



Fife College



Net Zero Action Plan

2022 - 2028

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Executive Summary

Fife College recognises that climate change poses an existential threat to the planet. We are committed to making every effort to reduce both our own emissions and those we can influence in a wider capacity. Our aims are set out in our Climate Change Strategy.

In the past seven years, the College has made excellent progress by reducing emissions from 5,401 tCO₂e to 2,897 tCO₂e - a 46% reduction in overall emissions. Our plan is to: 1) cease burning fossil fuel for heating; 2) convert the remainder of the fleet to zero emissions and 3) eliminate fugitive emissions of refrigerant gases – all by 2028. This is the College zero direct emission (Scope 1 emissions) commitment date. Subsequently, the College will reduce as far as practicable, the use of electricity (Scope 2 emissions) on campus, and commit to offset any residual emissions from electricity to achieve net zero emissions by 2030.

The College is also committed to increase its monitoring, measurement and reporting of those emissions that we can influence but not control (Scope 3 emissions). By improving this measurement accuracy, the College will be able to identify areas of potential improvement and then address those to minimise these emissions (Scope 3). When all of the possible reductions have been accomplished, the College will then offset the remainder to secure net zero for all emissions (Scopes 1, 2 and 3*) by 2035. To achieve this the College will engage all areas including the professional services team and the academic staff. A key factor in the journey will be the students who will be an intrinsic part of the action necessary to achieve the emission reduction goals. Fife College recognises that climate change will affect everyone, and is everyone's responsibility, and so a College-wide approach. As a major player in the Fife response to climate change, and as a responsible partner, the College will actively seek opportunities to work in partnership with other organisations, both in Fife and nationally, to maximise the influence that the College can bring to bear on this challenge.

This Net Zero Action Plan is highly ambitious and will need the support of everyone at Fife College. It comes with the full endorsement of the College Board and Executive Team. We will be providing high level guidance on, and scrutiny of, the steps being taken along the way. If you have any questions, comments or ideas in the meantime, we would love to hear from you at netzero@fife.ac.uk

* See page 5 for more detail on Scopes.

Where We Are Now

Fife College has made good progress in reducing emissions from the base year of 2013/14 with a 46.4% reduction in overall emissions from 5,401 tCO₂e to 2,897 tCO₂e (Figure 1). We are well on track to achieve our Strategic key performance indicator (KPI) of 2,453 tCO₂e by end July 2023.

