

UAGCVS Report

November 2024



Executive Summary

This report provides a review of National Gas Transmission's (NGT) Unaccounted for Gas (UAG) management since April 2013, the start of the RIIO-T1 price control. The report places particular emphasis on the period between 1st April 2024 to 30th September 2024 inclusive, the period since the publication of the May 2024 UAGCVS report. This report also contains our Calorific Value Shrinkage (CVS) statement with an overview of its possible causes.

The publication of this report discharges NGT obligations under the Gas Transporter Licence Part J of Special Condition 5.6 (System operator external incentives, revenues and costs) – requirement to undertake work to investigate the causes of UAG and CVS.

The total assessed pre-reconciled UAG quantity for the 1st April 2024 to 30th September 2024 is lower than the previous six months (1st October 2023 to 31st March 2024), which aligns with historical seasonal trends. Pre-reconciled UAG in formula year 2024/25 is higher than the previous summer of 2023/24.

By using data visualisation tools and analytical, investigative projects, NGT continues to improve its understanding into the causes of UAG.

CV Shrinkage is currently trending lower in 2024/25 than the previous year, although based on only 6 months of data. CV Capping has occurred less frequently during this summer period, when compared to the same months in the last formula year.

Continued support from meter owners has enabled NGT to obtain and review meter validation reports for NTS entry and exit facilities. This data is used to support the identification of UAG causes, enhance NGT's ability to detect meter error, and inform the preparation of future meter witnessing programmes.

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Unaccounted for Gas & Calorific Value Shrinkage Report – November 2024

Introduction

This report provides a review of National Gas Transmission's (NGT) UAG and CVS management.

The report provides information on assessed UAG quantities since April 2013, the start of the RIIO-T1 price control, with particular emphasis on 1st April 2024 to 30th September 2024 inclusive - the period since the publication of the May 2024 UAG report.

Throughout the report, projects undertaken by NGT are outlined, describing the investigations carried out into the causation of UAG and CVS.

UAG, CVS and OUG (Own Use Gas) are the three components of NTS Shrinkage. Further information on the components of NTS Shrinkage can be found via the following link:

[NGT - Shrinkage](#)

NGT also provide a range of UAG related data to accompany this report including:

- previous UAG reports and UAGCVS reports.
- daily data on the components of NTS Shrinkage.

which are available on the National Gas Transmission website via the following link:

[NGT - UAG Management](#)

The publication of this report and associated backing data discharging NGT's obligations under the Gas Transporter Licence Part J of Special Condition 5.6, is detailed in Appendix I of the report.

If you have any feedback or questions on this document, please contact NGT's Meter Assurance team via the following email address: meterassurance@nationalgas.com.

The Meter Assurance Team is part of the Energy Balancing team within NGT, responsible for investigating the causes of and reporting upon UAG and CVS.

National Transmission System Unaccounted for Gas Trends

This section of the report provides information on assessed UAG quantities since April 2013, with particular emphasis on the period between 1st April 2024 to 30th September 2024.

Unless stated otherwise, all UAG values used in this report are pre-reconciliation. Pre-reconciled UAG is the value which is recorded after entry and exit closeout. This data shows the position prior to any reconciliations taking place.

Formula Years 2013/14 to 2024/25

Figure 1 provides the annual assessed UAG, OUG and CVS quantities for formula years 2013/14 to 2024/25 so far. A formula year refers to the period from 1st April to 31st March of the following year.

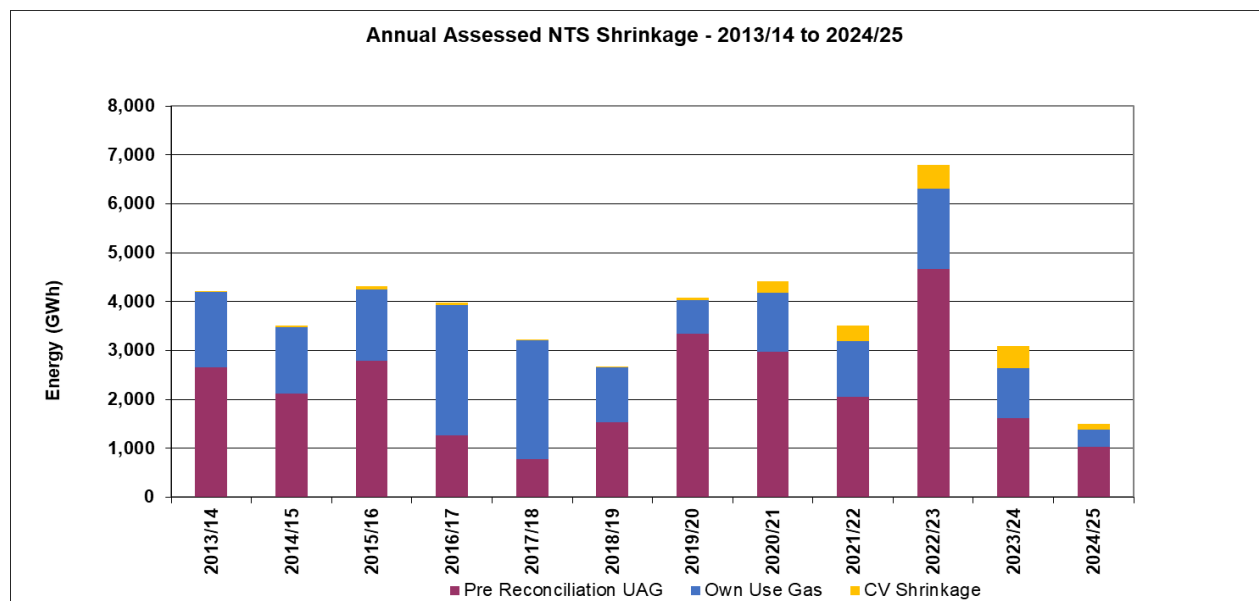


Figure 1: Annual Assessed NTS Shrinkage – 2013/14 to 2024/25

Figure 1 indicates that in formula year 2024/25 so far, NTS Shrinkage is lower than previous years, recognising that the data only 6 months of the current formula year. So far in formula year 2024/25, UAG is currently the dominant component of NTS Shrinkage, accounting for around 69%, whilst OUG makes up 24% and CVS 7%. CVS has become more prominent over the last four years and the potential causes of this are detailed later in the report.

Figure 2 provides the summer period assessed UAG, OUG and CVS comprising of April to September data for each formula year.

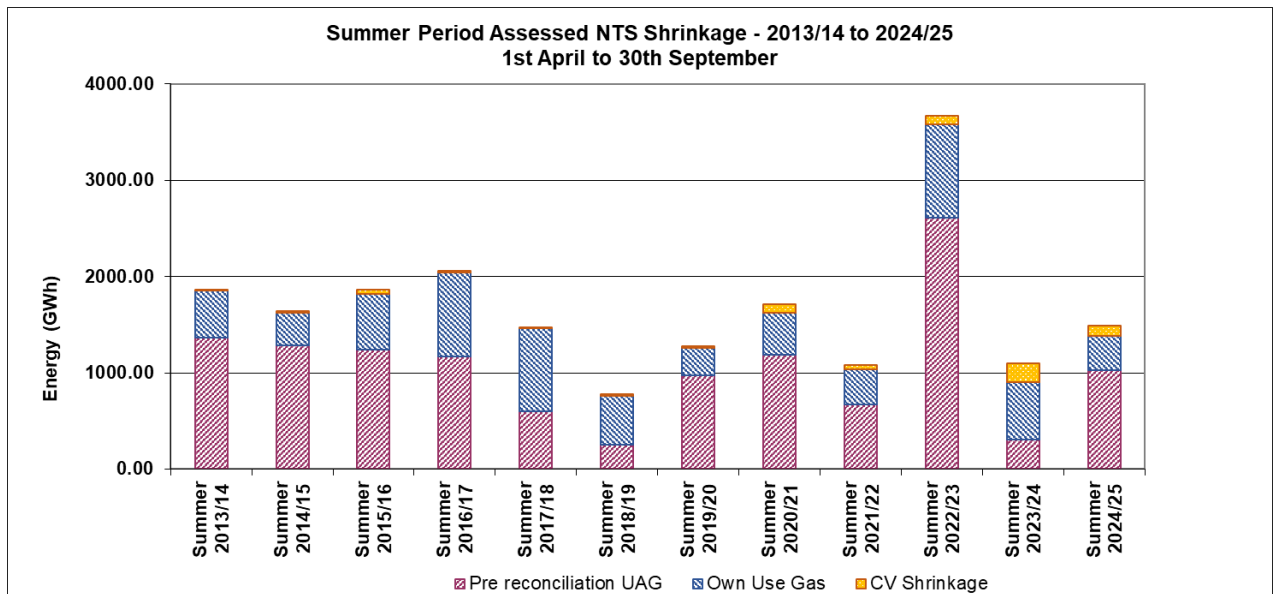


Figure 2: Summer Period Assessed NTS Shrinkage – 2013/14 to 2024/25

Figure 2 demonstrates that NTS Shrinkage throughout this period (April 2024 to September 2024) is higher than the summer periods of 2021/22 and 2023/24, notably the period in 2022/23 includes a large Thornton Curtis offtake meter error, which was reconciled in 2023.

