



CAE Carbon Reduction Plan 2022

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A message from the CEO and COO

We at CAE, believe that together we can create a better future for the new generations by leaving behind us a green technology footprint in everything we do.

To achieve this, we must continuously look at ways to improve our environmental impacts by reducing our own direct and indirect carbon dioxide equivalent (CO_{2e}) emissions as efficiently and effectively as possible.

Our experience with the ISO 14001:2015 environmental management certification made us realise how environmental issues were embedded in the solutions provided to our customers as well as the actions to continuously improve our system towards the reduction of our carbon dioxide equivalent (CO_{2e}) emissions.

We acknowledge the carbon dioxide equivalent (CO_{2e}) emissions generated through the delivery of our services and as a signatory of the government's **Net Zero** emissions and the UN framework **Absolute Zero** by 2040, CAE has committed to set a common target to reduce its carbon emissions gradually by 25% every five years to contribute to the government's Net Zero scheme and reduce its greenhouse gas emissions.

And it is with real pleasure that we will accompany this Carbon Management Plan to its final destination by providing a strategic plan towards meeting the aspirational Net Zero emissions by 2025. It will also pave the path for a long-term programme of action to meet future targets under the Climate Change Act 2008 to achieve a cut in emissions by at least 70% by 2050.



Justin Harling

Justin Harling
Chief Executive Officer



Richard Behan

Richard Behan
Chief Corporate
Development Officer

Foreword from the Net Zero Scheme

In 2019 the UK Government amended the Climate Change Act 2008¹ by introducing a target of at least a 100% reduction of greenhouse gas emissions² (compared to 1990 levels) in the UK by 2050. This is otherwise known as the 'Net Zero' target.

The Climate Change Act introduced legally binding carbon budgets which set a ceiling on the level of UK GHG (greenhouse gas) emissions and to meet these budgets we have to collectively reduce our total emissions.

The Government recognises that for organisations to take action to reduce their emissions they must have the appropriate tools and guidance. Measuring the GHG emissions is the first step to effectively managing them.

Our UNFCC Race to Zero Pledge

As a business, inspired by **Net Zero International**, we commit to the following:

1. For our company to achieve Net Zero in line with the Science Based targets set out by the UNFCCC³ i.e., to achieve Net Zero no later than 2050 and target a 50% reduction in emissions by 2030.
2. To set realistic short- and long-term targets that are designed to achieve our Net Zero commitments.
3. To report the total Greenhouse Gas emissions of our business regularly and for our performance to be part of future Net Zero's and CBN Expert's annual reporting back to the UNFCCC.

We acknowledge that our commitment will be reported on **future Net Zero**.

¹ *Climate Change Act 2008*: <https://www.legislation.gov.uk/ukpga/2008/27/contents>

² *When the reporting of GHG emissions is measured, it is often done so in carbon dioxide equivalent units (CO2e). The use of CO2e allows for more accessible reporting and straightforward tracking and reporting of emissions over time.*

³ *United Nation Framework Convention on Climate Change-entity tasked with supporting the global response to the threat of climate change.*

Executive Summary

We are aware that reducing our carbon dioxide equivalent emissions (CO_{2e}) represents significant benefits for us, our customers, and the community.

Translated into this Carbon Reduction Plan are the strategies and frameworks of CAE's ongoing commitment to the management and reduction of carbon emissions.

More particularly, it outlines CAE's baseline, sets a target for reducing this baseline within a defined period, and finally, lists the projects to be implemented for the carbon neutral achievement and the source of funding for taking these projects to the right destination.

Outlined below lies our journey to successfully achieve the Net Zero emissions and UN framework Absolute Zero by 2040 and part of it will focus on finding wasted energies that will contribute to the reduction of the organisation's carbon dioxide equivalents (CO_{2e}):

- CAE aims to reduce its CO_{2e} emissions by 25% by 2025 based on its 2019/20 baseline;
- CAE CO_{2e} baseline emissions were 387.43 tonnes in 2019/20, taking into account fuel combustible, transport-related and waste disposal;
- Failure to take action would result in a rise from 387.43 tonnes in 2019/20 to 581.14 tonnes in 2030. If CAE achieves its target reduction of 25% then the CO_{2e} emissions would fall to 281 tonnes, saving a cumulative total of 98 tonnes over a period of 5 years;
- Over 10 energy-saving projects have been identified from different sources, including 3rd party consultancy resulting from ESOS¹ audit outcome and internal collaborative approach sessions to encourage and improve culture change for our organisation and effectively implement them in the view to achieve the net zero emissions by 2040.

