JCS Nuclear Solutions Carbon Reduction Plan

01/10/2023-30/09/2024

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An introduction to JCS Nuclear Solutions

JCS Nuclear Solutions is a UK-based SME, providing nuclear radiation sensing and shielding solutions since 1975. Our range includes radiation dose-rate monitoring instrumentation, designed and built in the UK, world-class scintillation detectors and a wide-range of neutron shielding materials. We specialise in working in partnership with our customers to provide solutions that are fit for purpose.

In response to the pressing global challenge of climate change, JCS Nuclear Solutions is committed to achieving Net Zero emissions by 2050.

As such, JCS Nuclear Solutions has engaged in the following project to calculate, report, and identify opportunities to reduce our greenhouse gas (GHG) emissions.

This report, in accordance with PPN 006, details the results of JCS Nuclear Solutions' baseline GHG inventory, which quantified GHG emissions across the reporting period of 01/10/2023-30/09/2024. Also documented is JCS Nuclear Solutions' long-term strategy to monitor, manage, and minimise our environmental impact in alignment with achieving our Net Zero commitment.

This report was prepared with the support of Ecologi to ensure that emissions were quantified in alignment with the Greenhouse Gas Protocol Corporate Accounting and Reporting Standard and supplementary Corporate Value Chain (Scope 3) Standard.

Ecologi

Ecologi is a leading climate action platform specialising in emissions measurement, reduction, and reporting, as well as helping businesses fund high impact, high integrity climate solutions. Ecologi equips businesses with the expertise and tools to curate and implement emissions reduction strategies on their journey to Net Zero.

2024 Carbon Reduction Plan

Methodology

JCS Nuclear Solutions were responsible for the internal management controls governing the collection and entry of data for processing. The subsequent emissions calculations and this report were generated with the support of Ecologi in accordance with the Greenhouse Gas Protocol Corporate Accounting and Reporting Standard and supplementary Corporate Value Chain (Scope 3) Standard.

Emissions have been calculated using the appropriate UK emission conversion factors published annually by the UK government, Department for Energy Security and Net Zero (DESNZ). The methodology for homeworking emissions aligns with Anthesis' published in their 2021 White Paper.

Reported emissions figures are expressed as tonnes of carbon dioxide equivalent (tCO_2e) and include GHG emissions from all seven GHGs named by the Kyoto Protocol: CO_2, N_2O, CH_4, HFCs, PFCs, SF_6 and NF_3.

The GHG inventory assesses emissions for the reporting period 01/10/2023-30/09/2024. This is the first year for which a GHG inventory has been compiled by JCS Nuclear Solutions and, therefore, constitutes our base year - the reference point against which all future emissions reductions will be measured.

The boundary of the report includes all UK-based operations during the reporting period. An operational control approach [1] has been adopted, and emissions are categorised within the relevant Scope, as prescribed by the GHG Protocol.

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.

Greenhouse Gas Inventory - 01/10/2023-30/09/2024

Scope	Emissions	Total (tCO_2e)
Scope 1	Stationary combustion	N/A
	Mobile combustion	N/A
	Process emissions	N/A
	Fugitive emissions	N/A
	Total - Scope 1	N/A
Scope 2	Purchased electricity (Location-based)	3.50
	Purchased electricity (Market-based)	5.45
	Purchased steam, heating & cooling	N/A
	Total - Scope 2 (Location-based)	3.50

Scope	Emissions	Total (tCO_2e)
Scope 3 [2]	Upstream transportation and distribution	35.25
	Waste generated in operations	0.29
	Business travel	0.37
	Employee commuting (including homeworking)	0.59
	Downstream transportation and distribution	N/A
	Total - Scope 3	36.50
Total		40.00

1. *A company has operational control over an operation if it, or one of its subsidiaries, has the full authority to introduce and implement its operating policies at the operation. Under the operational control approach, a company accounts for 100% of emissions from operations where it has operational control.*

2. *Scope 3 categories reported on include the required subset of Scope 3 emissions in accordance with the published reporting standard for Carbon Reduction Plans and the Corporate Value Chain (Scope 3) Standard.*

