GRIFFITH UNIVERSITY

Carbon Management Report

2024-2025

Contents

Cover picture: Solar installation on the eastern side of Gold Coast campus, 19 November 2024, Profly Solutions.

Griffith University acknowledges the people who are the traditional custodians of the lands on which we learn and work, and pays respect to the Elders, past and present, and extends that respect to all Aboriginal and Torres Strait Islander peoples.

Griffith University campuses sit on the lands of the Yugarabul, Yuggera, Jagera, Turrbal, Yugambeh and Kombumerri peoples. We acknowledge Aboriginal and Torres Strait Islanders' unique relationship with and understanding and ongoing stewardship of these lands. Through collaboration with staff, students and community members we are committed to embedding Indigenous cultures and diverse knowledge systems in our learning and teaching, research, operations, and partnerships. Griffith University acknowledges Elders past and present who guide the way to a more sustainable future for all. Under the guidance of the Griffith University Elders and First Peoples Knowledge Holders Advisory Board we seek to ensure sustainability actions are aligned with First Peoples' knowledge and cultural practices.

Executive Summary

The annual Carbon Management report reflects on our progress in managing the carbon footprint of the University, with a focus on the major sources of operational carbon emissions: electricity, air travel and waste. It notes our targets, outlines our carbon emissions for the year ended 30 June 2025 and compares our performance to the baseline, the previous year and the higher education sector TEFMA benchmarks.

Overall, the total carbon emissions for the 2024/25 year were 45,489.9 tonnes of carbon dioxide equivalent (tCO_2-e), 46.7% below the 2010/11 baseline but 1.7% higher than the previous year.

Performance of scope 1, 2, and 3 emissions for 2024/25 can be summarised as follows:

- Scope 1 emissions relate to the direct consumption of fossil fuels. Scope 1 accounts for 3.0% of the total carbon emissions for the year. 2024/25 scope 1 emissions were 1,370.7 tCO2-e, a small reduction on the previous year resulting from reduced gas use and reduced fuel consumption for the University vehicle fleet, and a 35% decrease on 2010/11.

- Scope 2 emissions are the emissions associated with the consumption of electricity generated off campus. These account for 67.1% of the total Carbon footprint for the year. 2024/25 scope 2 emissions were 30,530.6 tCO2-e, 14% increase on 2023/24 and 42% below 2010/11 levels. Factors influencing scope 2 emissions this year included:

    - increased solar generation on campus from the new rooftop installations at Brisbane South (Nathan) and Gold Coast campus
    - small reduction in annual consumption from energy efficiency projects and ongoing controls replacements and building tuning
    - the additional power consumption from the acquisition of Treasury Building.

  Once the refurbishment of the Treasury building (including new energy efficient plant) commences, and Brisbane South (Mount Gravatt) is handed over to the State, total University electricity consumption is expected return to similar levels experienced in 2024.

- Scope 3 emissions are the emissions as a direct consequence of the University's goods or services e.g. waste, paper, flights and distribution losses from the electricity counted under scope 2. These form the remaining 29.9% of our emissions. Compared to 2023/24, these have reduced by 17.4% in 2024/25 to 13,588.7 tCO_2-e, and this is also a 55% decrease on 2010/11. The key change was a 40% reduction in aviation emissions to 4,689.6 tCO_2-e (below the target set for 2030 (8,139 tCO_2-e)).

The final section of the report focuses on actions to reduce our emissions and sets out our pathway to achieve the updated target of achieving net zero emissions based on the 2010 baseline by 2029.

Introduction

This report

- reviews our carbon footprint over recent years and associated targets
- reviews how Griffith University compares against the sector on a scope 1 and 2 emissions and electricity consumption basis
- reviews scope 1, 2 and 3 emissions and describes initiatives to manage each category
- outlines our pathway to Net Zero 2029.

Our carbon emissions footprint

The boundary for the Griffith University operational carbon emissions footprint was set in 2008/9 based on the Greenhouse Gas (GHG) methodology and we continue to report on that basis. Our carbon calculations and submissions for both the statutory National Greenhouse Emissions Reporting Scheme (NGERs) and our GHG report are prepared by Pangolin Associates. This allows us to compare performance over the long term. This report refers to emissions based on the GHG methodology only, as the NGERs methodology only covers scope 1 and 2 emissions and there are some differences in what is included in each category in the two protocols. These are not material and the trends relating to scope 1 and 2 and the associated emissions reductions are similar.

The categories of emissions are defined as follows:

Scope 1

Emissions on our campuses, or associated with the University's business, generated through the combustion of fossil fuels in University owned vehicles, natural gas and LPG use as well as synthetic gases e.g. refrigerant gas leakage.

Scope 2

Emissions associated with the use of electricity imported from the grid or from a third-party supplier of energy in the form of heat or electricity.

Scope 3

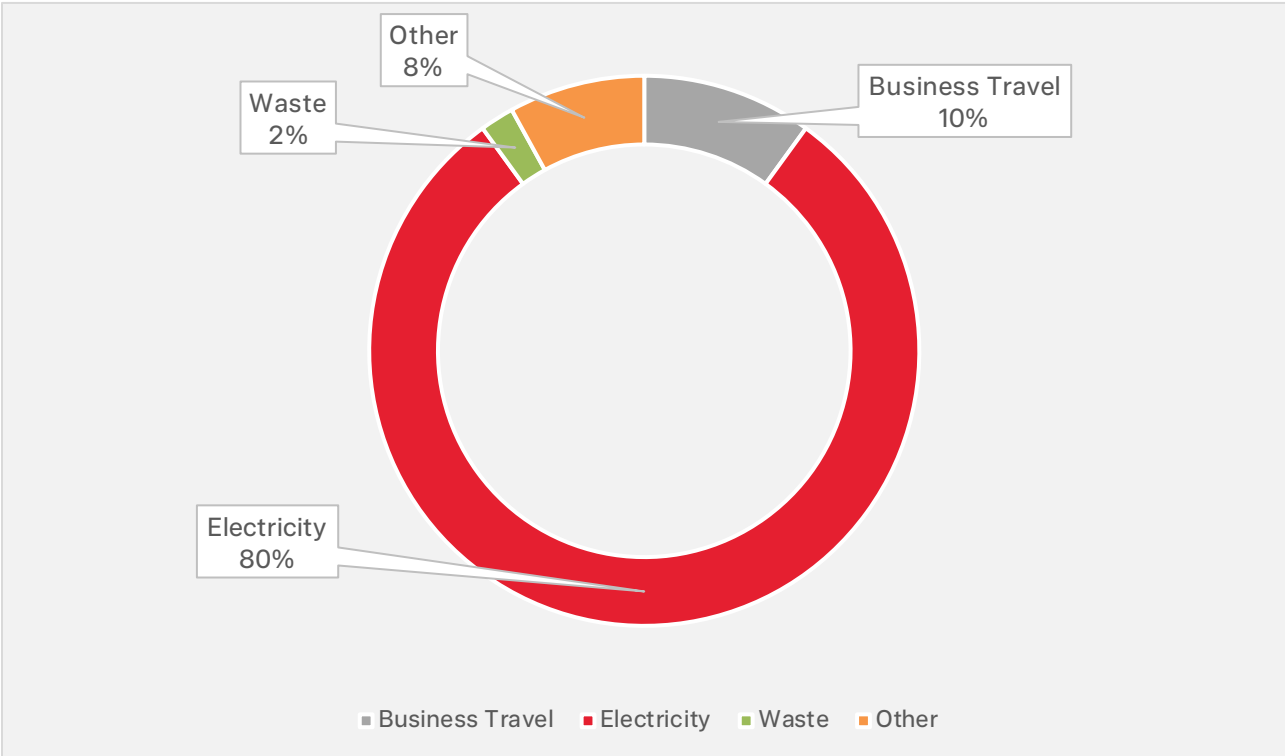
Emissions as a direct consequence of the use of goods or services provided to the University to enable it to conduct its business. Sources include waste disposal, cleaning services, food and beverage services, IT and other equipment, paper, flights, and transmission and distribution losses from electricity. This is a partial consideration of scope 3, omitting for example, working from home and employee commuting emissions. More detail is provided in Appendix C.

Our scope 1, 2 and 3 emissions since the 2010/11 baseline emissions year are as shown below:

Scope 1, 2 and 3 emissions by year

Refer Appendix A for tabulated emissions figures.

Alternatively, emissions can be broken down by category or source. For the 2024/25 year, the carbon emissions breakdown by source is as follows:



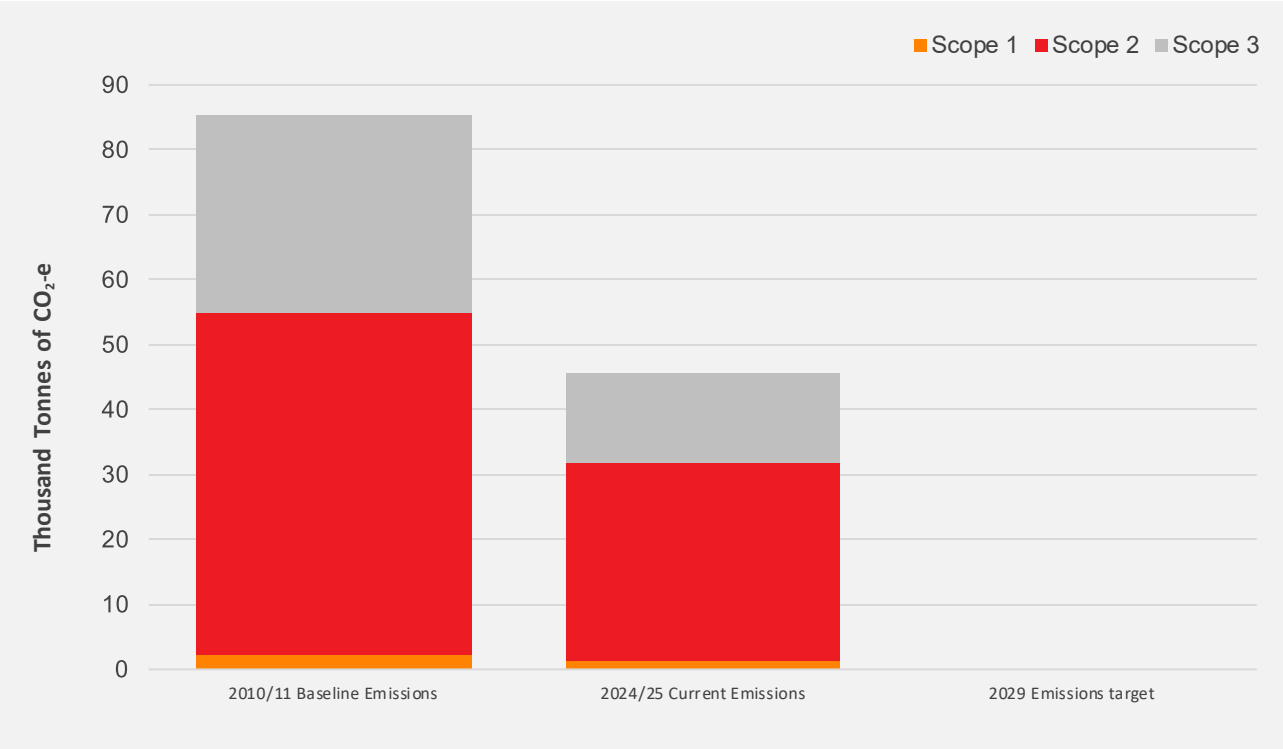
2024/25 carbon emissions breakdown

1. Other emissions includes

Food & beverage	0.1%	Stationary fuels	1.0%
ICT equipment	2.2%	Synthetic Greenhouse Gasses	1.8%
ICT services	1.6%	Transport fuels	0.5%
Office supplies & services	0.6%		

Our operational carbon emissions target

In 2012 the University developed its first Carbon Management Plan, as part of its broader commitment to sustainability. This plan was updated in 2016 and the *Creating a Future for All: Strategic Plan 2020–2025* further updated the targets. This aligned Griffith University targets with the 2019 Intergovernmental Panel on Climate Change (IPCC) recommendations to halve carbon emissions from 2010 levels by 2030 and reducing them to zero by 2050. This target was accelerated in 2023 to achieve net zero emissions based on the 2010 baseline by 2029 in response to the findings of the sixth assessment report from the IPCC and the Australian Government target of a 43% reduction on 2005 carbon emissions by 2030.



