Item 4

20th January 2026

Glasgow City Council

Net Zero & Climate Progress Monitoring City Policy Committee

Report by George Gillespie, Executive Director of Neighbourhoods, Regeneration and Sustainability

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ENERGY MANAGEMENT TEAM UPDATE

Purpose of Report:

This report provides Committee with an update on the formation of, and progress made, by the Energy Management Team between April 2025 – December 2025.

Recommendations:

It is recommended that Committee notes the content of this report.

Further progress will be reported through the carbon management plan with an update report brought to committee annually.

Ward No(s):	Citywide: ✓
Local member(s) advised: Yes ☐ No ☐	consulted: Yes ☐ No ☐

1. Introduction

1.1. The Energy Management Team (EMT) commenced work in September 2024 within Property Asset Management to allow more direct control over utility usage and so deliver a reduction across the Glasgow City Council estate through robust energy management and the development and delivery of energy efficiency projects.

1.2. The GCC estate comprises approximately 500 operational properties of varied function, age and typology and includes: offices, schools, residential and day care centres, depots, car parks, crematoria, and community centres.

1.3. This report provides Committee with an update on the progress made by the EMT in delivering their key objectives between April to December 2025.

2. Key Facts

2.1. The council property estate is diverse, containing a mixture of old and new buildings which support a broad range of statutory and non-statutory services provided by the Glasgow City Council family.

2.2. The trend for gas use is lower than for the same period of the previous year. Figures for April – November in comparison to previous year indicate a reduction in gas consumption of 11.6%. This corresponds to a 15.3% cost reduction and a saving of 1,675 tCO2. See figure 1. Higher gas consumption was noted for May 25 vs May 24 which has been attributed to the significantly lower overnight temperatures during May 25.

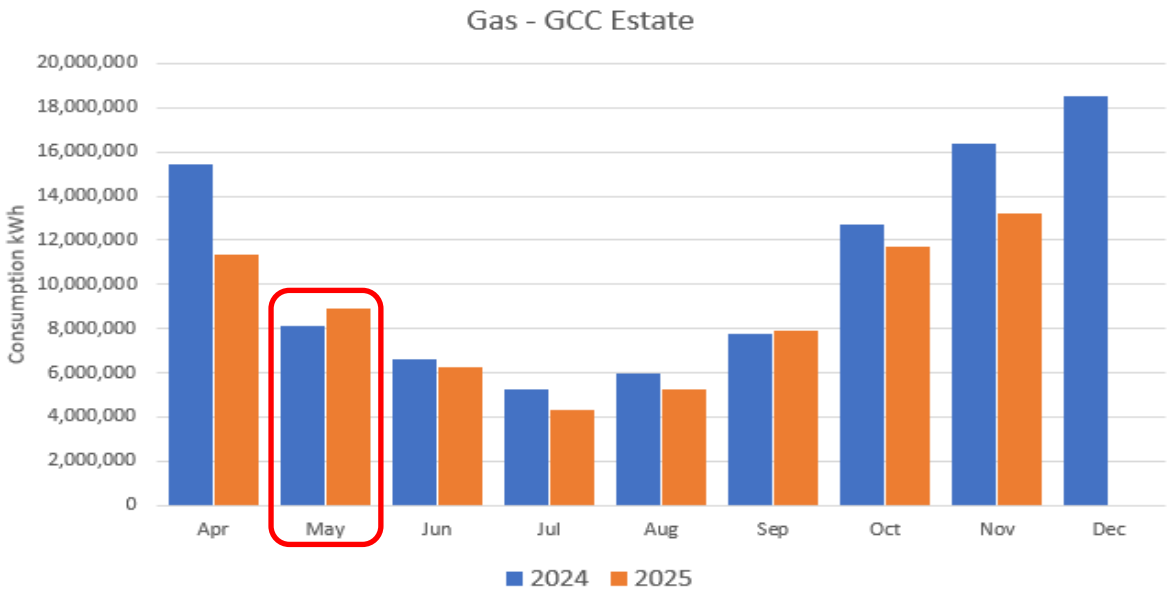

Figure 1. Gas use comparison for GCC estate. Years 2024 – 2025

2.3. The trend for electricity consumption is also lower than the same period in the previous year. Figures for April – November indicate a 7.9% reduction, corresponding to a carbon saving of 1,118 tCO2. Combined with the drop in utility costs, this is a 26.8% cost reduction on the previous year. See figure 2.

