



Net Carbon Reduction Plan

January 2025

Supplier Name: Koalaa Ltd

Publication Date: 25/01/2025

Check: [PPN-0621 Carbon Reduction Plan Template - Koalaa Jan 2025](#)

1. Commitment to Achieving Net Zero

- Koalaa recognizes the global climate emergency and is committed to becoming a net-zero organization by 2040.
- As a medical device company, we aim to lead in sustainability within our sector and align with the NHS's ambition to achieve net zero.
- We embrace the responsibility to address climate change, enhance resilience across our operations and supply chain, and support the broader healthcare community in adopting sustainable practices.
- We commit to accurately measuring 100% of our carbon emissions using reliable data and continuously improving our processes to reduce emissions.
- Our first 3-year sustainability plan will outline key steps towards achieving these goals, setting a benchmark for innovation and responsibility.



1.1 Defining Net Zero and Baseline

- In 2024, Koalaa adopted the UN Climate Neutral Now definition of net zero: “a state where a balance between anthropogenic greenhouse gas (GHG) emissions and removals is achieved.”
- By combining direct reductions with offsets, we aim to achieve this balance while focusing on minimizing reliance on offsets over time.
- Koalaa’s baseline year for emissions measurement is 2024, encompassing Scope 1, 2, and 3 emissions.

2. Baseline and Current Emissions Footprint

- Koalaa’s baseline year (2024) emissions:
 - Scope 1: Direct emissions from industrial machinery and processing.
 - Scope 2: Indirect emissions from purchased electricity (market basis).
 - Scope 3: Emissions from purchased goods, transportation, business travel, employee commuting, and waste management.
- These emissions are monitored using the Greenhouse Gas Protocol to ensure accuracy and transparency.

Scope	Category/ Definition	Description	Baseline (tCO ₂ e)
1	Direct emissions from owned or controlled sources	Emissions from laser cutter	0.01
2	Indirect emissions from the generation of purchased electricity, steam, heating and cooling	Lights on in the workshop Portable heaters in the winter Heat Press 3D Printer	1.14
3	1 Purchased Goods & Services	3D prints from 3D print UK Neoprene production Velcro production Kitt Bags	34



	2	Capital Goods	Emissions from capital goods are included in Scope 2	0
	3	Fuel- and Energy Related Activities Not Included in Scope 1 or 2	All Fuel and Energy are included in Scope 1 & 2	0
	4	Upstream transportation and Distribution	Flights and ground transportation of the supply chain	27.62
	5	Waste Generated in Operations	Fabric scraps, packaging from supply chain deliveries	5.71
	6	Business Travel	Travel within the UK and around the world	121.44
	7	Employee Commuting	Commuting London	0.77
	8	Upstream Leased Assets	Office Space, included in Scope 2	0
	9	Downstream transportation and Distribution	Shipping products around the world	1748.28
	10	Processing of Sold Products	Koalaa products do not need to be processed after they are sold	0
	11	Use of Sold Products	Koalaa products do not produce emissions	0
	12	End-of-Life Treatment of Sold Products	Assuming Landfill after 3 years of use	41.67
	13	Downstream Leased Assets	Koalaa does not lease any assets to others	0
	14	Franchises	Koalaa neither sells franchising rights nor operates any franchises	0
	15	Investments	Koalaa has no material investments	0
All				1980.64



Scope 1: Koalaa manufacture all products in our factory at NW10 6HF. All manufacturing processes are hand-operated (sewing machines) or emissions are incorporated into Scope 2 (powering the machine) aside from one laser cutter. GHG emissions are low calculated at 0.01 tCO₂e.

Scope 2: Koalaa manufacture all products in our factory at NW10 6HF. Powering machines (1 x 3D Printer, 3 x sewing machines, 1 x heat press), lighting and heating are relatively low for the small facility (1170sq ft) calculated at 1.14 tCO₂e.

Scope 3: Koalaa largest emissions occur from travel, purchasing materials and posting devices calculated at 190 tCO₂e. As a growing worldwide company with an in-person fitted medical device it is likely that gross emissions will increase in the next few years. Koalaa plans for emission reduction and carbon off-set will focus on these areas.

