



# CARBON MANAGEMENT PLAN (2023)

## Version Control

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# Carbon Management Plan

## 2023

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### Foreword

Climate change is a global challenge and requires a global response.

Energy is fundamental to the way we live our lives; how we heat our homes, turn on the lights when it is dark, power our machines and appliances both at home and in the workplace. How energy is consumed at Energus needs to change and action needs to be taken to address issues such as climate change, security of supply and the cost of energy consumed.

Energus is committed to developing the opportunities that come with reducing carbon emissions.

This plan outlines how Energus will reduce its carbon emissions and make carbon management an important part of everything it does. There is no denying that it will not be a simple task and that Energus will need support from all its staff, tenants, and stakeholders.



Shaun Stanger  
General Manager

Date: 28/02/2023

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### Management Summary

Calendar year CO2 table

CO2 source	Total usage	Tonnes of CO2 Produced
Electricity	496,078kwh	116 tonnes
Natural Gas	698,320kwh	128 tonnes
Total CO2	FY2/21	244 tCO2e

In 2020 the coronavirus (COVID-19) pandemic and the resulting restrictions brought in across the UK had a major impact on various aspects of society and the economy and this has had a significant impact on greenhouse gas emissions in the UK over this period.

- Carbon dioxide (CO2) emissions in the UK are provisionally estimated to have fallen by 10.7% in 2020 from 2019, to 326.1 million tonnes (Mt), and total greenhouse gas emissions
- By 8.9% to 414.1 million tonnes carbon dioxide equivalent (MtCO2e). Total greenhouse gas emissions were 48.8% lower than they were in 1990.
- A net-zero GHG target for 2050 will deliver on the commitment that the UK made by signing the Paris Agreement. It is achievable with known technologies, alongside improvements in people's lives, and within the expected economic cost, that Parliament accepted when it legislated the existing 2050 target for an 80% reduction from 1990. However, this is only possible if clear, stable and well-designed policies to reduce emissions further are introduced across the economy immediately.

In March 2021, the updated greenhouse gas emission, provisional figures were updated and can be accessed via the website at:

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/972583/2020\\_Provisional\\_emissions\\_statistics\\_report.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/972583/2020_Provisional_emissions_statistics_report.pdf)

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### 1 Introduction

UK emissions were 44% below 1990 levels in 2018. The first (2008-12) and the second carbon budget (2013-17) have been met and the UK is on track to meet the third (2018-22) carbon budget, but is not on track to meet the fourth, which covers the period 2023-27.

The Carbon Management Plan sets out the carbon savings that have been identified, the timescale over which they will be implemented, and resources needed.

### 2 Carbon Management Strategy

#### 2.1 Context and drivers for Enerigus' Carbon Management Programme

2.1.1 Meeting future carbon budgets and the UK's 2050 target to reduce emissions by at least 100% of 1990 levels will require reducing domestic emissions by at least 3% of 2018 emissions, that is 50% higher than under the UK's previous 2050 target and 30% higher than achieved on average since 1990. This is an indication of how substantial the step up in action must be to cut emissions in every sector.

Focus on Net Zero – The UK's contribution to stopping global warming

In May 2019, the CCC produced a report called Net Zero – The UK's contribution to stopping global warming, the report responded to a request from the Governments of the UK, Wales and Scotland, asking the Committee to reassess the UK's long-term emissions targets. The CCC recommended a new emissions target for the UK:

- A net-zero GHG target for 2050 will deliver on the commitment that the UK made by signing the Paris Agreement. It is achievable with known technologies, alongside improvements in people's lives, and within the expected economic cost, that Parliament accepted when it legislated the existing 2050 target for an 80% reduction from 1990. However, this is only possible if clear, stable and well-designed policies to reduce emissions further are introduced across the economy immediately.

In June 2019, the updated target was legislated by the UK Government.

