is temporary
 - When it is detected within reconciliation period
 - Unidentified Gas from Thefts detected later than this goes into Balancing Factor
- Feeds into Consumption Method calculation for total Unidentified Gas

Total Unidentified Gas (Consumption Calcs)

- Additional Meter Reads have a significant impact
 - Forecast Total Permanent UIG for 2020/21 is 8,097GWh



Balancing Factor Split

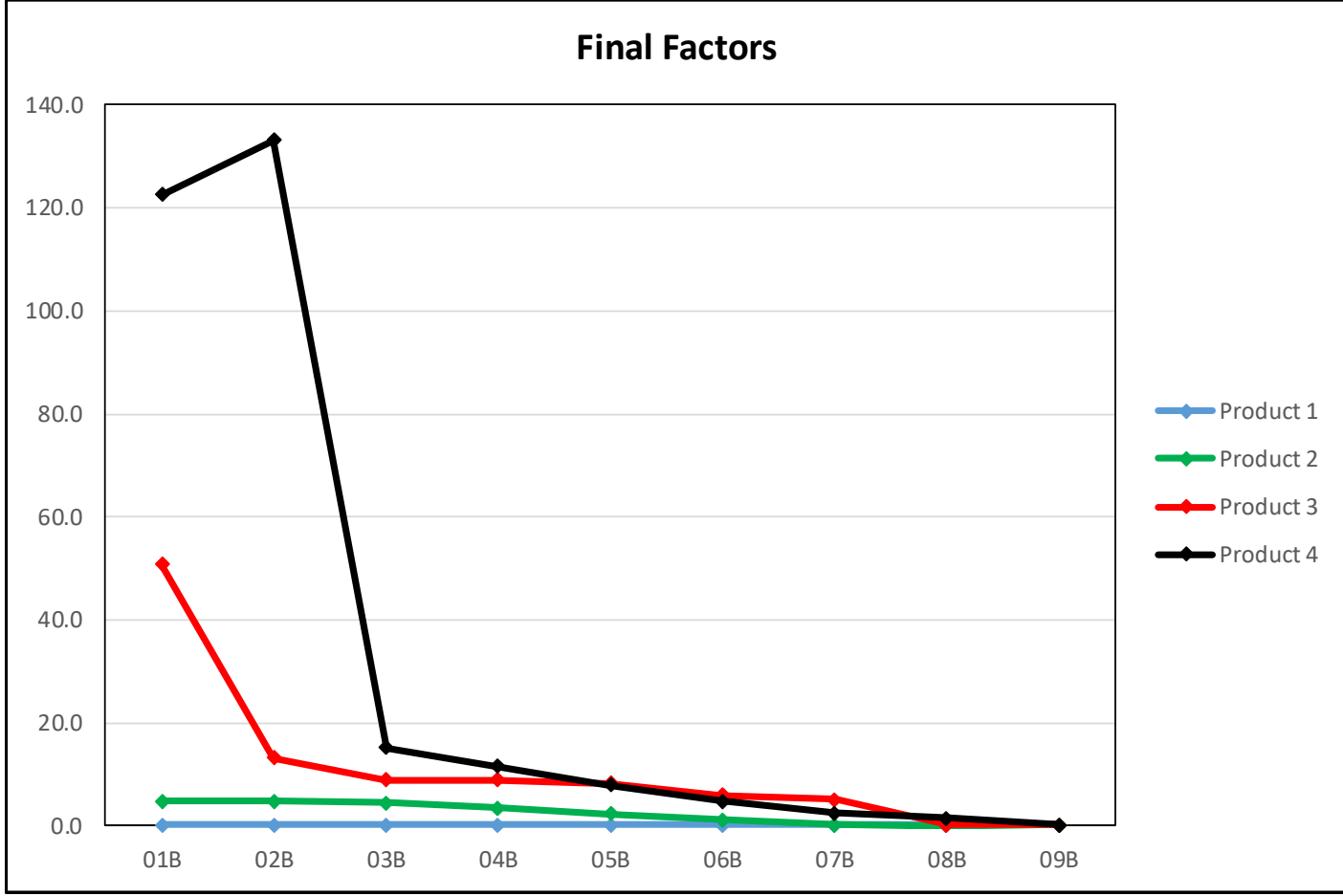
- Assumed to be mainly undetected theft
- Split based on TRAS data for confirmed thefts
 - Fiscal theft levels estimated and removed
 - Bias due to Supplier targeting of theft detection activity removed
 - Levels adjusted in line with expected population changes to April 2021