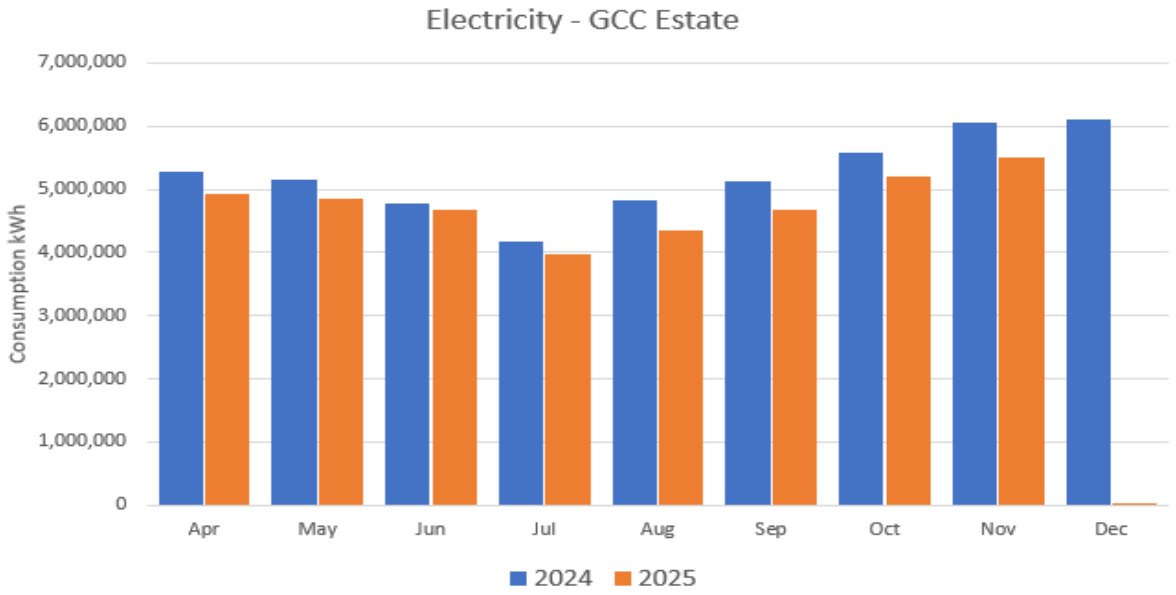

Figure 2. Electricity use comparison for GCC estate. Years 2024 - 2025

2.4. Whilst fluctuations within the global energy market, and so costs, are outwith our control, effective monitoring of energy use is contributing to reduced consumption with notable savings (or cost avoidance) being achieved.

2.5. The reduction in energy consumption also contributes to carbon reduction and the objectives of the Council's Carbon Management Plan (CMP3)[1] and delivers against action 18 (reporting on energy use) of CMP3.

3. Key workstreams

3.1. As per the report to the April Net Zero Committee, the EMT has established key workstreams to its activities. These are listed below:

- Cost Reduction (CR1 – CR2) Streamline and optimise billing processes and supporting infrastructure.
- Energy Monitoring (EM1 – EM2) Introduce effective monitoring to analyse and reduce demand and ensure energy policy compliance. Half-hourly metering being critical to this task.
- Energy Infrastructure (EI1 – EI2) Drive the replacement of analogue meters to smart technology.
- Performance Improvements (PI1) Improve accuracy and availability of information to drive more efficient working.

[1]https://onlineservices.glasgow.gov.uk/councillorsandcommittees/viewSelectedDocument.asp?c=P62AFQDNNTDNZ38181

- Energy Projects (EP1) Baseline buildings by type to clarify what is economically viable to reduce demand and decarbonise.