Total Tonnes CO₂e

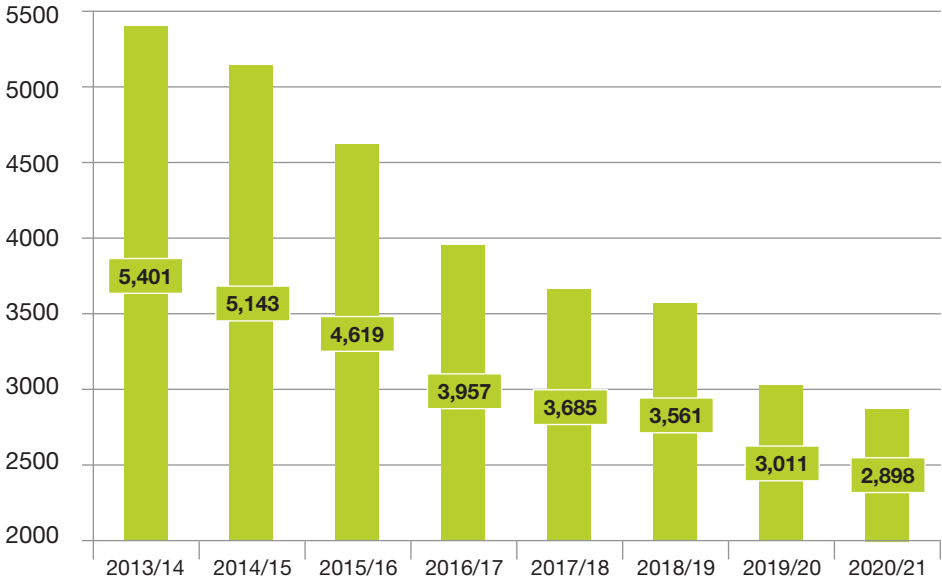


Figure 1: Fife College carbon reporting 2013/14 to 2020/21

Total Tonnes CO₂e - 2020/21

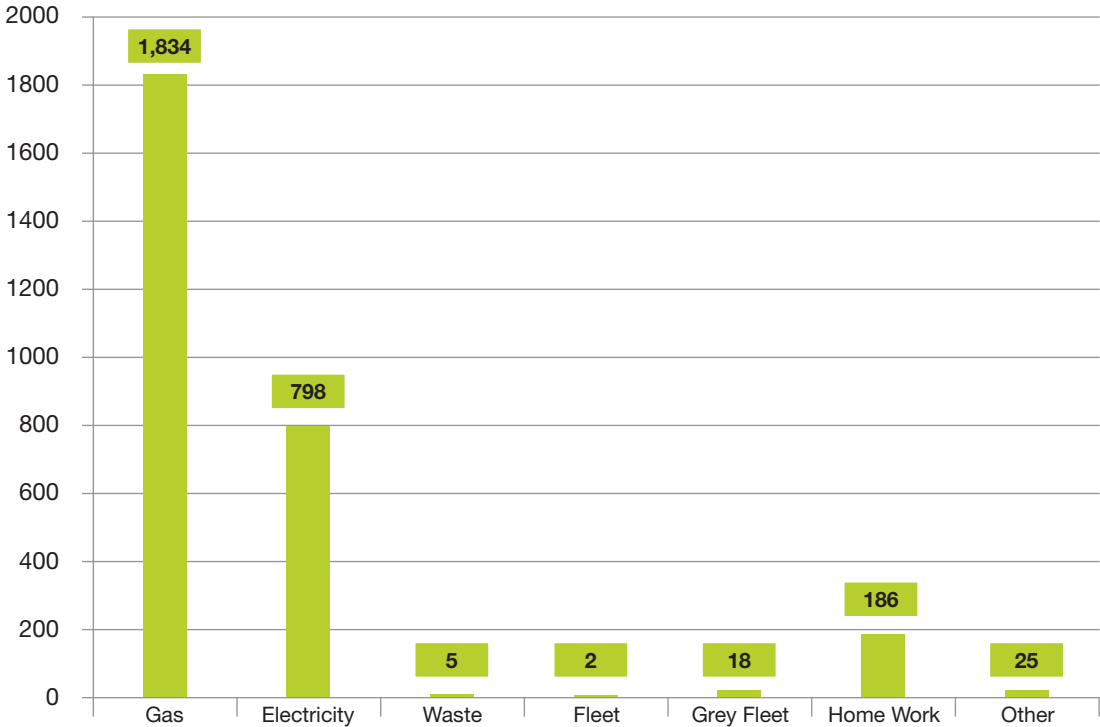


Figure 2: Fife College carbon reporting breakdown 2020/21 - Total 2,898 tCO₂e

Figure 2 shows the breakdown of emissions reported in 2020/21. However for our future net zero goals, the reported figures need to be expanded as shown in the following table. The figures in **Green** are measured and accurately reported, **Amber** figures are estimated and reported, those in **Red** are not accurately quantified and not yet reported.

Scope 1	Scope 2	Scope 3
These are direct emissions from activities which includes the use of natural gas for heating and catering, fleet vehicles and air conditioning system leaks.	These emissions are indirect emissions from the use of purchased energy such as electricity from the grid	These emissions are other indirect emissions from sources not owned or controlled by the college. This includes waste, procurement, business travel, water, and waste water.
Gas	Grid Electricity (Generation)	Grid Electricity (T&D)
Fleet		Grey Fleet
F-gas leakage		Waste Disposal
		Water and Waste Water
		Work from Home
		Staff Commuting
		Student Commuting
		Procurement

Scope 1 Tonnes CO2e

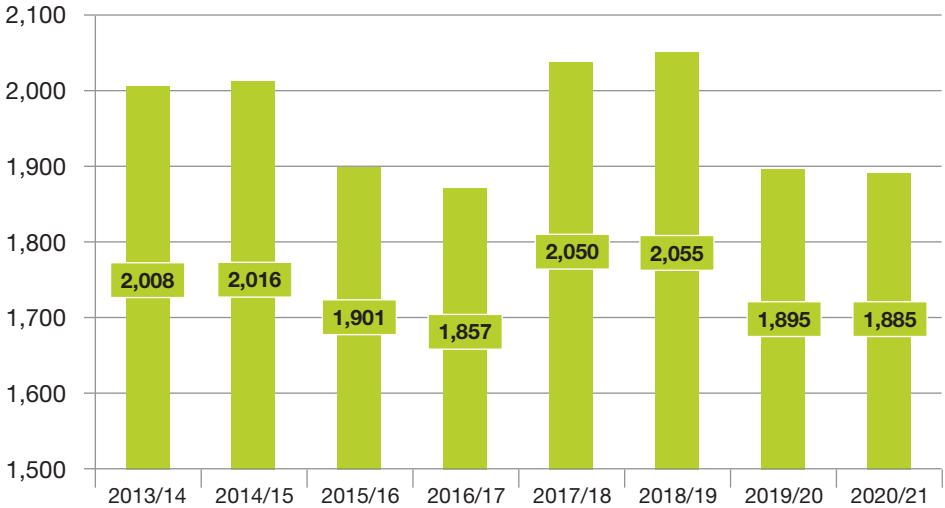


Figure 3: Fife College Scope 1 carbon reporting 2013/14 to 2020/21

Fife College Scope 1 emissions have remained substantially flat since measurements began in 2013/14 - see Figure 3. This is because the largest contributor to Scope 1 emissions is the use of gas for space and water heating (1,834 tCO2e in 2020/21 out of a total of 1,885 tCO2e); gas heating is a technology that is currently ‘locked in’ to the building infrastructure. The only variation that usually occurs is due to temperature variations. Even the significant reduction in occupancy levels with the COVID-19 lockdown had only minor effect.