Comparison of 2010/11 baseline emissions, current emissions and the updated 2029 target

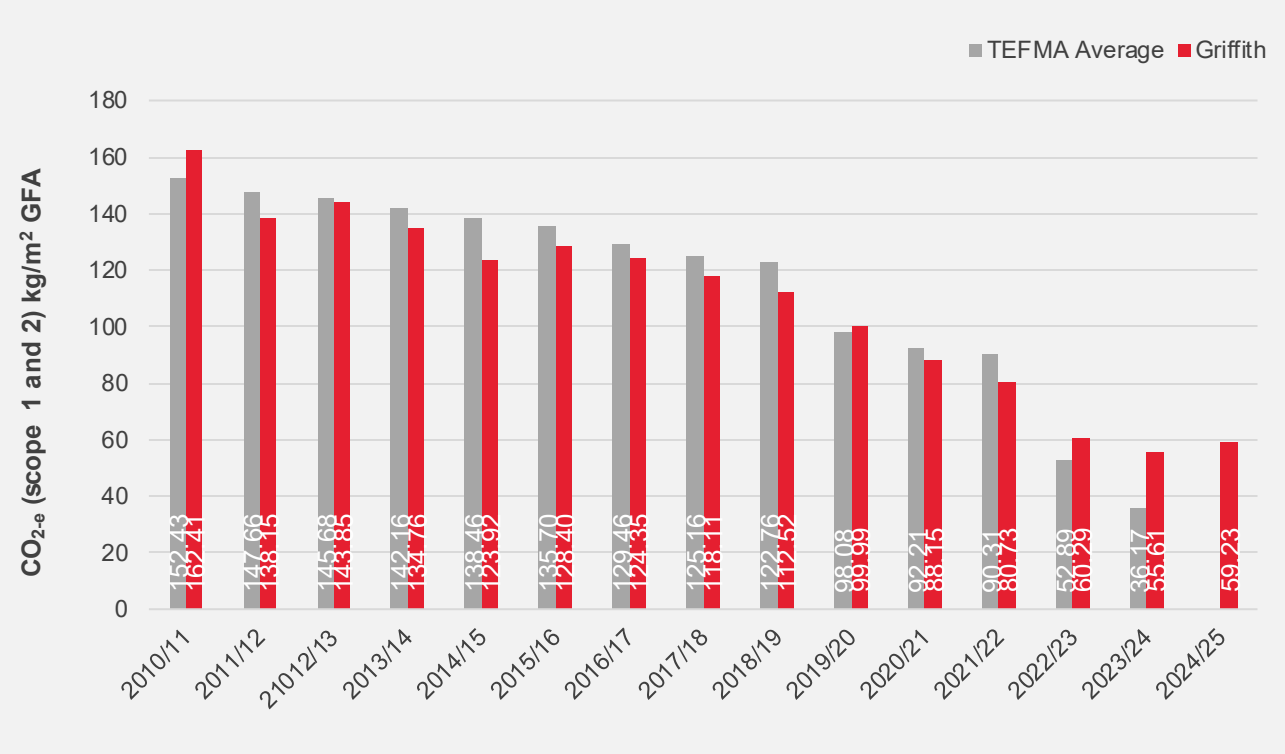
The 2029 target has the following underpinning assumptions:

- 5% residual emissions will be offset (based on 2010 baseline emissions of 85,344 tCO_2-e)
- flight emissions will achieve our target of a 25% reduction by 2029 (8,100 tCO_2-e) based on the 2010 baseline of 10,500 tCO_2-e and these will also be offset
- on renewal of our power purchasing contract (which ends December 2028), 100% renewable power will be available and affordable for all campuses and leased premises.

2024/25 Year-on-year performance comparisons

	Total emissions tCO_2-e	% change relative to 2010/11 baseline	% change relative to prior year (2023/24)
Scope 1 Direct emissions	1,370.7	-35%	-3.0%
Scope 2 Indirect emissions associated with the use of grid (offsite generated) electricity	30,530.6	-42%	+13.6%
Scope 3 Emissions as a consequence of use of goods/services (partial)	13,588.7	-55%	-17.4%
Total	45,490.0	-46.7%	+1.7%

Against the higher education sector (TEFMA) benchmarks



Scope 1 and 2 CO2-e Emissions per m2 GFA

Note: [1] TEFMA excludes residences GFA. [2] 2025 TEFMA data not yet available [3]. 2022/23 onwards no sector average figure is published so an average of the Go8 universities plus QUT has been used. [4] Comparison relates to campus gross consumption only.

Griffith had performed well against the sector average until 2022/23, when TEFMA ceased publishing a sector average figure. A comparison against the Group of 8 universities and Queensland University of Technology has been substituted. Their performance covers a wide range from values of zero to 140 kg/m^{2}GFA (for University of Queensland) and is dominated by southern states so the benchmark is indicative only.

Scope 1 emissions

Scope 1 emissions were 3% of total emissions for 2024/25. These include:

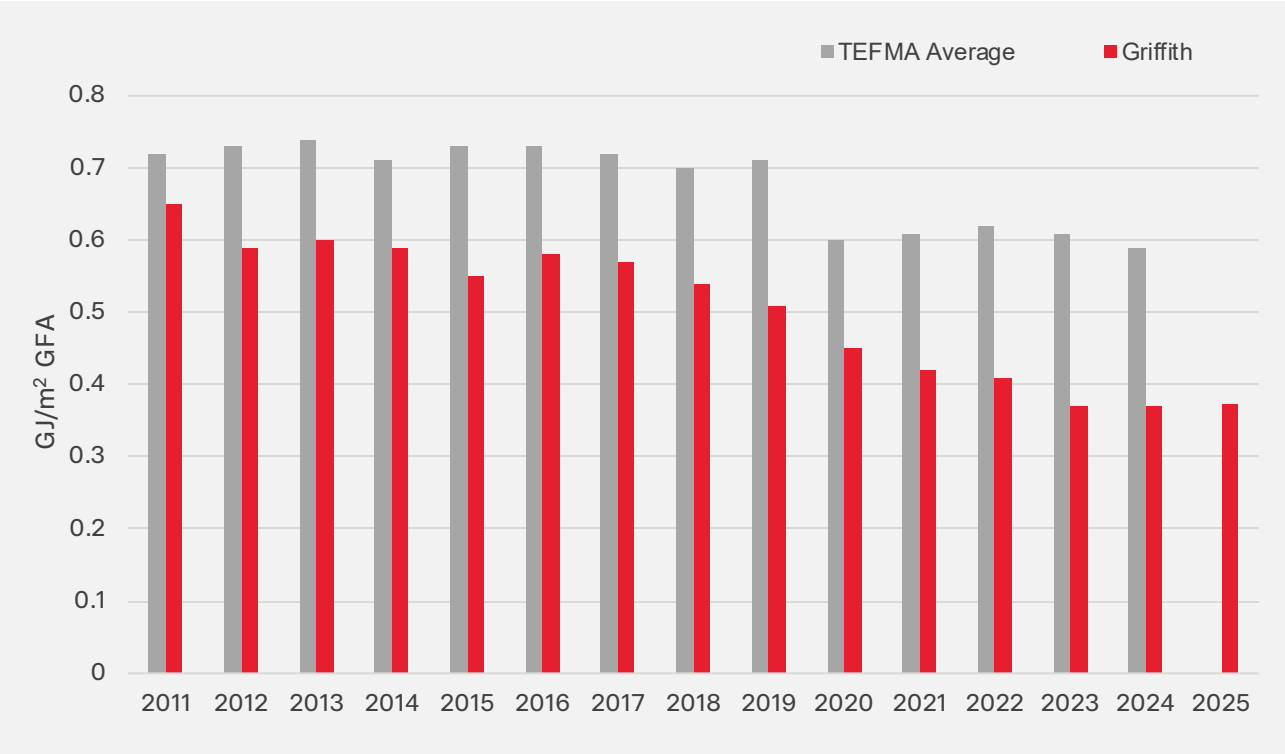
- natural gas and LPG consumption for boilers, hot water heating cooking and laboratory use
- transport fuels e.g. fuel for fleet cars and other University vehicles
- stationary fuels for fixed equipment e.g. generators
- synthetic gases e.g. refrigerant for cold rooms, air conditioning units, chillers.

Initiatives underway to reduce these include:

- supporting the transition of fleet vehicles to 50% hybrid electric vehicles (HEV) 50% battery electric vehicles (BEV) by 2025, electric vehicle chargers are in operation at both Brisbane South (Nathan) and Gold Coast. The fleet fuel consumption is beginning to reduce as expected
- preferencing replacing gas water heaters with electric equipment when they reach end of life where costs are affordable
- ensuring our construction projects, Health and Advanced Technology Research and Innovation Centre (HATRIC) and the refurbishment of the Treasury building to house the new Brisbane City (CBD) campus, include no new natural gas/LPG installations on campus for building heating or hot water requirements (as required by the Griffith Design Guidelines). Some exceptions for laboratory gas use may be required (for HATRIC) until the available technology is suitable for the research activities, this is a small part of the gas use profile.

Scope 2 emissions

Scope 2 emissions, indirect emissions associated with the offsite generation of electricity consumed on campus, were 67% of emissions for 2024/25. Whilst our emissions have increased this year, electricity consumption normalised on gross floor area is lower than the sector average as shown below.



Electricity consumption – per m2 GFA

Note: [1]TEFMA excludes residences GFA. [2]2025 TEFMA average value not yet available.

We continue to focus on reducing these emissions by

- reducing electricity consumption through our energy efficiency projects
- increasing onsite renewable generation through the roof top solar project
- purchasing offsite renewable power through our agreement with CS Energy. The output of the associated Columboola Solar Farm has been more variable than expected resulting in a lower percentage renewable power at times but these issues are understood to be resolved.

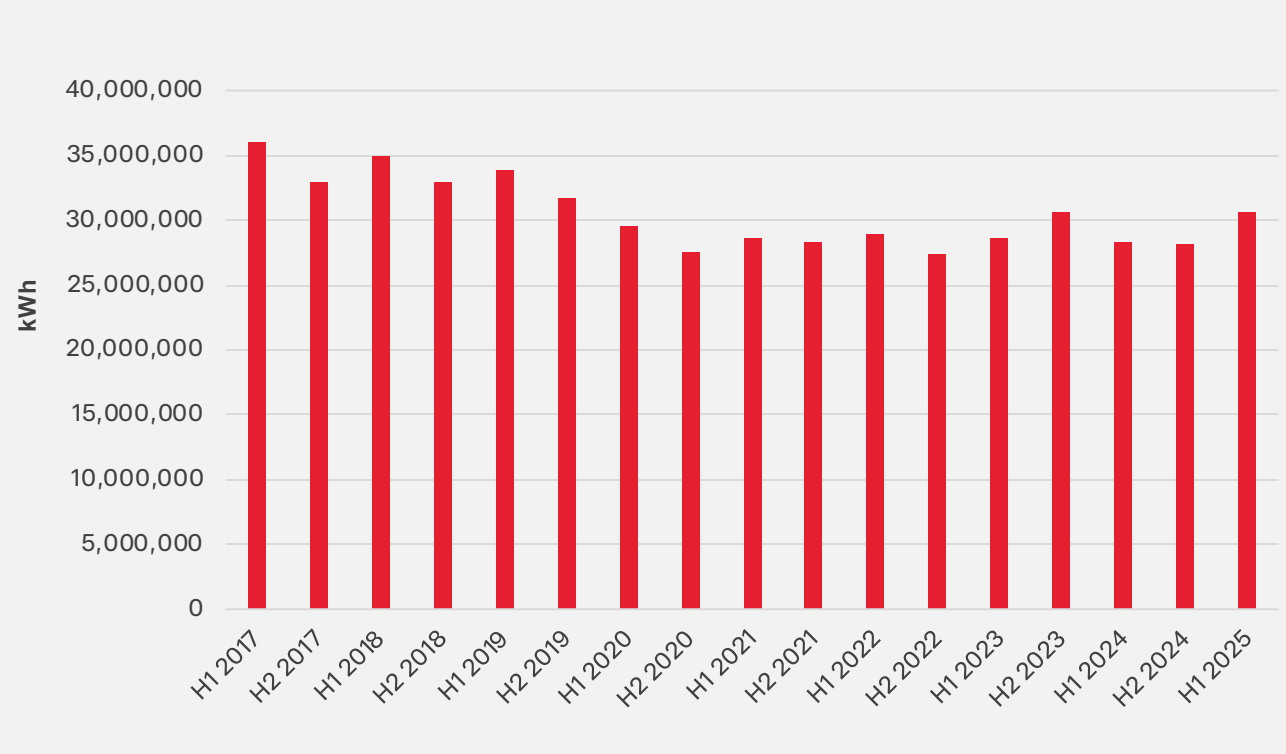
Looking at the onsite and offsite solar together, in 2024/25, 37.1% of our power consumption came from renewable sources, a total of 23,475,415 kWh, or 84,511.5 GJ.