3.2. A detailed progress update in respect of each workstream is provided in the following sections.

4. Cost Reduction (CR1) invoice verification and payment process optimisation

4.1. This workstream aims to identify and resolve issues with historic processes. Prior to the establishment of EMT, incorrect billing and late settlement fees were incurred as a consequence of no dedicated resources allocated to this task.

Progress update

4.2. A review of the energy billing process has been undertaken. This has removed redundant administrative steps that delayed processing and resulted in abortive staff time. This has been completed without affecting the governance required for audit purposes. EMT will continue to monitor and implement further improvements where possible.

Priority actions

4.3. The priority actions of this workstream include:

- Remove redundant supplies to reduce standing charges – ongoing.
- Complete data cleanse for energy datasets – June 2026.

5. Cost Reduction (CR2) Recovery and Reduction Utility Audit

5.1. Workstream CR2 is to carry out a full audit of Electricity, Gas and Water provision for the Glasgow estate. This is underway and analysing historic and ongoing billing with a view to identifying overpayments, incorrect billing and erroneous standing charges.

Progress update

5.2. Water Consumption. An Invitation to Tender (ITT) has been published with an expected award of contract by the end of January 2026. This will appoint a supplier to perform a forensic audit of charges for water consumption/disposal and identify potential for “Invest to Save” projects. There will be no upfront cost to the council as this will be financed as a gainshare arrangement.

5.3. Gas and electricity consumption. A forensic audit is currently underway and has already resulted in some revenue recovery and charge reduction. As an example, one location has generated refunded Climate Change Levy (CCL) of £120,000 with ongoing annual savings of approximately £35,000 pa for fuel costs. Additional CCL submissions have been made for revenue recovery and ongoing savings. Further to this, the estate is being reviewed for the potential to reduce rated electricity supply charges. Initial results suggest a potential for cumulative ongoing savings. This process is also being conducted for locations managed by our ALEOs where appropriate.

Priority Actions

5.4. The priority actions of this workstream include:

- Award contract (Jan 2026) and undertake forensic water audit of utilities.
- Continue with gas and electricity forensic audits – Sept 2026.

6. Energy Monitoring (EM1) High Energy/Utility Alerts

6.1. The effective monitoring of our energy/water use is identifying incidences of anomalously high consumption. This is resulting in the alert and remediation of these issues in a timely manner. Not only does this reduce unnecessary utility consumption, it also aids fault detection which helps avoid unnecessary utility costs across the GCC estate.

Progress update

6.2. Water Consumption: In the April to December 2025 period report, 73 issues were detected. 84% have been resolved, avoiding costs of over £65,250, with others underway. To provide context of the impact of long-term water loss, an example is provided: At Pollokshaws Primary School, water was detected as being lost at a rate of 0.6 m3/hr. This was investigated and revealed water loss into a void space for 16 months at a cost of over £14,000 and 1,057 kg CO2e. This issue was resolved within one month of initial detection. On-going monitoring, detection and rectification of this type of issue is helping remove this cost exposure to the council and consequential negative impact on our estate.

6.3. Gas Consumption: Starting in May 2025, high gas consumption alerts have been introduced to flag abnormally high gas demand. Frequently these are issued due to heating being set to manual, resulting in constant operation and additional cost is avoided via the heating being returned to automatic/BMS mode.

6.4. Gas alerts are assisting in identifying equipment issues as well as incorrect boiler settings. 54% have been resolved via settings resulting in cost avoidance equivalent to £138,637 and carbon saving of 517 tCO2e per annum. Due to the age of heating equipment, a significant number of gas boiler systems need replacement. 16% have resulted in identification of boiler or BMS faults which are now scheduled for repair/replacement. 13% have been identified as being a result of additional heat demand from Swimming Pools and Hydro Pools. The remainder are currently being monitored.

6.5. As an example, data from Langfaulds Primary School is shown in figure 3. During the period shown, higher gas demand, indicated by solid colour, was detected out of hours with a reduced demand during operational hours. A 4-week average of gas demand indicated constant heating use (approximately 40 kWh). Following intervention, the timer was re-engaged resulting in a 63% reduction in gas demand or 4,416 kWh per week. In this example, the

intervention avoids approximately £23,500 per year not including the summer shutdown period.