Scope 2 Tonnes CO2e

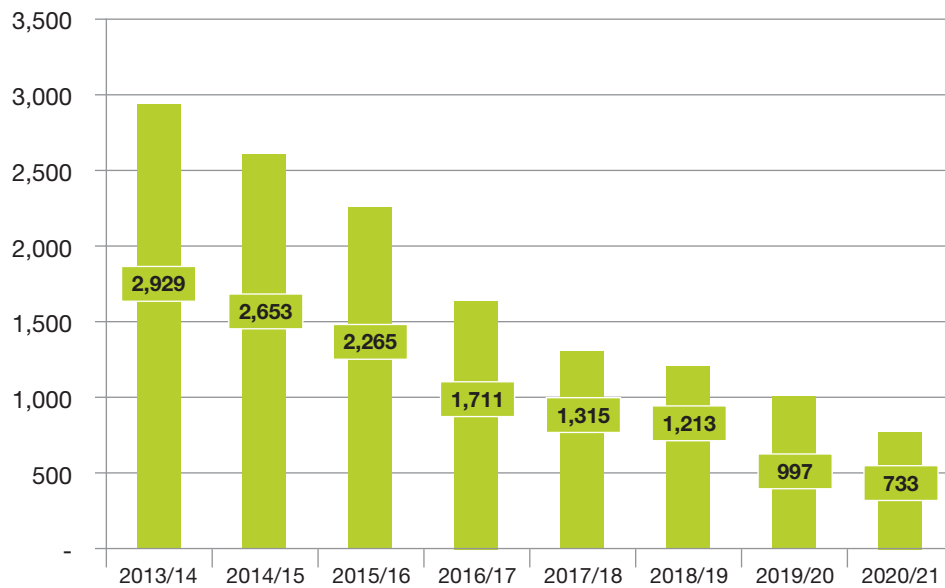


Figure 4: Fife College Scope 2 carbon reporting 2013/14 to 2020/21

In this time we have reduced our Scope 2 emissions (electricity) from 2,929 tCO₂e to 733 tCO₂e (Figure 4) - some from energy efficiency saving and some from grid changes. Between 2015/16 and 2020/21, electricity consumption has reduced from c.5.5million kWh to c.3.5million kWh, and the grid emission factor has reduced from 0.41kg/kWh to 0.21kg/kWh. These figures illustrate the improvements that have been made by the College's own actions in reduction consumption, and by the national infrastructure improvements to the grid carbon intensity.

Scope 3 Tonnes CO₂e

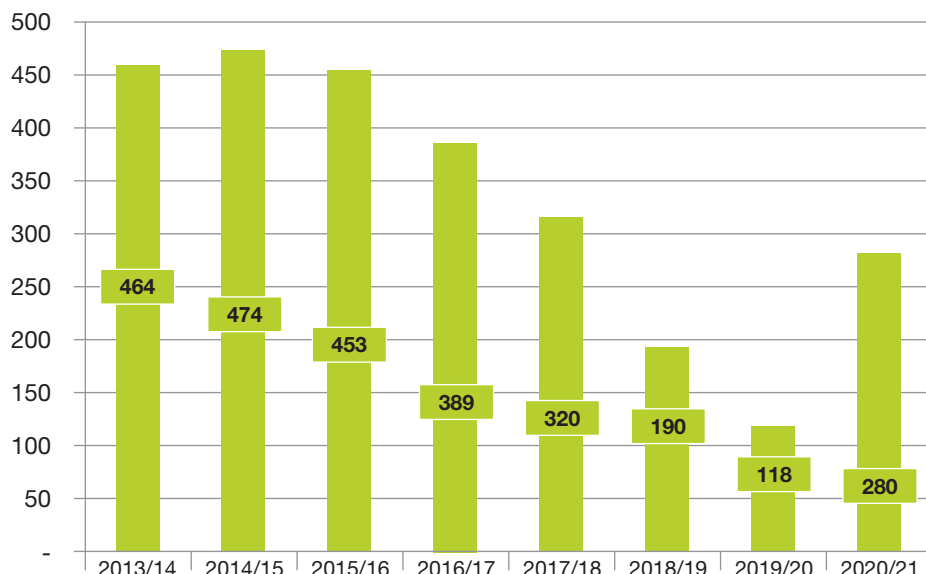


Figure 5: Fife College Scope 3 carbon reporting 2013/14 to 2020/21

In this time we have reduced the Scope 3 emissions from 464 tCO₂e to 280 tCO₂e (Figure 5) - the 2020/21 figure would have been lower at 94 tCO₂e were it not for the Government estimate of carbon emissions from home working.