	01B	02B	03B	04B	05B	06B	07B	08B	09B
Product 1	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Product 2	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Product 3	11.40%	0.23%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Product 4	81.85%	6.45%	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Unidentified Gas Factors

Supply Meter Point Classification	Class 1	Class 2	Class 3	Class 4
EUC Band 1	0.20	4.91	50.76	122.53
EUC Band 2	0.20	4.91	13.20	133.14
EUC Band 3	0.20	4.54	8.89	15.16
EUC Band 4	0.20	3.59	8.89	11.67
EUC Band 5	0.20	2.36	8.30	8.00
EUC Band 6	0.20	1.16	5.98	4.79
EUC Band 7	0.20	0.31	5.17	2.47
EUC Band 8	0.20	0.12	0.28	1.48
EUC Band 9	0.20	0.20	0.20	0.20

Unidentified Gas Factors



Factor Changes – 2019/20 to 2020/21

- Factor Proportions

2019/20 Factor Proportions

	Product 1	Product 2	Product 3	Product 4
01B	0.05%	0.96%	5.69%	38.45%
02B	0.05%	0.96%	3.60%	26.03%
03B	0.05%	0.96%	2.40%	4.21%
04B	0.05%	0.91%	1.81%	2.94%
05B	0.05%	0.82%	1.59%	1.85%
06B	0.05%	0.67%	1.46%	1.01%
07B	0.05%	0.46%	1.16%	0.50%
08B	0.05%	0.18%	0.43%	0.40%
09B	0.05%	0.05%	0.05%	0.05%

2020/21 Factor Proportions

	Product 1	Product 2	Product 3	Product 4
01B	0.05%	1.16%	11.94%	28.83%
02B	0.05%	1.16%	3.11%	31.33%
03B	0.05%	1.07%	2.09%	3.57%
04B	0.05%	0.84%	2.09%	2.75%
05B	0.05%	0.55%	1.95%	1.88%
06B	0.05%	0.27%	1.41%	1.13%
07B	0.05%	0.07%	1.22%	0.58%
08B	0.05%	0.03%	0.07%	0.35%
09B	0.05%	0.05%	0.05%	0.05%

Change

	Product 1	Product 2	Product 3	Product 4
01B	0.00%	0.20%	6.25%	-9.62%
02B	0.00%	0.20%	-0.50%	5.30%
03B	0.00%	0.11%	-0.30%	-0.64%
04B	0.00%	-0.07%	0.28%	-0.19%
05B	0.00%	-0.27%	0.37%	0.03%
06B	0.00%	-0.40%	-0.05%	0.11%
07B	0.00%	-0.39%	0.06%	0.08%
08B	0.00%	-0.16%	-0.36%	-0.05%
09B	0.00%	0.00%	0.00%	0.00%

Factor Changes – 2019/20 to 2020/21

- UIG Proportions

2019/20 UIG Proportions

	Product 1	Product 2	Product 3	Product 4
01B	0.00%	0.00%	0.05%	93.58%
02B	0.00%	0.00%	0.09%	4.75%
03B	0.00%	0.00%	0.07%	0.52%
04B	0.00%	0.00%	0.04%	0.45%
05B	0.00%	0.00%	0.02%	0.21%
06B	0.00%	0.01%	0.01%	0.10%
07B	0.00%	0.01%	0.01%	0.04%
08B	0.00%	0.01%	0.00%	0.02%
09B	0.01%	0.00%	0.00%	0.00%

2020/21 UIG Proportions

	Product 1	Product 2	Product 3	Product 4
01B	0.00%	0.00%	6.64%	84.36%
02B	0.00%	0.00%	0.29%	6.81%
03B	0.00%	0.00%	0.16%	0.50%
04B	0.00%	0.00%	0.14%	0.47%
05B	0.00%	0.00%	0.08%	0.24%
06B	0.00%	0.01%	0.02%	0.15%
07B	0.00%	0.00%	0.02%	0.06%
08B	0.00%	0.00%	0.00%	0.04%
09B	0.02%	0.00%	0.00%	0.00%