#### 2.1.2 Energy Cost Savings

Measures to increase energy efficiency and smart energy usage will mitigate against rising energy expenditure, which is particularly important for the future given the projected increases in energy prices. Energy and fuel costs have seen a dramatic rise in recent years, with energy prices increasing by well over 37% since 2010. This trend will continue, and we must accept that the price we pay for our energy will continue to increase in the coming years.

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### 2.2 Strategic themes

There are several strategic themes, which together will ensure the success in achieving the desired reduction in carbon emissions. These are:

#### The need to determine the areas of Energus' operations that influence significantly on CO<sub>2</sub> output

The great majority of emissions fall into the following areas:

- Use of office and events space by Energus (Energus staff offices, Atrium and Auditorium).
- Use of workshops, laboratories, LRC, teaching and staff rooms by Sellafield Ltd (the single largest tenant).
- Control and use of the BMS system within the building
- Use of kitchen, servery and cafeteria.
- Use of office space by tenants.
- Travel by Energus staff (generally car and train).
- Provision of services by external contractors (refuse and recycling collection).

#### The need to monitor and audit progress and carbon savings.

It will be necessary to incorporate the monitoring process and report annually the year-on-year carbon savings. It is proposed that progress is reported at the end of each financial year and incorporated into the Business Plan in order that delivery of the project is maintained.

### 2.3 Targets and objectives

Given the need for financial prudence and rising energy costs, it is clear that there is a need to be proactive with the management of energy at Energus. The aim is to develop a range of projects that will deliver both significant carbon reductions and cost savings, and to embed carbon management in the way that Energus, its tenants and external providers operates.

A Carbon Management programme has been established within Energus that will:

- **Short Term:**  
Ensure a 5% year on year reduction in CO<sub>2</sub> emissions relating to Energus activities.
- **Medium Term:**  
Reduce CO<sub>2</sub> emissions from Energus by 26% from a 2021/22 baseline by the end of the 2022/23 financial year.
- **Long Term:**  
Reduce CO<sub>2</sub> emissions from Energus by up to 40% from a 2021 baseline by 2050.

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### 3 Emissions Baseline and Projections

#### 3.1 Scope

In compiling the baseline CO<sub>2</sub> emissions Energus has followed the guidance as set out by Defra for National Indicator 185 – Percentage reduction in CO<sub>2</sub>.

Servicing of waste removal (residual waste and all recycling collections from Energus) is included but emissions from service maintenance contractors are excluded.

Staff business travel is included but not commuting.

#### 3.2 Baseline

The baseline data is for the year 1 April 2021 to 31 March 2022.

In order to make as detailed an assessment as possible of the approximate emissions, the table below indicates the source of the emissions and the level of data quality, a more detailed package of data is now compiled and sent to the carbon trust on a yearly basis, this is then collated into the yearly carbon figures for Energus and feed into the NDA estate report.

CO <sub>2</sub> Emissions source	Data quality
Energus building.	Accurate water, waste, and energy data available for all premises from General Manager
Refuse collection service.	Estimate made by outsourced provider.
Recycling Services: <i>Paper &amp; card</i> <i>Plastics</i> <i>Glass</i>	Estimate made by outsourced provider
Staff Mileage	Accurate assessment from Finance Manager.

The information below indicates the total tonnage of CO<sub>2</sub> emitted.

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Table 3.1 – Summary table of emissions for baseline year 2021/22

### 3.3 Projections and Value at Stake

Assuming business as usual (i.e. no carbon savings) and an increase in demand of 7% per annum, the projected CO<sub>2</sub> emissions for the next three years would be as shown in the table below.

Year	2020/21	2021/22	2022/23	2023/24
Kg of CO <sub>2</sub> for year shown *	244.00	244.00	244.00	180.00

Table 3.2 – Projected Emissions for Business as Usual

Energus is aiming to reduce its carbon emissions by 26% by 2022 CO<sub>2</sub> emissions will be reduced to 180.00 tonnes which will equate to a reduction of 66 tonnes on the business as usual (BAU) scenario.