One area of Scope 3 emissions that has improved during the COVID-19 pandemic is ‘grey fleet’ emissions, i.e. the emissions from members of staff using their own vehicles for college business. The last full year of reporting showed grey fleet usage of 856,000 km with emissions of 152 tCO₂e. The new ways of working, better quality electric fleet and greater utilisation, and staff engagement, should maintain this at the lower levels necessary to continue the College’s net zero journey.

However, there are a number of areas of Scope 3 emissions that are currently not being reported which will have to be reported in the future. This additional reporting will substantially increase the Scope 3 figure for the College and hence the overall emissions figure.

Our Commitments to Net Zero Greenhouse Gas Emissions

Commitment 1:

Fife College will achieve zero direct emissions (Scope 1) by December 2028.

Fife College will no longer use gas for heating, will have a zero emission fleet of vehicles, and will have implemented a strategy to eliminate fugitive emissions of F-gases for refrigeration systems.

Commitment 2:

Fife College will reduce our electricity emissions (Scope 2) to net zero by December 2030.

Fife College will have eliminated the direct (Scope 1) emissions and reduced the emissions from the consumption of grid electricity (Scope 2) as far as possible. Any absolutely unavoidable remaining emissions from electricity (Scope 2) will be mitigated by the use of approved offsetting schemes as a last resort.

Commitment 3:

Fife College will achieve net zero for all emissions (Scope 1, 2 and 3) by December 2035.

The College will have in place accurate measurement of all indirect (Scope 3) emissions, and will have taken all practicable steps to reduce these. Any absolutely unavoidable remaining emissions will be mitigated by the use of approved offsetting schemes as a last resort.

Leadership and Governance

Fife College demonstrates many areas of good practice including regular monitoring of progress on sustainability by the Executive Team and the Board. It is, however, recognised that the increased focus and effort required to deliver on the Commitments to Net Zero will need an even greater focus from senior levels of the College.

The plan to achieve this growth in focus is shown in the following table:

Leadership and Governance Target	Completion Date
The Executive Team and Board of Governors to have a nominated Sustainability Lead	June 2022
Re-establish the Sustainability Committee	June 2022
Re-establish Annual Climate Risk Assessment Surveys	July 2022
All of the Executive Team to receive Carbon Literacy Training	December 2022
Embed sustainability and climate change into staff development	January 2023
Design and then incorporate carbon assessments into all purchasing decisions	January 2023
All of the Board of Governors to receive Carbon Literacy Training	May 2023

Estates, Operations and Infrastructure

Fife College has a strong record of collaboration and partnership working, and this will be key to making progress at pace on the transition to net zero. This will include looking for opportunities to work together on infrastructure projects, sharing best practice and providing key sharing of resources.

While much of the historical progress that the College has achieved has been estates focused, there is still much to be done to reach the net zero goal. The new campus build is a Pathfinder project for net zero, but the existing campuses will need considerable planning and improvement in order to comply with the new requirements. The College is currently undertaking feasibility and funding applications for Solar PV installations at Leven, Glenrothes and Kirkcaldy campuses which, if they are able to go ahead, will reduce electricity consumption, and a Heat Pump installation at Kirkcaldy which will reduce gas consumption but increase electricity consumption.

Scope 1:

Fife College is leading the college sector in Scotland with the DLC new build project which is a Net Zero Pathfinder. The transition from the current Halbeath Campus to the new DLC will immediately remove c.3.4million kWh of gas consumption, resulting in a reduction of 627 tCO₂e from the college carbon emissions. When the Carnegie Conference Centre and Rosyth Campus are also removed from the College estate, this will further reduce gas consumption by c.2.1million kWh, and reduce the carbon emissions by 382 tCO₂e. While welcome, this c.1009 tCO₂e reduction in emissions still leaves 825 tCO₂e from gas heating, plus c.50 tCO₂e from fleet and fugitive F-gas emissions. These must be eliminated by the zero direct emission commitment date of December 2028.

Scope 2:

Fife College has reduced the consumption of electricity over the past eight years, but this trend of reduction is slowing as the 'low hanging fruit' projects are completed. Also, as buildings move away from gas heating, some of the scenarios will result in an increase in electricity usage as electrical heating systems replace gas ones. This means that it is important to re-double efforts to reduce electricity consumption wherever possible, as soon as possible. Although Scope 2 emissions are heavily dependent on the grid emission factor, it is our responsibility to reduce consumption as much as possible both for our own reported emissions and also, in our wider responsibility, to ensure that the grid capacity is able to cope with other increasing areas of demand.

Scope 3:

Scope 3 emissions are going to be a big challenge for the net zero journey. While the existing reporting by the College is comparable with the sector, there are emissions that are not yet accurately reported (e.g. working from home), or not reported at all (e.g. staff commuting and procurement). Once these are added into our report our reported level of emissions will increase substantially, possibly by more than double our current level. This will require a concerted effort to both gather the information and then reduce these emissions, and not all of the levers for making the necessary changes will rest with estates.

