XOSERVE

Unidentified Gas (UIG) Education Pack

⋈ Glossary of Terms (1/2)

Non-Daily Metered (NDM) – of the c.25m Gas Supply Meter Points the majority are Non-Daily Metered

Daily Metered (DM) – Supply Meter Points that are read Daily - usually very high consumption

End User Category (EUC) – Categorise gas consumers by their different usage patterns. Each NDM supply point belongs to an EUC.

> For Lower consumption Bands (0 to 293 MWh pa) this includes separate EUCs for Domestic and Non-Domestic and Pre-Payment and Non-Prepayment meters

> Higher Consumption Bands (>293 MWh pa) are grouped into 4 separate EUCs based on their Winter/Annual Consumption Ratio (WAR) which provides an indication of the consumption seasonality

Local Distribution Zone (LDZ) - Each LDZ represents a geographical area of the country. Each LDZ is 'owned' by a specific gas transporter and determine the area for which they distribute gas. Here is a helpful LDZ Map.

Glossary of Terms (2/2)

Annual Quantity (AQ) – An estimate of the amount of gas (in kWh) that a Supply Meter Point will use in the coming year under seasonal normal weather conditions

Rolling AQ – is recalculated every time an acceptable read is received for a Supply Point and is used for estimating NDM Demand

Class 1 Supply Points have an Annual Quantity (AQ) of 58.6 million kWh or above and are mandatorily daily read by a Daily Meter Service Provider (DMSP)

Class 2, 3 and 4 Supply Points have an AQ below 58.6 million kWh

Class 2 Supply Points are Daily Metered, but the reads can be sent in a day later. Usually an Automated Meter Reading (AMR) device is attached (but not mandatory) which allows reading to be collated remotely everyday

Class 3 Supply Points are Non-Daily Metered (NDM) but record a daily read, with reads sent in batches on a regular basis by Shippers

Class 4 Supply Points are Non-Daily Metered (NDM) and are read at agreed intervals, annually, every 6 months or monthly. Supply Points with an AQ over 293,000 are read monthly

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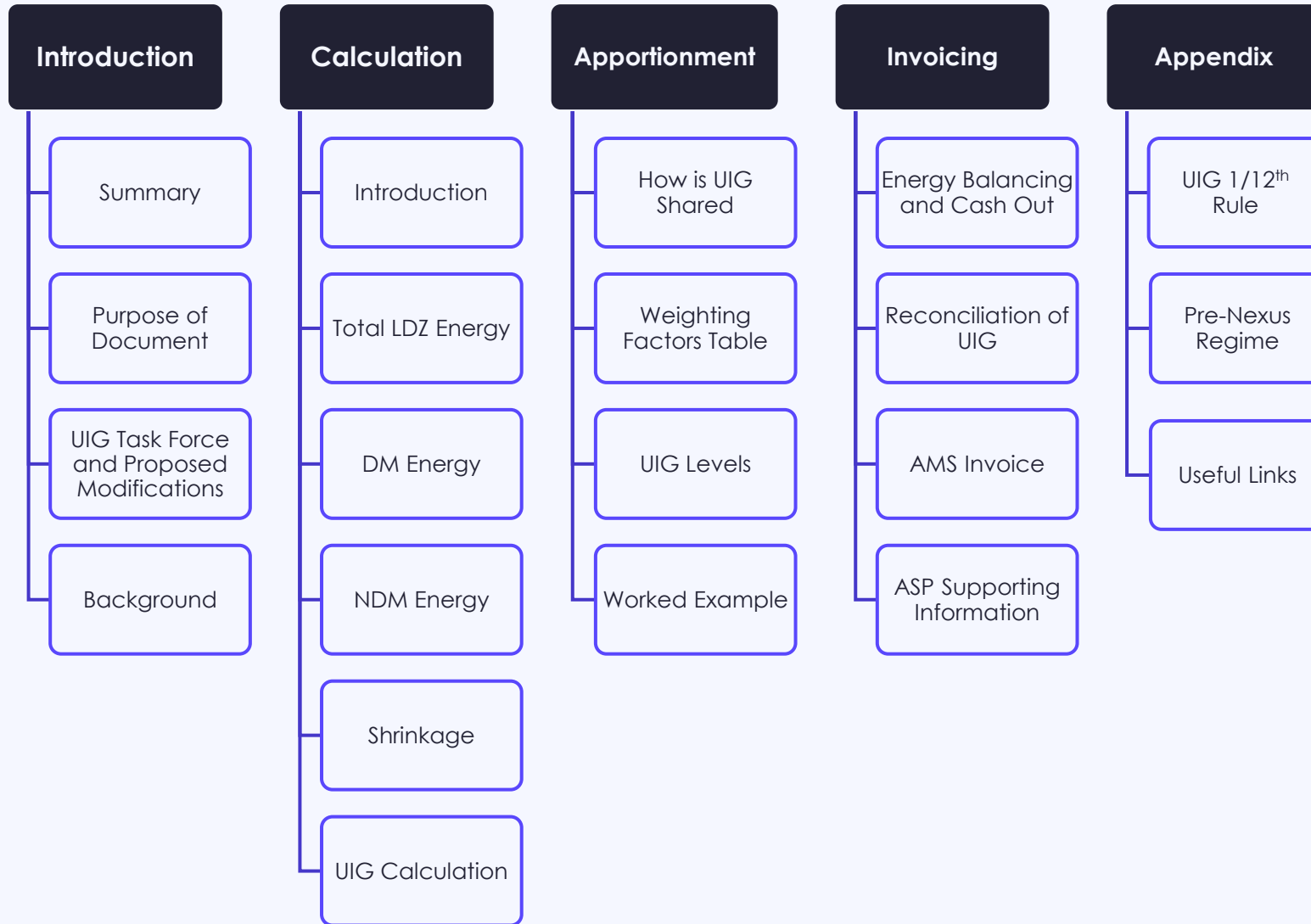
Document Navigation

To jump to a particular section or subject, click on the title

01

Introduction

July 2025

Introduction - Summary

What is Unidentified Gas (UIG)

- The majority of gas consumed in Great Britain can be accounted for as it is metered and registered. However, some gas is lost from the system, or not registered, due to theft, leakage from gas pipes, consumption by unregistered supply points and other reasons

- The gas that is off taken from the Local Distribution Zone (LDZ) System, but not attributed to an individual Supply Meter Point or accounted for as Shrinkage, is referred to as UIG

Why is UIG such a hot topic?

- The level of UIG can be volatile on a day-to-day basis, with calculated UIG values being unpredictable in nature

- The lack of projected UIG values is financially impacting organisations within the industry and customers are looking to Xoserve for further support and knowledge

Introduction – Purpose of Document

- This UIG Education Pack has been created to provide an overview and education into UIG. This includes;
    - Contributions and calculations
    - How UIG is shared out
    - Invoicing
    - Possible causes of UIG
    - Reasons for its volatility

- Signposting to further details will be provided throughout the pack – with a summary of useful links in the appendix

- It aims to deliver an easy to reference library of UIG related information which is broken down into easy to digest modules. We hope this will support our customers in gaining a more consistent level of knowledge of UIG across the industry, especially for new entrants to the market.

- This education pack aims to be seen as a reliable information source and will be updated on an ongoing basis.

Introduction – UIG Task Force and UIG Modifications

- Modification 0658 enabled Xoserve to investigate the root causes and influencers of UIG

- Xoserve made recommendations for reducing its volatility and scale

- You can find more information on the UIG Task Force in our [UK Link Docs secure area](#) (Folder 18.NDM Profiling and Capacity Estimation Algorithms / UIG / UIG Task Force)

- Modifications are often raised regarding UIG, details of all live modifications can be found on the Joint Office website here [Live Mods](#)

Introduction – Background

Why did it all change?

- As part of Project Nexus, which would replace Xoserve's UK Link system, the industry agreed the legacy way of calculating UIG needed to change. Historically, as less than 20% of annual usage and fewer than 1,000 sites submitted daily reads into the allocation process, the remainder of gas was allocated based on estimates and historic profiles based on sample data. It was also deemed inappropriate, by the industry, to smear all reconciliation energy into just the Smaller Supply Points (SSP) market

- Consultation across the industry during 2008-09, discussed the Nexus requirements. This resulted in the agreement of introducing a universal individual meter point reconciliation. UIG would be calculated daily and allocated across the entire industry using weighted profiles. It will no longer only be smeared across SSP where the AQ <73,200.

- Project Nexus implemented the changes in June 2017 and they would be the driving force to enable the industry to more accurately capture how much gas was actually unidentified and allocated. The new regime will show UIG as the balancing figure in each Local Distribution Zone (LDZ) each day. Reconciliation by Difference (RbD) would be no more

02

Calculation

Calculation - Introduction

**What are the UIG Contributors & Calculations?**

To calculate Unidentified Gas there are several considerations

- Each Local Distribution Zone (**LDZ**) is calculated independently of each other and on a daily basis

- The **Input** to each LDZ is from the National Transmission System (NTS)

  - This is known as **Total LDZ Energy**

- **Outputs** are primarily what is consumed at Supply Points. These are broken down into:

  - **Total Daily Metered** (**DM**) **Energy**

  - **Total Non-Daily Metered** (**NDM**) **Energy**

- Gas can also be lost as part of Gas Transportation activities, theft or leakage.

  - Some of this is accounted for as **Shrinkage** and is also an **Output**

Calculation – What is Total LDZ Energy?