6.6. With respect to the full implementation of abnormal gas and electricity consumption alerts, work is being progressed as part of workstream EI1 to review and upgrade half hourly meters to enable this level of reporting.

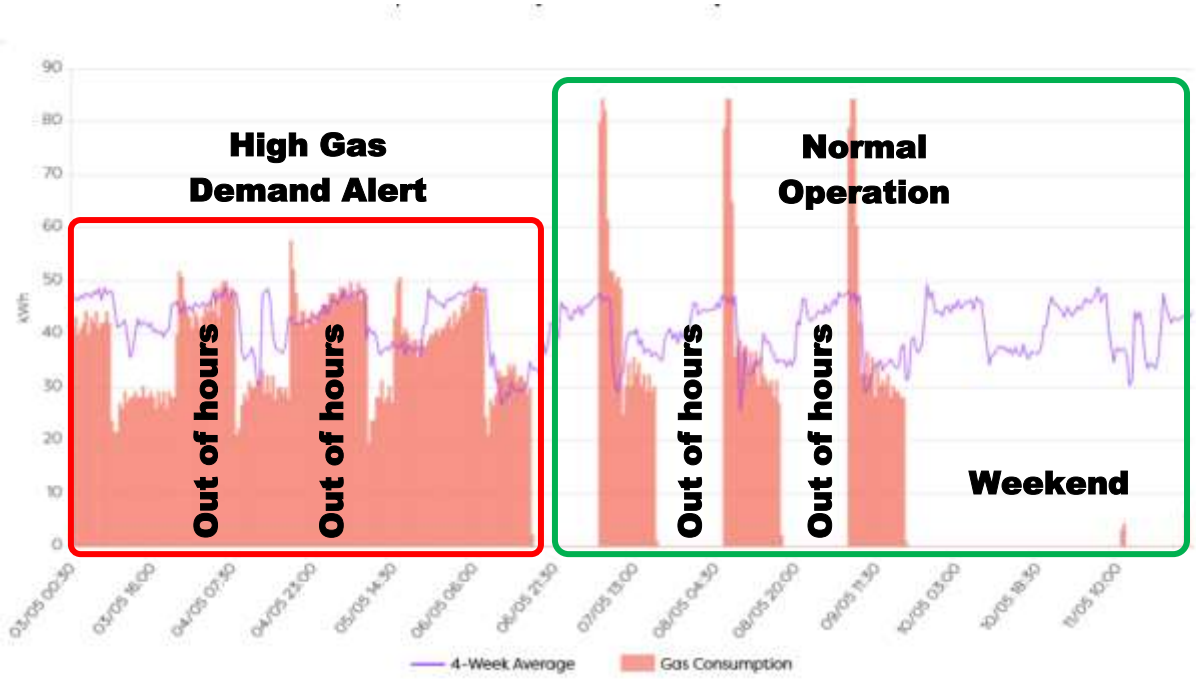

Figure 3. Langfaulds Primary School. Gas use showing Out of Hours use at detection and after resolution.

6.7. Analysis is being applied to locations with, and without, Building Management Systems (BMS) and have already improved the efficiency of the locations via optimisation of heating times. This process uses half hourly energy data to detect anomalous energy use both inside and out-with operational hours. Some of the issues that have been identified thus far could be listed as:

- Engagement of manual override of timed heating control
- Technical issues with timer equipment leading to boiler operating constantly or out-with the operational hours of the building.
- Heating requirements not fully understood or modelled leading to the creation of inefficient schedules.
- Equipment failure not been detected via other means.

Priority Actions

6.8. The priority actions of this workstream include:

- Create a baseline of current utility demand for all existing sites to aid alerts and reporting, and to monitor improvement against – May 2026.
- Implement the alert system for abnormal energy and utility consumption – June 2026.