The plan to achieve these changes is shown in the following table:

Estates, Operations and Infrastructure Target	Completion Date
Scope 1	
Gas Heating	
Conduct zero direct emission feasibility studies on all campuses	September 2022
Install Heat Pump at Kirkcaldy Campus to reduce gas consumption	December 2022
Develop zero direct refit strategy	January 2023
Implement zero direct strategy	TBA
Open DLC and close Halbeath, CCC, and Media Centre	July 2024
Fleet	
Complete fleet transformation to zero emission	December 2028
F-gas Leakage	
Survey of existing F-gas systems to identify key leakage areas	September 2022
Develop zero direct refit strategy	December 2022
Begin implementation of zero direct strategy	June 2023
Achieve zero direct emissions	December 2028
Scope 2	
Grid Electricity (incl. Scope 3 T&D figures)	
Complete initial survey of demand per campus	September 2022
Research and implement better real time monitoring of electricity consumption	December 2022
Install Solar PV at Leven, Glenrothes and Kirkcaldy campuses	December 2022
Develop energy reduction strategy based on accurate data	June 2023
Begin implementation of energy reduction strategy	June 2023
Complete implementation of energy reduction strategy	December 2030
Scope 3	
Grey Fleet	
Refresh and enforce Grey Fleet and Fleet policies	September 2022
Improve reporting of Grey Fleet use with feedback	November 2022
Update Fleet Vehicle booking system for ease of use	January 2023
Waste	
Continue waste reduction programmes	Ongoing
Water and Waste Water	
Investigate water usage monitoring options	November 2022
Commission water saving feasibility study	November 2022
Implement water saving strategy	June 2023
Work from Home / Agile Working	
Develop accurate reporting mechanism	December 2022
Staff Commuting	
Develop staff travel monitoring system	July 2023
Report more accurate staff commuting	November 2023 report
Student Commuting	
Develop student travel monitoring system	July 2024
Report more accurate student commuting	November 2024 report
Procurement	
Include approximate procurement emissions in PBCCD report	November 2022
Produce Procurement Net Zero Action Plan	December 2022
Net Zero Completion	
Purchase approved offsets to achieve net zero for Scope 1, 2 & 3	December 2035

Existing Planned Project Impacts

Fife College has a number of projects at feasibility and funding proposal stage which, if implemented, will begin the process of achieving the Zero Direct and Net Zero Emissions goals. These projects are assumed to have been implemented in the following information.

Kirkcaldy Campus:

Two projects at the Kirkcaldy campus will improve the carbon emissions on that site.

Project 1: Install a 300 kW heat pump to provide base heating and reduce the consumption of gas. Savings on gas are estimated to be c.710,000 kWh per annum, with an increased to the electricity consumption of c.215,000 kWh.

Project 2: Install Solar PV with a capacity of c.150 kWp which will produce c.120,000 kWh of electricity.