- **Total LDZ Energy** is all the energy entering an LDZ from the NTS

- LDZs usually have multiple gas input points, as shown in the diagram opposite, with ABC representing multiple input points into an LDZ

- To provide the daily LDZ energy and display it in Gemini, National Gas collect readings from the measurement device at each input point. Using an aggregator tool, they convert this to total LDZ level before publishing

- Net gas moved to/from storage and any net stock change within the LDZ also contribute to the Inputs to make up Total LDZ Energy
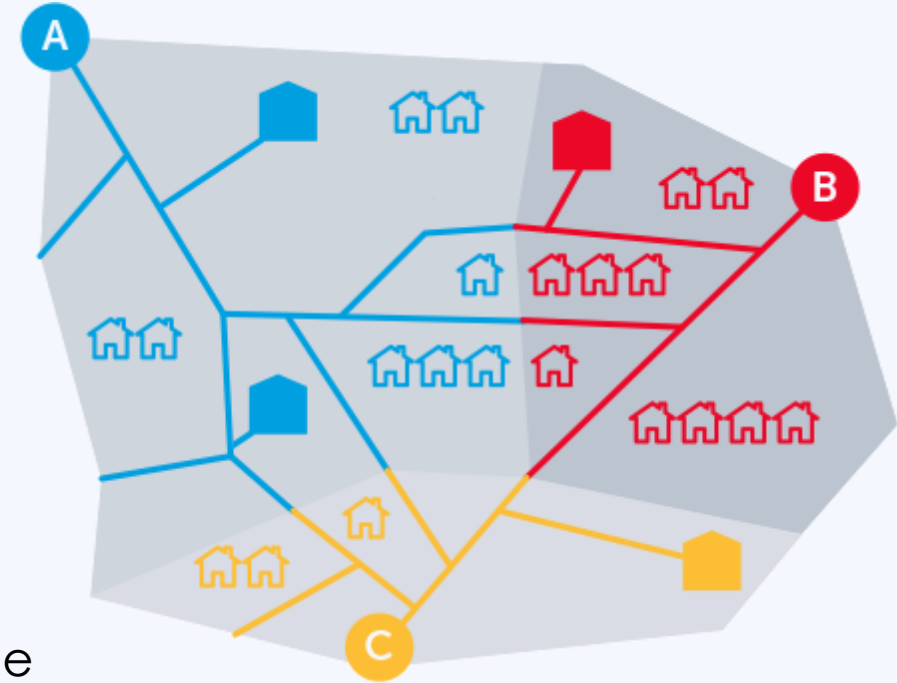
To ensure accurate UIG Calculations
- Gas Transporters continue to review accuracy of LDZ offtake equipment to minimise errors

- For more information on offtake equipment see [Measurement Error Reports | Joint Office of Gas Transporters (gasgovernance.co.uk)](gasgovernance.co.uk)

Calculation – What Makes Up Total DM Energy?

- **DM (Daily Metered) Energy** is the total energy for <u>Class 1 and 2 Supply Points</u>
- Reads received from Shippers and Daily Metered Service Provider (DMSP) are used to calculate energy in Gemini and are simply added up to provide a **Total DM Energy**

 + **+** **= Total DM Energy**

- The accuracy of the DM figure relies on timely receipt of accurate data
- With only a very small number of sites making up nearly 20% of the allocation, any inaccurate reads received could have a large impact on UIG

To ensure accurate UIG Calculations
- Accurate DM Nominations should be supplied as early as possible each day
- Meter Asset exchanges and updates should be notified in a timely manner
- Site set-up investigations and site visits should be supported

- **NDM (Non-Daily Metered) Energy** is the total energy for [Class 3 and 4 Supply Points](#)

- As an individual AQ is available for every single supply meter point we can calculate & allocate energy each day and to each particular End User Category within LDZ

- The calculation is shown below, and accuracy relies on the data being as accurate and up to date as possible

$$\text{NDM Demand}_t = (\text{Rolling AQ}/365) * \text{ALP}_t * (1 + (\text{DAF}_t * \text{WCF}_t))$$

- For each day 't' where:
  ALP = Annual Load Profile, DAF = Daily Adjustment Factor and WCF = Weather Correction Factor

- At a high level, the calculation takes the AQ of each site and coverts it to a daily figure. Then using a modelled profile, along with historic and up to date weather data, creates an expectation of what energy will be used by each site each day

- The NDM Demand Calculation considers several factors:

$$\text{NDM Demand}_t = (\textbf{Rolling AQ}/365) * \textbf{ALP}_t * (1 + (DAF_t * WCF_t))$$

- The **Rolling AQ** is covered in the [Glossary of Terms](#).

- **ALP (Annual Load Profile)**
  ALP is the daily seasonal normal as a proportion of the average daily seasonal normal demand for the End User Category. If sites used the same energy every day, then this figure would always be 1, but as supply is seasonal and profile dependent, each EUC has its own ALP Profile. Example shown for a domestic EUC.
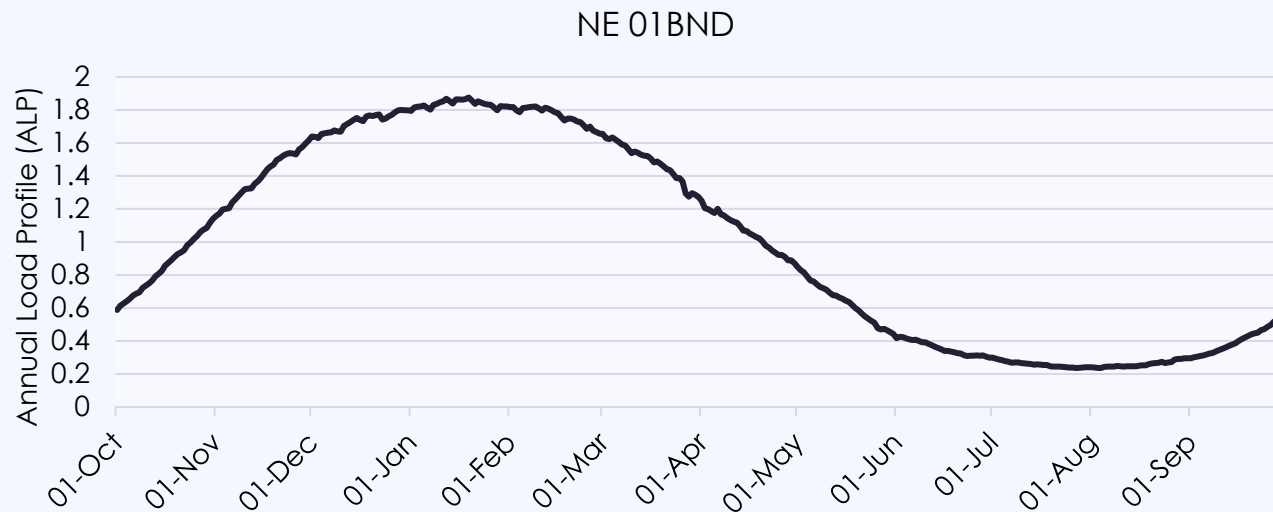
NE 01BND

- The NDM Demand Calculation considers several factors:

$$\text{NDM Demand}_t = (\text{Rolling AQ}/365) * \text{ALP}_t * (1 + (\mathbf{DAF}_t * \text{WCF}_t))$$

- **DAF (Daily Adjustment Factor)**
  DAF is the weather sensitivity of demand in the End User Category as a proportion of the seasonal normal demand of the End User Category. The DAF will always be equal to or less than zero and represents the proportion of seasonal normal demand lost for an increase in CWV of 1°, expressed as a decimal.

  For example, if the End User Category were to lose 10% of its demand with an increase of 1° in CWV, the DAF would be -0.1

  Example shown for a domestic EUC

NE 01BND

(Chart: Daily Adjustment Factor (DAF) vs. date from 01-Oct to 01-Sep. Y-axis ranges from 0 to -0.7. Curve starts around -0.23 at 01-Oct, rises to about -0.08 around 01-Jan, stays flat until 01-Apr, then declines to about -0.57 around 01-Aug, then rises back to about -0.24 at 01-Sep.)
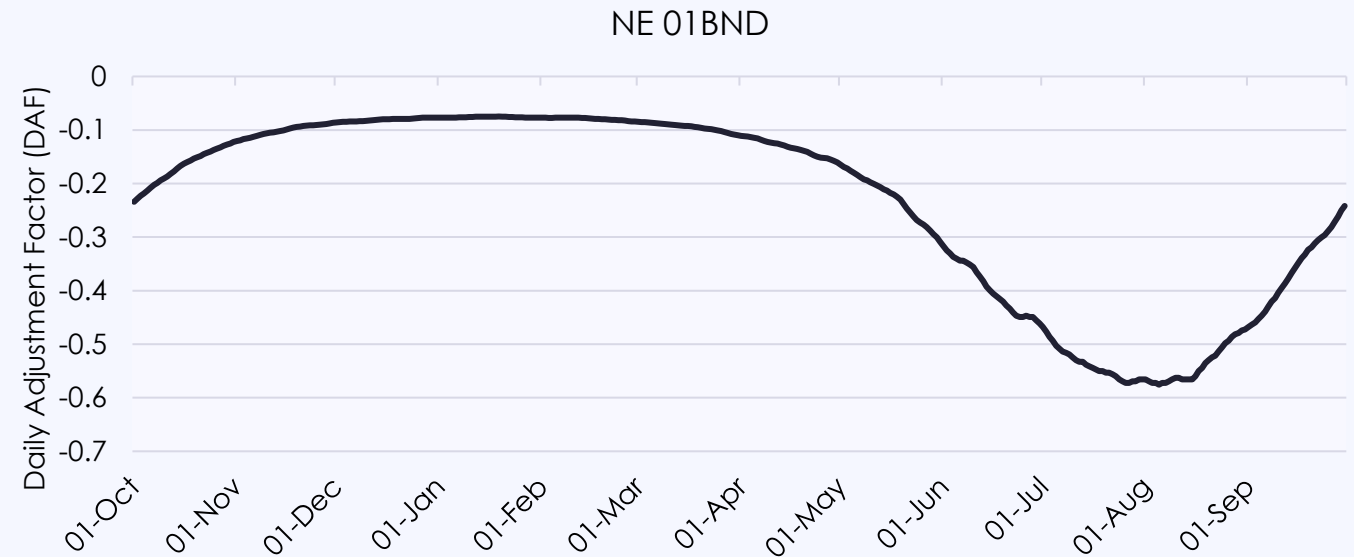
Calculation – What is Total NDM Energy? (4/4)

- The NDM Demand Calculation considers several factors:

$$\text{NDM Demand}_t = (\text{Rolling AQ}/365) * \text{ALP}_t * (1 + (\text{DAF}_t * \mathbf{WCF}_t))$$

- **WCF (Weather Correction Factor)**

The Weather Correction Factor is calculated for each LDZ using the Composite Weather Variable (CWV) minus the Seasonal Normal Composite Weather Variable(SNCWV)

Ahead of and during the day, both CWV and WCF are based on forecast weather data for the LDZ. After the day, both CWV and WCF are based on actual weather observations.