¹*Energy Savings Opportunity Scheme*

Our Low Carbon Vision

CAE's Sustainability Policy states that the organisation is committed to integrating sustainable development into everyday practice by minimising environmental impact wherever possible and supporting community opportunities.

To that extent, CAE is committed to achieving Net Zero emissions by 2040.

During the process of developing this Carbon Management Plan, several key areas have been selected that will allow us to demonstrate a significant reduction of the carbon emissions generated by our activities.

Baseline Emissions Footprints

During the years of 2019/20, the carbon emissions generated by CAE were 319.93 tonnes while the Business Sector's carbon emissions as a whole were 59.4 Mt for the 2020 period¹.

We have observed a descending trend in terms of carbon emissions of 14% averagely since 2019 which is our baseline year. And when compared to our CO₂e emissions reduction target to 25% every 5 years, we can assume that the carbon reductions plan put in place are paying off.

The baseline emissions below explain how the 25% reduction in CO₂e target will be set.

Scope

The scope of this carbon emissions plan will be categorised by the type of emissions emit from our activities:

Scope 1 comprises direct energy such as:

- Fuel's combustion: boiler;
- Owned transport: carpool;
- Process emissions: waste processing;
- Fugitive emissions: HVAC.

Scope 2 includes the energy consumed through the purchasing of:

- Electricity;
- Heat.

Scope 3 outlines other direct energy such as:

- Purchased material;
- Transport related: commuting, business travels, distribution
- Waste disposal: waste, recycling

Method of data collection:

The data is obtained from bills, maintenance sheets, waste transfer and collection notes, and assets specification manuals. The key data is focused on the kilowatt hours (kWh) used for electricity and gas, car fuel used, and the waste quantity collected from sites in Kg or Tonne.

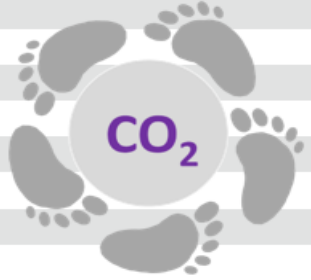
Data For the Baseline year 2019 & Reporting Year 2022

In 2022, the largest contribution of CAE’s CO_{2e} emissions came from the business travel accounting for 45% of the baseline emissions and electricity from 31%.

Despite an increase of the business travels in 2022 compared to the baseline year (2019), encouraged by the high-volume market’s demand and also by the reduction of the COVID 19 restrictions. We have observed a diminution of 37% of the total annual net CO₂ emissions against the baseline year (2019) and also a 19% decrease of total annual net CO₂ emissions against the previous year (2021).

Which give us the confidence to affirm that the predictions set around the patterns/trends observed to reduce our carbon emissions were effective, as well as the maturity of the free energy system generated by the solar panels. And finally, by our involvement in the Madagascar Reforestation Project Eden, in response to the large-scale loss of mangroves and upland forests, CAE has planted 500 trees (Ceriops tagal) which participate to 20 tonnes (20,000 Kgs) of CO₂ offset (Registration N° BE0727828810).

CAE Carbon Footprint Emissions		
	Tonnes of CO _{2e}	
	Baseline Year 2019	Reporting Year 2022
Scope 1		
Gas consumption	26.57	4.79
Owned transport	10	9.38
Fugitive emissions	0	0
Total Scope 1	36.57	14.17
Scope 2		
Purchased electricity	98.36	75.62
Total Scope 2	98.36	75.62
Scope 3		
Business travel	66	110.4
Employee commuting	90	34.46
Waste disposal	29	9
Total Scope 3	185	153.86
Total gross emissions	319.93	243.65
Carbon offsets ²	0	(23.54)
Carbon offsets ³	0	(20)
Carbon saved ⁴	0	(9.49)
Total annual net emissions	319.93	200.11



¹Department for Business, Energy & Industrial Strategy-2020 UK greenhouse gas emissions, provisional figures, 25 March 2021.