Although pre-reconciliation UAG has increased compared to last year, OUG and CVS are lower than the previous summer. OUG in this 2024/25 summer period is at its lowest since summer 2021/22.

There have been more instances of high UAG days this summer period compared to last, with 28 days exceeding the ± 20 GWh tolerance, compared to the 21 days observed in the 2023/24 summer period. There were also 57 days in summer 2024/25 where UAG was negative whereas summer 2023/24 witnessed 85 negative UAG days.

Over the 2024/25 summer period, UAG accounted for 69% of NTS Shrinkage, increasing from the last summer period where UAG was 28% of Shrinkage. OUG and CVS however both decreased when compared to last summer, to 24% and 7% of NTS Shrinkage respectively.

In aggregate, CVS, OUG & UAG have increased by 36% when compared to the last summer period.

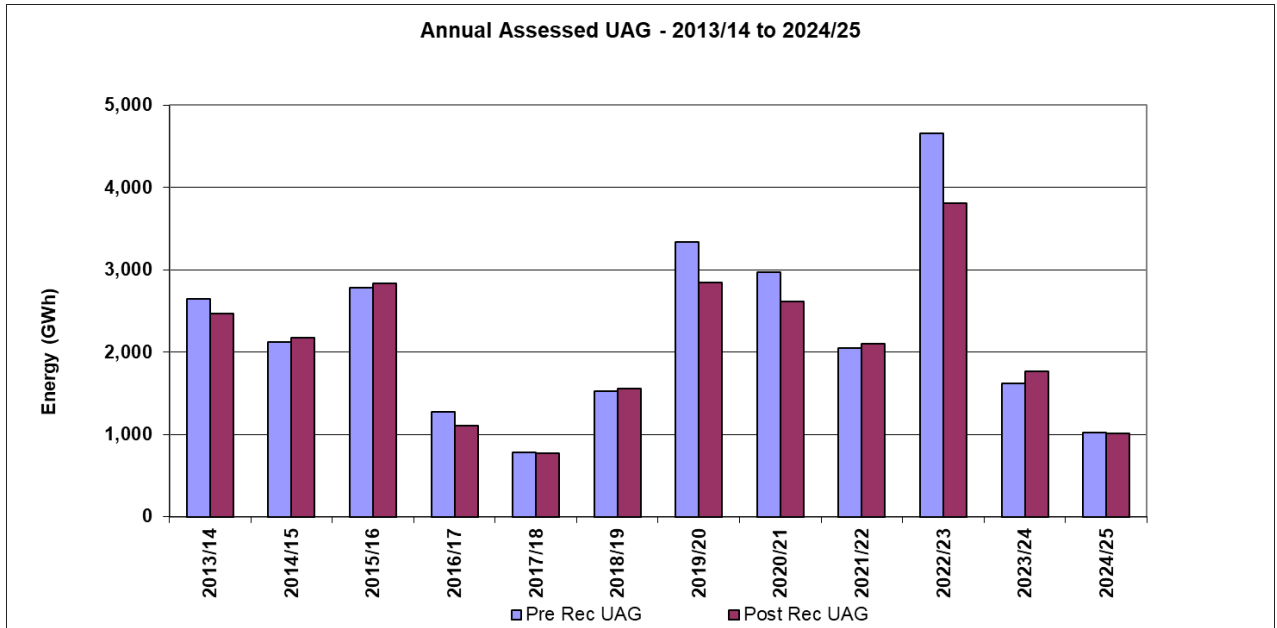


Figure 3: Annual Assessed UAG – 2013/14 to 2024/25

Figure 3 depicts annual assessed UAG quantities, pre-reconciliation and post-reconciliation, for formula years 2013/14 to 2024/25. Pre-reconciliation UAG is calculated using energy measurements for NTS entry and exit points reported in the Gemini commercial system at closeout. If a meter or data error is identified outside of closeout for an entry or exit point, the correct values are calculated. Post-reconciliation UAG is then determined using the corrected values. Reconciliations impacting this formula year have marginally decreased UAG. Further information on reconciliation is provided under section 'UAG Management Activities' of this report.

Table 1 provides the annual and daily average assessed UAG quantities for formula years 2013/14 to 2024/25. The table also provides the annual assessed UAG quantities as a percentage of annual NTS throughput.

| JAG | 13/14 | 14/15 | 15/16 | 16/17 | 17/18 | 18/19 | 19/20 | 20/21 | 21/22 | 22/23 | 23/24 | 24/25 |
|--------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Assessed Level (GWh) | 2,648 | 2,121 | 2,782 | 1,272 | 783 | 1,528 | 3,342 | 2,972 | 2,051 | 4,659 | 1,616 | 1,023 |
| Assessed Daily Average (GWh/d) | 7.25 | 5.81 | 7.60 | 3.48 | 2.14 | 4.19 | 9.13 | 8.14 | 5.62 | 12.76 | 4.41 | 5.59 |
| Percentage of NTS Throughput | 0.30 | 0.24 | 0.30 | 0.13 | 0.08 | 0.17 | 0.36 | 0.32 | 0.23 | 0.45 | 0.19 | 0.32 |

Table 1: Annual Statistical performance of UAG - 2013/14 to 2024/25

The values provided in Table 1 indicate that annual assessed UAG in formula year 2024/25 is lower than 2023/24, however, the values for 2024/25 only contain 6 months of data. Notably, daily assessed UAG and UAG as a percentage of NTS throughput, is higher than the previous year.

Figure 4 below shows the total monthly assessed UAG from April 2013 to September 2024. It also provides the average monthly assessed UAG for this formula year (170.46 GWh) represented as the horizontal black line, together with the long-term average assessed UAG for the entire period (194.18GWh) depicted by a horizontal red line.

With exception to 2022/23, where there was a large meter error identified and higher throughput due to increased supplies to Europe, UAG is largely following patterns of lower UAG during summer months.

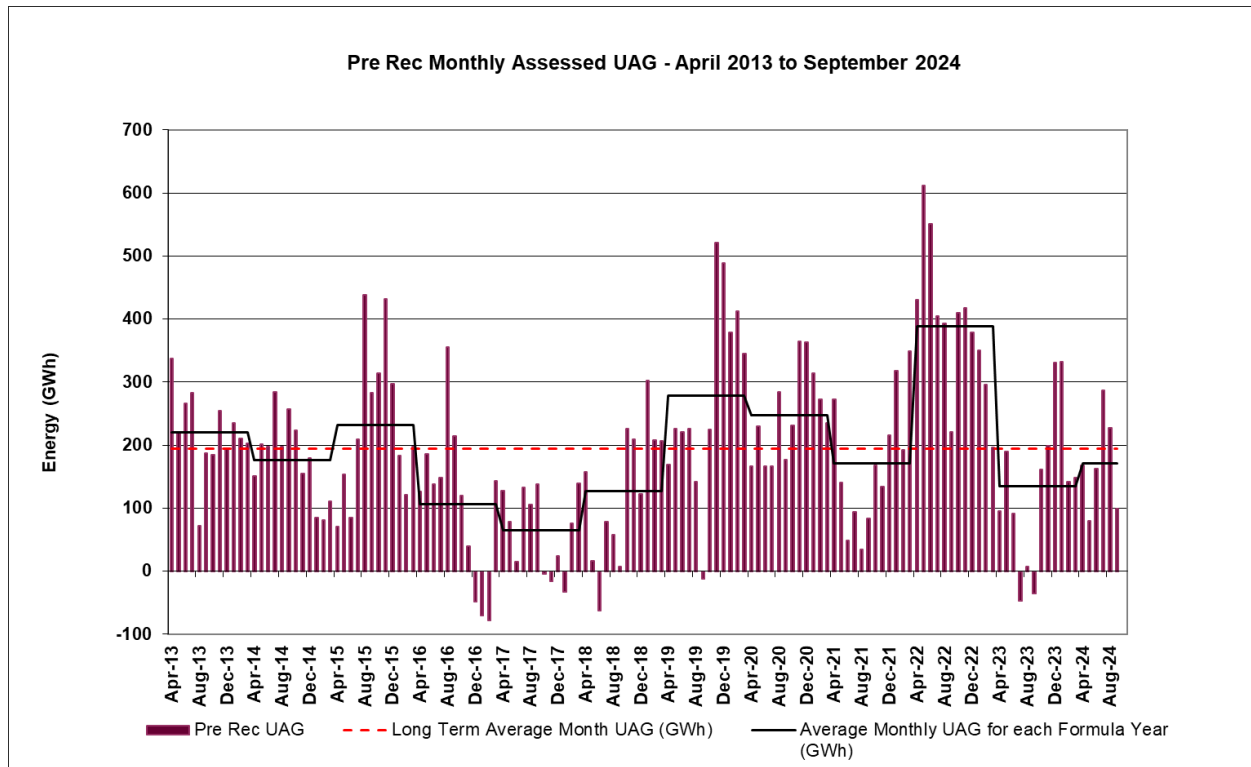


Figure 4: Monthly Assessed UAG - April 2013 to September 2024

Throughout 2024/25 so far, 2 out of the 6 summer months (July & August) have UAG above both the assessed monthly average UAG and the long term average UAG.