7. Energy Monitoring (EM2) Reporting and compliance with KPIs

7.1. Reporting aligns with action 18 of the Carbon Management Plan 3. The EMT is using half hourly (HH) data sourced from our appointed meter operator and billing data where HH data is not available to aid the optimisation of building energy use (EM1). This allows for the comparison of performance and provide information on all utility and microgeneration under the remit of the Energy Management Team.

Progress update

7.2. The EMT is currently progressing with the baselining of energy demand data across the GCC estate. Currently 115 locations have been completed for Electricity and Gas demand. This will provide a basis for optimisation of building performance and support for automatic high use alerts, enabling issues to be detected and addressed promptly. This action has been submitted to CMP3 as a new project.

7.3. To provide a support role for the development of invest to save projects, the EMT has provided a first steps energy analysis of the five Education Phase 1 PV sites (delivered by the Sustainability Team Nov 2024) to compare the impact of the Solar PV Arrays on the grid demand for the sites. Results show a 20% reduction in grid-electricity demand across the four locations with the smaller 50 kWp[2] solar PV arrays[3]. At Dalmarnock Primary School grid demand is reduced by an average of almost 40 % over the whole year due to the larger 130 kWp PV array. During summer months, energy provided by the solar PV is completely supplanting daytime grid demand, as shown in figure 4. With weekly demand reduced from 3,239 kWh (Aug 2024) to 1,426 kWh (Aug 2025).

Figure 4. Reduction of daytime grid demand at Dalmarnock Primary School.

[2] Kilo Watt Peak. This is the peak output of the array based on rated output of panels.
[3] Camstradden, Castleton, Haghill and St Bernards 50 kWp Solar PV arrays.

Priority Actions

7.4. The priority actions of this workstream include:

- Effective tracking of AMR functionality to provide reliable data sources to be used for energy tracking – ongoing.
- Develop reporting and compliance KPIs based on SMART objectives – April 2026

8. Energy Infrastructure (EI1) Automatic Meter Reader (AMR) Metering Programme

8.1. The replacement and upgrade of utility meters is underway. This process will replace manual read meters to provide half hourly reporting and so more accurate energy invoicing, budget control and monitoring to support EM1.

Progress update

8.2. Gas meter replacement and Automatic Meter Reader (AMR) installation is reported as 99% complete. However, some additional work is required to ensure correct calibration of AMRs. This is underway.

8.3. Most water supplies are equipped with AMRs except where the telemetry is not effective. This affects a small number of remote locations.

8.4. First phase of electricity meter replacements where mains disconnection was required was completed during the October week holidays to address the school estate. The programme replaced 21 meters, of which 4 require District Network Operator involvement to complete works. This has required close coordination between all four stakeholders[4].

8.5. A comms plan to coordinate electricity meter replacement programmes for locations that do not require disconnection has been agreed with the contractor and a schedule is being finalised by the contractor for review by EMT.

Priority Actions

8.6. The priority actions of this workstream include:

- EMT to review meter operator list against EDF and Total Energie asset lists – January 2026.
- Ensure all meters are correctly incorporated into contract and data is available – February 2026.
- Identify and plan time-sensitive locations to minimise disruption - ongoing.

9. Energy Infrastructure (EI2) Dynamic Telemetry Switching (DTS) Switch-off

[4] EMT, Stark (Meter Provider), Comms World (IT support), CFM (Facility Staffing).

9.1. Investigation confirmed that DTS had no impact on the Glasgow estate and only affected one ALEO. EMT have been in communication to provide support.

Progress update

9.2. Workstream actions complete.

10. Performance Improvements: (PI1) Meter Location GIS Layer

10.1. Meter location data is being compiled to create a spatial dataset of our utility meters. This will allow the EMT to rapidly extract the unique reference numbers of meters related to a property.

Progress update

10.2. Whilst an important part of the overall strategy, other actions have been prioritised which will provide more immediate benefits. This measure will be reprogrammed.

10.3. Whilst initial data gathering was completed in May 2025, GIS data is not available for some locations. This information will be gathered and added on a site-by-site basis.