² The carbon offsets represent the energy generated from CAE assets (solar panels) deducted from the total electricity consumption.

³ The carbon offsets represent the Madagascar Reforestation Project with the 500 trees planted.

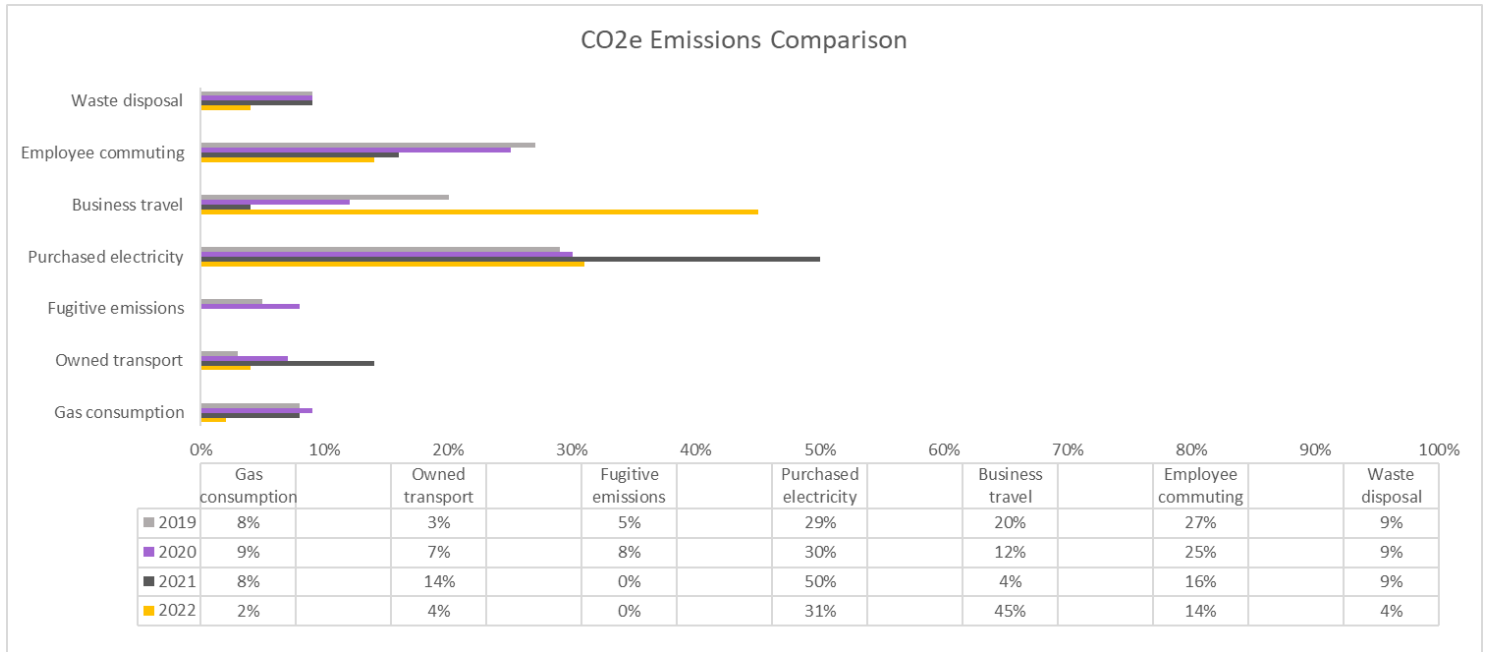
⁴ The carbon saved outlines the CO₂ saved from the waste generated and recycled by the 3rd parties only for information purposes.

Examining the breakdown of emissions in the graph below, we noticed that several CO_{2e} emissions reductions had happened, compared to the previous years.

Although a diminution of 36% electricity consumption observed in comparison to the previous year, this category still represents 31% of the total energy consumption for the 2022 period which could be addressed through the energy savings opportunity outlined by the ESOS report.

The second source of energy experiencing a hike was the business travel with a contribution of 45% in the total of CO_{2e} emissions produced for 2022.