Below, figure 5 provides the total monthly assessed UAG between April 2024 and September 2024, compared with the equivalent months within 2023/24.

UAG over the 2024/25 summer period amounts to 1022.74GWh, which is 719.87 GWh (238%) higher than the 2023/24 summer period.

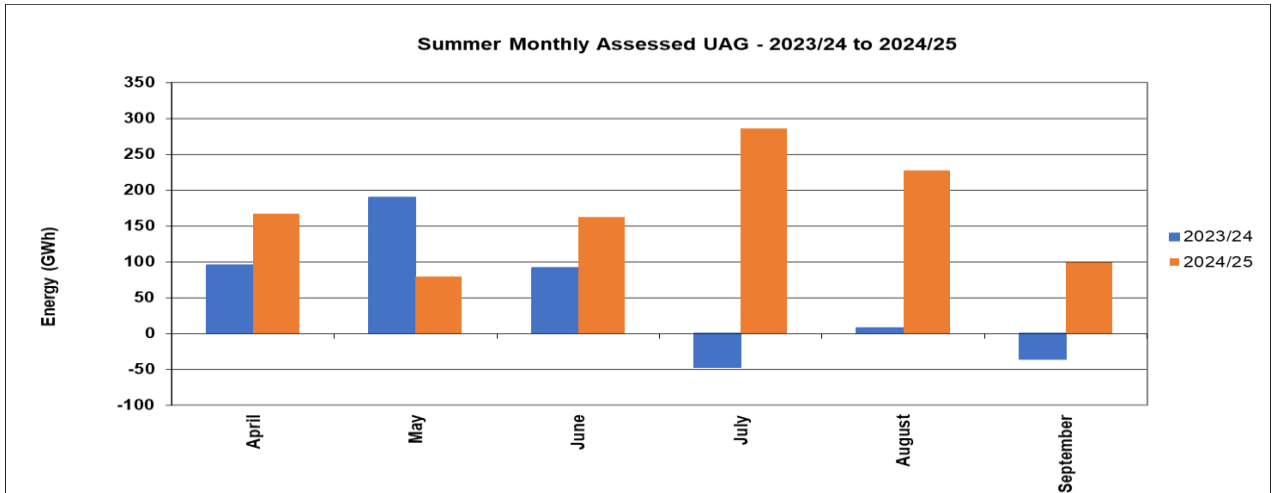


Figure 5: Summer Monthly Assessed UAG – April to September 2023/24 and April to September 2024/25

As evidenced in Figure 5, the total monthly assessed UAG in summer 2024/25 varied from 79.14GWh to 286.49GWh, with a monthly average of 170.46GWh. These values are higher when compared to the same months in the previous year. During the same period of 2023/24, total month assessed UAG varied from -46.86GWh to 190.13GWh, with a monthly average of 50.40GWh.

Figure 6 shows the daily assessed UAG values for the period between April 2024 and September 2024 and indicates that UAG has been outside ± 20 GWh for 15% of that time. Volatility between days has been observed and is depicted by a fluctuation of positive and negative UAG. From mid-May to early June, negative UAG was as prevalent as positive UAG, creating a near net zero effect to the rolling average. The latter part of the period sees the rolling 30-day average increase slightly with higher positive UAG in the months of July and August, as mentioned earlier in this report.

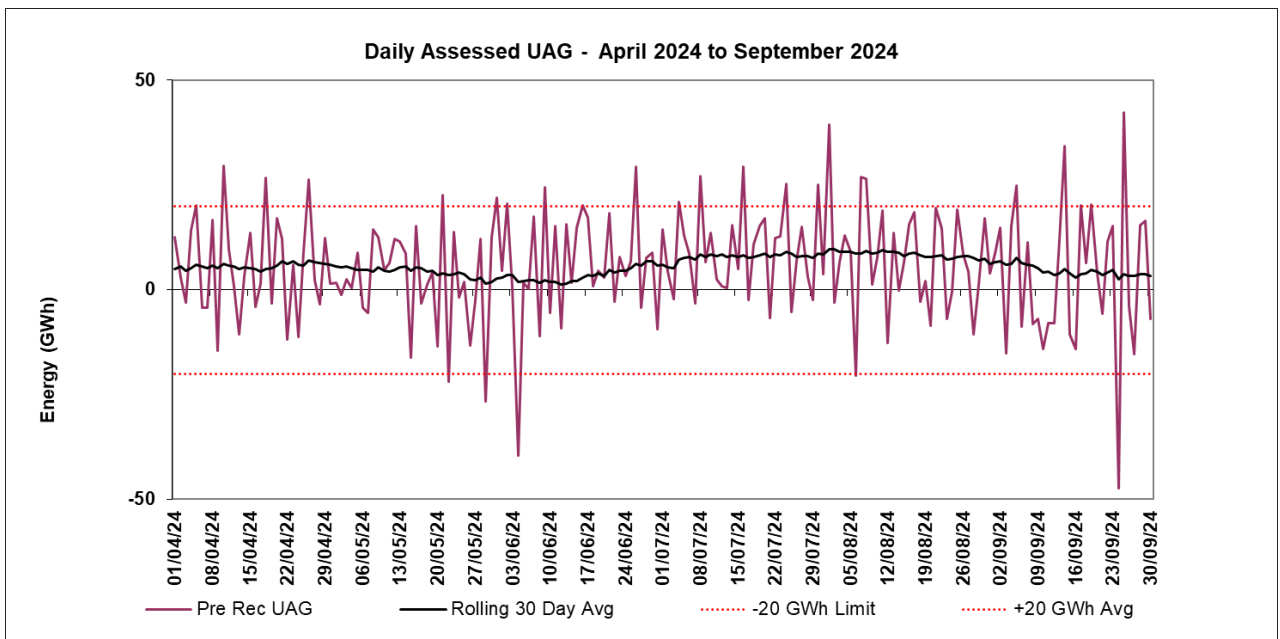


Figure 6: Summer Daily Assessed UAG – April 2024 to September 2024

NGT reviews and investigates the assessed UAG values on a daily basis, paying particular attention to high UAG days. High UAG days are categorised by any assessed values for a given day that exceed ± 20 GWh, displayed on the above graph as red dashed lines. Between 1st April 2024 to 30th September 2024, there were 28 days when daily assessed UAG exceeded ± 20 GWh, 7 days more than the last summer period.

All high UAG days for 2024/25 so far have been identified and investigated, the causation has not yet been identified.

Figure 7 below outlines demand breakdown, supplemented with monthly UAG values for the period between April 2020 to September 2024. Interconnector export volumes have increased by 76% when compared to the last 6 months (October 2023 to March 2024), although volumes have decreased by 12% when compared to last summer (April 2023 to September 2023). LDZ offtakes continue to display a seasonal pattern throughout, whereas Power Station demand demonstrates a more consistent annual offtake.

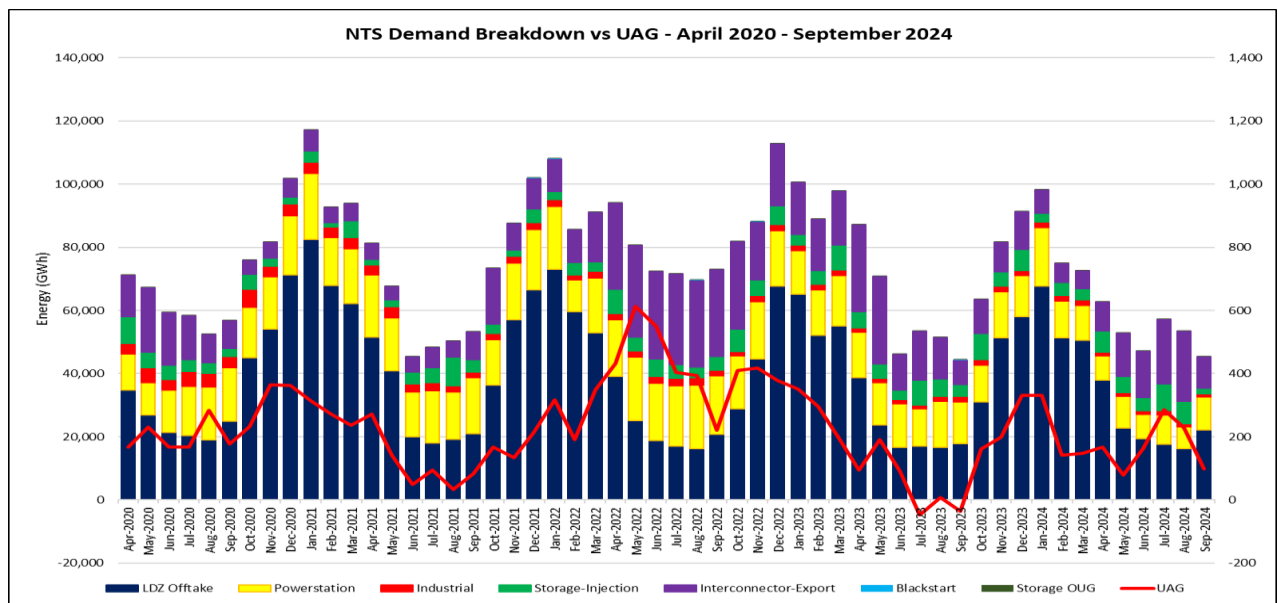


Figure 7: NTS Demand Breakdown – April 2020 to September 2024

Figure 8 below demonstrates that interconnector exports for 2024/25 so far have varied compared to previous years. From June 2024 to September 2024, monthly interconnector exports were the second highest when compared to the last four years – 2022/23 notably includes the highest export flows we have witnessed into Europe.