The two graphs below illustrate the University's progress in managing Scope 2 emissions through both demand reduction and increased renewable energy generation. While overall electricity consumption has declined steadily over the past eight years, the expansion of rooftop solar installations has significantly boosted onsite renewable generation, In the first half of 2025 , solar contributed 8% of the total campus power needs. This dual approach—reducing grid reliance (by increasing on site generation) and improving energy efficiency—has helped offset the impact of increased campus activity and warmer weather.

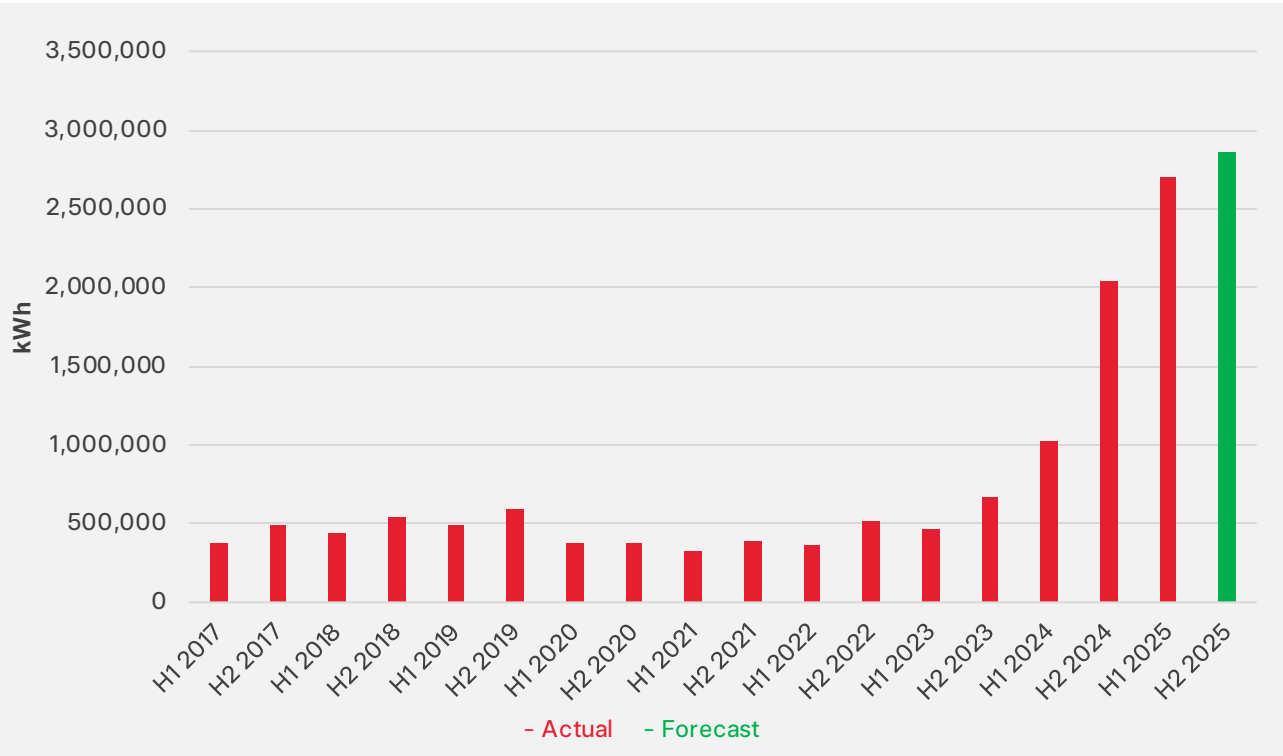
Further detail is provided in Appendix D: General Power and Solar Performance Analysis, which outlines the performance of the 4 MW rooftop solar systems installed across Logan, Gold Coast, and Brisbane South (Nathan). These systems have delivered strong generation results and financial savings. There are further opportunities for investment in solar systems noted for when funding is available.

Additionally, Appendix E: Impact of Building Type and Control Systems on Campus Energy presents comparative data on building type and building controls. This shows that facilities with updated building control systems outperform those with

legacy systems, supporting the prioritisation of control system upgrades as part of the University's broader carbon reduction strategy.



Grid power consumption – all campuses



Solar power generation – all campuses

Energy efficiency projects

Gold Coast 2288kW Solar system

The new Gold Coast solar system was commissioned in January 2025 and is shown on the front cover of this report. These additional systems bring the Gold Coast total system size to 2578kW. This is part of a university wide strategy to install 4000kW of rooftop solar across three campuses, Logan, Brisbane South (Nathan) and Gold Coast. The key features of the Gold Coast system are:

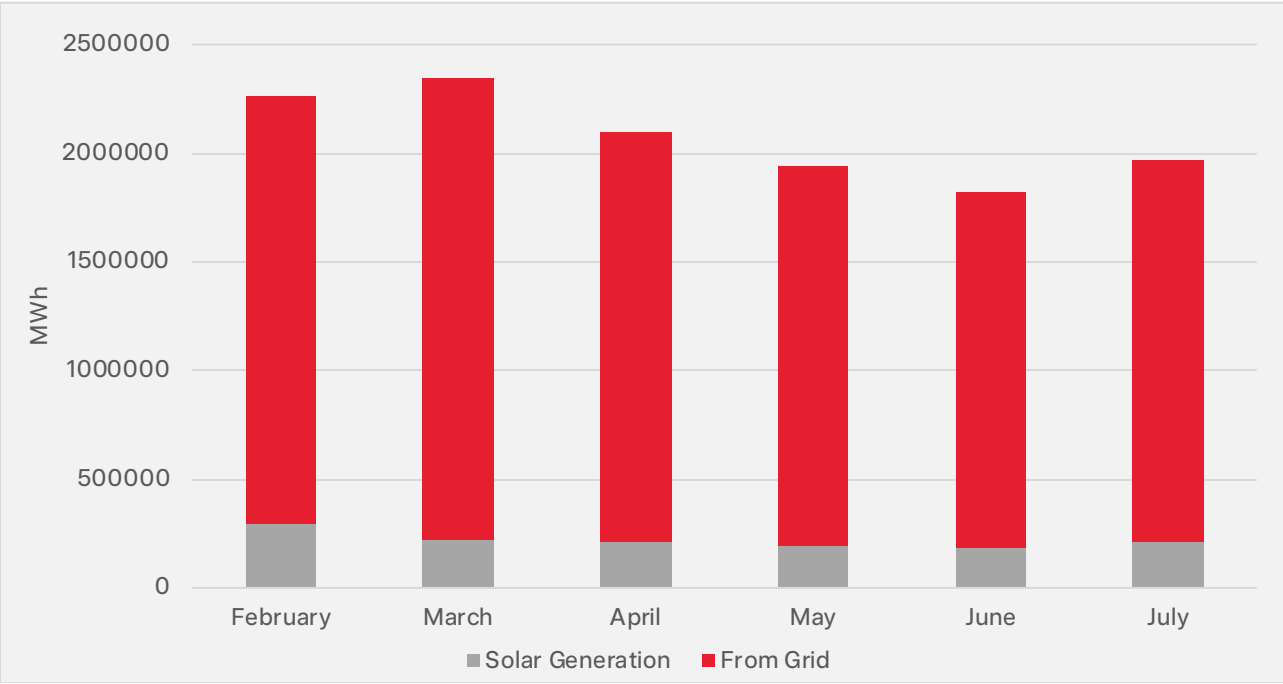
- uses solar panel optimisers to check and optimise the power being generated from each individual solar panel
- uses 4769 highly efficient Astronergy double glass and Canadian Solar solar panels
- integrates with our campus monitoring system for display and logging.

Benefits of rooftop solar include:

- local generation of electricity which reduces energy cost and transmission losses
- using existing structural assets (rooftops) to install solar rather than creating new structure and civil works
- generates electricity with zero operational carbon emissions.

Table: Gold Coast rooftop solar system – Project energy savings and return on investment.

Total Cost of Works	$3,529,857
Annual power savings (kWh) (estimated)	3,615,000 kWh
Annual tCO_2-e reduction	2,747
Project spending ($) per annual tCO_2-e saved	$1,290
Annual electrical bill savings (estimated)	$530,000
Return on investment	6.6 years



Gold Coast consumption by month

Chiller replacements

This year was the first full year of operation for the following high efficiency chiller replacement projects were completed in the first half of 2024:

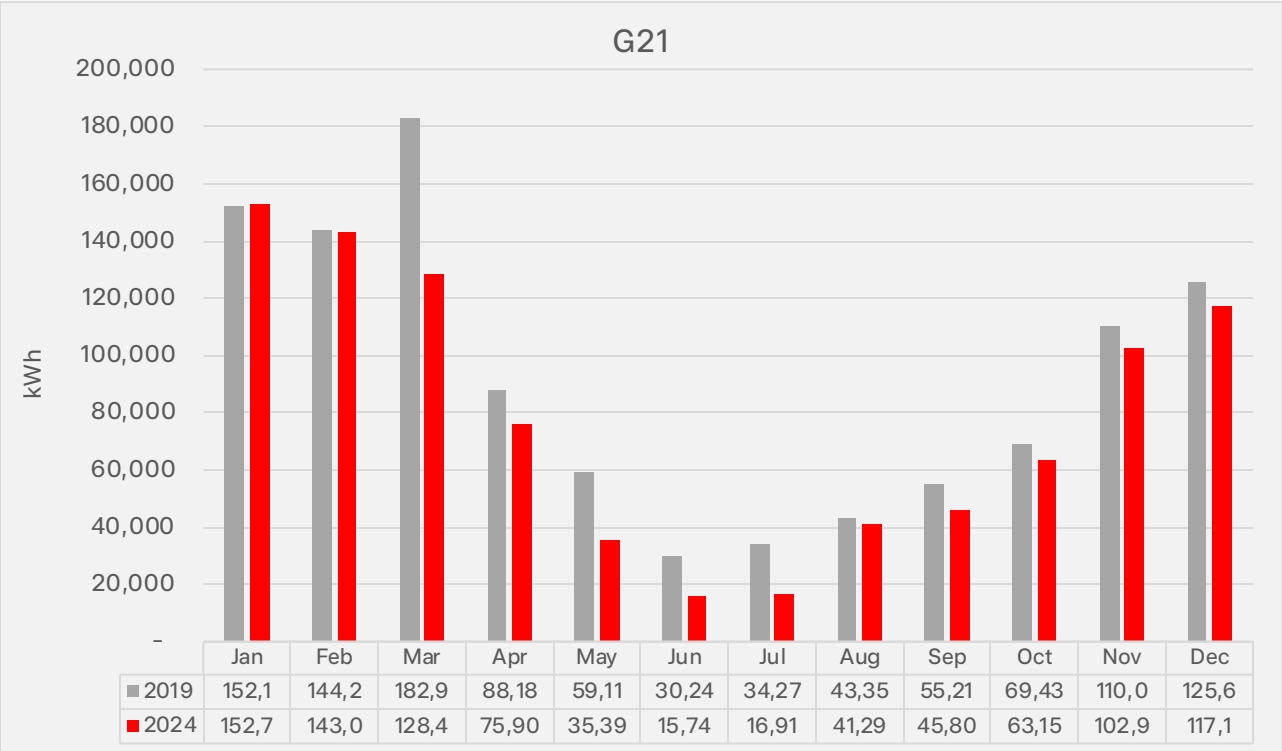
- replacement of one chiller at each of G21, G22 and G29 plants—including replacement of building pumps with variable speed drives and other energy efficiency measures arising from a detailed review of the performance of the air conditioning systems
- replacement of all Chillers at Logan Chiller Plant (L02) and upgrade of site wide building pumps to improve performance and reduce power consumption.

Gold Coast Chillers Upgrade

The Gold Coast Chiller Upgrade Project involved the replacement of chillers in compounds G21, G22, and G29. Each compound received one new chiller as part of the upgrade. These works contribute to Griffith University's broader strategy to improve energy efficiency and reduce emissions across campus infrastructure. The key features of the Gold Coast chiller upgrade are:

- installation of new chillers using low Global Warming Potential (GWP) refrigerants, helping reduce potential Scope 1 emissions associated with servicing
- replacement of chillers and primary chilled water pumps. New chilled water pump motors are selected with International Efficiency (IE) Class 3 with efficiency range of 88% - 91%
- upgrade of chilled water pumps and associated controls in nine buildings to implement variable speed control to improve energy efficiency.