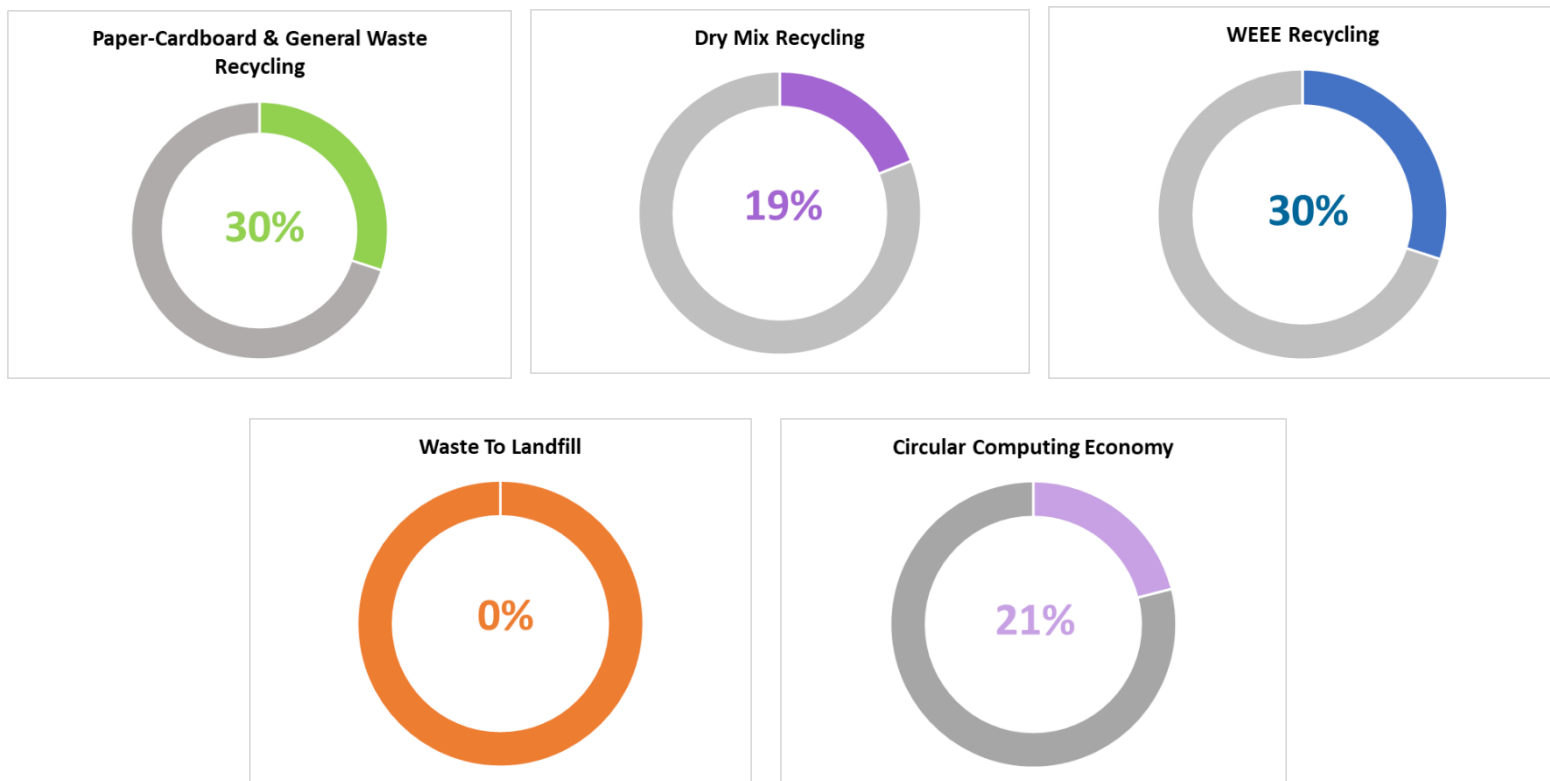
This was mainly due to an ascendant in the market demand requiring professional service in order to answer to the customers' s requirements.