	Baseline CO <sub>2</sub> emissions (tonne)	Baseline cost (£)
Energus Building	2441t	£100,000

Year	2020/21	2021/22	2022/23	2023/24
Kg of CO <sub>2</sub> for year shown	244.00	240.00	180.00	180.00

Table 3.3 – Projected Emission Reduction



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In terms of energy costs, the projection below gives an indication of likely expenditure on energy over the same five-year period tabulated above for business as usual. (For Enerigus building only and excludes standing charges)

Year	2020/21	2021/22	2022/23	2023/24
Energy expenditure for year shown – Business as usual *	£107,000	£114,490	£122,504	£96,600
Energy expenditure – 26% emissions reduction	No pv	No pv	No pv	£71,600

\*7% year on year increase in gas and electricity charges (historical), note 2023/24 Solar PV online

**Table 3.4 – Projected energy expenditure for Business as Usual**

The projective energy expenditure clearly shows the **cost of not taking / delivering** a Carbon Reduction Programme is over **£234,000** in the first five years.

## 4 Carbon Management Projects

Initially one project has been chosen that will lead to a reduction in excess of 20% of Enerigus' current CO<sub>2</sub> emissions. Other projects were initially identified but ruled out for various reasons such as difficulty of implementation or lack of cost effectiveness. Projects have been programmed to maximise 'quick wins' (e.g. alter time settings for ventilation plant). Much of the work will be undertaken utilising the current building planned maintenance and reactive maintenance budgets.

### 4.1 Existing projects

The projects noted below are those that have been or will be implemented within the financial year 2021/22. A full description of each project can be found in Appendix B. The project costs have been apportioned between capital and revenue costs where appropriate; the 'year' refers to the year in which the saving will be made.

Ref	Project	Lead	Cap'l	Rev'	Annual Saving		Pay back (yrs)	% of Target	Year
					Fin	CO2			
E1	Heating timing altered to reflect building usage	General Manager		0	£2476	16.84t	0	3.4%	2023
E2	Ventilation timing altered to reflect building usage	General Manager		0	£8632	48.1t	0	9.7%	2023

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Ref	Project	Lead	Cap'l	Rev	Annual Saving		Pay back (yrs)	% of Target	Year
					Fin	CO2			
E3	Close Energus for Christmas and New Year Bank Holidays	General Manager		0	Reflected in E1 & E2 above				2023
	<b>Total % of carbon baseline reduction</b>								

The status of each project is tabulated below:

Ref	Project	Status
E1	Heating timing altered to reflect building usage	Ongoing
E2	Ventilation timing altered to reflect building usage	Ongoing
E3	Close Energus for Christmas and New Year Bank Holidays	Completed Christmas Shutdown

### 4.2 Planned / funded projects

These planned projects all have a budget provisions that will ensure their implementation. All can be completed within existing revenue budgets.

Ref	Project	Lead	Cap'l	Rev'	Annual Saving		Pay back (yrs)	% of Target	Year
					Fin	CO2			
E4	Equipment timer controls – the University of Cumbria electronic display screens	Building Technician	0	£50	£164	0.914t	0.3	0.01%	2023
E5	Eco Pilot	General Manager	£60,000	0	£889	100t	0	45%	2023
E6	Led Light Fitting in the workshop. Stairways and first-floor areas	Maint. Technician	£15,300	0	£1000	3.95t	3	0.75%	2023
E7	Ensure photovoltaic cells are performing correctly	Building Technician	0	£1000	Unknown until further work undertaken			26%	2022
E8	monitor recycling strategy within Energus	General Manager	0	£150	£2568	7,147	0.5	5.2%	2022
	<b>Total % of carbon baseline reduction</b>							<b>77.05 %</b>	<b>2023</b>



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Unallocated annual revenue	-	-	-	-	-
<b>Total unfunded</b>	<b>£0</b>	<b>£0</b>	<b>£0</b>	<b>£0</b>	<b>£0</b>

The table above shows the level of funding (at 2023/24 prices) required to complete the carbon saving measures detailed in sections 4.1 to 4.3.