Kirkcaldy Campus Project tCO₂e

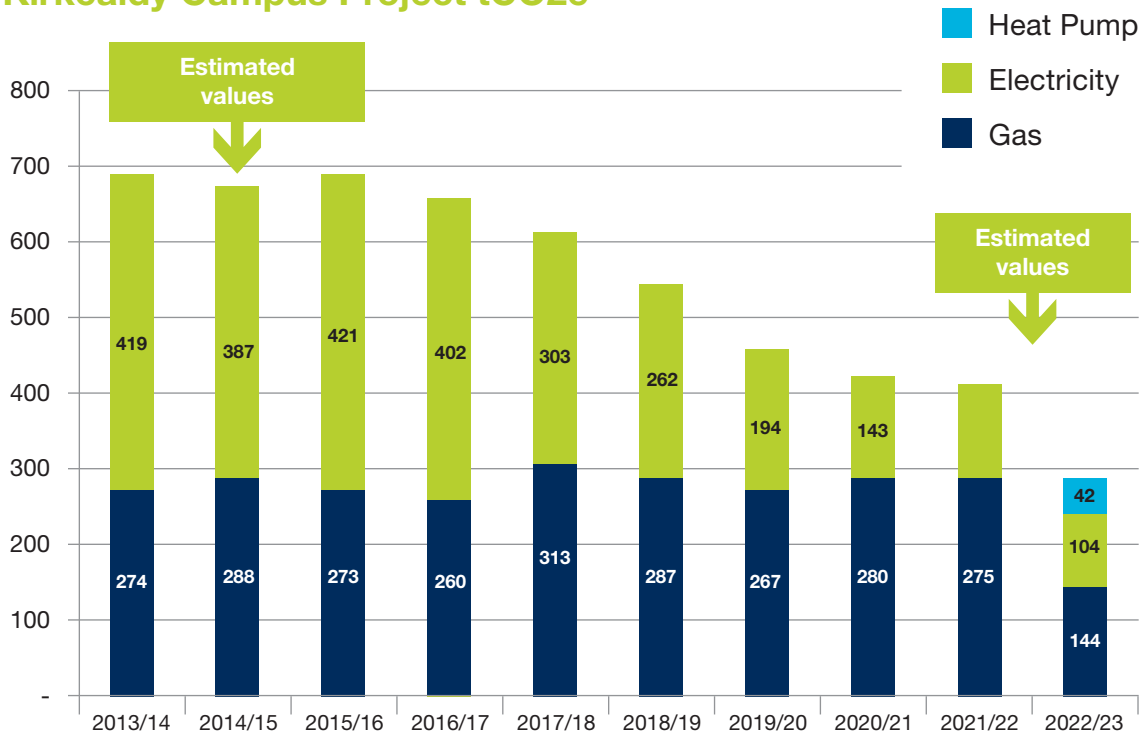


Figure 6: Fife College Kirkcaldy Campus Project Impacts

Glenrothes and Leven Campuses

These two campuses are both eligible for Solar PV installation which will reduce Electricity consumption as shown below. The Glenrothes Campus will have installed Solar PV with a capacity of c.270 kWp which will produce c.226,000 kWh of electricity. The Leven Campus will have installed Solar PV with a capacity of c.25 kWp which will produce c.21,000 kWh of electricity (note this new campus only has figures from 2016/17).