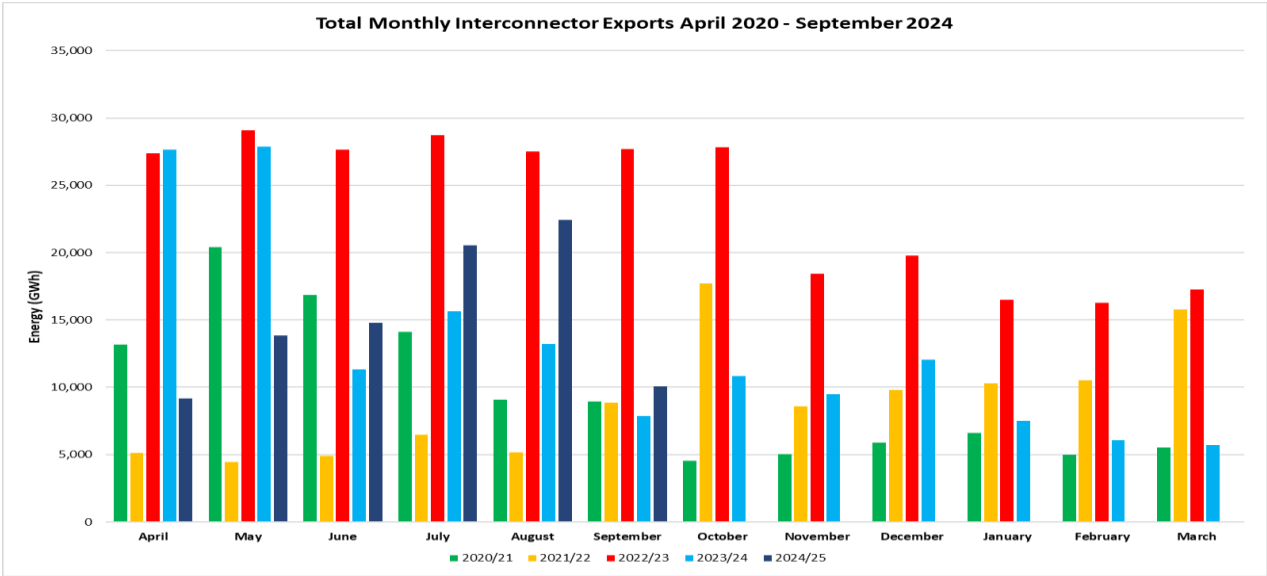


Figure 8: Monthly Interconnector Exports - April 2020 to September 2024

Figure 9 below illustrates that entry terminals have continued to follow previous seasonal patterns and LNG deliveries were similar to flows seen throughout the last summer period.

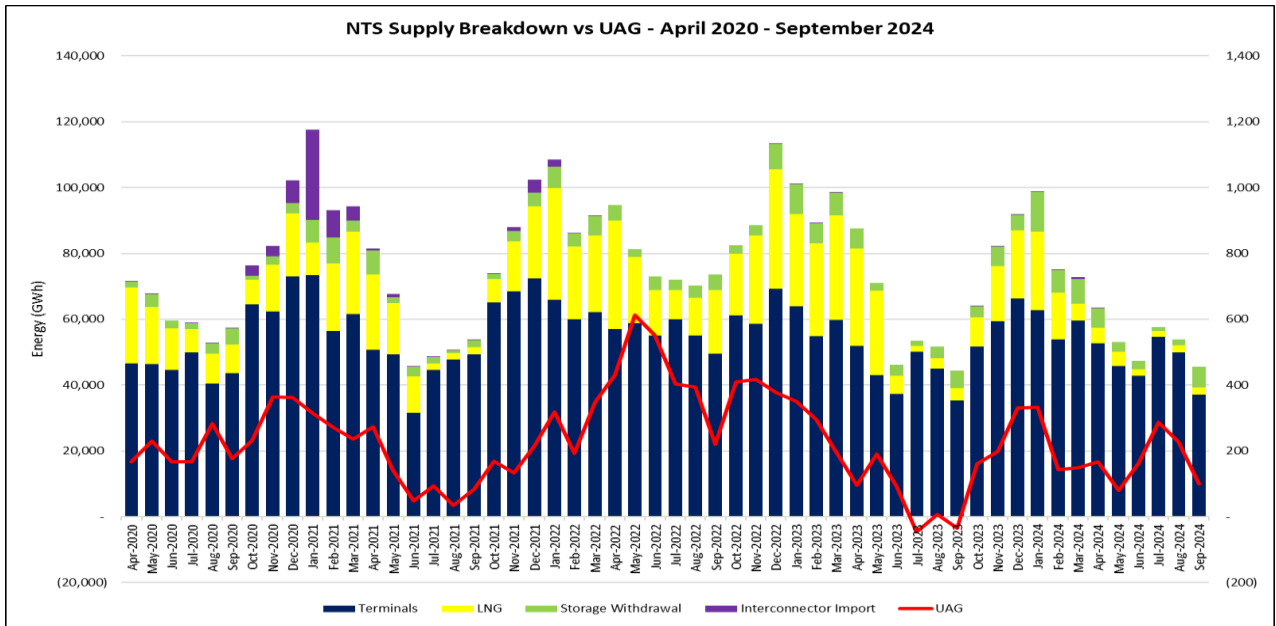


Figure 9: NTS Supply Breakdown – April 2020 to September 2024

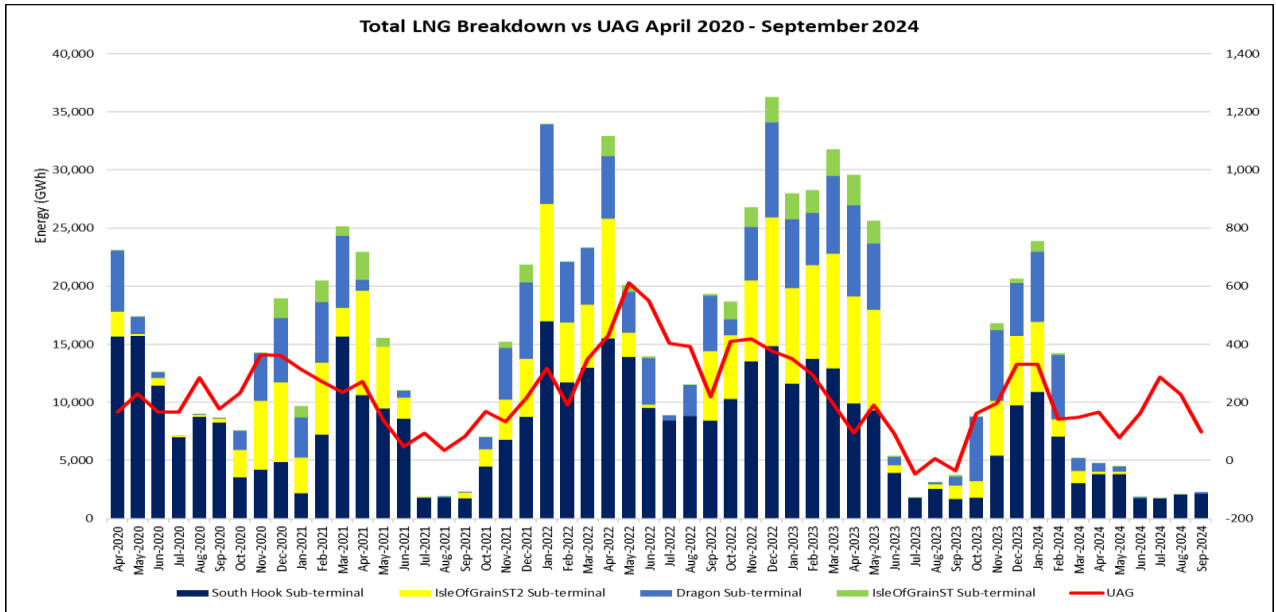


Figure 10: Total LNG Breakdown – April 2020 to September 2024

Figure 10 displays the total LNG breakdown from South Hook and Dragon sub-terminals (South Wales) and both Isle of Grain terminals (South-East England). It has been reported previously that UAG increased and decreased in line with LNG flows, however during the 2024/25 summer period, UAG and LNG no longer correlate.

Figure 11 below compares the total monthly LNG imports since April 2020 for the summer months. Due to recent low LNG terminal flows, summer 2024/25 had the lowest LNG supply compared to the last four formula years, with the exception of August 2021/22 (where the LNG supply was marginally lower than 2024/25).