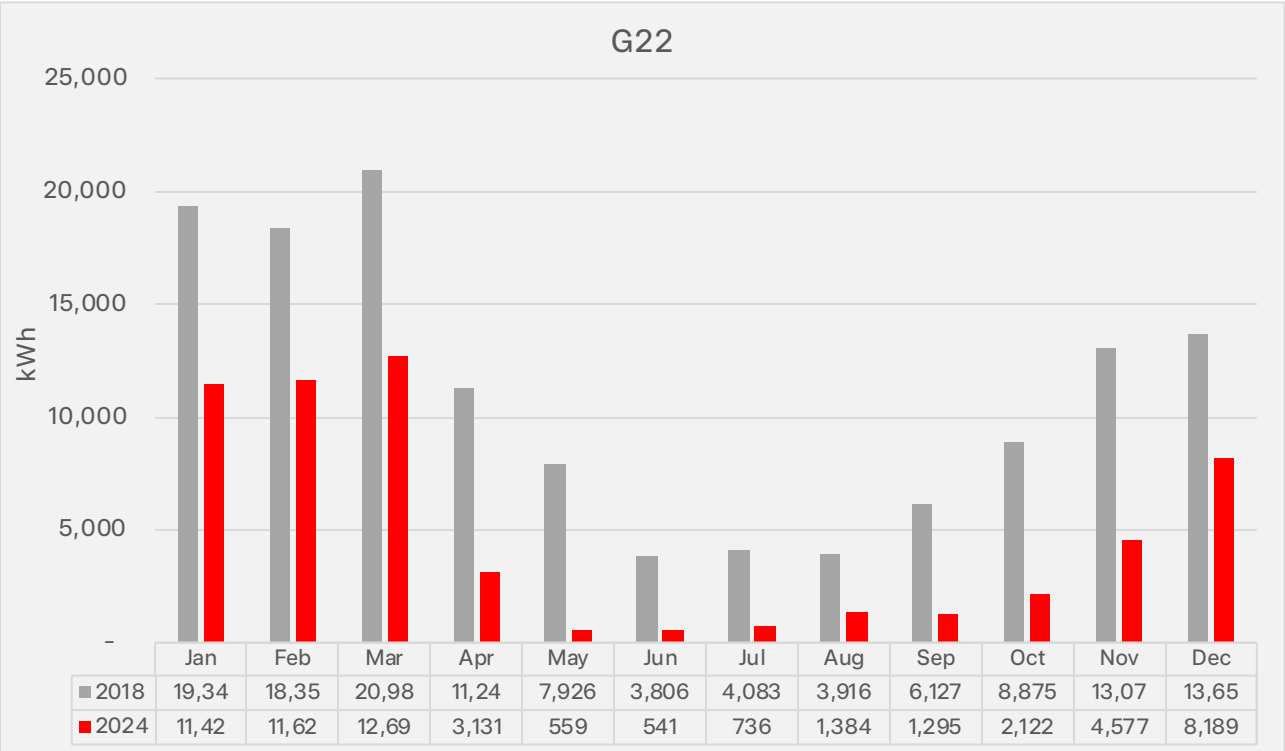
The G21 chiller compound upgrade included a new low-load chiller with a cooling capacity of 350 kW_r. The smallest of the four chillers, it carries the lesser overnight and winter loads. Comparing 2024 compared to 2019, the benefits are most clearly seen in June and July, when the electricity consumption was approximately halved.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2019	152,1	144,2	182,9	88,18	59,11	30,24	34,27	43,35	55,21	69,43	110,0	125,6
2024	152,7	143,0	128,4	75,90	35,39	15,74	16,91	41,29	45,80	63,15	102,9	117,1

G21 power consumption - 2019 vs 2024

In G22, the smaller chiller (250 kW) was replaced and the other large (537 kW_r) chiller retained. As shown in the graph, annual energy consumption has reduced by 45% compared to 2019. Improved efficiency is attributed to both the upgrade and the implementation of improved controls throughout the system, enabling low-flow operation during cooler months for more effective electricity use.

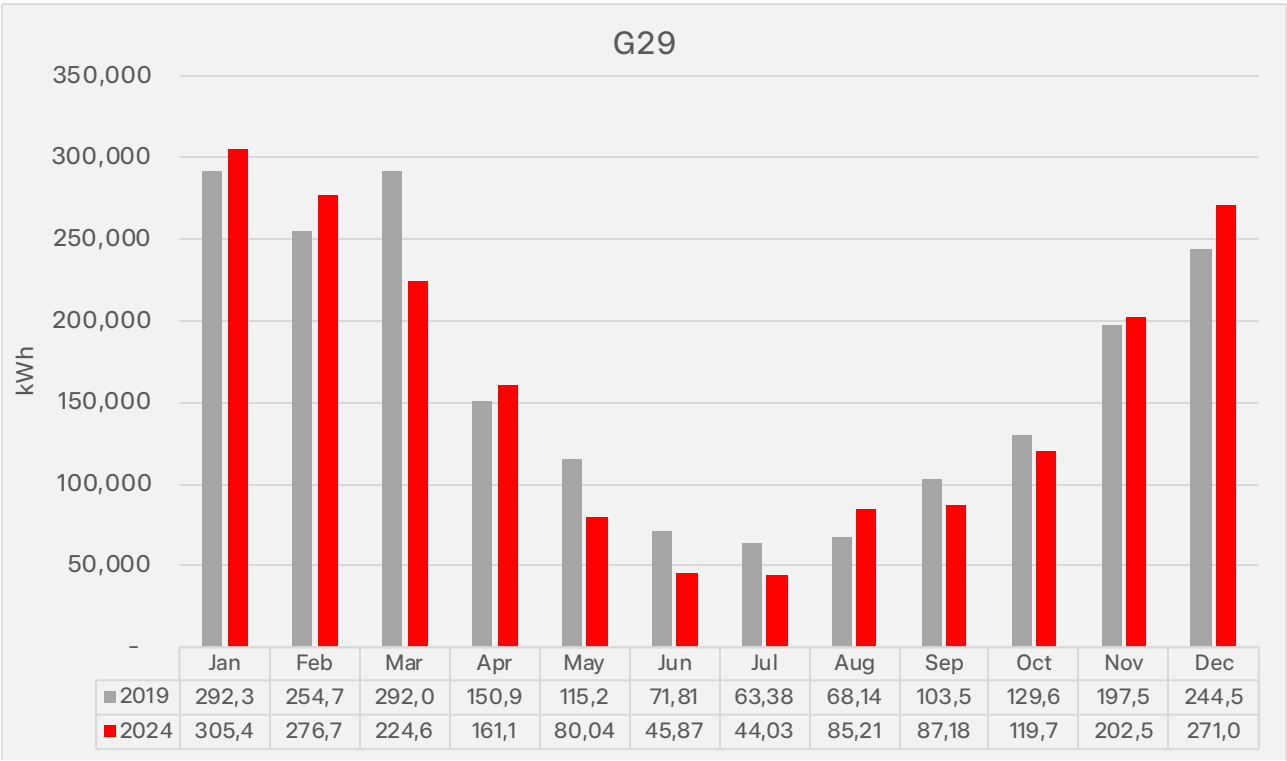


G22 power consumption - 2018 vs 2024

The G29 chiller compound was upgraded with a new large-capacity unit (900 kW_r). This compound serves predominantly research and sciences buildings, with a consistent cooling demand of approx. 1.98 GWh as shown in the table below (excluding Covid impacted years). Following the upgrade, a 4% reduction in energy use was observed compared to 2019.

Table: G29 Annual Energy Consumption

kWh	2019	2020	2021	2022	2023	2024
Total Energy Consumed	1,983,943	1,989,329	1,932,775	1,897,877	1,998,224	1,903,734



G29 power consumption - 2019 vs 2024

Table: Gold Coast Chillers - Project Energy Savings and Return on Investment

Total Cost of Works	$2,526,689
Annual power savings (kWh)	283,205
Annual tCO_2-e reduction	215.24
Project spending ($) per annual tCO_2-e saved	$9,593.30
Annual electrical bill savings	$39,648
Return on investment[1]	64 years

Note 1: ROI excludes power savings from new building chilled water pumps. Cost of works includes these pumps, increasing the ROI.

Logan Chiller Upgrade

The L02 Chiller Plant project was completed in February 2024. The existing plant had reached its end of service life and was replaced with new water-cooled plant with new switchboard and pumps. Key features included a complete replacement of the entire plant including switchboards, pumps, cooling towers and variable speed drives

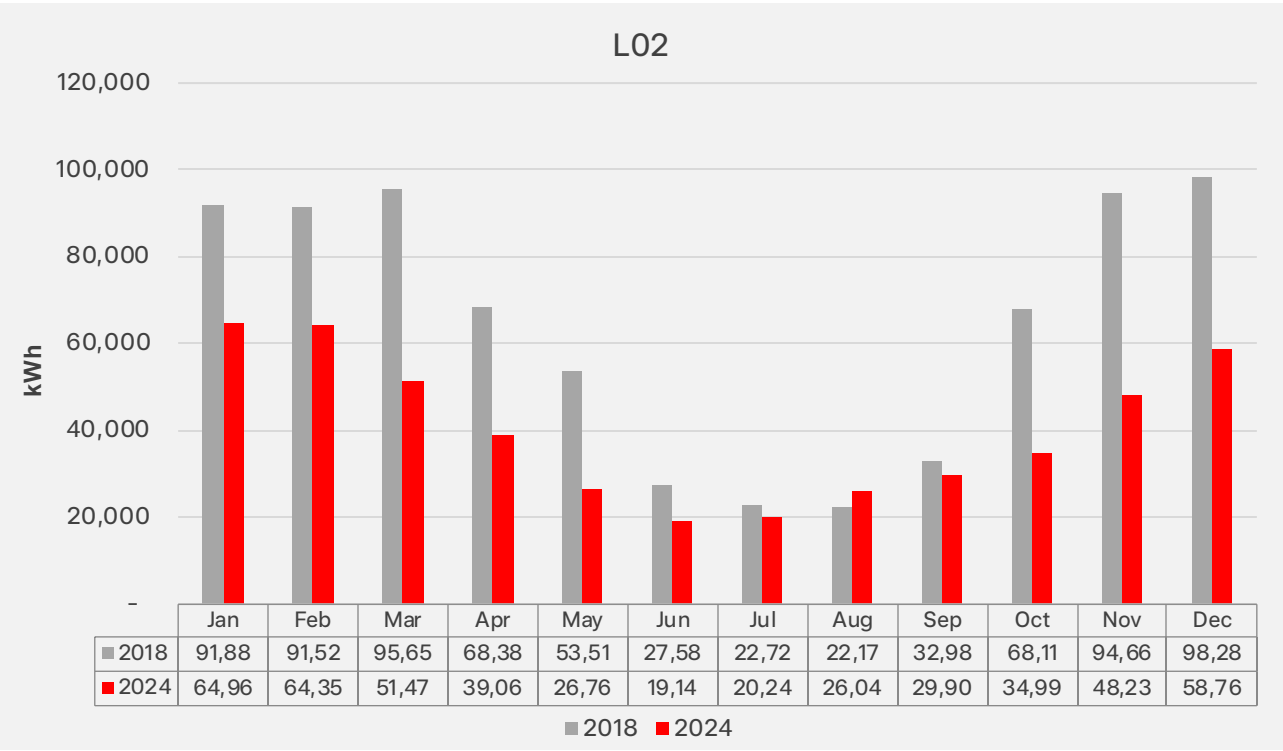
- new chillers with low Global Warming Potential (GWP) refrigerant (reducing our potential Scope 1 emissions associated with servicing)
- upgrade of chilled water pumps in four buildings, totalling eight pumps with IE Class 3 motors
- controls upgrade to implement variable speed control to improve energy efficiency.

The resultant power savings are tabulated in the table below and power consumption for 12 months in the following graph. The energy consumption from 2018 is taken as baseline as it gives a true utilisation rate prior the COVID pandemic and building shutdowns. The clear difference in energy consumption is during spring/summer (October -March).

Table: L02 - Project Energy Savings and Return on Investment

Total Cost of Works	$3,895,778
Annual power savings (kWh)	283,555 kWh
Annual tCO_2-e reduction	215.50
Project spending ($) per annual tCO_2-e saved	$13,388
Annual electrical bill savings	$43,805
Return on investment	89 years

Note 1: This comparison is taken between Jan, Feb and Mar of 2018 vs 2024.
Note 2: ROI excludes power savings from new building chilled water pumps but cost of works includes these costs, increasing the ROI.