3. Emissions Reduction Targets

Koalaa will transition towards net zero emissions by the end of 2045 using a phased approach, ensuring that we commit to a steady decline in emissions using science-based targets to deliver positive outcomes through our climate action. Thereby, enabling Koalaa to support the Paris Agreement goal.

Year	Scope of Net Zero
2024	Confirmed baseline year
2030 (Near-term)	Reduce absolute Scope 1 & 2 GHG emissions by 50% from baseline. Reduce absolute Scope 3 GHG emissions by 30% from baseline.
2040 (long-term)	Reduce absolute Scope 1 & 2 GHG emissions by 90% from baseline. Reduce absolute Scope 3 GHG emissions by 90% from baseline.
2045	Reduce absolute Scope 1 & 2 & 3 GHG emissions by 100% from baseline.



4. Carbon Reduction Projects aligning with science-Based Targets

The following environmental management measures and projects are central to our commitment to net-zero targets.

Koalaa will follow science-based targets aligned with the 1.5°C global warming pathway, ensuring consistent progress and adherence to validated methodologies.

4.1. Renewable Energy (Solar, Wind, Hydro)

- By 2045, Koalaa will transition to 100% renewable energy across all facilities, including our manufacturing site in London.
- We aim to install renewable energy sources, such as solar panels, at our UK facilities.
- We aim to purchase green-energy from our supplier

4.2. Carbon Capture and Storage (CCS)

- Koalaa have considered CCS technologies to capture CO₂ emissions at the point of release (like from industrial processes) and store it underground to prevent it from entering the atmosphere.
- The cost and GHG emissions generated to create such technologies are larger than the GHG emissions from our factory and are not considered a viable solution. This will be reviewed annually

4.3. Green Hydrogen

- Green Hydrogen can be used as a fuel for some processes or as a backup energy source, helping to decarbonise hard-to-electrify areas of your operations.
- This is not a viable solution for manufacturing in London. There are more cost-effective and carbon reducing initiatives that would be more beneficial. This will be reviewed annually.



4.4. Electric or Low-Carbon Freight Options

- Switching to electric or hybrid trucks, ships, or rail for transportation (especially since we are using or will be using sea freight as we grow) reduces emissions from logistics.
- This is a central focus of Koalaa targets, and we will,
- Engage with suppliers to adopt sustainable practices, including setting GHG reduction targets.
- Source raw materials from eco-friendly and certified suppliers.
- Audit the supply chain annually to ensure compliance with sustainability goals.
- Actively monitor and choose logistics suppliers that utilise greener transportation methods.

4.5. Circular Economy and Material Efficiency

- Embrace a circular economy approach where materials used in production can be recycled or repurposed to minimise waste.
- Koalaa will continually create prosthetics with a focus on easy disassembly, using recyclable or biodegradable materials, or offering repair and upgrade services.
- Each device will be rated on sustainability, and re-engineered to reduce GHG emissions

4.6. Bio-based Materials and Bioengineering

- Use bio-based or sustainably sourced materials, such as biodegradable plastics, natural fabrics, or bioengineered composites that store carbon and can be less carbon-intensive to produce.
- Koalaa will source local materials as it expands worldwide.
- Koalaa will (and have) introduced recycled materials

4.7. Energy Efficiency Improvements

- Implement energy-efficient upgrades to manufacturing equipment and office spaces.



- Conduct regular energy audits to identify further areas for improvement.
- Encourage employee behavior changes through awareness campaigns and training.

4.8. Carbon Offsetting (Projects)

- Partner with accredited organizations to invest in carbon removal projects, such as reforestation and renewable energy initiatives.
- Focus on offsetting residual emissions through verified and impactful projects.

4.9. Sustainable Manufacturing Technologies

- Koalaa are already using advanced manufacturing technologies such as additive manufacturing (3D printing) to help reduce material waste and improve precision, resulting in fewer emissions during the production process.
- Koalaa will optimise current practices and designs to reduce material usage and waste

4.10. Carbon-Neutral Shipping Solutions

- Koalaa will source third-party logistics companies that offer carbon-neutral shipping options or offset the emissions from transportation by investing in sustainable practices or projects.