- Information packs on ALPs, DAFs and WCFs are available on the Demand Estimation page of the Xoserve website

[Demand Estimation (xoserve.com)](xoserve.com)

Calculation – How to Limit Impact of NDM Energy on UIG

NDM energy relies on accurate and up to date information. This not only assists in the accurate allocation of energy for this sector, but also helps to reduce the volume of energy that flows at reconciliation. The entire industry can mitigate these impacts to **ensure more accurate UIG calculations** by working together to:

- Review accuracy of AQs and complete adjustments where required
- Promptly register Shipperless/unregistered sites
- Supply regular accurate reads, in line with read frequency, for NDM meter points
- Notify meter asset exchanges/updates in a timely manner
- Ensure 'Payment Method' for Smart meters is kept up to date
- Use the Class 2 Product for larger NDM LSP sites where appropriate
- Submit daily reads as per UNC obligations
- Support NDM Demand Estimation modelling by enhancing sample data
- Continue to be diligent in managing consumer theft of gas
- Ensure correct Domestic or Industrial & Commercial 'Market Sector Code' flag is used
- Manage changes and defects to support activities feeding into UIG
- Ensure Vacant Sites Process is followed where appropriate

Calculation – What is Shrinkage?

- Within each LDZ there is some expected losses of gas from the network. This is known as **Shrinkage**. It is made up of three factors and is calculated by the Network Operators supported by the Industry Shrinkage Forum, these are:

  - **Leakage**, with individual quantities being calculated at LDZ level
  - **Own Use Gas** (used by the Transporters for transportation activities). This is a single factor applied across all LDZs
  - **Theft of Gas**, which is gas stolen upstream of the meter. This is a single factor applied across all LDZs

More information on Shrinkage
Joint Office Shrinkage Publications

✕ Calculation – How is UIG Calculated?

- Once we are able to identify the majority of the energy passing through the LDZs we are left with a small percentage that is unidentified

- The final calculation is:

$$\text{UIG} = \text{Total LDZ Energy} - \text{DM Energy} - \text{NDM Energy} - \text{Shrinkage}$$

UIG

Non-Daily Metered (NDM) Energy

Daily Metered (DM) Energy

Shrinkage

Total LDZ Energy
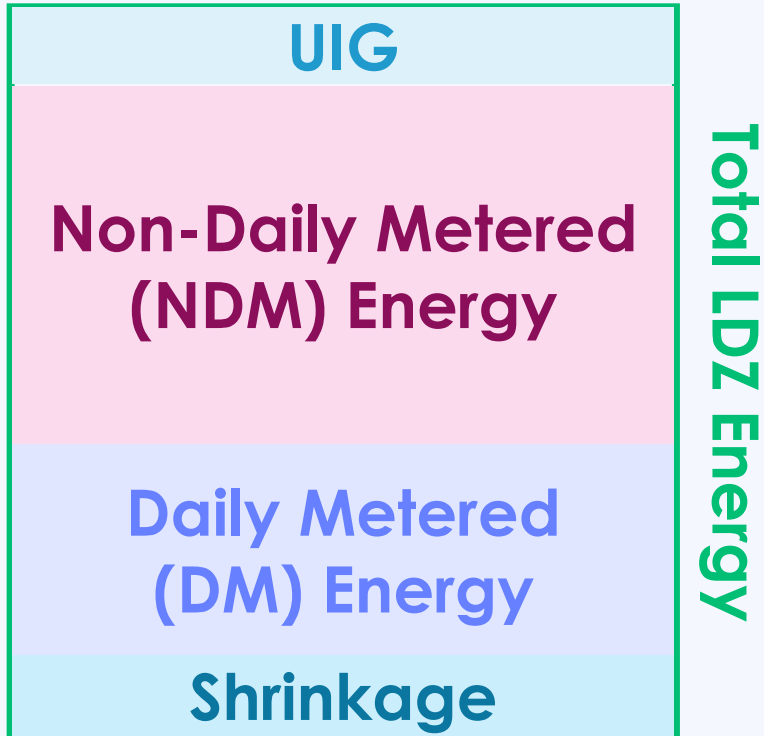
- This is calculated on a daily basis and is reported against a UIG meter in Gemini

- UIG is calculated per LDZ and is then allocated based on Class and EUC category

- This is covered further in the next section

03

Apportionment

July 2025

Apportionment – How is UIG Shared Out?

- Due to the changes in gas settlement Project Nexus brought about, the industry agreed there was a requirement to fairly apportion the total UIG between classes and End User Category (EUC)

- An independent expert (the AUGE – Allocation of Unidentified Gas Expert) helped the industry develop a methodology

- The AUGE annually provide a table of weighting factors that assigns the correct amount of UIG to different classes of meter points

- This table of weighting factors is used in the daily gas nomination and allocation processes

- Daily measured or estimated gas throughput, in each LDZ, is weighted using the AUG table factors to assign daily UIG to Shippers based on their throughput by meter point class and EUC

More information on the AUGE
AUGE Information

Apportionment – What is the Weighting Factors Table?

- A UIG Weighting value exists for each EUC, Market Sector and Payment Method along with Product Class

- The same factors apply to all Local Distribution Zones (LDZs)

- The Weighting Factors are published on the Joint Office of Gas Transporters website for each year

- The total UIG for each LDZ, Class and EUC profile are weighted using a ratio calculation rather than a % calculation

More information on the weighting Factors
AUGE Information

EUC	Class 1	Class 2	Class 3	Class 4
EUC 1ND	56.61	56.61	56.61	111.87
EUC 1PD	56.61	56.61	56.61	111.87
EUC 1NI	5.74	844.42	155.89	615.26
EUC 1PI	5.74	844.42	155.89	615.26
EUC 2ND	73.33	73.33	73.33	145.41
EUC 2PD	73.33	73.33	73.33	145.41
EUC 2NI	5.74	294.31	85.15	297.90
EUC 2PI	5.74	294.31	85.15	297.90
EUC Band 3	5.74	55.35	47.93	54.72
EUC Band 4	5.74	57.43	58.67	62.88
EUC Band 5	5.74	66.28	57.44	61.96
EUC Band 6	5.74	67.88	55.17	63.76
EUC Band 7	5.74	69.29	55.09	70.34
EUC Band 8	5.74	59.76	54.86	57.90
EUC Band 9	5.74	29.73	26.32	27.73

Apportionment – UIG Levels

- UIG fluctuates due to various factors – some known and some unknown
- The best ways to track UIG levels can be found here [Unidentified Gas (UIG) (xoserve.com)](#)
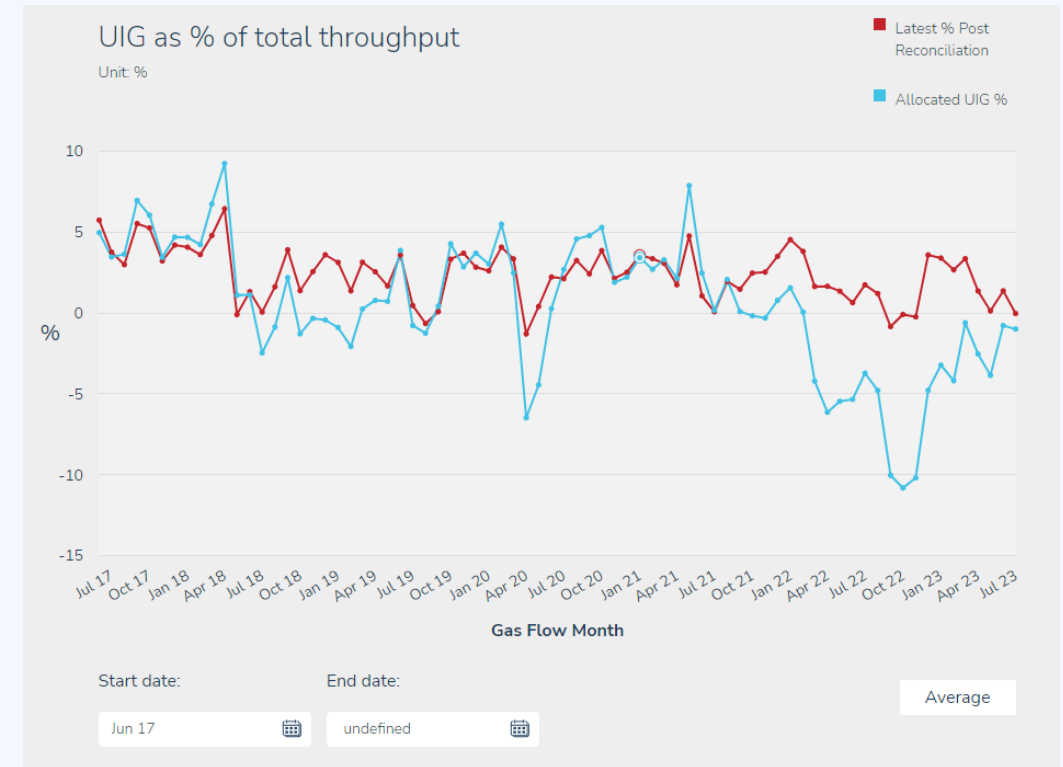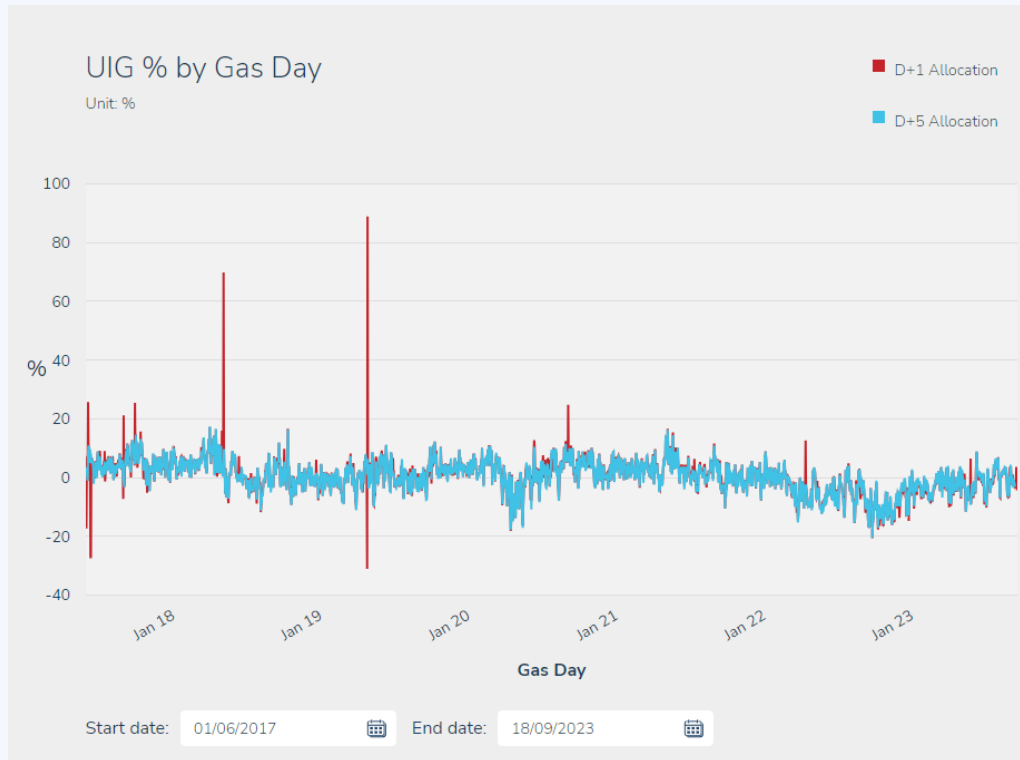
[Chart - UIG % by Gas Day - XOSERVE](#)