## 6 Monitoring & Audit

### 6.1 Annual Progress Review

To ensure that Energus is on course to achieve its carbon reduction target of 40% by 2021, this Plan will be reviewed annually by the Board and a report presented to the Management Team during July of each year. This timescale will allow sufficient time for all relevant data to be collected for the previous year.

The review will include all costs and benefits from the Programme:

- Financial costs of the Programme
- Financial savings
- CO2 savings
- Any barriers identified.
- Any changes to this Plan.

## Appendix A: Definition of Capital Projects

<b>Project: Reference:</b>	<b>E5 Eco Pilot BMS Monitoring and enhanced environmental control</b>
<b>Owner (person)</b>	General Manager
<b>Description</b>	Self-explanatory
<b>Benefits</b>	<ul style="list-style-type: none"> <li>• Financial savings: £20,000 per annum</li> <li>• Payback period: 6 years</li> <li>• CO2 Emissions reduction: 55 tons of Co2 approx.</li> <li>• Percentage of overall CO2 saving target: 29%</li> <li>• Confidence level – medium</li> </ul>
<b>Funding</b>	<ul style="list-style-type: none"> <li>• Project cost - £60,000</li> <li>• Operational costs £0 (less Electricity and Gas consumption compared to current arrangement)</li> <li>• Source of funding: Capital Expenditure</li> </ul>
<b>Resources</b>	<ul style="list-style-type: none"> <li>• additional H and S resources required on project.</li> <li>• Project will be delivered on schedule as per Tender spec</li> </ul>
<b>Ensuring Success</b>	<ul style="list-style-type: none"> <li>• Key success factors: Commission</li> <li>• Principal risks: System failure</li> </ul>
<b>Measuring Success</b>	<ul style="list-style-type: none"> <li>• Reduced Energy Bills</li> <li>• Live System Feedback from Portal</li> </ul>
<b>Timing</b>	<ul style="list-style-type: none"> <li>• Milestones: <ul style="list-style-type: none"> <li>○ start date: March 2023</li> <li>○ completion date May 2023</li> </ul> </li> </ul>
<b>Notes</b>	

<b>Project:</b>	<b>LED lighting Building Exterior and interior areas</b>
<b>Reference:</b>	<b>E10</b>
<b>Owner (person)</b>	General Manager
<b>Description</b>	Replace over 70 halogen units with LED
<b>Benefits</b>	<ul style="list-style-type: none"> <li>• Financial savings: £667</li> <li>• Payback period: 22 years</li> <li>• CO2 Emissions reduction: 3.95 tonnes of CO2</li> <li>• Percentage of overall CO2 saving target: 0.75%</li> <li>• Confidence level – full</li> </ul>
<b>Funding</b>	<ul style="list-style-type: none"> <li>• Project cost: £15,800</li> <li>• Operational costs: £0 (less electricity consumption compared to current arrangement)</li> <li>• Source of funding: N/A.</li> <li>• Approval given and implementation completed</li> </ul>
<b>Resources</b>	<ul style="list-style-type: none"> <li>• No additional resource required.</li> <li>• Project will be delivered within current resources</li> </ul>
<b>Ensuring Success</b>	<ul style="list-style-type: none"> <li>• Key success factors: None</li> <li>• Principal risks: None.</li> </ul>
<b>Measuring Success</b>	<ul style="list-style-type: none"> <li>• Metrics for displaying performance or achievement: n/a</li> <li>• When success will be measured/evaluated: Monthly monitoring of n building electricity consumption</li> </ul>
<b>Timing</b>	<ul style="list-style-type: none"> <li>• milestones: <ul style="list-style-type: none"> <li>○ start date: April 2023</li> <li>○ completion date (when it will deliver savings): from May 2023</li> </ul> </li> </ul>
<b>Notes</b>	