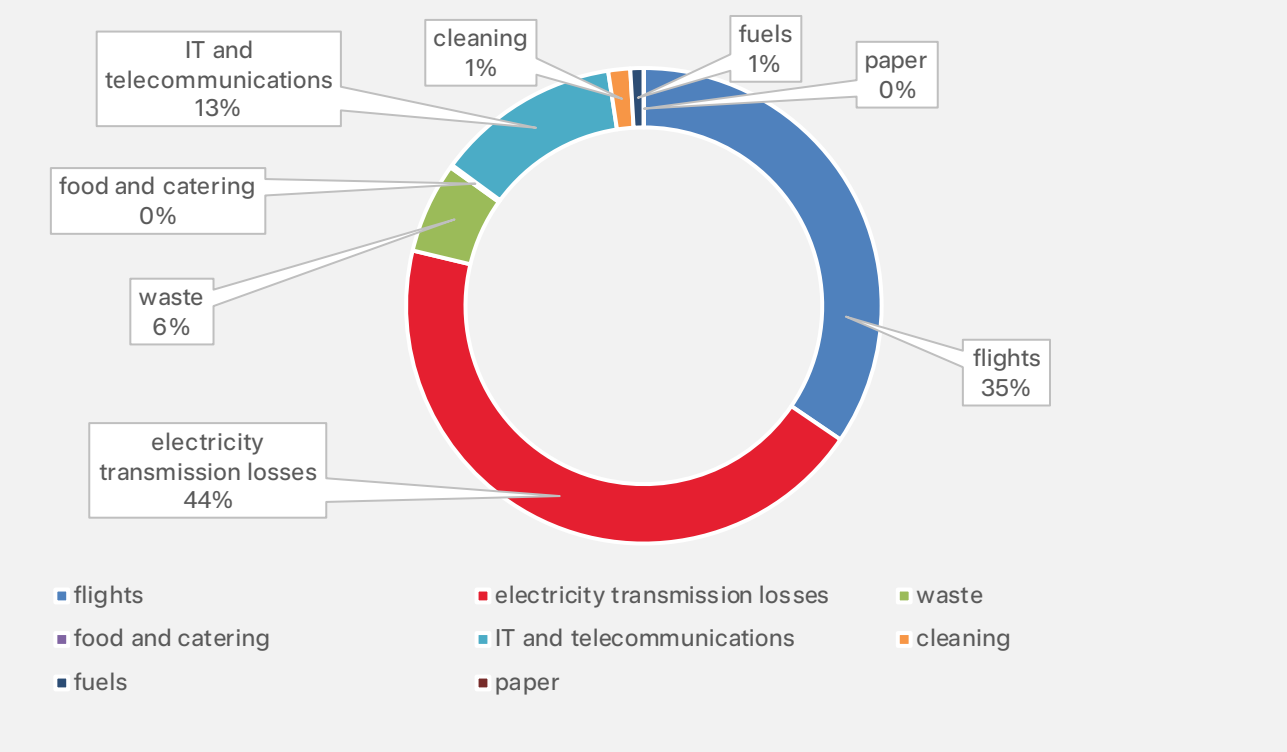


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2018	91,88	91,52	95,65	68,38	53,51	27,58	22,72	22,17	32,98	68,11	94,66	98,28
2024	64,96	64,35	51,47	39,06	26,76	19,14	20,24	26,04	29,90	34,99	48,23	58,76

L02 power consumption - 2018 vs 2024

Scope 3 emissions

Scope 3 emissions form 30% of this year's emissions. The University has monitored partial scope 3 emissions from 2010/11 onwards, to a defined boundary. The details of which categories of emissions we report on are given in Appendix C.



2024/25 scope 3 emissions

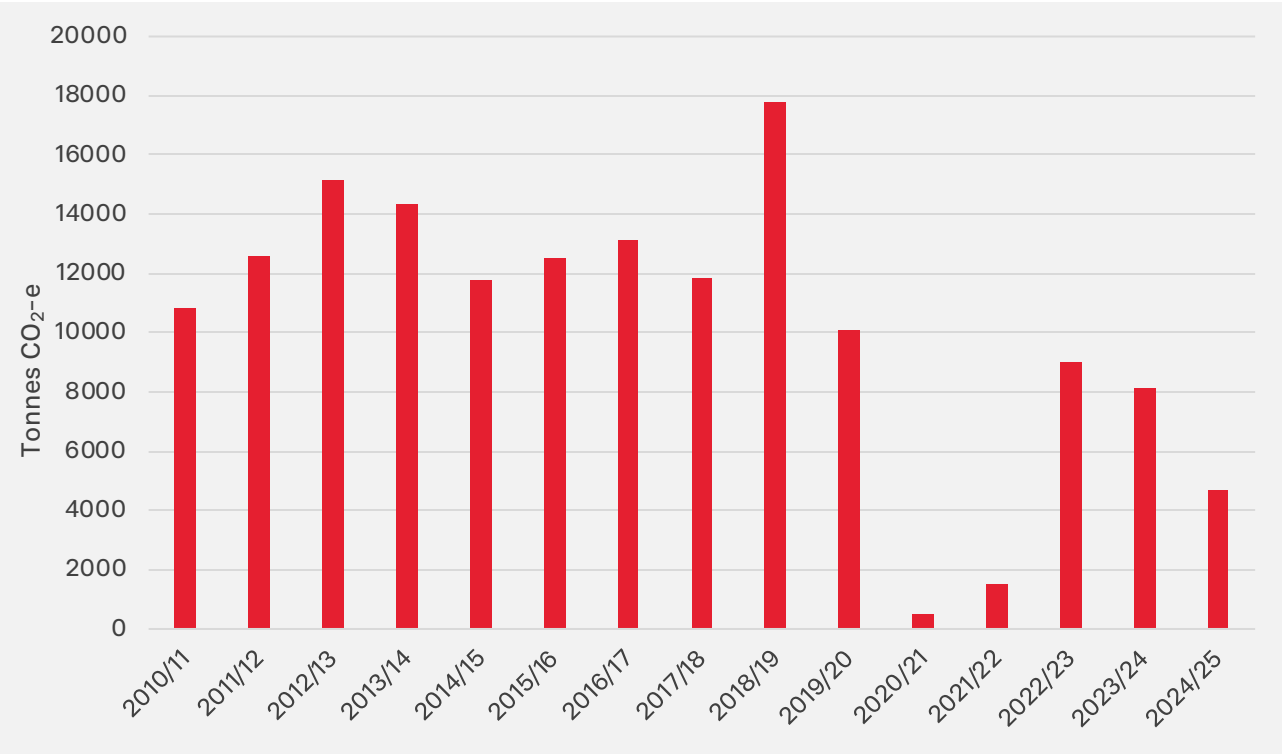
After electricity related emissions (with management as described earlier), the next largest contributors are flights and waste, with more detail given below.

Managing our flights

Flight emissions reduced by 40% compared to the previous year, below the target set for 2030 (8139 tCO2-e)).

Further detail on the business air travel data is given in Appendix B.

Carbon emissions since the baseline year are shown in the graph below.



Carbon emissions from business air travel from baseline year until present

Managing our waste

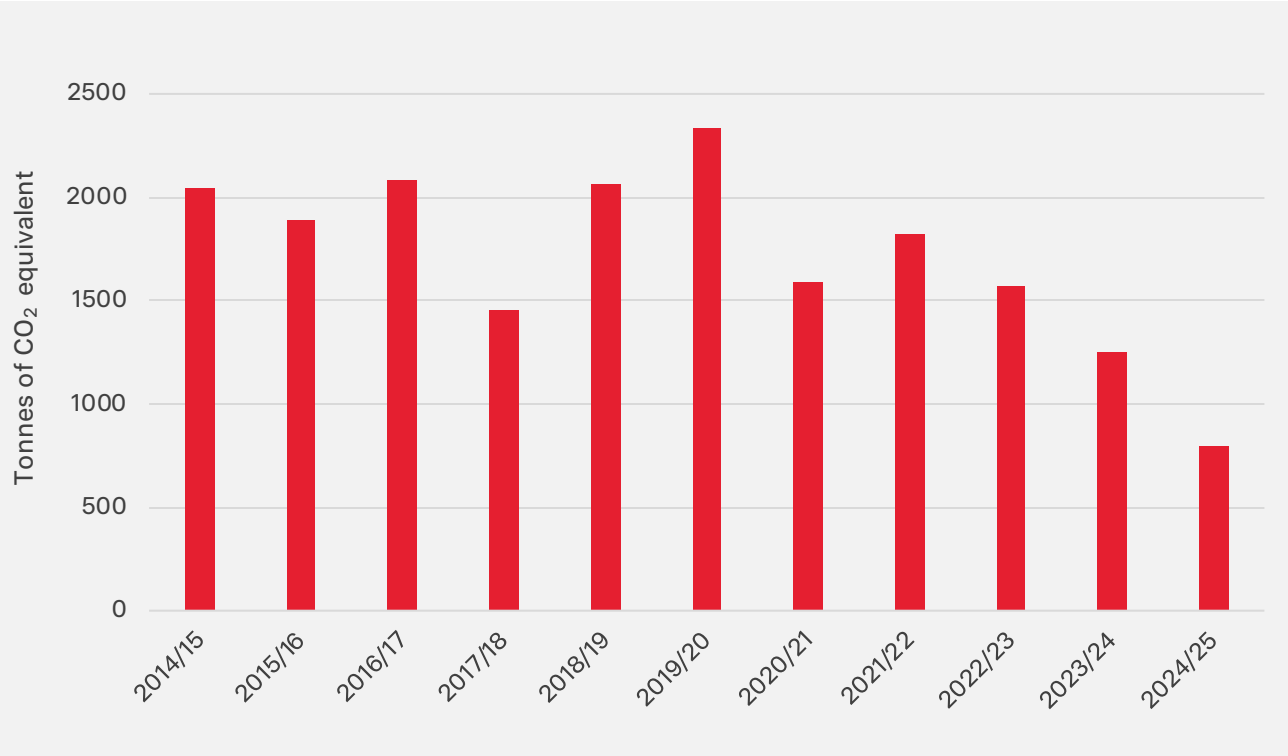
Initiatives for waste reduction continue including

- collection of organic waste for composting and Containers for Change recycling which contributes to Griffith University's hardship grants for students
- the resource recovery facilities on campus at both Gold Coast and Brisbane South (Nathan) which are both now fully operational are exceeding expectations in reducing landfill waste
- bins at Brisbane City (South Bank), Brisbane South (Mount Gravatt) and Logan are now weighed improving the reliability of data.

The TEFMA benchmark data is for landfill and recyclable waste combined. As the data on recyclable waste is considered unreliable, a comparison to TEFMA benchmark data is not presented here.

The University's historic data is based on a mixture of weighed waste and average bin weights so lacks reliability (and methodology varied with contract provider). Values from last year (2023/24) onwards are considered reliable as they are based on weight and the further 38% reduction in emissions in 2024/25 demonstrates the impact of the updated approach.

Emissions from waste since the baseline year are shown in the graph below



Carbon emissions from landfill waste from baseline year until present

Pathway to Net Zero 2029

The Net Zero 2022 report updated Griffith's pathway to achieve Net Zero by 2029 based on the 2010 emissions boundary (which includes partial scope 3 emissions as detailed in Appendix C). The pathway employs three key strategies for reducing our carbon footprint:

- avoiding emissions
- reducing emissions
- generating and purchasing clean energy.

The pathway includes the following key levers:

- high efficiency chiller replacements for replacements completed for end-of-life assets
- energy efficiency measures including review of building and server room temperature set points, fitting VSD drives to mechanical equipment where applicable, occupancy sensors, etc.
- onsite renewables – additional 4MW of rooftop solar installed
- offsite renewables — purchase of 50% renewable power (in place from December 2022); 100% renewable power on contract renewal in January 2029 (provided this is available and affordable)
- reduction in air travel of 25% on 2010 baseline year by 2030
- reduction in paper use, waste, behavioural change programme
- migration to electric car fleet or other low carbon transport options
- reduction in gas consumption on campus.

As the largest contributors to our carbon footprint, the current initiatives focus on reduction in energy consumption and flight related emissions as follows:

Flights

The University community will continue to work together to maintain the excellent performance against the target of a reduction in air travel of 25% on 2010 baseline year by 2030. Ongoing initiatives include investing in digital technology to enable virtual meetings and conferences, incentivising travel reduction and a review of University policy relating to international collaboration.