Glenrothes Campus Project tCO2e

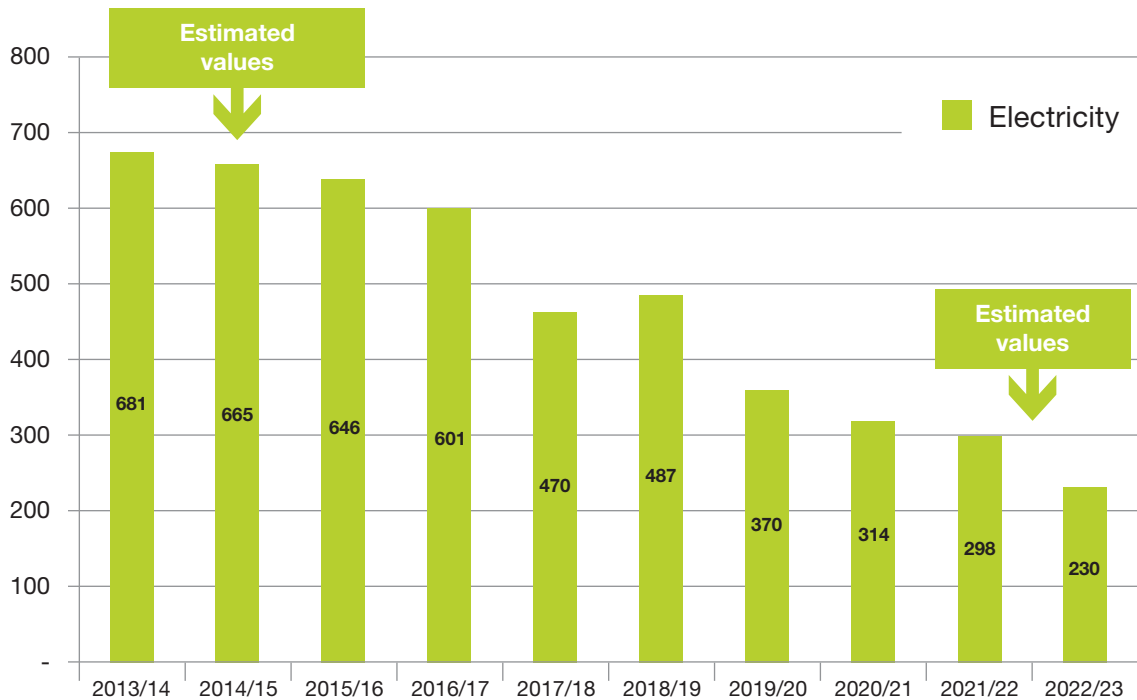


Figure 7: Fife College Glenrothes Campus Project Impacts

Leven Campus Project tCO2e

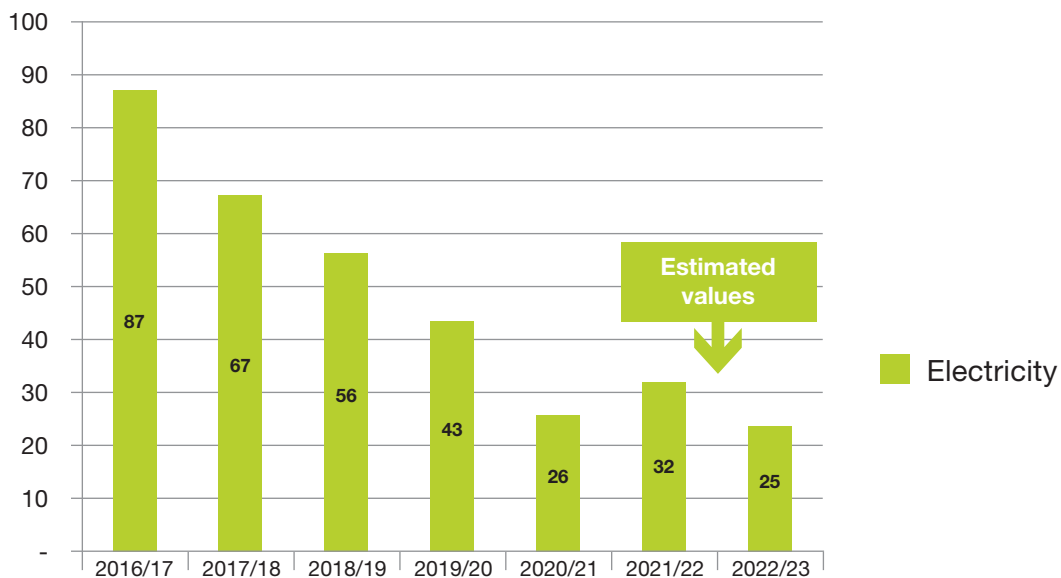


Figure 8: Fife College Leven Campus Project Impacts

Dunfermline New Build Campus

This new Net Zero Pathfinder campus is due for completion in 2024 and will achieve substantial carbon savings including an immediate move off gas for heating producing a dramatic reduction in direct (Scope1) emissions. However, the use of heat pumps for heating will increase the electricity consumption, although as the grid decarbonises, the impact of this will reduce.

Dunfermline Campus – New Build tCO2e

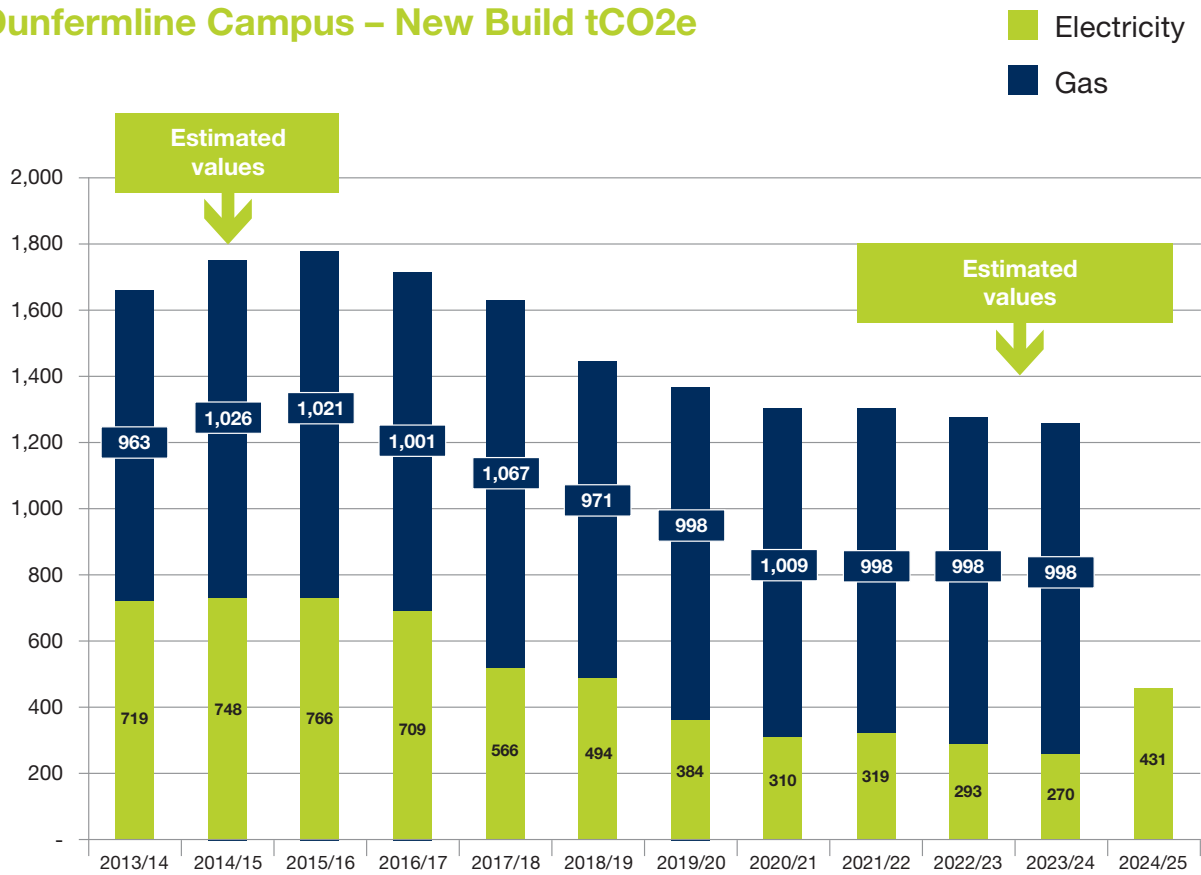


Figure 9: Fife College Dunfermline Campus New Build Impact

Staff and Student Engagement, and Behaviour Change

Progress to net zero is the responsibility of everyone, staff and students, and needs the active involvement of all areas of the College. This is especially true in the area of teaching and student engagement, and behaviour change, where much of the climate change impact can be achieved. By correctly engaging with our teaching staff and students the College can also influence a far wider audience.