Change

	Product 1	Product 2	Product 3	Product 4
01B	0.00%	0.00%	6.59%	-9.22%
02B	0.00%	0.00%	0.21%	2.06%
03B	0.00%	0.00%	0.08%	-0.02%
04B	0.00%	0.00%	0.11%	0.02%
05B	0.00%	0.00%	0.06%	0.04%
06B	0.00%	0.00%	0.01%	0.05%
07B	0.00%	-0.01%	0.01%	0.02%
08B	0.00%	-0.01%	0.00%	0.01%
09B	0.01%	0.00%	0.00%	0.00%

Factor Changes – 2019/20 to 2020/21

- 2020/21 UIG Proportions

2020/21 UIG Proportions (2019/20 Factors)

	Product 1	Product 2	Product 3	Product 4
01B	0.00%	0.00%	2.56%	90.95%
02B	0.00%	0.00%	0.27%	4.57%
03B	0.00%	0.00%	0.14%	0.48%
04B	0.00%	0.00%	0.10%	0.41%
05B	0.00%	0.00%	0.05%	0.19%
06B	0.00%	0.01%	0.01%	0.11%
07B	0.00%	0.01%	0.01%	0.04%
08B	0.00%	0.01%	0.00%	0.03%
09B	0.02%	0.00%	0.00%	0.00%

2020/21 UIG Proportions

	Product 1	Product 2	Product 3	Product 4
01B	0.00%	0.00%	6.64%	84.36%
02B	0.00%	0.00%	0.29%	6.81%
03B	0.00%	0.00%	0.16%	0.50%
04B	0.00%	0.00%	0.14%	0.47%
05B	0.00%	0.00%	0.08%	0.24%
06B	0.00%	0.01%	0.02%	0.15%
07B	0.00%	0.00%	0.02%	0.06%
08B	0.00%	0.00%	0.00%	0.04%
09B	0.02%	0.00%	0.00%	0.00%

Change

	Product 1	Product 2	Product 3	Product 4
01B	0.00%	0.00%	4.08%	-6.59%
02B	0.00%	0.00%	0.02%	2.24%
03B	0.00%	0.00%	0.01%	0.02%
04B	0.00%	0.00%	0.04%	0.06%
05B	0.00%	0.00%	0.03%	0.05%
06B	0.00%	-0.01%	0.00%	0.04%
07B	0.00%	-0.01%	0.00%	0.02%
08B	0.00%	-0.01%	0.00%	0.00%
09B	0.00%	0.00%	0.00%	0.00%

Modifications & Industry Changes

- UNC/IGT Modifications
 - Mods with impact on projected Product Class split
 - 0664 Transfer of sites with low read submission performance from class 2 and 3 into class 4
 - 0665 Changes to Ratchet Regime
 - 0690S Reduce qualifying period for Class1
 - 0691S CDSP to convert Class 3 or 4 meter points to Class 1 when G1.6.15 criteria are met
 - 0700 Enabling large scale utilisation of Product Class 3
 - Other Mods which potentially impact permanent UIG/UIG factors
 - 0681S/IGT127/XRN4932 Improvements to the quality of the Conversion Factor values held on the Supply Point Register
 - 0711/XRN4665 Update of AUG Table to reflect new EUC bands

Modifications & Industry Changes

- UNC/IGT Modifications (continued)
 - Other Mods with no or unknown impact on permanent UIG/UIG factors
 - 0673 Target, Measure and Reporting Product Class 4 Read Performance
 - 0677 Shipper and Supplier Theft of Gas Reporting Arrangements
 - 0692S/XRN4941 Automatic updates to Meter Read Frequency
 - 0693R Treatment of kWh error arising from statutory volume-energy conversion
 - 0699 Incentivise Read Submission Performance using additional Charges
 - IGT126F Alignment between the IGT UNC and UNC for Unregistered New Supply Meter Points