Electricity

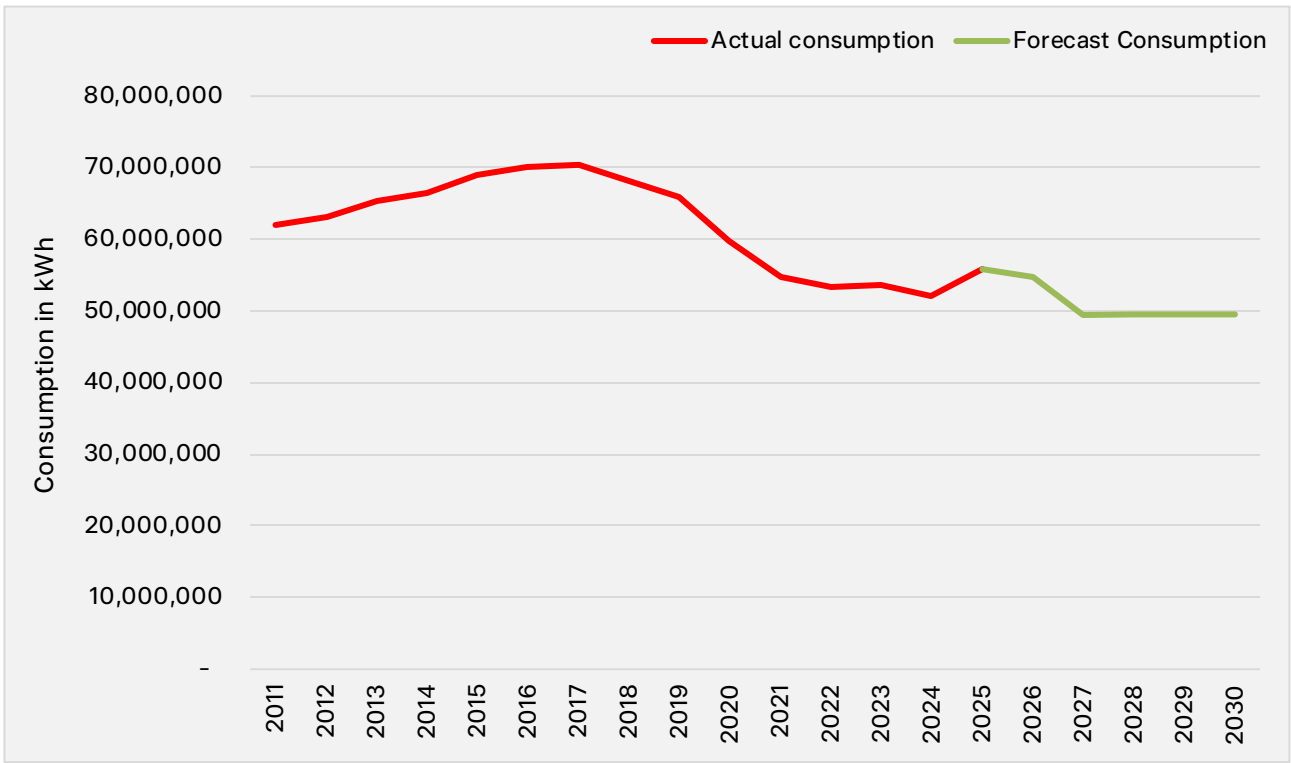
The scope 2 electricity emissions remain the greatest part of our emissions. Energy reduction projects in progress and planned for next year are as follows:

- the refurbishment of Sciences 2 (N34) and Technology (N44) will update air conditioning, hot water and lighting systems to current energy efficient standards for plant as part of the research facilities upgrade
- Building Control system upgrades will continue to allow updated strategies including night set back and integration with room booking systems to reduce air conditioning consumption for unoccupied rooms, where appropriate
- the refurbishment of the Treasury building will result in improved performance and energy efficiency
- the draft University strategic space plan includes some rationalisation of buildings at Brisbane South (Nathan) which will in turn reduce power consumption. This will deliver energy savings of 3 – 5% depending on the final scope.

These factors combine with the following planned changes in buildings and associated consumption:

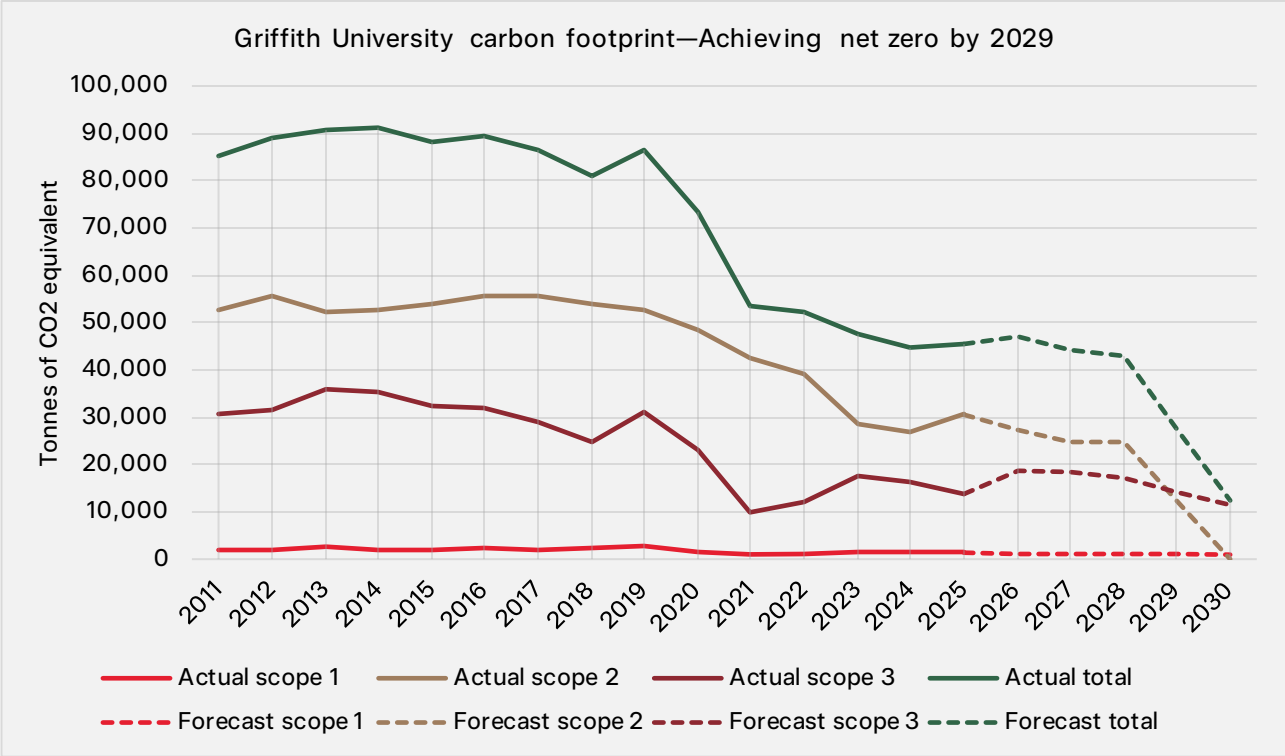
2026	Completion of Brisbane South (Nathan) consolidation and Exit from Brisbane South (Mount Gravatt) campus
2027	Brisbane City (CBD) - the Treasury building opens HATRIC building opens at Gold Coast

Resulting in forecast power consumption to 2030 as shown below:



Annual electricity consumption forecast to 2030

Forecast emissions are as follows:



1Annual carbon emissions to 2030

Key assumptions underpinning the emissions target for 2025/26 are:

- activity levels on campus similar to 2018/19
- solar installations on campus generate as expected
- 50% renewable portion from the electricity sourcing agreement
- electricity consumption at the Treasury building has been estimated based on limited data and the current project timeline
- flights are estimated at 11,750 tCO_2-e, 20% above the 2030 baseline
- finalisation of arrangements for sporting facilities and handover of the Brisbane South (Mount Gravatt) in late 2026
- the Treasury building consumption reduces by 40% following commencement of refurbishment and implementation of various energy saving initiatives with the existing plant.

Targets for the remaining years to 2029 were estimated as part of the Net Zero Emissions Sprint Team work, based on assumptions as above for future building footprints and activity levels. For the next two years, the aim is to maintain our current -45% target, with Mount Gravatt handover, solar generation and energy efficiency initiatives continuing to reduce consumption to offset the additional consumption of HaTRIC and the Brisbane City (CBD) campus.

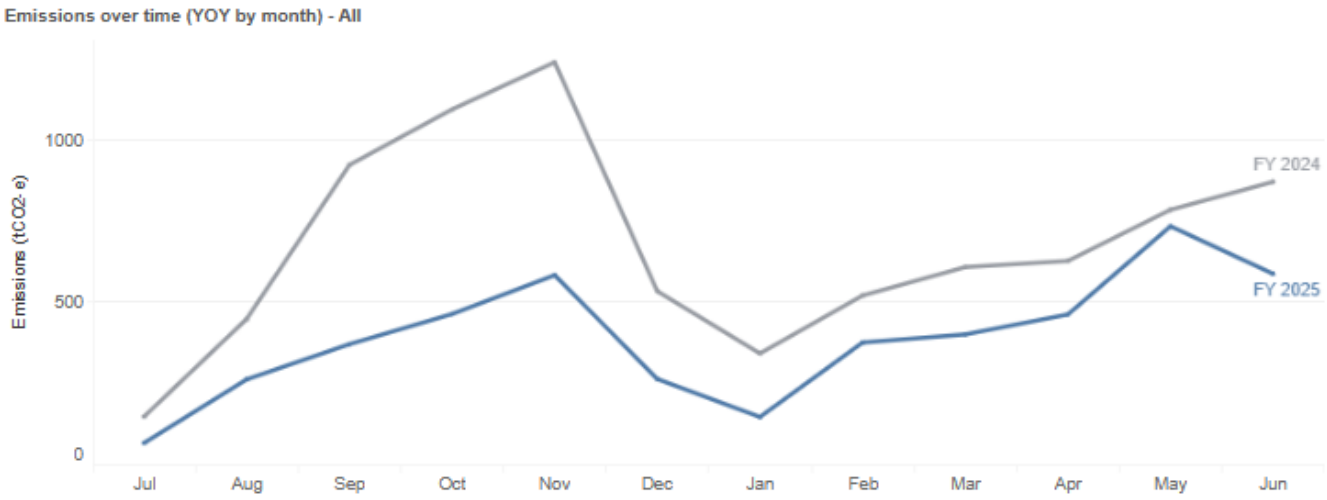
Appendix A: Table of emissions from Baseline 2010/11 to present

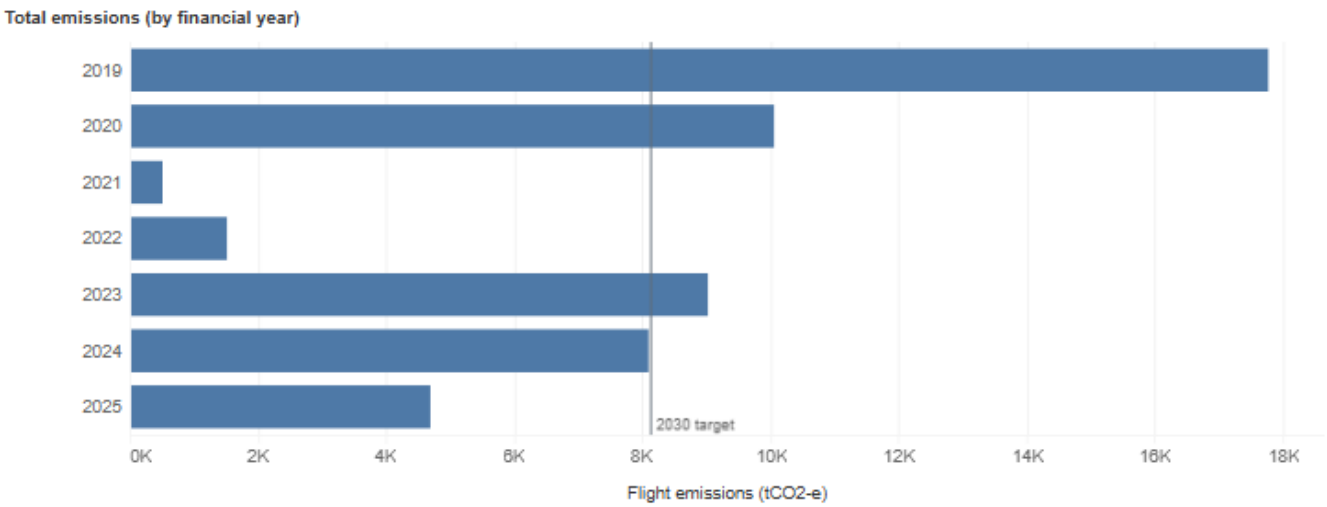
Table: Griffith University Carbon Footprint—emissions tCO2-e from Baseline 2010/11 to present