Priority Actions

10.4. The priority actions of this workstream include:

- Collaborate with the Council's Geographic Information System (GIS) team to introduce a new layer on GIS to improve how assets are managed. Currently paused due to move Arc Pro GIS.
- Obtain coordinates for the location of all energy and utility meters – Complete.

11. EMT Energy Projects: (EP1) Projects Impacting on the Property Estate

Progress update

11.1. Action is currently being taken regarding sites on which Solar was installed pre-2020 to ensure that the arrays are performing as expected and that all equipment is operational and functional.

11.2. Following the analysis of the 130 kWp Solar PV array at Dalmarnock Primary School, a feasibility study on the integration of battery storage is being progressed. This should provide a basis for battery storage at similarly sized arrays where there is the potential to further reduce grid dependency and cost. This is underway and should be completed by April 2026.

11.3. Several of the workstreams represent ongoing actions and long-term projects. As part of the behaviour change and awareness campaigns, options such as including schools' initiatives, information on laptop screens, require to be fully explored.

11.4. Additional communications have been issued to staff to promote compliance with GCC heat in buildings policy. This has addressed the issue of building heating being switch to manual override which can result in an increase in energy use of 33%.

12. Property Asset Management Projects

12.1. Upgrading and installing Building Management Systems (BMS) is crucial to improve energy efficiency, reduce energy costs and carbon emissions, and improve occupant comfort. Modern BMS offer, better integration with other systems, such as lighting systems, which can extend the lifespan of equipment. BMS Upgrades are being carried out to the following sites.

New BMS Upgrade sites – Completed - 7

- Eastgate
- Merrylee Primary School
- John Paul 2 Primary School
- Eastbank Primary School
- Benview Campus
- Knightswood School of Dance
- Pikeman Nursery

New BMS Upgrade sites – In progress - 3

- Notre Damme Primary School
- St Fillan's Primary School
- Toryglen Primary School

Further work to identify properties that currently do not have a BMS and which would benefit from a BMS system is also ongoing.

12.2. Switching from fluorescent to LED lighting offers significant benefits including lower energy consumption, reduced long-term costs, and improved light quality. LEDs use up to 90% less energy, last much longer than fluorescent lamps, are more environmentally friendly by containing no mercury, and provide instant, flicker-free illumination. Fluorescent to LED Lighting replacement to Eastgate building on London Road has now been completed. Further work to identify other properties that would benefit from LED replacement is underway with the benefits of replacement projects being compared with other proposed interventions to ensure capital is deployed to result in the greatest cost benefit.

12.3 Building performance and evaluation (BPE) audits are being carried out to 13 high energy consumption sites of differing building typologies. These BPEs are looking at optimising energy consumption within the premises and optimisation of building systems such as heating and cooling systems. Monitoring the BMS and Energy data over the period of the audit. The energy audit will lower energy consumption and carbon emissions by fine tuning building controls providing an

energy optimisation standard of controls across the GCC property estate. Further work to identify the next tranche of buildings is underway.

12.4. A working group comprising of the PPP Contract Management Team, Amey and the EMT has been assembled to improve the energy performance of the PPP Education estate. In comparison to 2024, an average 15% reduction in gas use, figure 5, has been achieved via the optimisation of BMS to address core target temperatures and heating schedules. Amey have also been proactive in the adjustment of pool heating times. Additionally, electricity reduction of 4% and water use reduction of 1% have been achieved.