Staff/Student Engagement and Behaviour Target	Completion Date
Re-establish the Sustainability Committee	June 2022
Curriculum team to hold workshop to begin to develop Sustainability Strategy	June 2022
All senior staff to receive Carbon Literacy Training	June 2023
All Student Representatives to receive Carbon Literacy Training	June 2023
Embed Sustainability Champions in all areas	December 2023
All staff to have basic Carbon Literacy Training	July 2024
Embed sustainability and climate change in the curriculum in all academic areas	Ongoing
Work with others to develop Green Skills	Ongoing
Use staff commuting data to produce lower carbon behaviours	June 2023

Collaboration and Wider Influence

Fife College has always been well represented, locally and nationally to share best practice and experiential learning on climate change. This approach has meant that Fife College has been able to capitalise on opportunities whenever they arise and to work collaboratively with other organisations to maximise the outcomes for all parties. This way of operating will continue and grow as different organisations attempt to tackle the ever more challenging climate change targets. Key partners going forwards will include:

National Bodies - Sustainable Scotland Network (SSN), Environmental Association of Universities and Colleges (EAUC), College Development Network (CDN) and others as appropriate.

Local Bodies - Fife Environmental Partnership (FEP), Addressing the Climate Emergency Board (ACEB - Fife), Fife Council, NHS Fife, and others as appropriate.

Collaboration and Wider Influence Target	Completion Date
Continue with, and grow, existing collaborations	Ongoing
Explore joint working opportunities e.g. Fife Council and NHS Fife	December 2022
Explore more joint working on biodiversity	June 2023

Further Information

As well as providing regular updates on progress in delivering this Action Plan, we would welcome comments, questions and ideas from staff and students. Please get in touch at netzero@fife.ac.uk

Appendix 1

- Activities Checklist

Key to Table :

- Leadership and Governance Target
- Estates, Operations and Infrastructure Target
- Staff/Student Engagement and Behaviour Target
- Collaboration and Wider Influence Target

Table of activities with dates in date order.

Target	Completion Date
The Executive Team and Board of Governors to have a nominated Sustainability Lead	June 2022
Re-establish the Sustainability Committee	June 2022
Curriculum team to hold workshop to begin to develop Sustainability Strategy	June 2022
Re-establish the Sustainability Committee	June 2022
Re-establish Annual Climate Risk Assessment Surveys	July 2022
Conduct zero direct emission feasibility studies on all campuses	September 2022
Survey of existing F-gas systems to identify key leakage areas	September 2022
Complete initial survey of demand per campus	September 2022
Refresh and enforce Grey Fleet and Fleet policies	September 2022
Improve reporting of Grey Fleet use with feedback	November 2022
Investigate water usage monitoring options	November 2022
Commission water saving feasibility study	November 2022
All of the Executive Team to receive Carbon Literacy Training	December 2022
Install Heat Pump at Kirkcaldy Campus to reduce gas consumption	December 2022
Develop zero direct refit strategy	December 2022
Research and implement better real time monitoring of electricity consumption	December 2022
Install Solar PV at Leven, Glenrothes and Kirkcaldy campuses	December 2022
Develop accurate reporting mechanism	December 2022
Explore joint working opportunities e.g. Fife Council and NHS Fife	December 2022
Embed sustainability and climate change into staff development	January 2023
Design and then incorporate carbon assessments into all purchasing decisions	January 2023
Develop zero direct refit strategy	January 2023
Update Fleet Vehicle booking system for ease of use	January 2023
All of the Board of Governors to receive Carbon Literacy Training	May 2023
Begin implementation of zero direct strategy	June 2023
Develop energy reduction strategy based on accurate data	June 2023
Begin implementation of energy reduction strategy	June 2023
Implement water saving strategy	June 2023
All senior staff to receive Carbon Literacy Training	June 2023
All Student Representatives to receive Carbon Literacy Training	June 2023
Explore more joint working on biodiversity	June 2023
Develop staff travel monitoring system	July 2023
Include procurement emissions in PBCCD report	November 2023
Report more accurate staff commuting	November 2023
Embed Sustainability Champions in all areas	December 2023
Open DLC and close Halbeath, CCC, and Media Centre	July 2024
Develop student travel monitoring system	July 2024
All staff to have basic Carbon Literacy Training	July 2024
Report more accurate student commuting	November 2024
Complete fleet transformation to zero emission	December 2028
Achieve zero direct emissions	December 2028
Complete implementation of energy reduction strategy	December 2030
Purchase approved offsets to achieve net zero for Scope 1 & 2	December 2030
Purchase approved offsets to achieve net zero for Scope 1, 2 & 3	December 2035
Continue waste reduction programmes	Ongoing
Improve measurement system for procurement	Ongoing
Continue with, and grow, existing collaborations	Ongoing
Implement zero direct strategy	TBA
Embed sustainability and climate change in the curriculum in all academic areas	TBA
Work with others to develop Green Skills	TBA
Use staff commuting data to produce lower carbon behaviours	TBA