Weight Of CO_{2e} Emissions Saved With Stakeholders

From the baseline year 2019 and reporting 2022, the total carbon emissions saved from the waste collected and recycled by the licenced waste dealers was 24 tonnes of CO_{2e}, which also include the circular computing economy function created within the business which allows us to salvage computer parts from decommissioned assets to be recycled and reused to repair current laptops in use.

Once they are factored into a graph to emphasise their contributions, it could be easily observed as per the below the organisation's commitment in terms of monitoring the life cycle of its waste generated and ensuring its positive impact on the environment.

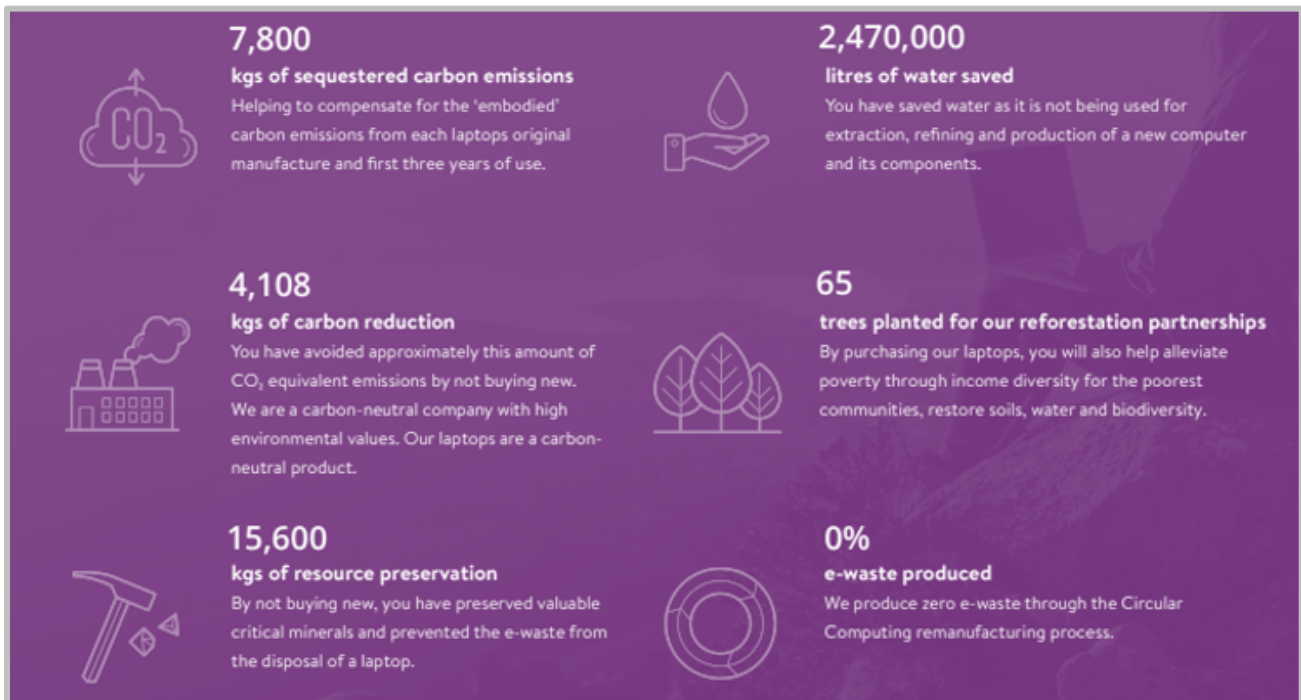


CAE Circular Computing Economy

The average estimated carbon footprint of a laptop is around 300 to 400 kgs, which includes the carbon emissions during the production, transportation and first 4 years of use¹. Knowing that, over the past 3 years, 13 laptops have been repaired within the CAE Configuration department, which would be equivalent to 5 tonnes of CO_{2e} saved.

Beyond the economy incentive that represents the circular economy such as cutting costs and increasing revenue, we discovered an underlay opportunity that could differentiate ourselves from the competition and bring add value to our customers as well as effective response to our environment challenges like resource scarcity, supply chain dependence, environment regulations and public pressure.

When the number of laptops repaired were gauged against the environmental savings² as per the below, we were very impressed by the level of impact that a such basic function in our organisation could generate, which encourage us develop this activity by providing more resource.