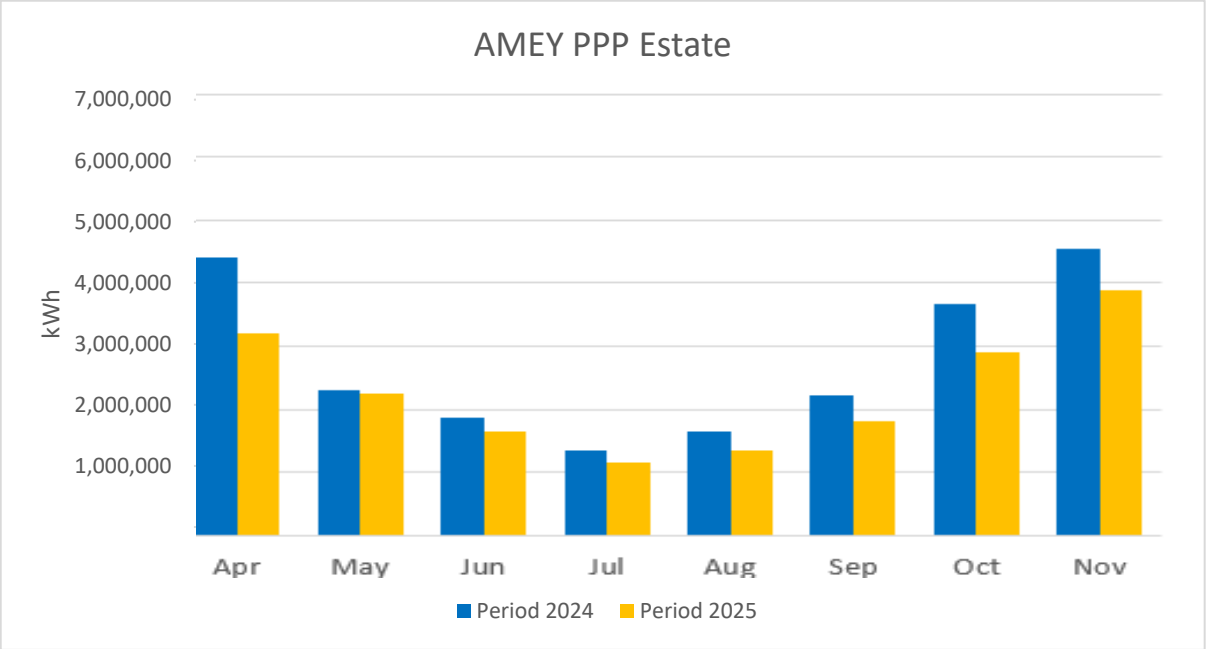

Figure 5. Gas Use Comparison in PPP Schools for 2024 / 25.

13. Conclusion

13.1. Since commencing work, the Energy Management Team have delivered measurable improvements in energy efficiency, primarily through a reduction in unnecessary use. These have contributed to significant savings to the council. Based on data from April to November[5], gas and electricity use has been reduced by 12.06 GWh (12,059,938 kWh) with a combined cost reduction of £4.34m in comparison with the same period in 2024.

13.2. The EMT is currently driving and providing essential support to various infrastructure projects that will support the delivery of key objectives of improvements in operational energy efficiency and decarbonisation.

[5] Current data from Inspired for December 2025 is incomplete.

14. Policy and Resource Implications

Resource Implications:

Financial:	Projects will be supported via internal funding and external sources where appropriate.
Legal:	None
Personnel:	All positions now recruited.
Procurement:	Resources have been assigned for immediate requirements.

Council Strategic Plan: Grand Challenge Three: Fight the climate emergency in a just transition towards a net zero Glasgow.
Mission 2: Become a net zero carbon city by 2030
Fulfils delivery of CMP3 actions:

Equality and Socio-Economic Impacts:

Does the proposal support the Council's Equality Outcomes 2021-25? Please specify.	no significant impact
What are the potential equality impacts as a result of this report?	no significant impact
Please highlight if the policy/proposal will help address socio-economic disadvantage.	no significant impact

Climate Impacts:

Does the proposal support any Climate Plan actions? Please specify:	Fulfils delivery of CMP3 actions: 4, 8, 18, 22 & 27

What are the potential climate impacts as a result of this proposal?	Monitoring and demand reduction will contribute to GCC CO2e reduction.
Will the proposal contribute to Glasgow's net zero carbon target?	Yes
Privacy and Data Protection Impacts: Are there any potential data protection impacts as a result of this report Y/N	Yes. DPIA has been carried out on appropriate action (CR2)
If Yes, please confirm that a Data Protection Impact Assessment (DPIA) has been carried out	

15. Recommendations

It is recommended that Committee notes the content of this report.

Further progress will be reported through the carbon management plan with an update report brought to committee annually.