[UIG as % of total throughput - XOSERVE](#)

Apportionment – UIG Calculation and Allocation Worked Example

- At a high level we will look at how this all fits together. For this example we will assume 3 Shippers in one LDZ. All the values are representative of energy.

  - Step 1 – Calculate total LDZ UIG Energy
  - Step 2 – Calculate throughput for each Shipper
  - Step 3 – Calculate throughput for Total LDZ Energy
  - Step 4 – Apply weighting factors* to all Shipper throughput
  - Step 5 – Apply weighting factors* to Total LDZ Energy and total all weightings
  - Step 6 – Calculate weighted shipper throughput as a percentage
  - Step 7 – Apportion UIG

*Weighting table used is for Gas Year 23/24 and available to view on Slide 23 and here https://www.gasgovernance.co.uk/AUGStatement2324

Apportionment – UIG Calculation and Allocation Worked Example

UIG = **Total LDZ Energy** – **DM Energy** – **NDM Energy** – **Shrinkage**

Step 1 – Calculate total LDZ UIG Energy

- The UIG for the LDZ is calculated using the above calculation
- In the example this equates to 6,540 or 5.03% of the total

Total LDZ Energy	130,000
Total DM Energy	39,440
Total NDM Energy	70,220
Shrinkage	13,800
UIG	6,540
UIG Percentage = 6,540/130,000 = 5.03%	

Apportionment – UIG Calculation and Allocation Worked Example

Step 2 - Calculate throughput for each Shipper

- The throughput is calculated by EUC and Class
- In the example, we have titled the shipper 'Shipper A'

'Shipper A' has a large domestic Portfolio with few Large and Daily Metered Supply Points

	'Shipper A' Throughput			
EUC	**Class 1**	**Class 2**	**Class 3**	**Class 4**
EUC 1ND	0	0	746	17,486
EUC 1PD	0	0	0	428
EUC 1NI	0	0	276	1,810
EUC 1PI	0	0	0	0
EUC 2ND	0	0	1,275	6,894
EUC 2PD	0	0	0	0
EUC 2NI	0	0	1,024	3,197
EUC 2PI	0	0	0	0
EUC Band 3	0	0	1,035	2,541
EUC Band 4	0	0	1,456	375
EUC Band 5	0	0	987	154
EUC Band 6	801	0	423	982
EUC Band 7	0	0	0	0
EUC Band 8	2,758	0	125	0
EUC Band 9	2,879	0	184	0

Apportionment – UIG Calculation and Allocation Worked Example

Step 3 - Calculate Total LDZ throughput in the same way as step 2, but for the whole LDZ

- The throughput is calculated by EUC and Class

Total LDZ Energy	130,000	
Total DM Energy	39,440	Sum of Class 1 and 2
Total NDM Energy	70,220	Sum of Class 3 and 4
Shrinkage	13,800	
UIG	6,540	

Total LDZ Throughput				
EUC	**Class 1**	**Class 2**	**Class 3**	**Class 4**
EUC 1ND	0	0	2,642	33,660
EUC 1PD	0	0	154	724
EUC 1NI	0	0	276	1,810
EUC 1PI	0	0	0	0
EUC 2ND	0	0	1,845	11,334
EUC 2PD	0	0	0	0
EUC 2NI	0	0	1,024	3,197
EUC 2PI	0	0	0	0
EUC Band 3	0	0	1174	5581
EUC Band 4	0	28	1504	580
EUC Band 5	578	154	987	1358
EUC Band 6	2811	985	423	1405
EUC Band 7	6035	452	50	36
EUC Band 8	14773	895	190	0
EUC Band 9	11304	1425	206	60

Apportionment – UIG Calculation and Allocation Worked Example

Step 4 – Apply the Weighting Factor table to the 'Shipper A' throughputs

- The weighted throughput is calculated for each shipper independently
- The Weighting Table is shown on slide 23

Example Calculation (highlighted cell)
EUC 1ND Class 4
Shipper Throughput = 17,486
Weighting Factor = 111.87
Weighted Throughput =
17,486 x 111.87 = 1,956,159

'Shipper A' Weighted Throughput				
EUC	Class 1	Class 2	Class 3	Class 4
EUC 1ND	0	0	42,231	1,956,159
EUC 1PD	0	0	0	47,880
EUC 1NI	0	0	43,100	1,113,436
EUC 1PI	0	0	0	0
EUC 2ND	0	0	93,496	1,002,457
EUC 2PD	0	0	0	0
EUC 2NI	0	0	87,194	952,333
EUC 2PI	0	0	0	0
EUC Band 3	0	0	49,608	139,044
EUC Band 4	0	0	85,424	23,580
EUC Band 5	0	0	56,693	9,542
EUC Band 6	4,598	0	23,337	62,612
EUC Band 7	0	0	0	0
EUC Band 8	15,831	0	6,858	0
EUC Band 9	16,525	0	4,843	0

Apportionment – UIG Calculation and Allocation Worked Example

Step 5 – Apply the Weighting Factor table to calculate the Total LDZ Energy throughput

- The Weighting Table is shown on slide 23

> **Example Calculation (highlighted cell)**
> EUC 1ND Class 4
> Total LDZ Throughput = 33,660
> Weighting Factor = 111.87
> Weighted Throughput =
> 33,660 x 111.87 = 3,765,591

The sum of the weighted throughput is
Total LDZ Weighted Value = 9,156,831

Total LDZ Weighted Throughput				
EUC	Class 1	Class 2	Class 3	Class 4
EUC 1ND	0	0	149,559	3,765,591
EUC 1PD	0	0	8,695	80,980
EUC 1NI	0	0	43,100	1,113,436
EUC 1PI	0	0	0	0
EUC 2ND	0	0	135,294	1,648,103
EUC 2PD	0	0	0	0
EUC 2NI	0	0	87,194	952,333
EUC 2PI	0	0	0	0
EUC Band 3	0	0	56,270	305,392
EUC Band 4	0	1,608	88,240	36,470
EUC Band 5	3,318	10,207	56,693	84,142
EUC Band 6	16,135	66,862	23,337	89,583
EUC Band 7	34,641	31,319	2,755	2,532
EUC Band 8	84,797	53,485	10,423	0
EUC Band 9	64,885	42,365	5,422	1,664

Apportionment – UIG Calculation and Allocation Worked Example

Step 6 – The weighted value for each EUC/Class combination in Step 4 is divided by the Total LDZ Weighted Value calculated in Step 5

Example Calculation (highlighted cell)
EUC 1ND Class 4
Weighted Throughput = 1,956,159
Total LDZ Weighted Value = 9,156,831
Percentage of LDZ Total UIG = 0.213628

'Shipper A' Percentage of LDZ Total				
EUC	Class 1	Class 2	Class 3	Class 4
EUC 1ND	0	0	0.004612	0.213628
EUC 1PD	0	0	0	0.005229
EUC 1NI	0	0	0.004707	0.121596
EUC 1PI	0	0	0	0
EUC 2ND	0	0	0.010210	0.109476
EUC 2PD	0	0	0	0
EUC 2NI	0	0	0.009522	0.104002
EUC 2PI	0	0	0	0
EUC Band 3	0	0	0.005418	0.15185
EUC Band 4	0	0	0.009329	0.002575
EUC Band 5	0	0	0.006191	0.001042
EUC Band 6	0.000502	0	0.002549	0.006838
EUC Band 7	0	0	0	0
EUC Band 8	0.001729	0	0.000749	0
EUC Band 9	0.001805	0	0.000529	0

Apportionment – UIG Calculation and Allocation Worked Example

Step 7 – The percentage share calculated in Step 6 is multiplied by the total UIG for the LDZ (from Step 1) to provide the amount of UIG apportioned to each EUC Band and Class for the Shipper

Example Calculation (highlighted cell)
EUC 1ND Class 4
Percentage of LDZ Total UIG = 0.213628
Total LDZ UIG = 6,540
Calculated Value = 1,397.13

Total apportioned UIG for 'Shipper A' = 4,168.75 which is the value shown in Gemini

'Shipper A' UIG Share				
EUC	**Class 1**	**Class 2**	**Class 3**	**Class 4**
EUC 1ND	0	0	30.16	1,397.13
EUC 1PD	0	0	0	34.20
EUC 1NI	0	0	30.78	795.24
EUC 1PI	0	0	0	0
EUC 2ND	0	0	66.78	715.98
EUC 2PD	0	0	0	0
EUC 2NI	0	0	62.28	680.18
EUC 2PI	0	0	0	0
EUC Band 3	0	0	35.43	99.31
EUC Band 4	0	0	61.01	16.84
EUC Band 5	0	0	40.49	6.81
EUC Band 6	3.28	0	16.67	44.72
EUC Band 7	0	0	0	0
EUC Band 8	11.31	0	4.90	0
EUC Band 9	11.80	0	3.46	0