Modifications & Industry Changes

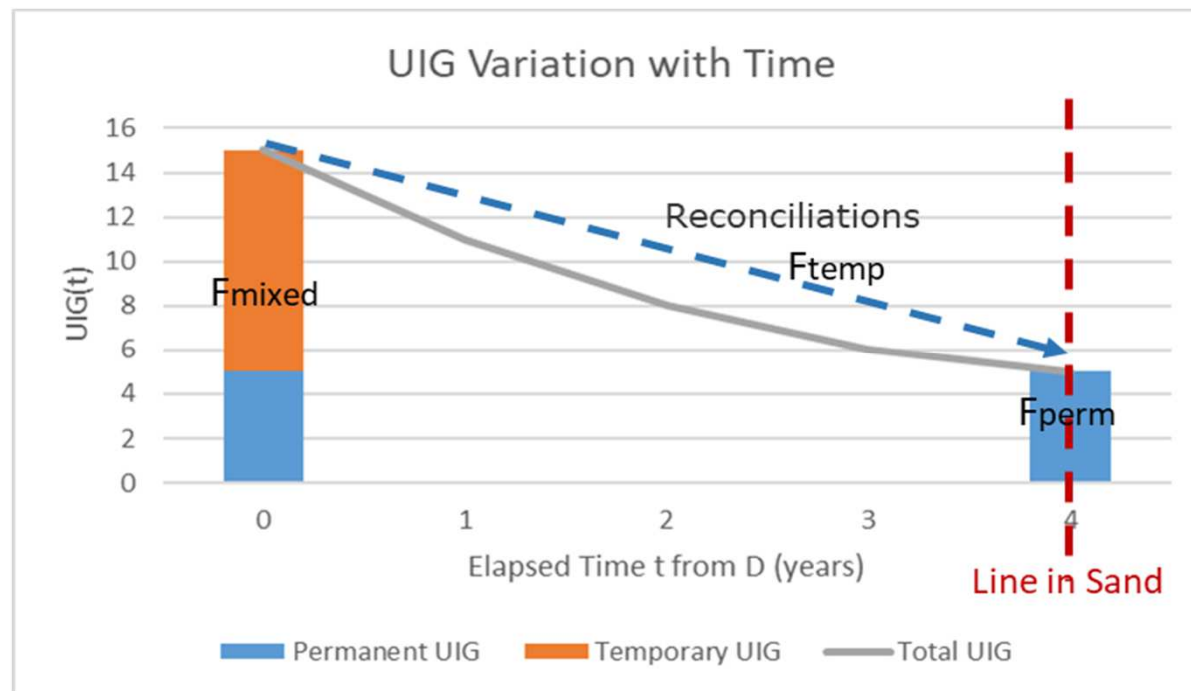
- DSC Change Proposals
 - XRN4621 Suspension of the Validation between Meter Index and Unconverted Converter Index
 - XRN4645 The rejection of incrementing reads submitted for an Isolated Supply Meter Point
 - XRN4690/4713 Actual read following estimated transfer read calculating AQ of 1
 - XRN4740 AQ Calculation for Class 4 sites with AMR Fitted
 - XRN4742 Incorrect AQ calculations due to migrated consumption
 - XRN4772 Composite Weather Variable (CWV) Improvements
 - XRN4933 Datafix CWV and recalculate WCF and WAALPs for SW LDZ
 - XRN4946 Reporting on Installed Meters with Conversion Capability

Innovation

- Three Innovation Areas for discussion
 1. Different UIG Factors for Allocation & Reconciliation
 - Apportion UIG (temporary & permanent) fairly at Allocation
 - Maintain correct final allocation of permanent UIG at line in sand
 2. Treatment of Meters with Volume Conversion
 - More fairly apportion Volume Conversion UIG
 - Incentivise use of Volume Converters and thereby reduce UIG
 3. Gas Temperature Derivation from Daily Read Meters
 - Update to ICTS results (current climate & consumptions)
 - Depending on Population of Daily Read Meters may provide
 - Internal/External meter temperature information
 - Provide more information regarding Small I&C market sector

Innovation

- Different UIG Factors for Allocation & Reconciliation
 - Initial UIG contains Permanent & Temporary elements
 - Expect different split for Permanent & Temporary
 - Reconciliation removes Temporary UIG only



Next Steps

- Consultation Period 1 - 22 Jan
 - AUG Sub-Committee to provide responses to AUG Expert asap
 - AUG Expert to provide written feedback to responses
 - Meeting to discuss feedback 14 Feb
- AUG Expert to prepare Modified AUGS & Table by 5 Mar
 - Table will be based on latest data where possible
 - Include Offline Adjustments
 - Updated Product Class Populations
 - Updated Volume Converter Populations
 - SW updated CWV (XRN4933)

AOB

- Location of Monthly Reports on JoT Website

Thank you

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