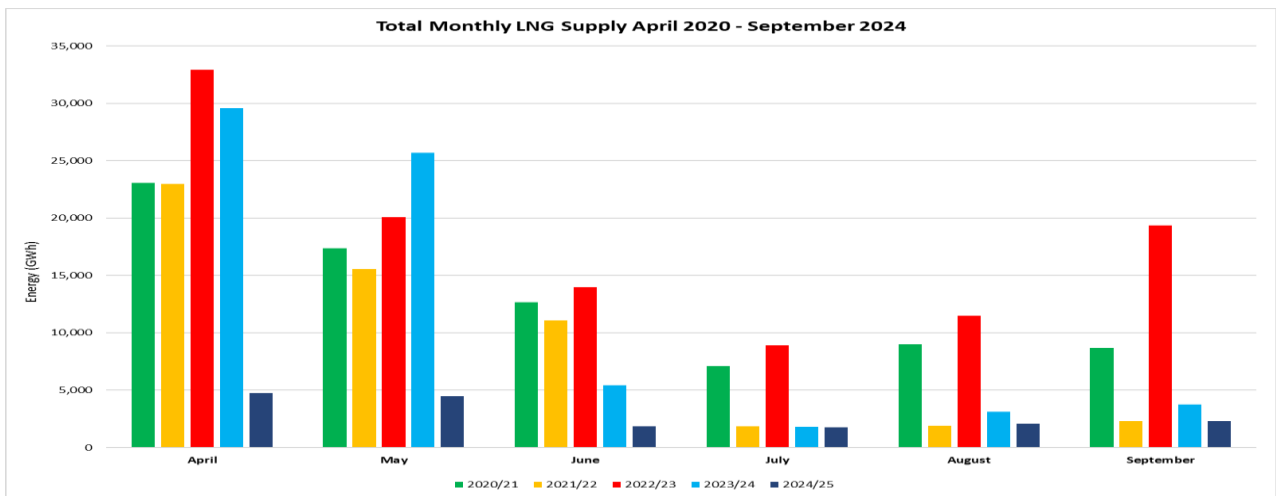


Figure 11: Monthly LNG Supply – April 2020 to September 2024

Figure 12 presents the monthly net interconnector positions for BBL, Interconnector (UK) and Moffat from April 2020 to September 2024. The positive values on the graph illustrate the monthly net position as interconnector imports onto the NTS and the negative values show the monthly net position value as interconnector exports from the NTS.

This graph demonstrates that UAG doesn't typically follow a pattern in relation to total net interconnector activity, although formula year 2022/23, did show some reverse correlation to net interconnector throughput. Investigations into this period were inconclusive.

Interconnector export for the 2024/25 summer months did steadily increase in line with UAG, also showing a reverse correlation – NGT's analysis of this is detailed in UAG Investigations later in the report.

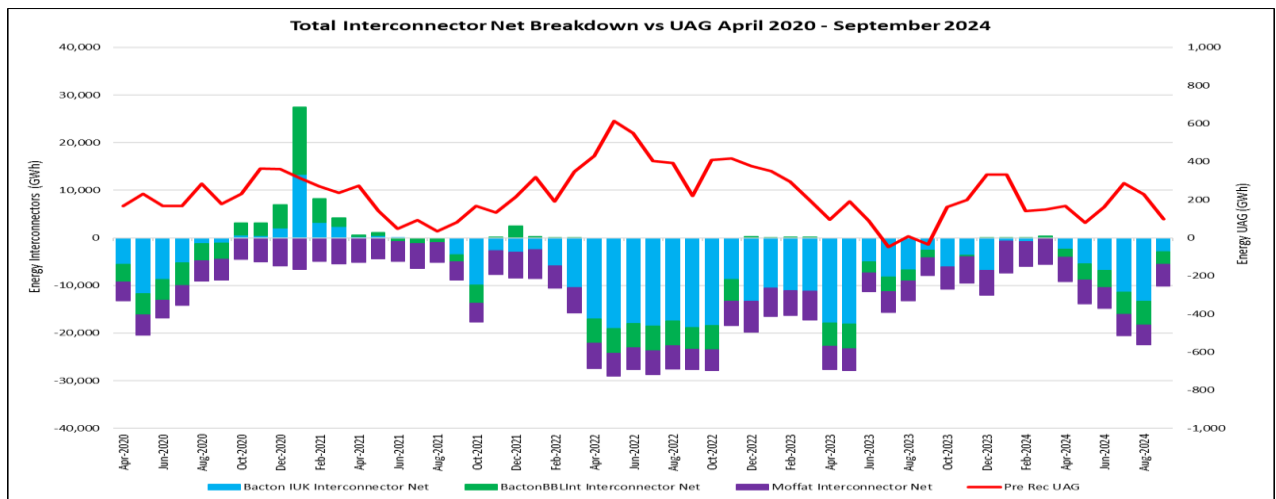


Figure 12: Net Interconnector – April 2020 to September 2024

UAG Management Activities

This section of the UAG report describes the various activities and initiatives that NGT has been undertaking or is planning to undertake to investigate the causes of UAG.

Reviewal of Meter Validation Reports

Meter owners are obligated to perform meter validations on each of their metering installations, on a minimum annual basis, to provide assurance that their metering equipment is measuring correctly. The test results are documented within a meter validation report and provided to NGT following the completion of validation tests.

The validation reports provide essential information that allows NGT to determine the asset health and accuracy of the metering connected to its network, enabling a better understanding of the impacts that meter errors have on assessed UAG.

For formula year 2024/25, NGT has received meter validation reports for 46 NTS entry and exit facilities, these reports relate to meter validations that have taken place between April 2024 and September 2024.

The reviewal of meter validation reports allows NGT to raise queries where necessary, with the relevant meter owners, to confirm if any instruments that tested outside of tolerance could have introduced measurement error, thus impacting assessed UAG levels.

The Meter Assurance team will continue to work with NTS asset owners to review the meter validation reports and follow up on any open actions that have arisen so far from the 2024/25 review period. The data provided and results recorded are used to develop the meter witnessing programme.

During meter validation tests, each measurement system is subjected to simulated pressures, temperature, and gas composition to carry out the required tests, which entails disconnecting or overwriting physical instruments, wires, and software. There is a risk that meter error could be introduced through these activities. NGT continues to investigate whether there is a potential to identify assessed UAG when meter validations are known to be taking place.

Meter Witnessing

The purpose of witnessing meter validations is for NGT to gain assurance that the measurement equipment within the metering installation continues to measure the gas delivered to or taken from the NTS without bias and within the agreed measurement uncertainties. It also provides an opportunity to build stronger relationships with our customers, allowing transparency and best practice between our companies.

Witnessing involves NGT personnel attending metering installations throughout the UK during meter validations to observe and document the testing taking place. From 1st April 2024 to date, the Meter Assurance team have witnessed two validations at Interconnector UK (IUK) and Brigg Power Station.

For the remainder of this 2024/25 formula year, NGT will continue to engage with NTS connected asset owners to arrange future visits.

Reconciliation

NGT has an obligation to reconcile NTS related meter and data errors on behalf of the shipping community.

Over the last six months, since the publication of the May 2024 UAGCVS Report, NGT has adjusted 59.13 GWh in absolute energy terms via the reconciliation process. This comprises of 16 instances of reconciliation at individual NTS entry and exit facilities, with each instance comprising of one or more days of reconciliation - a total of 83 gas days have been reconciled. The majority of these reconciliations have been in formula year 2024/25; however, reconciliations have also been processed for 2023/24.

Figure 13 provides the annual reconciliation quantities, in absolute energy terms, from 2013/14 to 2024/25. The red portion of the bars indicate the reconciliation quantities processed since the publication of the May 2024 UAG report.

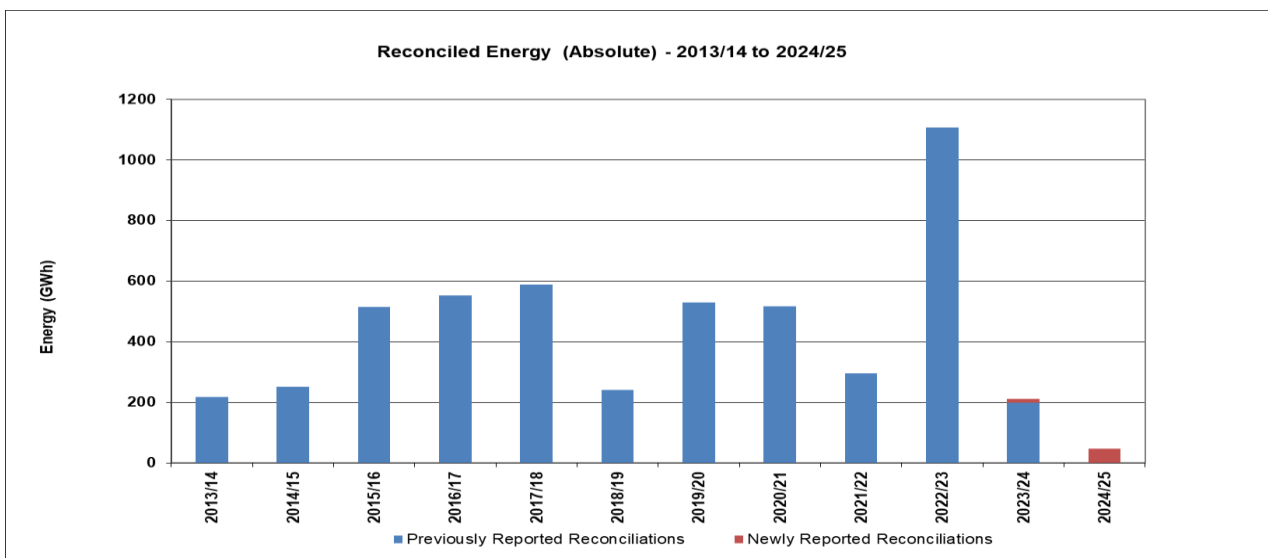


Figure 13: Reconciled Energy (absolute) – 2013/14 to 2024/25

Of the 16 instances of reconciliation processed, 5 related to meter error and 11 related to data error.