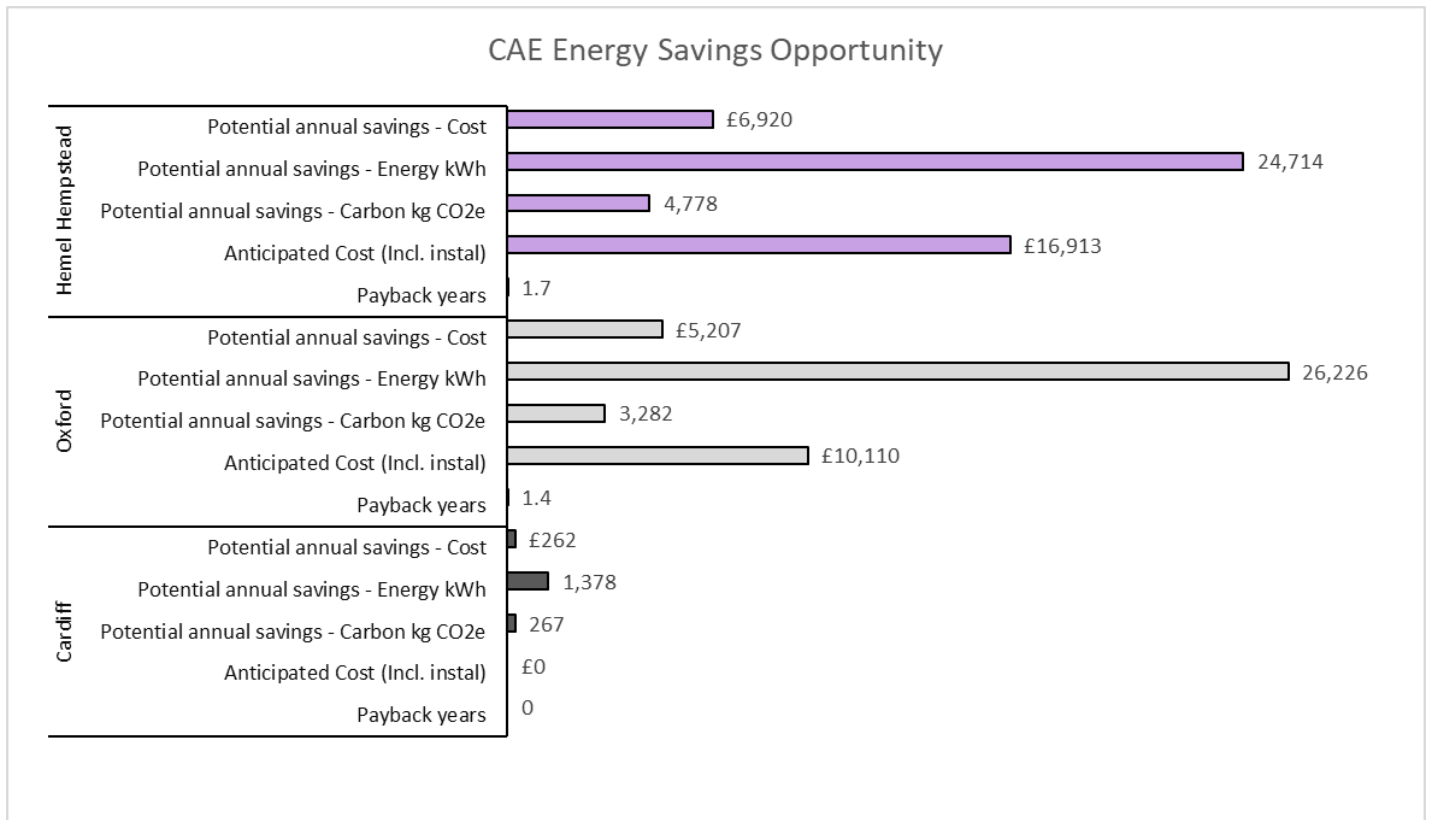
^{1/2} Sustainable IT Circular computing

Energy Savings Opportunity Scheme (ESOS)

Regulated by the Environment Agency (EA), ESOS is an audit assessment carried out every 4 years by a 3rd party licenced ESOS assessor of the energy used by the organisation buildings. And, as quoted in its name, the CAE ESOS' assessment abounded with several saving opportunities that if implemented could considerably make significant contributions to the UK's aim for net zero in the next 20-30 years, but also reduce ongoing operational costs.