Apportionment – UIG Calculation and Allocation Worked Example

- The other Shippers in the LDZ ('Shipper B' and 'Shipper C') will have the UIG allocation calculated in the same way
- In this example the 'Shipper B' portfolio is entirely Domestic

'Shipper B' Throughput (All Domestic)				
EUC	Class 1	Class 2	Class 3	Class 4
EUC 1ND	0	0	1,896	16,174
EUC 1PD	0	0	154	296
EUC 1NI	0	0	0	0
EUC 1PI	0	0	0	0
EUC 2ND	0	0	570	4,440
EUC 2PD	0	0	0	0
EUC 2NI	0	0	0	0
EUC 2PI	0	0	0	0

'Shipper B' Percentage of LDZ Total				
EUC	Class 1	Class 2	Class 3	Class 4
EUC 1ND	0	0	0.011721	0.197605
EUC 1PD	0	0	0.000950	0.003615
EUC 1NI	0	0	0	0
EUC 1PI	0	0	0	0
EUC 2ND	0	0	0.004565	0.070510
EUC 2PD	0	0	0	0
EUC 2NI	0	0	0	0
EUC 2PI	0	0	0	0

'Shipper B' UIG Share				
EUC	Class 1	Class 2	Class 3	Class 4
EUC 1ND	0	0	77	1,292
EUC 1PD	0	0	6	24
EUC 1NI	0	0	0	0
EUC 1PI	0	0	0	0
EUC 2ND	0	0	30	461
EUC 2PD	0	0	0	0
EUC 2NI	0	0	0	0
EUC 2PI	0	0	0	0

Total apportioned UIG for 'Shipper B' = 1,889.83

Apportionment – UIG Calculation and Allocation Worked Example

- The other Shippers in the LDZ ('Shipper B' and 'Shipper C') will have the UIG allocation calculated in the same way
- In this example the 'Shipper C' portfolio is entirely DM and Industrial and Commercial NDM Band 3 and above

'Shipper C' Throughput (All DM And Large NDM)				
EUC	Class 1	Class 2	Class 3	Class 4
EUC Band 3	0	0	139	3040
EUC Band 4	0	28	48	205
EUC Band 5	578	154	0	1204
EUC Band 6	2010	985	0	423
EUC Band 7	6035	452	50	36
EUC Band 8	12015	895	65	0
EUC Band 9	8425	1425	22	60

'Shipper C' Percentage of LDZ Total				
EUC	Class 1	Class 2	Class 3	Class 4
EUC Band 3	0	0	0.000728	0.018167
EUC Band 4	0	0	0.000308	0.001408
EUC Band 5	0	0	0	0.008147
EUC Band 6	0.001260	0	0	0.002945
EUC Band 7	0	0	0	0
EUC Band 8	0.007532	0	0.000389	0
EUC Band 9	0.005281	0	0.000063	0

'Shipper C' UIG Share				
EUC	Class 1	Class 2	Class 3	Class 4
EUC Band 3	0	0	5	119
EUC Band 4	0	1	2	9
EUC Band 5	2	7	0	53
EUC Band 6	8	48	0	19
EUC Band 7	25	22	2	2
EUC Band 8	49	38	3	0
EUC Band 9	35	30	0	1

Total apportioned UIG for 'Shipper C' = 481.42

Apportionment – UIG Calculation and Allocation Worked Example

Worked Example Summary

- The original UIG for the LDZ of 6,540 has been split over the three Shippers in the LDZ according to the Weighting Factors
- Shippers with a higher portion of the Total NDM Energy for the LDZ currently get a higher allocation of UIG
- This is a result of the higher relative Weighting Factors for NDM (Slide 23)

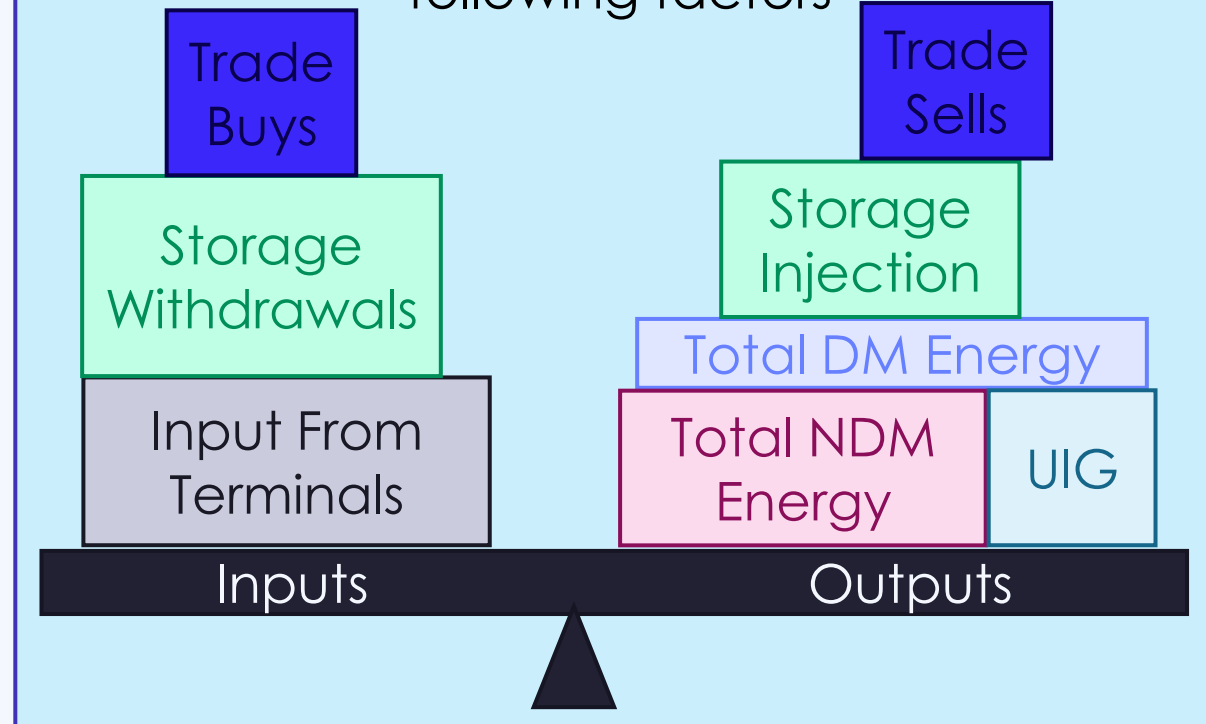|		'Shipper A'	'Shipper B'	'Shipper C'
Total LDZ Energy	130,000			
Total DM Energy	39,440	6,438	0	33,002
Total NDM Energy	70,220	41,398	23,530	5,292
Shrinkage	13,800			
UIG	6,540	4,169	1,890	481
UIG Percentage = 6,540/130,000 = 5.03%				

Invoicing – Energy Balancing and Cash Out for UIG

Pre Nexus, energy was balanced using the following factors

Inputs: Trade Buys, Storage Withdrawals, Input From Terminals

Outputs: Trade Sells, Storage Injection, Total DM Energy, Total NDM Energy
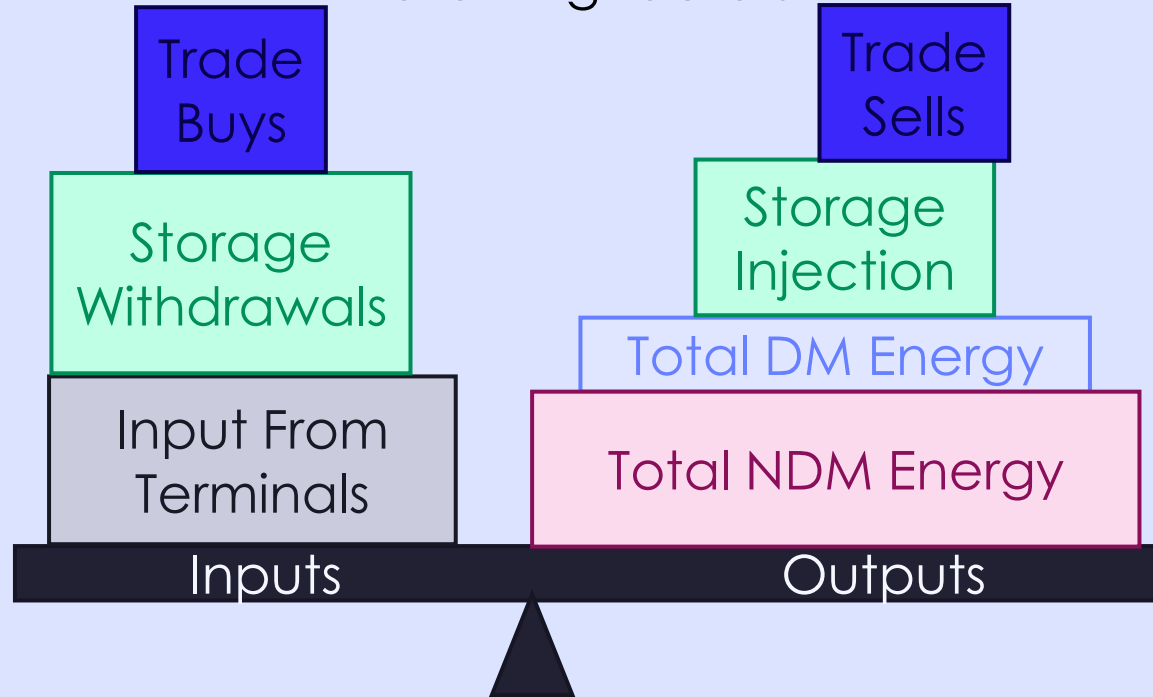
Post Nexus energy is balanced using the following factors

Inputs: Trade Buys, Storage Withdrawals, Input From Terminals

Outputs: Trade Sells, Storage Injection, Total DM Energy, Total NDM Energy, UIG

As you can see, the main difference is that **UIG** now appears on the outputs side, although the **UIG** and **Total NDM Energy** Post Nexus equates to the **Total NDM Energy** Pre Nexus.