Table 2 shows instances of measurement error that have been reconciled and the total absolute energy (GWh) that has been adjusted in each formula year since the May 2024 report.

| Formula Year | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 |
|-------------------------------|---------|---------|---------|---------|---------|
| No. Instances | 0 | 0 | 0 | 5 | 11 |
| Total Absolute GWh Reconciled | 0 | 0 | 0 | 12.33 | 46.80 |

Table 2: Reconciliations

Figure 14 below shows absolute reconciled energy against assessed UAG and reconciled energy as a percentage of UAG. Excluding formula years 2016/17 and 2017/18 as these years witness low UAG and high volumes of reconciled energy, reconciliations have historically averaged around 15%. Reconciliation as a percentage of UAG is lower in 2024/25 than previous years, however this only accounts for 6 months of data so far.

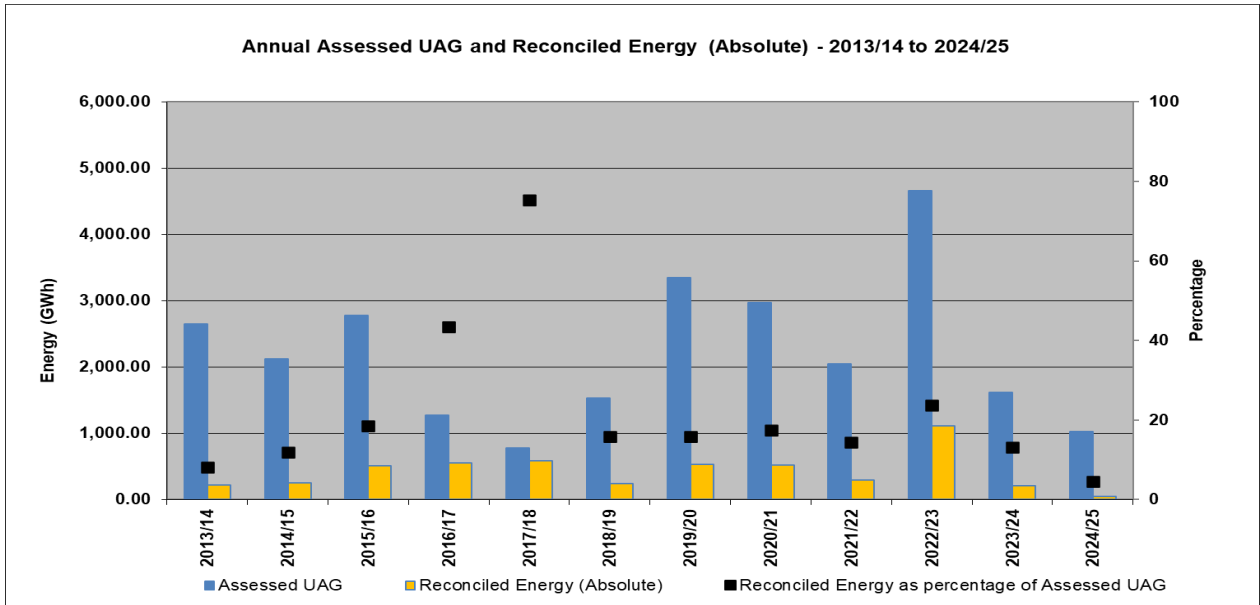


Figure 14: Annual Assessed UAG & Reconciled Energy (Absolute) – 2013/14 to 2024/25

Figure 15 shows post-reconciliation UAG, which is UAG with any reconciled values included. Reconciliation can make UAG increase, decrease, or remain the same if there is a netting effect. The impact of the 11 instances of reconciliation that have impacted gas days within 2024/25, has made UAG decrease slightly from 1,023GWh to 1,015GWh, compared to the previous year which increased from 1,616 GWh to 1,765 GWh.

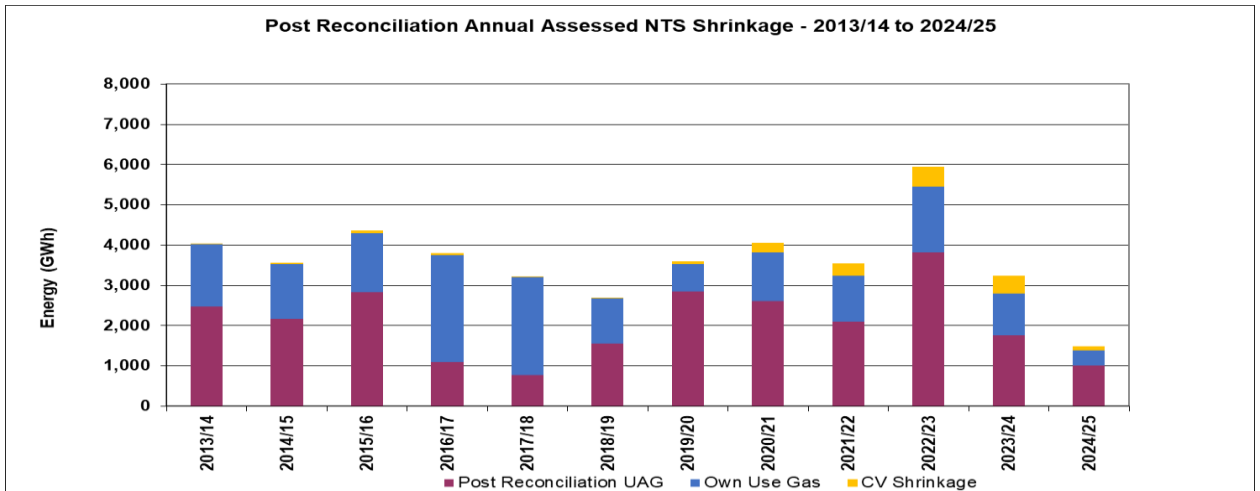


Figure 15: Post-Reconciliation Annual Assessed NTS Shrinkage – 2013/14 to 2024/25

NGT progresses its validation of end of day measurements to help address data quality challenges experienced during the pre-closeout period. An initiative steadily progressing is one that automates the handling of sub-terminal and storage data into our systems, whilst reducing the opportunity for manual input errors to occur. Further sub-terminals and storage sites are being onboarded to this system. So far, 16 sites are automated, with hopes that this can be rolled out to all NTS entry sites in the near future.

NGT is continuing to process meter and data error reconciliations, which will be included in future reports.

UAG Investigation

NGT manage projects to investigate the causes of UAG. These projects include historical and future UAG patterns or trends. NGT's continued ambition is to better understand end to end data flows to identify and mitigate systematic data error. To achieve this, we are automating data flows, validating all data points, and building the tools necessary to identify the sources of UAG.

Since the publication of the May 2024 UAGCVS Report, various projects have been undertaken to investigate current high and low UAG trends. These investigations have helped to mitigate any outliers and ensure assurance in our data. These investigations will continue throughout the formula year 2024/25.

Correlation

As mentioned in the May 2024 report, correlation was identified between UAG and Rough Terminal and Storage flows. Further analysis carried out resulted in the correlation being inconclusive.

A predominantly positive UAG trend was observed in early May and again in June and July, with a daily average UAG of 6.59GWh. This contrasts a low UAG trend in late May, which witnessed more frequent negative UAG days. Correlation analysis has been used as part of this investigation, which so far hasn't identified any causes of UAG, although analysis ongoing and any findings will be presented in future reports.

Trend Analysis

As previously mentioned, interconnector flows during periods of low demand have also been analysed against UAG as a percentage of throughput. This involved looking at interconnector flows (IUK, BBL and Moffat) in 2024 against historical flows, UAG as a % of throughput and against UAG as a % of demand. However, there were no strong relational trends found between Interconnectors and these UAG metrics.

Throughput Investigations

High UAG has also been investigated using UAG as a percentage of throughput. Trend analysis was carried out against supply and demand patterns as well as site nominations, allocations, and telemetry. No outliers so far have been discovered; however, further investigations utilising data science is planned with any outcomes featured in the next report.

Resource in our data science arena has been limited due to other projects, however, new projects to improve the meter validation and UAG processes are now scoped with our IT system architects. An innovation project to create a tool that can detect the causation of UAG is likely to be delivered in the T3 period, which will utilise raw data items to aid in depth analytical modelling.

A new data platform is also likely to be delivered in the T3 period and this will enable access to raw data that has not been accessible before. This data will benefit the success of the above projects.