Year	Scope 1	Scope 2	Scope 3	Total
2024/25	1,370.7	30,530.6	13,588.7	45,490.0
2023/24	1,407.8	26,872.1	16,445.0	44,724.90
2022/23	1,529.4	28,444.1	17,695.3	47,668.8
2021/22	1,104.3	39,031.5	12,207.4	52,343.1
2020/21	1,008.3	42,629.8	9,896.3	53,534.5
2019/20	1,592.5	48,499.1	23,214.6	73,306.2
2018/19	2,627.8	52,775.1	31,148.9	86,551.8
2017/18	2,588.9	53,880.1	24,585.2	81,054.2
2016/17	1,739.8	55,624	29,020.9	86,384.7
2015/16	2,274.7	55,440.4	31,835.4	89,550.5
2014/15	1,813.4	53,840.2	32,318.2	87,971.8
2013/14	2,124.8	52,604.7	36,459.6	91,189.1
2012/13	2,637.1	52,281.1	35,912.2	90,830.4
2011/12	2,115.7	55,431.1	31,456.9	89,003.6
2010/11	2,114.6	52,694.3	30,535.5	85,344.4

Appendix B: Aviation emissions detail

Total Flight Emissions 2024/25: 4,690.4 tCO_2-e





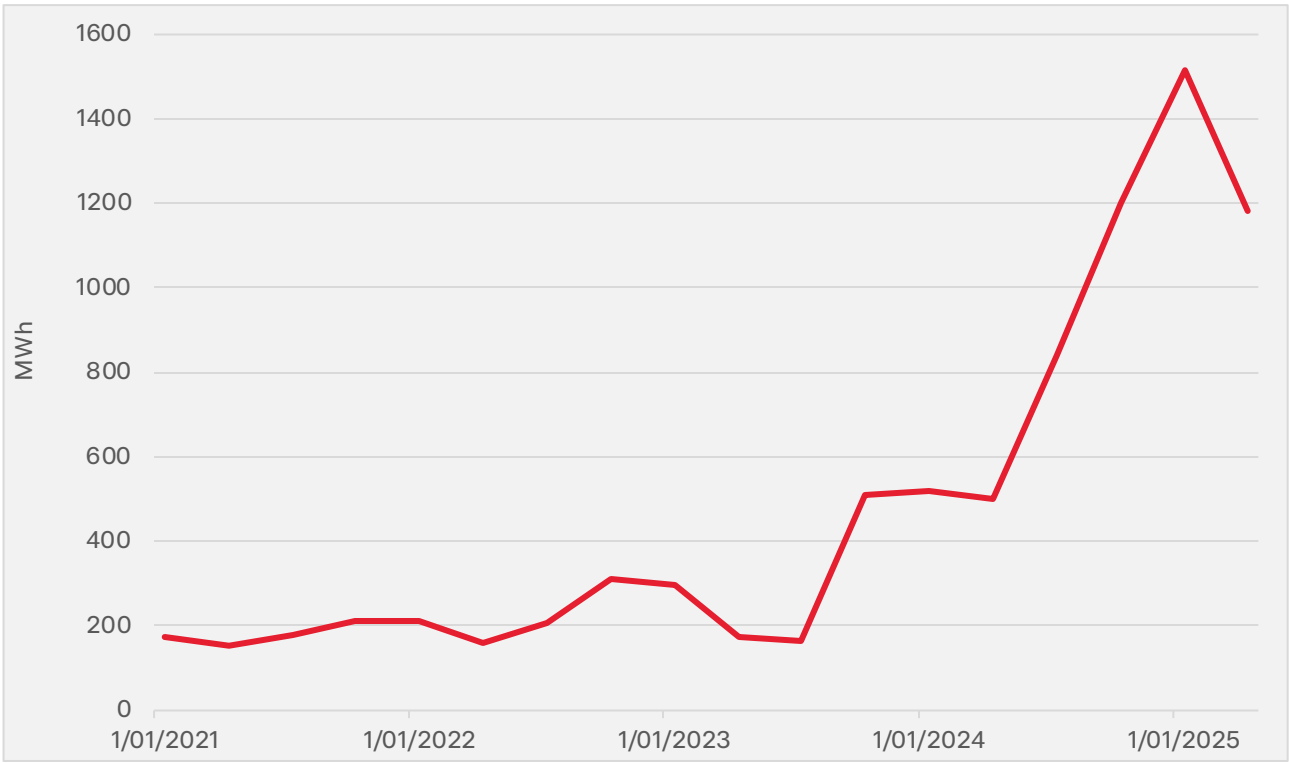
Appendix C: Scope 3 emissions by Greenhouse Gas Protocol categories

Emissions Sources	2021/22	2022/23	2023/24	2024/25
Scope 3 Cat 1 - Purchased goods & services	858.6	772.8	808.8	934.9
Advertising				
Cleaning Services	164.5	189.5	177.3	202.5
Construction (refurbishment)				
Food & Catering	196.4	34.6	22.9	25.1
Office Paper	0.3	14.0	71.1	0.7
Printing				
Stationery				
Telecommunications	497.4	534.7	537.5	706.6
Water				
Scope 3 Cat 2 - Capital goods	554.2	828.4	1,061.2	994.7
Livestock				
IT Equipment	554.2	828.4	1,061.2	994.7
Construction (new builds)				
Scope 3 Cat 3 - Fuel-and-energy-related activities	7,433.9	3,821.4	5,160.9	4269.8
Diesel oil				
Electricity	4,278.6	3,664.8	5,020.9	4,146.1
Ethanol (IC)				
LPG	5.4	35.2	35.4	32.0
Natural Gas	46.4	49.0	39.9	45.7
Post 2004 Diesel oil	7.0	20.3	19.9	17.7
Post 2004 Ethanol (IC)	0.2	2.0	1.9	1.1
Post 2004 Gasoline	7.8	50.1	42.9	27.2
Scope 3 Cat 4 - Upstream transportation & distribution				
Couriers				
Postage				
Scope 3 Cat 5 - Waste generated in operations	1,839.6	1,614.8	1,292.0	836.3
Landfill	1,823.4	1,570.1	1,235.8	793.3
Waste—incineration	16.2	44.7	56.2	43.0
Scope 3 Cat 6 - Business travel	1,521.0	9,039.1	8,104.1	4,689.6
Business Flights	1,521.0	9,039.1	8,104.1	4,689.6
Domestic Hotel Accommodation				
International Hotel Accommodation				
Taxi				
Scope 3 Cat 7 – Employee commute				
Employee Commute				
Scope 3 Cat 8 - Upstream Leased assets				
Griffith as tenant utilities consumption—typically Griffith pay utilities bills direct and report as scope 2				
Scope 3 Cat 9 Student commute				
Student Commute				
International student flights				
Scope 3 Cat 10 Processing Sold products				

Emissions Sources	2021/22	2022/23	2023/24	2024/25
Scope 3 Cat 11 Use of Sold products				
Scope 3 Cat 12 End of Life treatment of sold products				
Scope 3 Cat 13 Downstream leased assets	3,088.0	1,618.9	1,703.3	1,863.5
Tenants' utilities emissions	3,088.0	1,618.9	1,703.3	1,863.5
Scope 3 Cat 14 Franchises				
Scope 3 Cat 15 Investments				
Total (tCO_2-e)	12,207.4	17,695.4	18,130.3	13,588.8

Appendix D: General power consumption and solar performance analysis

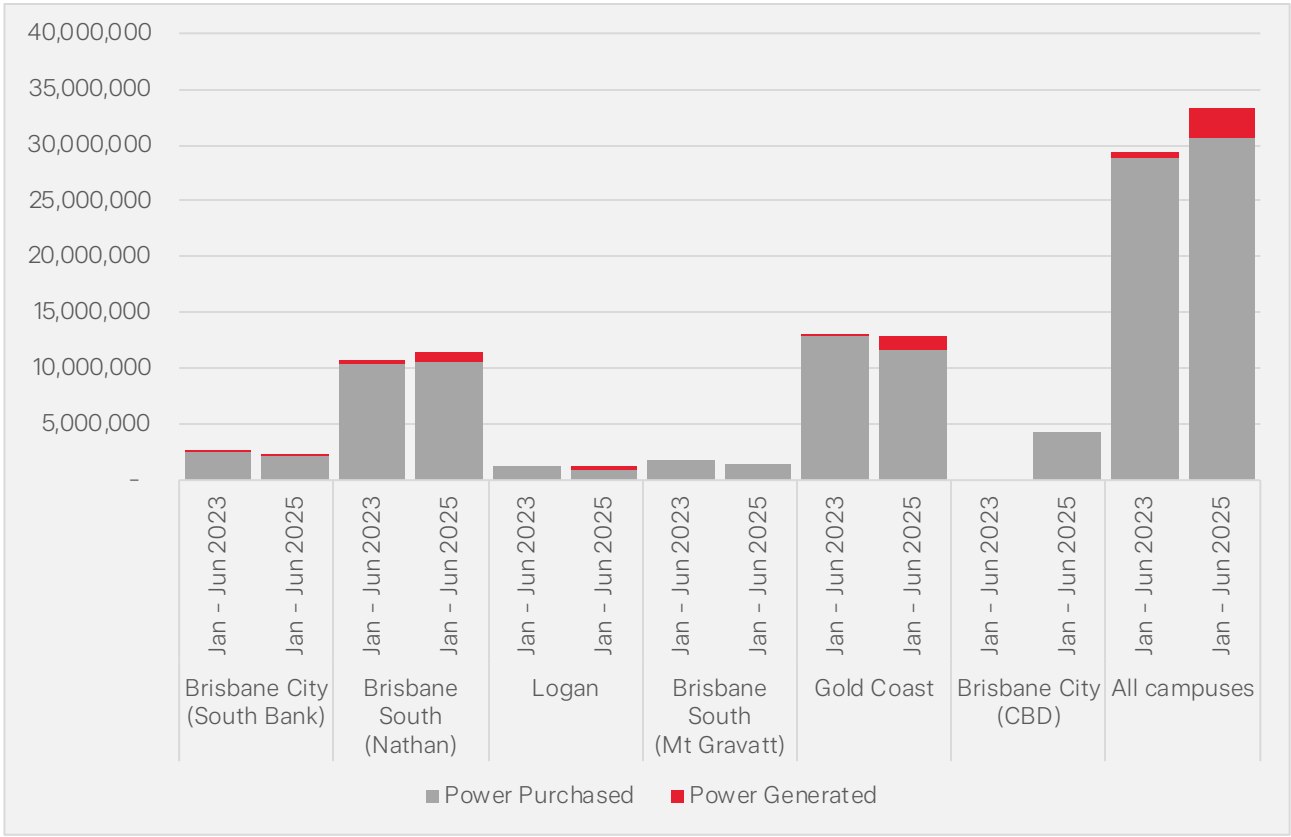
Griffith University's rooftop solar program continues to deliver strong results, with solar generation increasing significantly across campuses. The graph of *Quarterly Generation* below shows the increase from 200–400 MWh per quarter in 2023 onwards to a peak of 1,600 MWh in early 2025. This demonstrates the impact of the university's 4 MW of rooftop solar installed across Logan, Gold Coast, and Brisbane South (Nathan), substantially reducing carbon emissions, reliance on grid electricity and delivered measurable financial savings of $395,000 for the first 6 months of full operation (January - June 2025).



Quarterly MWh generation

The impact of this on overall grid power consumption is shown in the Campus Grid Power Comparison table and graph (below), which shows a downward trend in overall power purchased across established campuses. Brisbane South (Nathan) consumption is increasing, due to a combination of construction related consumption not separately metered and an anecdotal increase in utilisation, assumed to result from relocations from Brisbane South (Mount Gravatt) activity declines.