Here is outlined through the below graph the potential energy savings opportunity that have been integrated in the CAE carbon reduction that could be consulted in the later pages.

As it could be observed, the payback years for these opportunities once implemented are less than two years compared to the lifetime energy savings once the payback years threshold are achieved.



Strategies for CAE Carbon Reduction

The energy savings opportunity within this plan once fully implemented will reduce CAE's CO_{2e} emissions to up to 25% every 5 years to achieve the Net Zero target by 2040 as per the CO_{2e} emissions reduction projects described as follow:

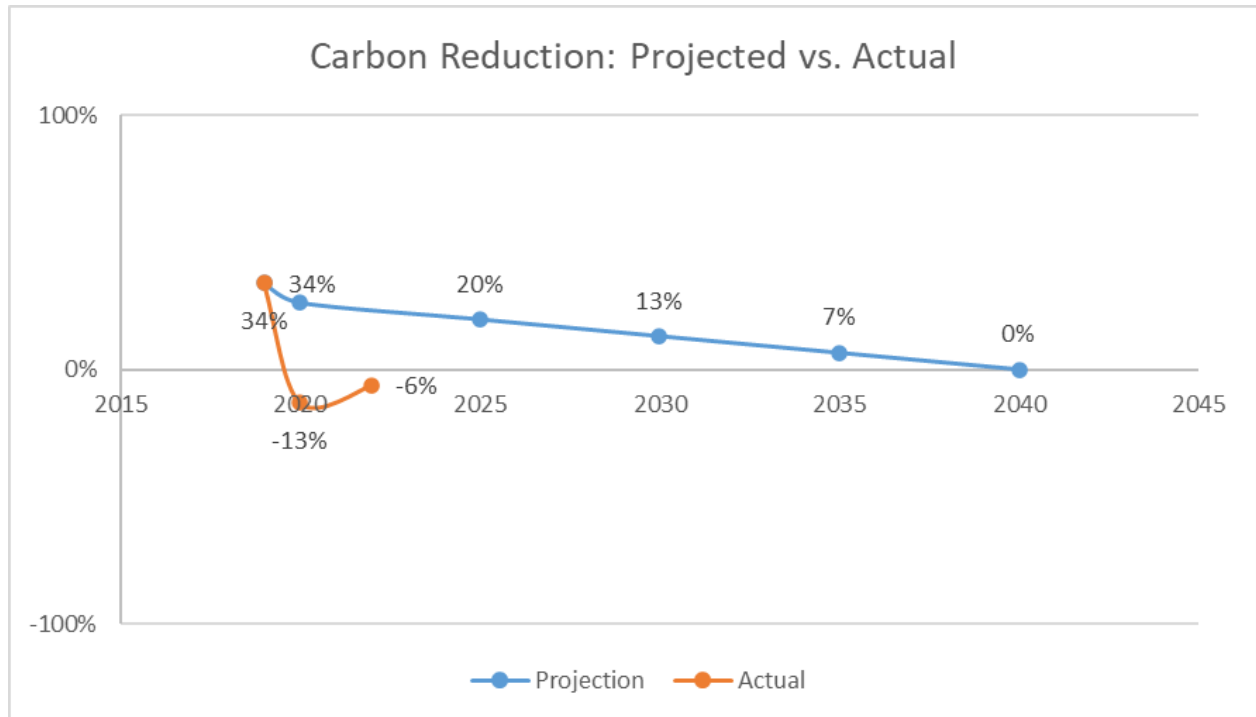
FIXES ASSETS		
Achieved	<ul style="list-style-type: none"> 1. Increase the current number of company cars to electric & hybrid from 17% to 20% by 2030 2. Increase the existing number of electric car charging points from 11% to 13% by 2022 3. Install 162 solar panels that will generate more than 50 K kWh per year by 2022 4. Increase by 100% the use of LED light for the owned buildings by 2022 5. Increase by 98% the use of light sensors for the new headquarter building by 2022 9. Equip all the new HQ toilets with the dual flush toilet system to save 1.9 gallons per flush 10. Equip all the new HQ toilets with new high-speed hand dryers using cool air 11. Equip all the new HQ toilets with touchless water sinks to save between 4 to 9 litres per minute 	Ongoing
		<ul style="list-style-type: none"> 6. Replacing the use of plastic cups for glass by 2023 7. Diverting annually, 100% of waste by promoting recycling and the use of recycling products to avoid the burden of landfill 8. Decrease the energy consumption for the HQ by 17% annually compared to the previous years 12. Evaluate the potential benefits of carbon offsetting such as collecting rainwater to water the plants inside the CAE offices 13. Using a licenced IT charity to donate all the decommissioned laptops 14. Repair the plastic moulding/trim around the bay door 15. Repair gaps between doors and frames 16. Using existing measurement technology and adding Submetering (calculations based on installing 2 submeters) 17. Increase Solar PV Array 18. Using existing measurement technology and adding Submetering (calculations based on installing 2 submeters) 19. Take regular gas readings 20. Air conditioning filter maintenance and energy saving settings 21. Server room cooling setpoints 22. Allow for less manual control of AC control panels 23. Avoid portable electric heaters
TRANSPORT		
Achieved	<ul style="list-style-type: none"> 24. Evaluate and where possible adopt means of reducing travelling including ideas such as video conferencing to achieve a reduction of 50% annually 25. Implement a flexible working program for all the employees for the reduction of the number of cars on the roads and thereby the reduction of CO_{2e} emissions by 70% 	Ongoing
EMBEDDING CLIMAT CHANGE		
Achieved		Ongoing
		<ul style="list-style-type: none"> 26. Comply with all current energy legislation and seek to meet legislative targets 27. Seeking the ISO 14061-1:2012 or PAS 2060 Greenhouse gases certification or equivalent
COMMUNICATION		
Achieved		Ongoing
		<ul style="list-style-type: none"> 28. Work with key partners and other stakeholders to achieve a better understanding and support on the waste emission categories and how to control them 29. Raise environmental awareness for all the employees through the training program by end of 2025 30. Ask staff for energy saving ideas
LEADERSHIP		
Achieved		Ongoing
		<ul style="list-style-type: none"> 31. Support the business charity program by providing free support to people in need of IT skills and knowledge.