Invoicing – Energy Balancing and Cashout for UIG

Considerations for UIG as Part of Energy Balancing & Cashout

- As UIG now forms part of a Shipper's overall daily cash out, it is part of the Daily Cashout charges on a Shipper's Energy Balancing Invoice (EBI)

- The UIG meter does not appear on the EBI with its own charge type

- The Shipper's overall daily imbalance is worked out using all Input and Trades acquired, minus all Outputs (DM sites, NDM sites, UIG) and Trades sold which gives the overall imbalance for the gas day and Shipper

- If the value is positive, then the Shipper has over delivered, and they are cashed out at SMP sell price. If the value is negative, they have under delivered and this is cashed out at SMP buy price

- Final allocations are used for final imbalance and cash out

- UIG is on the Output side hence effectively closes out at D+5

Invoicing – How Does Reconciliation Affect UIG? (1/4)

- Reconciliation relies on actual meter reads being submitted. These reads could either account for (identify) more or less gas than was used in the original UIG calculation, based on the previous actual read

- Readings can be received for a variety of reasons including:

    - Class 1 & 2 - actual read received following a period of estimates

    - Class 3 batch of actual reads received on a monthly basis

    - Class 4 actual reads received dependent on read frequency

    - RGMA (Review of Gas Metering Arrangements) Activity

    - Annual check reads at site

    - Estimated shipper transfer & class change readings

- Therefore, each actual read on each site impacts UIG in some way. All these reconciliation values are aggregated by Class, EUC and LDZ. The kWh is also apportioned but is not used to recalculate the financial amount and is a notional value

- We perform reconciliation on all Supply Points (e.g.1-10) where we have received read(s) in that billing month. The diagram shows a simplified example of Individual Reconciliations for Billing Month 'M' shown in **red**

- The energy for each NDM site is apportioned across the Reconciliation Period (read date - read date) in line with the NDM algorithm (see slide 14)

- Reconciliation Periods can be:
  - longer than 12 months (as in Supply Point 6)
  - Re-reconciliations for past periods (as in Supply Point 9)
 - Multiple periods for one Supply Point (as in Supply Point 4)
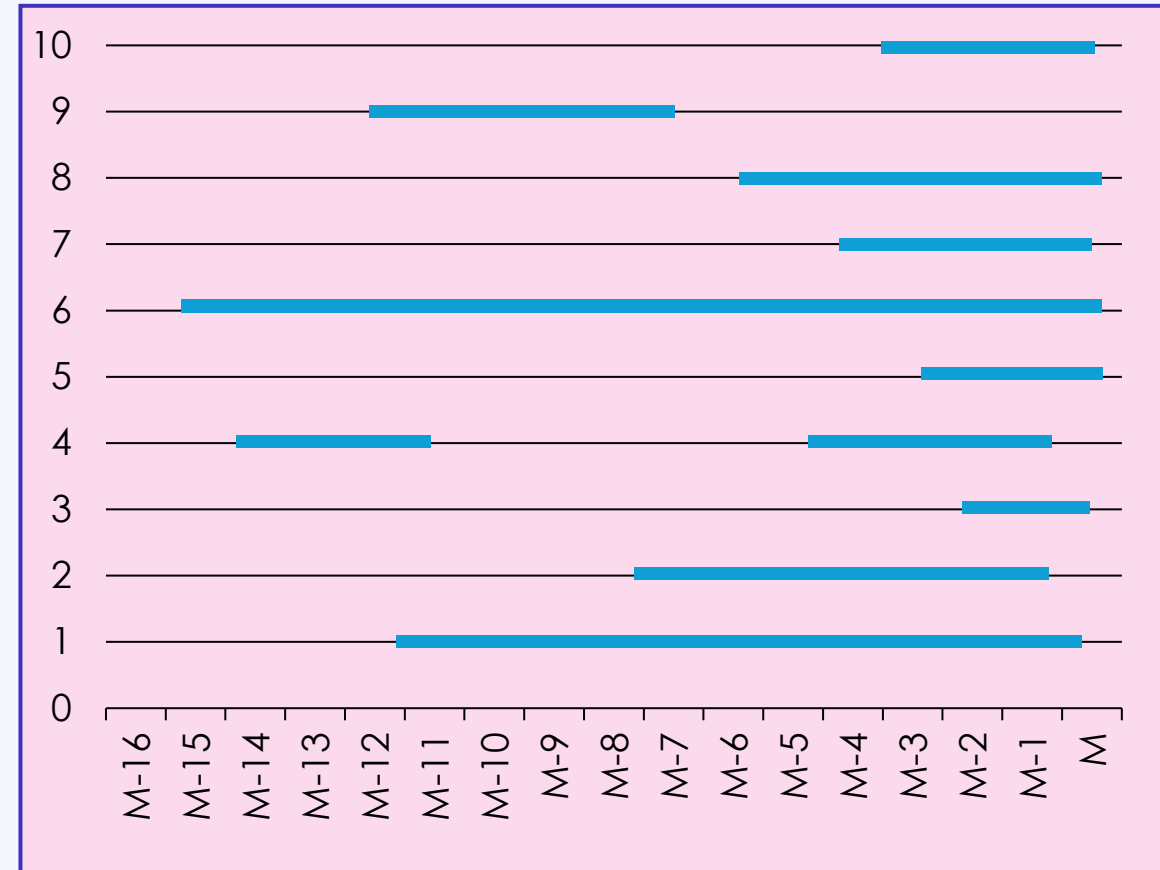
Invoicing – How Does Reconciliation Affect UIG? (3/4)

- The difference in energy consumption for each site is applied to The Reconciliation Period (read date to read date) and billed/ credited to the appropriate Shipper
- The opposite value of all the reconciliations in the LDZ for that billing month are totalled up by supply month to become UGR (UIG Reconciliation)

Billing Month 'M' Reconciliation Energy

Supply Month

Total actual Meter Point Reconciliations for Billing Month 'M' = -97.06m kWh (back to Line in the Sand)

New Method (from June 25)
Each month the UGR value is apportioned according to the prevailing supply month throughput
For example, for the highlighted supply month, the UGR (+6.8m kWh) will be apportioned according to the prevailing throughput for the month in question
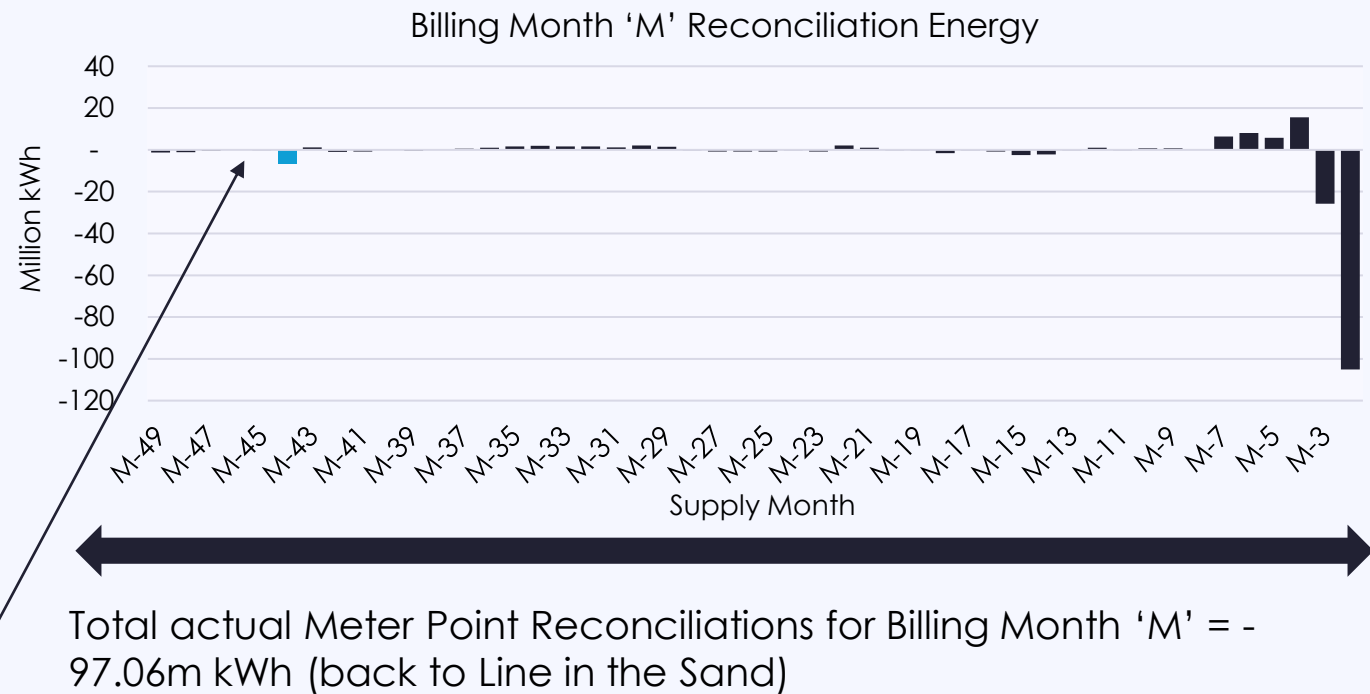
Previous Method (see Appendix 1 for details)
The opposite of the total reconciled volume (97.06m kWh) would be split into 12 equal portions and apportioned according to the throughput in the previous 12 months

Prevailing Throughput – the latest value of throughput for the month, as adjusted for reconciliation

Invoicing – How Does Reconciliation Affect UIG? (4/4)

- Note: The process for the sharing of UIG Reconciliation changes on 27 June 2025 as a result of Mod 0862
  - To understand the process prior to this change please see Appendix 1

- The first time it will apply is for the June 25 Amendment Invoice, which will be issued on 24 July 2025

- The UIG Reconciliation Smear will use latest reconciled throughput values (for the historical months of the Meter Point reconciliations) and AUGE weighting factors relevant to the UIG Reconciliation Period

- UIG will be reconciled back to Line in the Sand (LIS) and Unidentified Gas Reconciliation (UGR) Charges will be aggregated the same as today (Shipper, LDZ, EUC, Class type and Billing Period level) which are issued within the Amendment Invoice and supporting information (.ASP file)

Invoicing – Previous Exceptions to 12-month Apportionment Rule

- The new method from June 2025 brings all UIG Reconciliation in line with the two scenarios which have always related to the original error/adjustment period