	Total purchased Jan – Jun 2023	Generation Jan – Jun 2023	Total usage Jan – Jun 2023	Total purchased Jan – Jun 2025	Generation Jan – Jun 2025	Total usage Jan – Jun 2025
Brisbane City (South Bank)	2,457,368	15,853	2,473,221	2,104,505	14,766	2,119,271
Brisbane South (Nathan)	10,478,781	255,067	10,733,847	10,501,533	984,404	11,485,937
Logan	1,313,696	-	1,313,696	892,312	457,635	1,349,946
Brisbane South (Mount Gravatt)	1,786,663	-	1,786,663	1,394,196	-	1,394,196
Gold Coast	12,888,282	201,058	13,089,340	11,583,277	1,241,899	12,825,176
Brisbane City (CBD)	-	-	-	4,223,248	-	4,223,248
All campuses	28,924,790	471,977	29,396,767	30,699,070	2,698,705	33,397,775



Power Use per campus – Total consumption is Power Purchased + Power Generated

Note 1: Electricity supply for the Treasury building was only assumed by the university in January 2025. To ensure a fair comparison across sites, campus energy usage has been presented over a consistent six-month period.

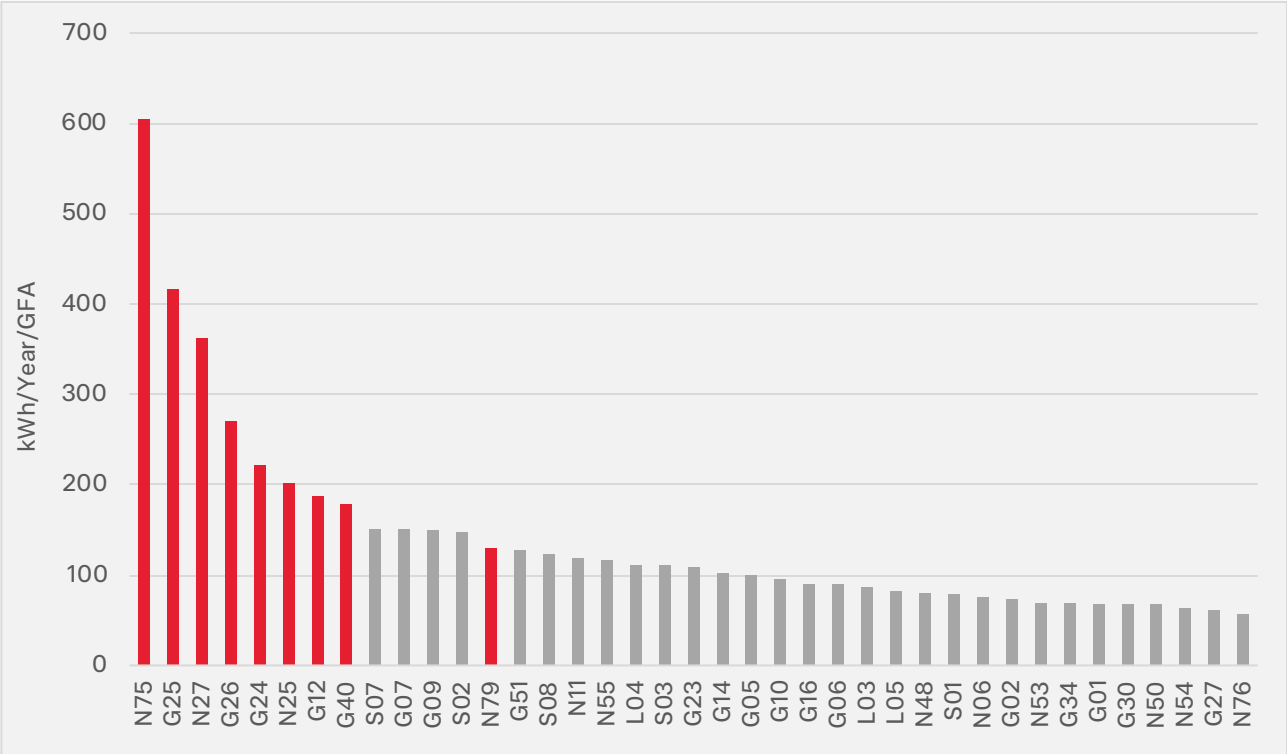
Note 2: The Nathan campus solar benefits have been largely offset by the increase in power use related to the relocation of staff from the Brisbane South (Mount Gravatt) campus to the Brisbane South (Nathan) campus.

The data also shows that the total consumption for the existing campuses has remained the same, and the overall increase of 4,000,000 kWh is due to the acquisition of the Treasury Building, which now accounts for 13.7% of the University's total power purchases. A portion of this increase has been offset by clean energy generated on campus through rooftop solar panels, demonstrating the effectiveness of our emissions mitigation strategy.

When funding allows, there are opportunities for a 1 MW solar system at Brisbane City (South Bank) campus and a 200kW system at the Brisbane City (CBD) campus. These proposals offer a cost-effective strategy to further reduce grid electricity demand and associated carbon emissions aligning with Griffith's long-term environmental and financial sustainability goals, offering relief from future energy price volatility.

Appendix E: Impact of Building Type and Control Systems on Campus Energy Consumption

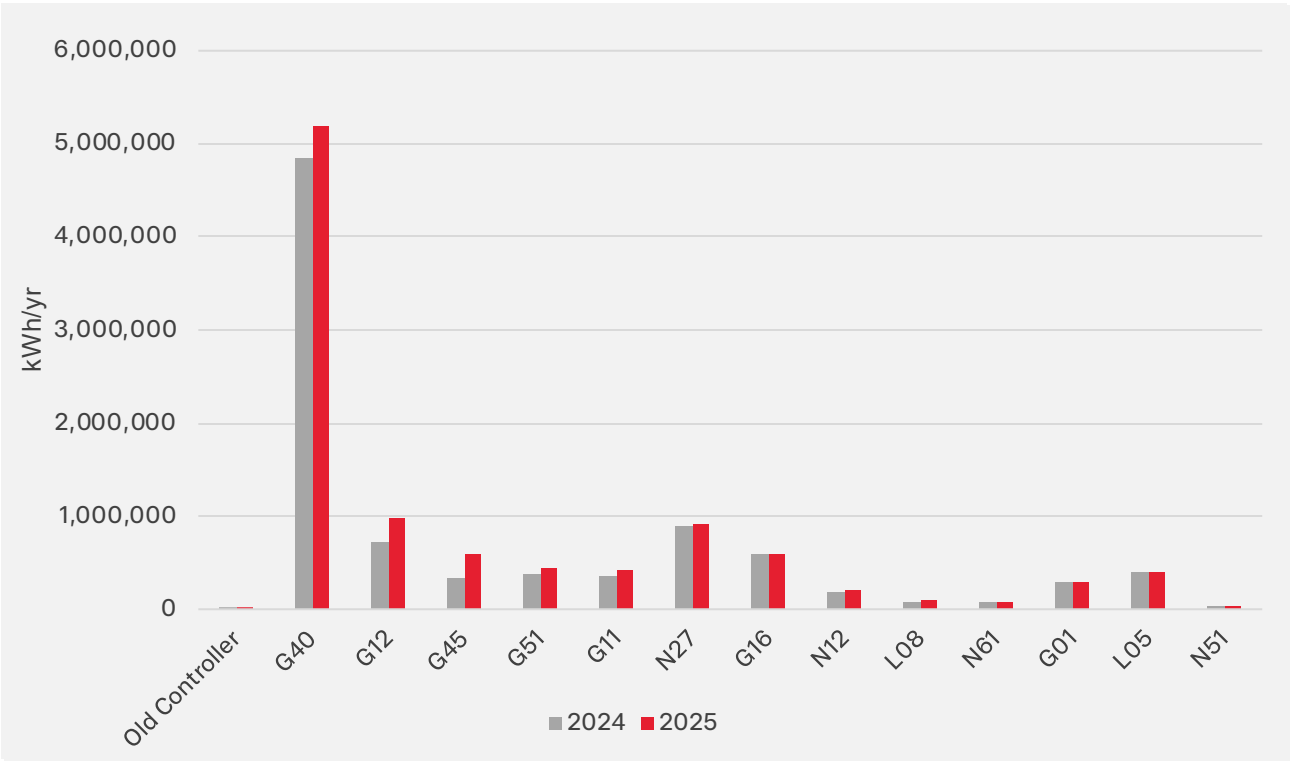
Building use dictates energy consumption to some extent. High energy consumption is consistently attributed to research and science facilities. This trend is primarily due to specialized equipment and machinery and 24/7 climate control requirements, all of which have significantly higher energy requirements than general academic, teaching and administrative buildings.



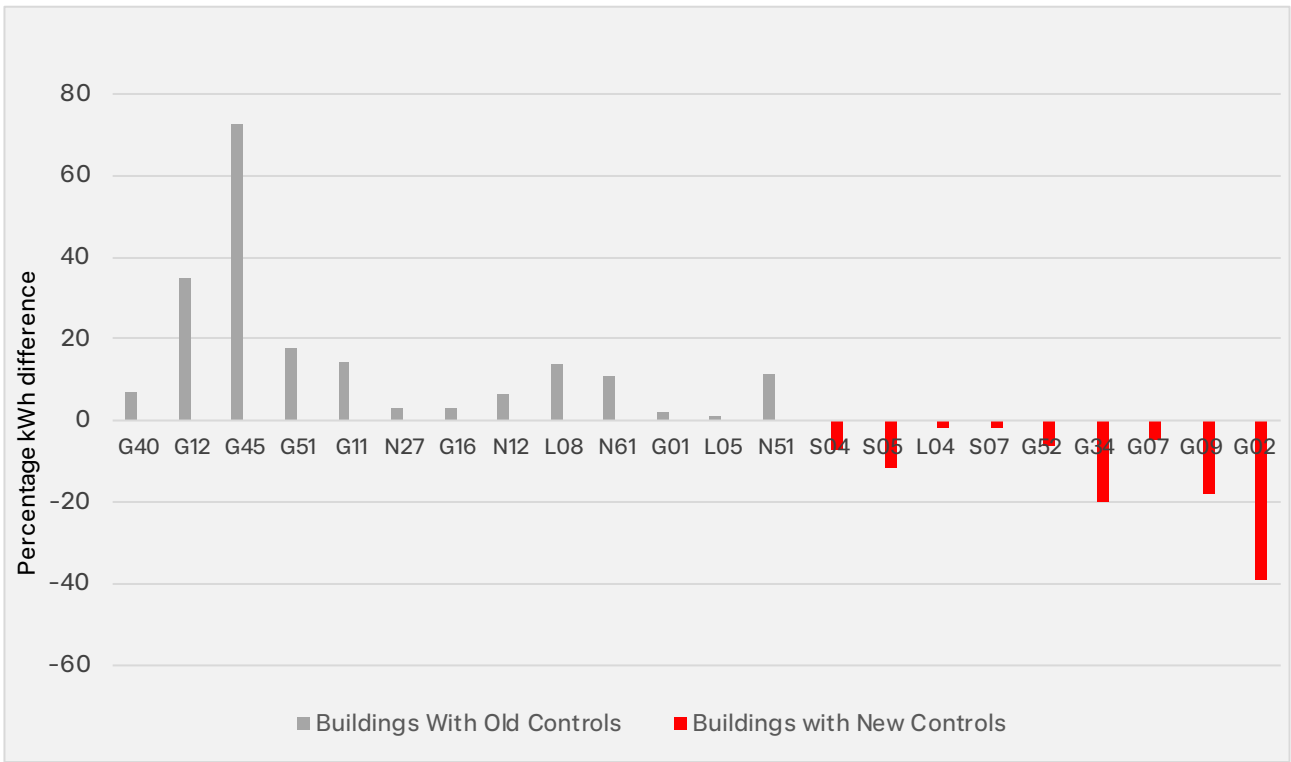
Energy use by building per gross floor area

To enable meaningful comparison across buildings of varying sizes, the above analysis normalises energy use against floor area, with Science/Research buildings in red. This is used to identify buildings with disproportionately high consumption relative to their size, prioritise facilities for detailed energy efficiency audits, and develop targeted strategies for reducing overall usage where the impact will be most significant. Applying this methodology across the University's building portfolio provides a systematic framework for identifying and addressing the highest-consuming assets.

Another driver of power consumption is the effectiveness of the building control system, which manage usage by air conditioning and lighting systems. Below is a comparison between buildings with obsolete controls against buildings with newer controls.



Buildings with new controls



Buildings with obsolete controls

Percentage kWh difference between 2024 and 2025

The graphs show buildings with obsolete control systems consistently consume more energy on average than those with updated controls. It is planned to continue to prioritise the phased upgrade of legacy control systems, including strategies such as night set back, outside air control (based on carbon dioxide monitoring), push button control for areas with intermittent occupancy, and integration of air conditioning start with the room booking system, so that rooms are cooled in time for lectures but only during booked hours delivering savings throughout the year.

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