Progress Against The CO_{2e} Emissions Reductions Projects

As per the chart below the projection for the CO_{2e} emissions reduction will gradually diminish by 25% every five years to comply with the Net Zero target by 2050.

This will be achieved with the assistance of independent third parties, and the carbon offset plan from the number of CO_{2e} emissions saved through the recycling program and energy generated from the solar panels.

However, we are remarking from the course of the graph “Actual” a continuous descending of the CO_{2e} since the baseline (2019) which combined, represents 19% of the 25% to be achieved in 2025 and if that trend continues, the net zero target will be achievable for 2040.



In conclusion, we can assume that the CO_{2e} emissions project funding will be mainly prioritised on acquiring environmentally friendly assets and environmental project implementation to constantly measure them against the business’ CO_{2e} emissions targets in a bid to quantify their effectiveness.

And finally, invest in the employee’s environmental awareness to encourage positive behaviour against the business’ overall CO_{2e} emissions reduction.

Declaration and Sign Off

This Carbon Reduction Plan has been completed in accordance with PPN 06/21 and associated guidance and reporting standard for Carbon Reduction Plans.

Emissions have been reported and recorded in accordance with the published reporting standard for Carbon Reduction Plans and the GHG Reporting Protocol corporate standard and use the appropriate Government emission conversion factors for greenhouse gas company reporting.

Scope 1 and Scope 2 emissions have been reported in accordance with SECR requirements, and the required subset of Scope 3 emissions have been reported in accordance with the published reporting standard for Carbon Reduction Plans and the Corporate Value Chain (Scope 3) Standard.

This Carbon Reduction Plan has been reviewed and signed off by the board of directors (or equivalent management body).

Date: 20/03/2023

Justin Harling

Richard Behan

Transforming people's experiences,
and people's lives, through technology.

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