  - **Significant LDZ Measurement Errors – over 50GWh**

  - **Annual Shrinkage Adjustment**

- Both of these are apportioned over the period of the error or adjustment, using the throughput shares applicable to those specific periods

- When these are issued, they will appear on a separate line within the K91 record of the ASP Core Amendment Invoice Supporting Information file

- Details of Significant LDZ Measurement Errors can be found on the Joint Office webpage on the Measurement Error Register:- Measurement Error Reports | Joint Office of Gas Transporters (gasgovernance.co.uk)

- Details of the Annual Shrinkage Adjustments provided by each Distribution Network are also found on the Joint Office webpage under LDZ Shrinkage Assessment and Adjustment | Joint Office of Gas Transporters (gasgovernance.co.uk)

Invoicing – Viewing UIG on Amendment Invoices (AMS)

- The Amendment Invoice (AMS) is triggered by a number of factors

- There are 52 possible charges which can appear on the Amendment Invoice

- One of the charge types is the Unidentified Gas Reconciliation (UGR) charge

- The purpose of the UGR charge is to redistribute UIG throughout the network and across all Shipper networks proportionally to their portfolio

Invoice Files and Supporting Information Files

- AMS invoices are issued as a csv file via the Information Exchange (IX) on the 18th Business Day of each month

- Each AMS Invoice provides the UGR total charge per Network

- Shippers will receive separate invoices for each Network they operate in

- ASP Core Amendment Invoice Supporting Information file provides a further breakdown of the UGR charges across all Networks – this page has more information Supporting information files (level 1 and 2) (xoserve.com)

Invoicing – ASP Supporting Information

- The **ASP Supporting Information file** is also known as the "Thin File"

- It is issued as a CSV (comma separated value) file via the IX, sent on the same day as the AMS Invoice (18th Business Day of the month)

- The UGR Charge appears in the **K91 record - Reconciliation Invoice UG Smear**

- The K91 record breaks down the UGR charge and includes:

LDZ	EUC Number	Class Type	UIG (Weighting) Factor	UIG Incurred Month and Year
LDZ Total Throughput	Shipper Throughput	Shipper Throughput Share	UIG Charge Amount	UIG Reconciliation Quantity

Note: If you notice multiple lines on the K91 record with the same information apart from the charge amount and reconciliation quantity, the 1st line corresponds to the "Monthly rec smear" and the 2nd is the "Other LDZ adjustments smear". The 2nd line relates to a Request To Bill (RTB) that will have been issued following a receipt of an ORD submission.
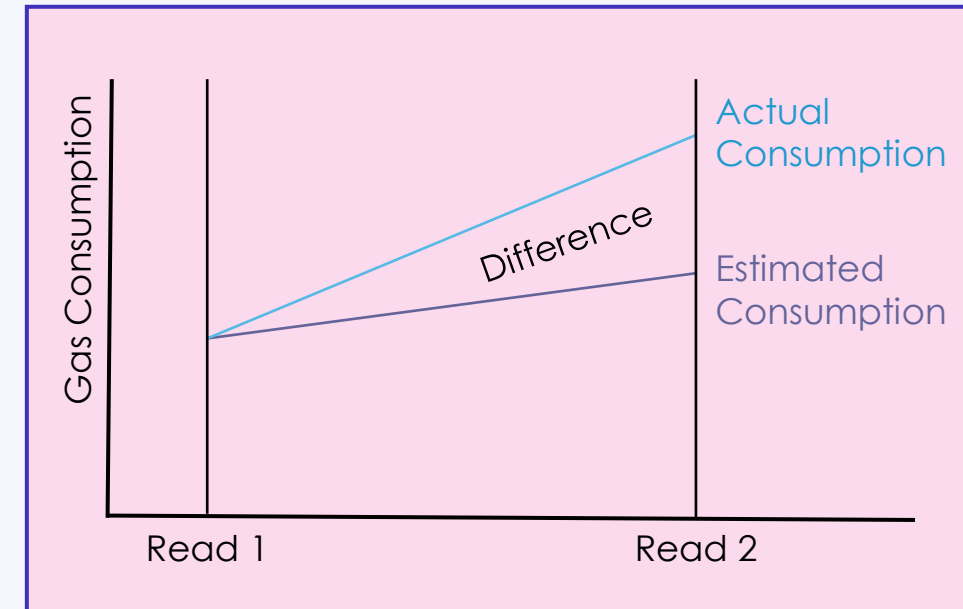
Appendix 01

Pre June-25 Reconciliation

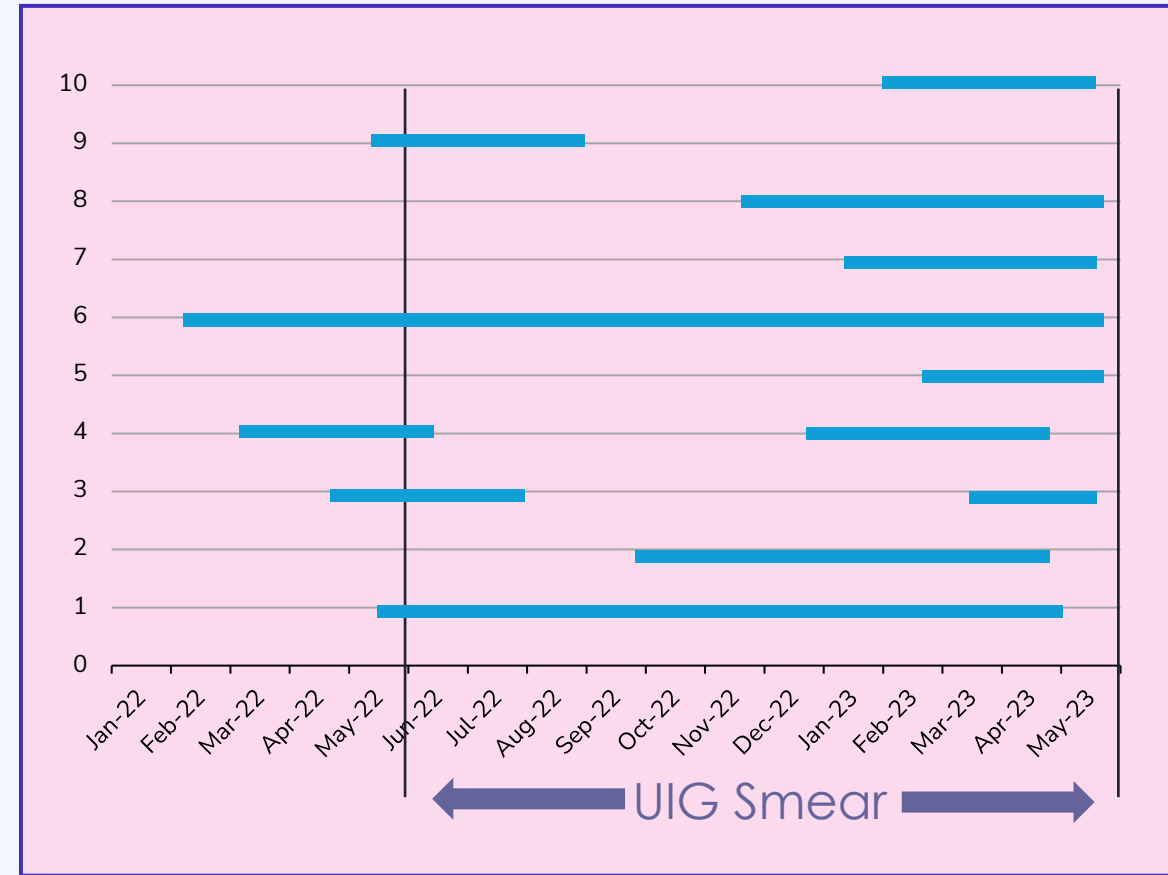# Invoicing – How Does Reconciliation Affect UIG? (1/3)

- Reconciliation relies on actual meter reads being submitted. These reads could either account for (identify) more or less gas than was used in the original UIG calculation, based on the previous actual read
- Readings can be received for a variety of reasons including:
    - Class 1 & 2 - actual read received following a period of estimates
    - Class 3 batch of actual reads received on a monthly basis
    - Class 4 actual reads received dependent on read frequency
    - RGMA (Review of Gas Metering Arrangements) Activity
    - Annual check reads at site
    - Estimated shipper transfer & class change readings
- Therefore, each actual read on each site impacts UIG in some way. All these reconciliation values are aggregated by Class, EUC and LDZ. The kWh is also apportioned but is not used to recalculate the financial amount and is a notional value
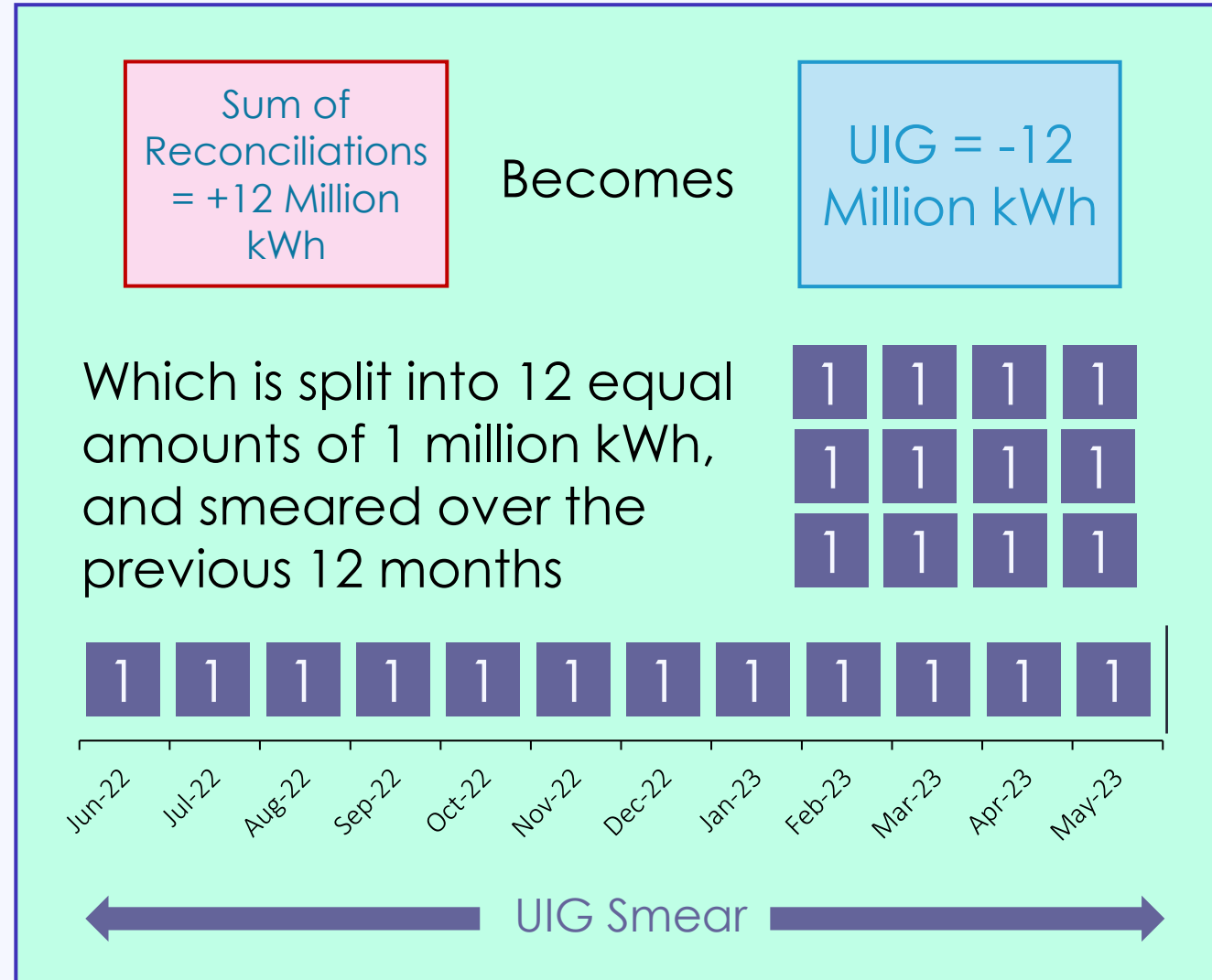
Invoicing – How Does Reconciliation Affect UIG? (2/3)