Total emissions

40.00 tCO_2e

Emissions intensity per revenue

40.00 tCO_2e
per £1m revenue

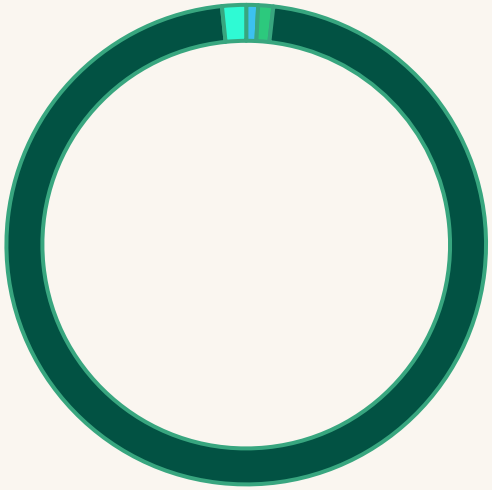
Emissions intensity per FTE

10.00 tCO_2e
per FTE

2024 Scope breakdown

Scope 1	N/A tCO_2e
Scope 2	3.50 tCO_2e
Scope 3	36.50 tCO_2e

Scope 3 emissions by category

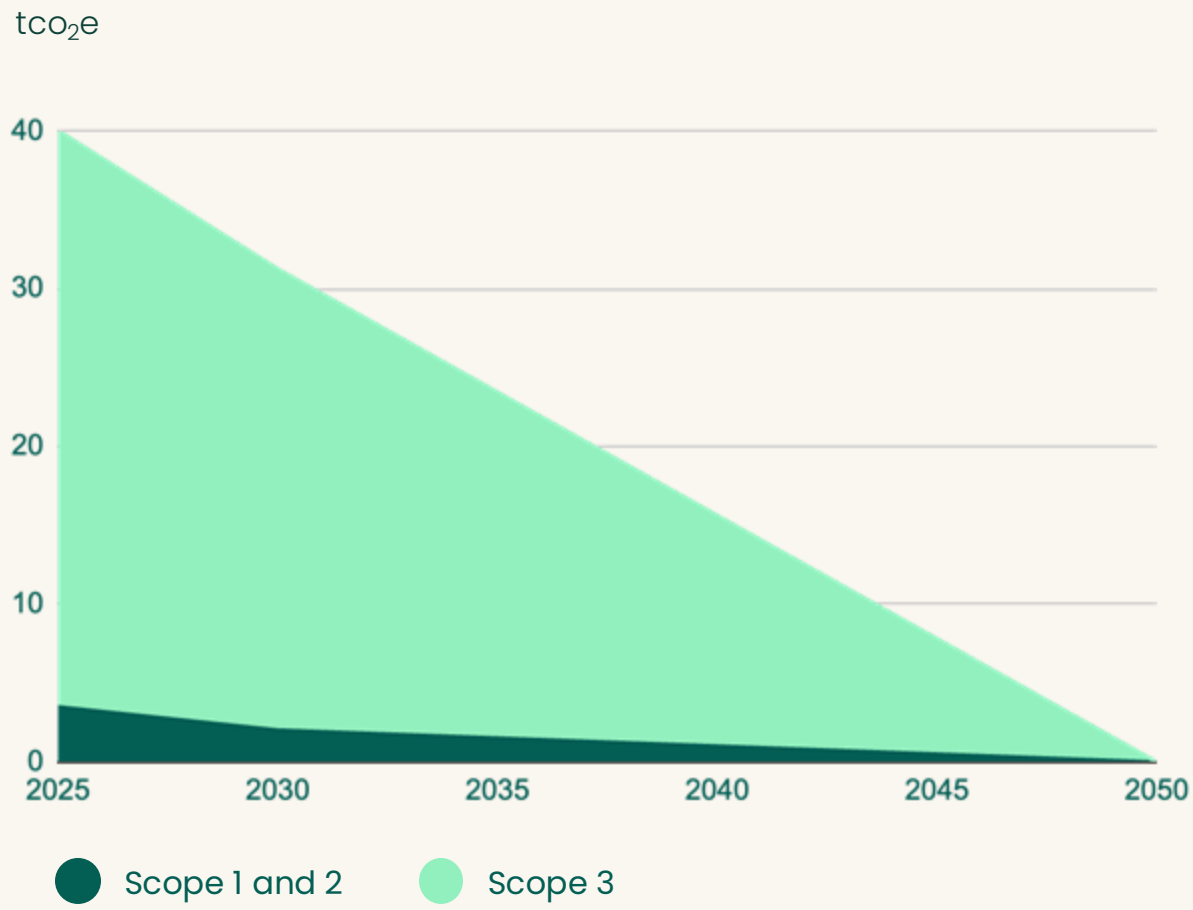


Upstream transportation and distribution	35.25 tCO_2e
Waste generated in operations	0.29 tCO_2e
Business travel	0.37 tCO_2e
Employee commuting (including homeworking)	0.59 tCO_2e
Downstream transportation and distribution	N/A tCO_2e

Emissions Reduction Targets

In alignment with the UK Government's 2050 Net Zero targets and global efforts to limit global working and the worst effects of climate change, JCS Nuclear Solutions is committed to achieving Net Zero emissions across the entire value chain (Scopes 1, 2, and 3) by 2050. Where possible, ambitious emissions reduction actions will be implemented to advance the achievement of Net Zero.