Table 3 below provides an overview of the UAG projects and initiatives NGT have planned over this formula year (2024/25). Other 'mini projects' focussing on UAG trends that have also been undertaken are listed above.

| Project / Initiative | Target Completion Date | UAG / CVS | OUTCOME |
|---|-------------------------------|-----------|---|
| Enhancements to UAG Causality detection models | T3 Period | UAG | Ongoing: NGT have scope for innovation project to create a tool to detect causes of UAG – this has been moved out to T3 as it requires the new data platform |
| Review of ± 20 GWh baseline tolerances | Future project | UAG | On Hold: The current trend in UAG has been adequately captured within the current baseline. This will roll over into the following period, especially if the current behaviour changes or settles. |
| LNG Gas Temperature – impact of temperature cooling as it leaves the Terminal. Scope would also include NTS compressors | Potential future project | UAG | Ongoing: This requires network modelling and expert determination to determine if there are impacts on volume within the network. |
| Duplicate LDZ offtake data | Extended into 2024/25 Project | UAG | Ongoing: The duplicate LDZ offtake volume occurs when the files from the distribution network have failed for an LDZ, and a new file hasn't been received into Correla. Gemini will apply the last good day as a default. The duplicated days do not appear to have caused high UAG spikes, but the data is incorrect, and a solution is required to ensure the DN files are received and accepted on time. (Extended as further discussions are required between DN & Correla to agree a solution). |
| Improvement of data visualisation tools to assess site profiles against UAG behaviour | Extended to T3 Period | UAG | On Hold: Incorporate new data sets from the new data platform into our current data visualisation tools. (On hold due to a delay in the release of the new data platform) |
| Linepack Drift v UAG | 2024/25 Project | UAG | Ongoing: Analyse linepack drift data against UAG. |
| UAG Tracker to further investigations using UAG as % of throughput | 2024/25 Project | UAG | Completed: Allows investigation into more gas days where UAG anomalies may lie under the 20GWh threshold. This is now incorporated into BAU activities |
| UAG reporting & data automation | 2024/25 Project | UAG | Not Started: This is scoped & logged on NGT system, in line to be picked up by data architects |
| Correlation analysis | 2024/25 Project | UAG | Complete: Reviewing UAG using correlation analysis to determine trends with certain sites is now part of BAU activities |

Table 3: Project initiatives for Formula Year 2024/25

The projects that are scoped in Table 3 for 2024/25 will be scheduled in the coming months dependent on resource and data availability.

All closed out projects can be viewed in previous UAGCVS reports.

CVS Statement & Investigation

Calorific Value Shrinkage (CVS) is gas which cannot be billed due to the application of Gas (Calculation of Thermal Energy) Regulations 1996 (amended 1997) and is the Local Distribution Zone (LDZ) energy difference between measured and billed Calorific Value (CV).

The regulations outline that the daily CV average for a given charging area is calculated by summing the product of the CV and volume for all supply inputs and dividing by the total volume of gas entering the charging area.

The maximum daily CV average for a charging area permitted by the regulations is equal to 1.0 MJ/m³ above the lowest measured daily CV of the supply inputs into that charging area, meaning if for any given day an input into a charging area has a CV outside of this range, a capped CV (lowest CV + 1MJ/m³) will be applied to the whole region for billing purposes. This is to protect customers who may live near this supply of lower quality of gas and prevent them overpaying for the gas they are receiving.

To calculate CVS, NGT deduct the value that is used to bill downstream shippers based on the principles detailed above, from what was measured leaving the NTS by Ofgem approved equipment.

CVS occurs every day for all charging areas with more than one supply input into the region, this usually equates to small quantities if capping hasn't occurred and is a result of the charging area CV being rounded to one decimal place following its calculation. With CV capping being the major contributing factor to CVS, UNC Offtake Arrangement Document Section F 2.2 details that all parties cooperate with the view to avoid or minimise the amount of CVS each day.

With that in mind, if capping is caused by an NTS to LDZ offtake, NGT will investigate, and where possible, seek to minimise or avoid capping and will provide guidance to the Distribution Network Operator (DNO) to alter patterns of flow through the offtakes or alternatively look at solutions to alter flows within the NTS to improve the blending of gases. If the capping is caused by a non-NTS connected asset that inputs gas into the LDZ, the DNO's may investigate the source.

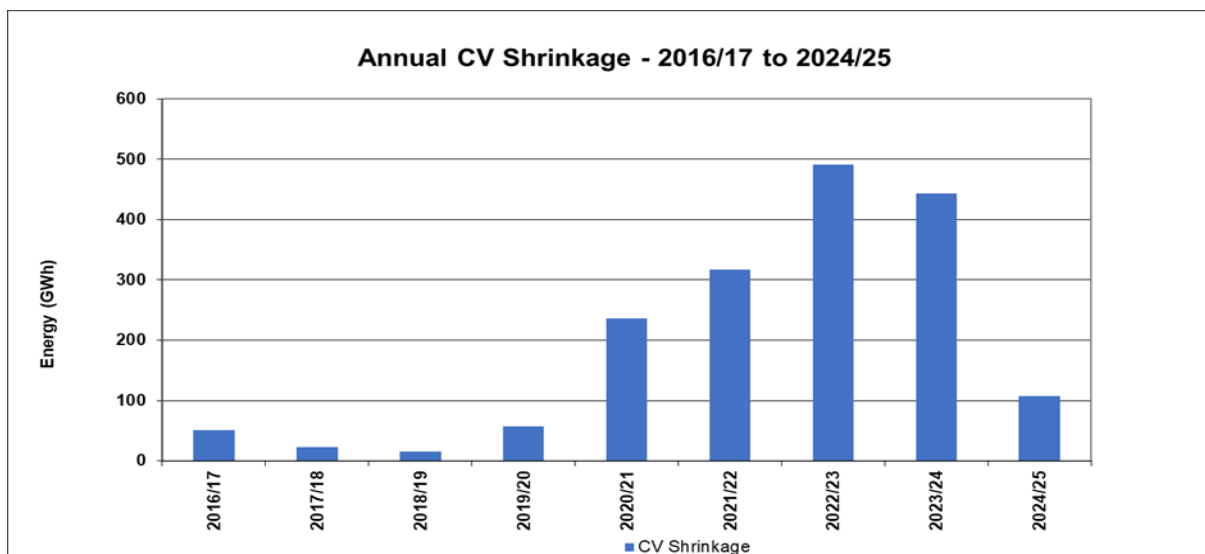


Figure 16 - Annual CV Shrinkage 2016/17 to 2024/25

Figure 16 provides a view of CV Shrinkage between 2016/17 and 2024/25 so far. CV Shrinkage in 2024/25 is 76% lower compared to the previous year.

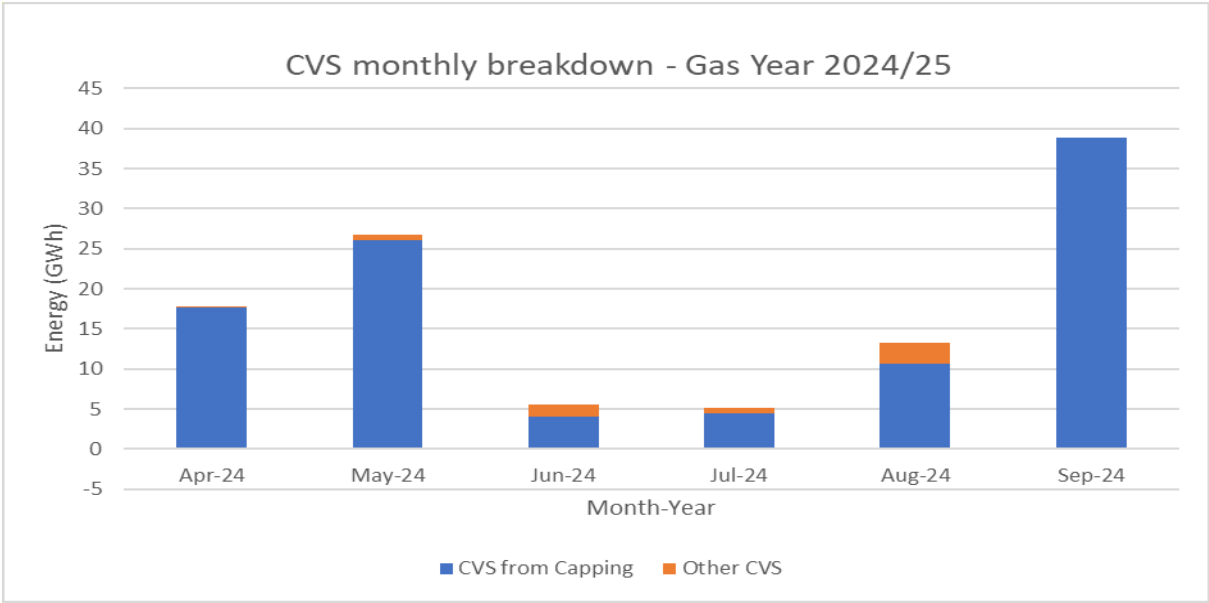


Figure 17 - CVS Monthly Breakdown 2024/25

Figure 17 provides a monthly breakdown of CV Shrinkage for 2024/25. This shows the proportion of CVS due to CV Capping detailed (in blue) and the remainder of other CVS (in orange), which can be either positive or negative when not caused by CV capping. This is due to the rounding of the LDZ CVS to 1 decimal place, as previously mentioned.