- We perform reconciliation on all Supply Points (e.g.1-10) where we have received read(s) in that billing month. The diagram shows a simplified example of Individual Reconciliations for the month of May 23 shown in **blue**

- The energy for each NDM site is apportioned across the reconciliation period (read date - read date) in line with the NDM algorithm (see [slide 14](#))

- Reconciliation periods can be:
    - longer than 12 months (as in Supply Point 6)
    - Re-reconciliations for past periods (as in Supply Point 9)
    - Multiple periods for one Supply Point (as in Supply Point 4)

- Regardless of the reconciliation period the UIG is smeared equally over the 12 months prior to the read being received – this period is shown below the chart in **blue**

- The opposite of the sum of reconciliation value amends UIG energy (aggregated at LDZ, Class, EUC level) and is then smeared equally across the previous 12 months

- **Example (shown on right)**
  If the total reconciliation figure (the sum of all the **red** lines on the previous slide) total 12million kwh, then this is effectively identified, and therefore it comes off the unidentified total, and the UIG smear would be -12m kWh and split to -1m kWh per month

- The same process could cause the unidentified gas (UIG) volume to increase if the reconciliation figure is a negative value, as seen during the period of 2022/23 when there were large credit reconciliations.

Sum of Reconciliations = +12 Million kWh

Becomes

UIG = -12 Million kWh

Which is split into 12 equal amounts of 1 million kWh, and smeared over the previous 12 months

1	1	1	1
1	1	1	1
1	1	1	1

| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

Jun-22 Jul-22 Aug-22 Sep-22 Oct-22 Nov-22 Dec-22 Jan-23 Feb-23 Mar-23 Apr-23 May-23

← UIG Smear →

Invoicing – Why is UIG Split 1/12 per month? (1/2)

- In its simplest terms "*a Shipper is responsible for a % of the UIG amendment for a site for 12 Months for the period of its ownership*" and the reason for this "*The Industry agreed that majority of reconciliations would flow within 12 months, and rather than continue to share out reconciliations over a long period, using 12 months would be less of a barrier to exiting the market*"

- In practical terms, if a site is taken over by a new Shipper or a Shipper leaves the market, the outgoing Shipper will still be responsible for the UIG charge on the amendment invoice for the site for 12 months, although this will dwindle over the 12 month period.

- Examples of different shipper activities and how this would impact the UIG Reconciliation is covered on the following slide

Invoicing – Why is UIG Split 1/12 per month? (2/2)

Examples of UIG Responsibility

- There are 3 Shippers in the market (A, B & C)
    - **Shipper A** had decided to leave the market and all Supply Points moved at the beginning of month 1
    - **Shipper B** is an established Shipper and has Supply Points moving in out regularly
    - **Shipper C** is new to the market and Supply Points started from the beginning of month 1

- **Shipper A**

Despite exiting the market, Shipper A will still have UIG responsibility for the next 12 months (as it is based on the previous 12 months weighted throughput). This is regardless of the reconciliation dates of their own Supply Points. Their UIG responsibility will reduce over time

- **Shipper B**

Will have ongoing UIG responsibility, based on their weighted throughput for the 12 months before the reconciliation month

- **Shipper C**

Will have no UIG responsibility in month one as they will have had no throughput in previous 12 months. This is even if Supply Points in their portfolio reconcile in the month. Their UIG responsibility will increase over time
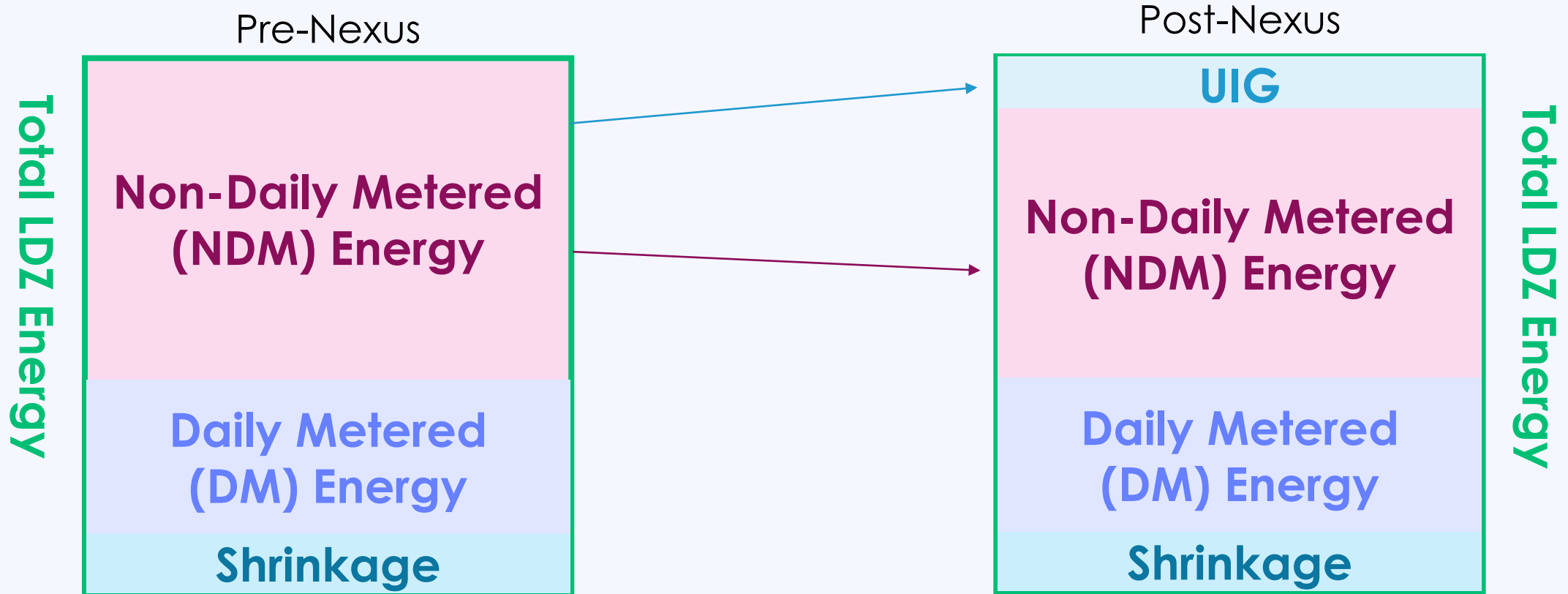
Appendix 02

Pre-Nexus Regime

Appendix – Pre-Nexus Regime

- Before UIG the process was known as RbD or Reconciliation by Difference

- The following parts of the UIG process have not changed and are as outlined in this pack:
    - Total LDZ energy was calculated in the same way
    - The principles of Shrinkage was the same
    - DM Energy (Class 1 & 2) were calculated using actual reads
    - Energy Balancing principles, although UIG was not an Output factor

- An illustration of the change is shown on the following slide

Appendix – Pre-Nexus Regime

- The only difference was that the remainder of the energy was allocated as **NDM Energy**
  - This is also illustrated on slide 37
  - This energy was calculated per LDZ and allocated based on portfolio share

Pre-Nexus

Post-Nexus

Total LDZ Energy

Non-Daily Metered (NDM) Energy

Daily Metered (DM) Energy

Shrinkage

UIG

Non-Daily Metered (NDM) Energy

Daily Metered (DM) Energy

Shrinkage

Total LDZ Energy

Appendix 3 – Useful Links

- **UIG Pages on Xoserve**

  - All you need to know about UIG, Communications, Events Material, Training Info. and Useful Links

  - Unidentified Gas (UIG) (xoserve.com)

- **AML Supporting Information File Format and File Hierarchy**

  - From the UK Link Documentation Library, select UK Link Interface Documents > 3b. System Interface Documents > Shipper

  - UK Link Documentation - File Formats - All Documents (sharepoint.com)

  - UK Link Documentation - File Hierarchies - All Documents (sharepoint.com)

- **Joint Office of Gas Transporters**

  - AUG Statements (and lots of other useful information)

  - AUG Information (Post 2017) | Joint Office of Gas Transporters (gasgovernance.co.uk)

- **Raise a Query About UIG**

  - Any queries you have regarding Unidentified Gas should be raised via our Support platform on Xoserve.com and these will be routed to the Demand Estimation Team

  - Your Query | Xoserve