JCS Nuclear Solutions' projected emissions reductions are charted to illustrate how progression towards these targets may look.



Emissions Management

The following emissions management measures are already in place as JCS Nuclear Solutions works towards Net Zero.

Hybrid working

We operate a hybrid-working structure, which significantly reduces our Scope 1 and 2 greenhouse gas emissions by reducing the energy consumption related to operating the office spaces, as well as our employee commuting emissions associated with transportation to and from the office.

We appreciate that remote working results in an increase in energy consumption within employees' homes. However, given the reduced need for office energy and commuting, hybrid working is likely to result in a net reduction in overall emissions.

Responsible waste disposal

We actively recycle our HMWPE neutron shielding materials and offer responsible recycling and disposal services for all used JCS products. Our new product designs are developed with through-life sustainability in mind, incorporating careful materials selection at the design stage to reduce waste and environmental impact from the outset.

We also follow responsible disposal practices for electronic and hazardous materials, with both of our office sites equipped with dedicated recycled waste streams to ensure materials are recovered and repurposed wherever possible.

Sustainable travel & commute

We have adopted electric vehicles (EVs) for all company cars used by our directors, with low-cost charging facilities available at both of our office locations. As a result, all current employees now travel and commute using EVs.

We also use rail exclusively for longer distance journeys when necessary to further minimise our travel footprints.

Climate Action Plan

JCS Nuclear Solutions is committed to embedding practices within our business to mitigate environmental impact. The following strategy outlines further decarbonisation interventions contributing to JCS Nuclear Solutions roadmap for achieving Net Zero across the entire value chain. Specific reference is given to emissions hotspots and priority areas identified within the emissions inventory published above. Interventions include both short and long-term actions dedicated to the pursuit of the overarching Net Zero ambition.

1 Measure and iterate on emissions data

We are committed to building on the foundational work of our previous GHG emissions reports, and furthering our collaboration with Ecologi, utilising their Ecologi Zero platform to measure our emissions and progress. This process has already enhanced our understanding of our environmental impact, allowing us to identify areas for emissions reductions and operational efficiency improvements. These insights will enable us to implement the progress necessary to monitor performance and assess the effectiveness of emissions reduction initiatives moving forward, supporting our goal of developing sustainable and transparent operations.

2 Reduce energy use and switch to renewable electricity

We will work with our landlord to explore and implement energy efficiency improvements across our leased office space. This includes discussing opportunities to upgrade lighting, heating, and cooling systems to more energy-efficient models, as well as exploring renewable energy options where feasible. We will review building performance data together to identify areas of high consumption and collaborate on measures to reduce overall energy use. By building this partnership, we aim to ensure that the space we occupy aligns with our sustainability goals and contribute to a lower carbon footprint for our operations.

3 Improve logistics efficiency and sustainability

One of our major focuses will be on reducing our emissions from upstream transportation and distribution, which currently represent 86% of our total carbon footprint due to the nature of our business and the movement of heavy, specialist materials between suppliers, clients, and project sites.

To address this, we plan to work closely with our logistics partners to optimise delivery routes and prioritise the use of low emissions freight options such as electric and hybrid vehicles where feasible. We will also review packaging sizes and delivery frequencies to consolidate and minimise unnecessary transport.

4 Broaden GHG footprint scope

As we iterate on our annual emissions assessment, we are also looking to expand the coverage of the assessment to all Scope 3 categories relevant to our operations, particularly Purchased Goods and Services, and Use and End-of-Life Treatment of Sold Products. This is not only to meet future PPN requirement for full Scope 3 disclosure, but also to help us develop a better understanding of our entire value chain impact.

As a nuclear technology solutions provider, we see most of our footprints coming from the procurement of professional and manufacturing services and products, and operation and disposal of products. We will work with Ecologi to start collecting and modelling activity data across these areas and estimating emissions to identify hotspots and reduction opportunities throughout our value chain.

5 Engage stakeholders and innovate on product design

We recognise that to achieve reductions in our corporate and product footprints we'll need to work closely with our partners across entire value chain. To drive sustainable innovations in nuclear detection and shielding technologies, we will actively engage our suppliers, customers, and industry associations to explore new approaches in product design, materials selection, and manufacturing technologies. By facilitating the sharing of insights and best practices, we aim to identify and implement solutions that optimise functional efficiency, reduce waste, and minimise the life cycle impact of our products from design through to end-of-life.

This collaborative approach can not only help strengthen our relationships with key stakeholders but also ensure that sustainability remains embedded at every stage of our innovation process, supporting our long-term commitment to responsible business and Net Zero.

Declaration and Sign Off

This Carbon Reduction Plan has been completed in accordance with PPN 006 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).

Signed on behalf of JCS Nuclear Solutions

Oliver Caunt
Managing Director

Date: 14/11/2025