Throughout the last six months, CV capping has equated to 101.60 GWh with capping occurring in 9 of the 13 LDZs (EA, EM, NE, NO, NT, NW, SC, SW, and WM). Higher volumes of capping have been witnessed throughout September, this occurred mainly in NO LDZ due to multiple Offtake site CV'S being low for several days, the impact can be seen in Table 4.

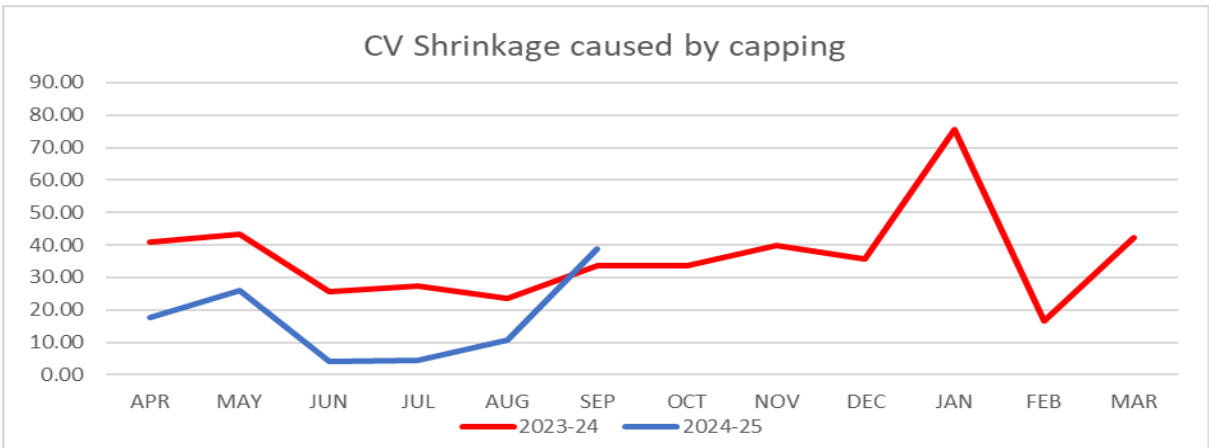


Figure 18 - CV Shrinkage caused by capping 2023/24 v 2024/25

Figure 18 shows that CV Shrinkage caused by capping in 2024/25 is trending lower in this formula year compared to the same months in the previous year, with the exception of September 2024.

CV capping for April to September 2023 had 337 instances of CV capping, whereas April to September 2024 witnessed 182 instances. Of the 182 instances this summer period, 47% of total capped energy was seen in NO LDZ.

| Month | CVS caused by Capping (GWh) | | | | | | | | | | | | | Total |
|--------------|-----------------------------|-------|--------|-------|------|-------|------|------|------|-------|-------|------|------|--------|
| | EA | EM | NE | NO | NT | NW | SC | SE | SO | SW | WM | WN | WS | |
| Apr-24 | 0.00 | 0.00 | 5.37 | 0.71 | 2.67 | 6.08 | 0.00 | 0.00 | 0.00 | 0.35 | 2.47 | 0.00 | 0.00 | 17.65 |
| May-24 | 0.22 | 0.54 | 10.53 | 11.23 | 0.19 | 0.00 | 2.47 | 0.00 | 0.00 | 0.11 | 0.76 | 0.00 | 0.00 | 26.06 |
| Jun-24 | 0.00 | 0.00 | 2.64 | 0.27 | 0.00 | 0.00 | 0.31 | 0.00 | 0.00 | 0.45 | 0.36 | 0.00 | 0.00 | 4.04 |
| Jul-24 | 0.00 | 0.00 | 0.62 | 2.65 | 0.00 | 0.00 | 0.45 | 0.00 | 0.00 | 0.00 | 0.68 | 0.00 | 0.00 | 4.40 |
| Aug-24 | 0.00 | 0.00 | 0.63 | 7.62 | 0.00 | 1.15 | 0.00 | 0.00 | 0.00 | 1.21 | 0.00 | 0.00 | 0.00 | 10.61 |
| Sep-24 | 0.00 | 0.00 | 3.75 | 29.03 | 0.00 | 6.08 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 38.85 |
| Summer 23/24 | 5.56 | 17.99 | 111.09 | 19.83 | 2.93 | 2.58 | 4.35 | 0.20 | 0.46 | 13.57 | 14.32 | 0.00 | 1.49 | 194.38 |
| Summer 24/25 | 0.22 | 0.54 | 23.54 | 51.50 | 2.86 | 13.30 | 3.24 | 0.00 | 0.00 | 2.12 | 4.27 | 0.00 | 0.00 | 101.60 |

Table 4: CVS Caused by capping (GWh)

Table 4 shows CV Shrinkage caused by capping over the last 6 months has been witnessed in NE and NO, equating to 75 GWh. When compared to the previous year's summer months, CVS in the NE has decreased by 79% and increased in NO by 160%, this equates to 74% of the total CVS caused by capping.

Capping in NO and NE LDZ is mainly due to greater supplies of gas entering the region from the Teesside (NE & NO), Easington (NE) and St Fergus (NO) terminals. The gas entering the network at Teesside is typically a higher CV, where Easington typically has a lower CV. Due to the location of Paull Offtake, which feeds gas into NE LDZ, along with the network configuration in that area, blending of the higher and lower CV gases cannot be achieved before it reaches that Offtake facility. Therefore, there is often a disparity within the CV's entering that LDZ, causing CV capping to occur.

Of the 118 days between April 24 and September 24 that capped for all LDZs, 85 of those days were within the NO LDZ, due to unofficial sites using an attributed CV which were receiving a lower CV to the remainder of the other NO offtakes. Of the 59 days that capped between April 24 and September in the NE LDZ, 56 of those days were due to Paull Offtake receiving a lower CV to the remainder of the other NE Offtakes.

Capping has also been caused by several bio methane sites within the capped LDZs where gas supplied to the DN has had a lower CV than the NTS to LDZ Offtakes. CV capping was also witnessed in NW & WM LDZ's, due to both Bio Methane sites and NTS to LDZ Offtakes in those areas, such as Lupton (NW) and Ross (WM) Offtakes.

Conclusion

In conclusion, the total assessed pre-reconciled UAG quantity for 1st April 2024 to 30th September 2024 is lower than the previous six months, aligning with historical seasonal trends. However, when compared to the summer of 2023/24, pre-reconciled UAG in formula year 2024/25 is higher.

Using data visualisation tools and analytical, investigative projects, NGT continues to improve its understanding into the causes of UAG.

From the 6 months of data so far, CV Shrinkage is currently trending lower in 2024/25 than the previous year. CV Capping has also occurred less frequently during this summer period, when compared to the same months in the last formula year.

Continuing support from meter owners has enable NGT to obtain and review meter validation reports for NTS entry and exit facilities. This data is used to support the identification of UAG causes, enhance NGT's ability to detect meter errors, and inform the preparation of future meter witnessing programmes.

Part J: Requirement to undertake work to investigate the causes of UAG and CVS

5.6.53 The licensee must use reasonable endeavours to undertake UAG Projects and compile a CVS Statement for the purposes of investigating the causes of UAG and CVS for each Regulatory Year.

5.6.54 The licensee must, unless the Authority otherwise directs, publish the UAGCVS Reports and provide a copy to the Authority by 1 May and 1 November in each Regulatory Year for the preceding six month period ending on 31 March and 30 September respectively.

5.6.55 The licensee must outline in the UAGCVS Report:

- (a) the UAG Projects the licensee has undertaken in the previous period;
- (b) the UAG Projects the licensee proposes to undertake in the next period and its views on whether, and if so how, the findings of the UAG Projects may be taken forward in order to reduce the volume of UAG;
- (c) the reasons why any UAG Projects that the licensee proposed to undertake have not been undertaken during the Regulatory Year;
- (d) a CVS Statement outlining the work conducted during the previous period to investigate CVS, and explaining the licensee's understanding of the causes of CVS;
- (e) any additional activities and inspections undertaken by the licensee to improve metering calibration and accuracy;
- (f) a summary of any relevant discussions concerning UAG or CVS at industry fora and with interested parties on a one-to-one basis; and
- (g) any data or information related to UAG or CVS that the Authority may reasonably request.

5.6.56 During the period of 28 days beginning with the date of publication of a UAGCVS Report the licensee must, unless the Authority otherwise consents, publish on its website all the relevant data referred to in the UAGCVS Report.

Interpretation and definitions UAG

is unaccounted for gas and means the amount of gas (GWh) that remains unaccounted for after the Entry Close-out Date following the assessment of NTS Shrinkage performed in accordance with the Uniform Network Code. **UAG Projects** means the projects currently undertaken by the licensee including:

- (a) the witnessing by the licensee of the validation of Measurement Equipment at NTS System Entry Points or Supply Meter Installations at NTS Exit Points; and
- (b) investigation and analysis of data in order to seek to identify causes of UAG.

UAGCVS Report

means a report required under Part J of Special Condition 5.6 (System operator external incentives, revenues and costs).

National Gas Transmission PLC
National Grid House,
Warwick Technology Park,
Gallows Hill, Warwick.
CV34 6DA United Kingdom
Registered in England and Wales
No. 2006000