4.11. Carbon-Free Materials from Bio-Refining

- Koalaa actively monitors suppliers of bio-plastics or advanced fibers from bio-refining processes to minimize our carbon footprint in the prosthetics manufacturing process.



4.12. Building Green Infrastructure (Green Building Design)

- Koalaa will strive to create a carbon-neutral space by incorporating sustainable building designs, energy-efficient heating and cooling, smart grids, and sustainable construction materials as we expand.

4.13. Data-Driven Optimisation

- Implement advanced data analytics and AI tools to optimize manufacturing, reduce waste, and track energy usage.

4.14. Climate-Smart Agriculture for Raw Materials

- Koalaa will aim to source raw materials that are grown or harvested using climate-smart practices (e.g., regenerative agriculture).

4.15. Building a Sustainable Supply Chain

- Koalaa will work closely with your suppliers to ensure they are adopting sustainable and carbon-neutral practices. This could involve evaluating your suppliers' emissions and encouraging them to adopt cleaner technologies.
- Engage with suppliers to adopt sustainable practices, including setting GHG reduction targets.
- Source raw materials from eco-friendly and certified suppliers.
- Audit the supply chain annually to ensure compliance with sustainability goals.

4.16. Green Building Certifications (BREEAM, LEED)

- Koalaa will consider obtaining green building certifications like BREEAM or LEED for Koalaa owned office and factory spaces as it grows.

4.17. Digitalisation and Automation

- Koalaa are exploring automation to reduce human error, minimise waste, and enhance energy efficiency in the manufacturing process.



4.18. Sustainable Waste Management

- Achieve zero landfill waste by 2030.
- Implement recycling initiatives for materials used in prosthetic production.
- Explore partnerships for circular economy practices, such as refurbishing and reusing prosthetic components.

4.19. Sustainability Certifications for Products

- Description: Certify your prosthetics products with sustainability certifications (e.g., Cradle to Cradle, FSC certified materials).
- How it helps: These certifications help show your commitment to sustainability, and products with such certifications often have lower embodied carbon.

4.20. Carbon-Neutral Manufacturing Platforms

- Description: Consider partnering with carbon-neutral or carbon-positive manufacturing platforms that have already made strides in reducing their carbon footprint.
- How it helps: By choosing to work with a third-party manufacturer that already operates sustainably, you can lower the overall emissions tied to your production process.

4.21. Social Value Initiatives

- Support local communities through partnerships with disability-focused charities.
- Develop programs to provide discounted or free adaptive sports equipment for individuals with disabilities.
- Collaborate with educational institutions to promote awareness and innovation in prosthetics and assistive devices.

4.22. Business Travel and Internal Carbon Price

- Transition to a fully electric or hybrid company vehicle fleet by 2030.



- Promote remote working and virtual meetings to minimize travel emissions.
- Apply an internal carbon price to all business travel, encouraging low-carbon alternatives.

Declaration and Sign-Off

This Carbon Reduction Plan has been prepared in compliance with PPN 06/21 and associated guidelines for Carbon Reduction Plans. All emissions have been reported in alignment with the Greenhouse Gas Protocol and relevant government standards.

Board Approval

This plan has been approved by the directors and is signed by the Founder/Director.

Approval: N MACABUAG

Date: 25th January 2025

Nate Macabuag (Founder/Director)



Board Response

The Directors of Koalaa Ltd. has reviewed and approved the commitments outlined in the Net Carbon Reduction Plan (January 2025) and fully supports the company's objective to achieve net-zero emissions by 2045.

We recognise the importance of immediate and sustained action to reduce carbon emissions across all aspects of our operations, supply chain, and product lifecycle. The commitments made within the plan reflect our responsibility to align with global climate goals, NHS sustainability targets, and industry best practices.

Having approved the commitments, the Board now instructs the Carbon Reduction Team to develop a detailed implementation plan and pathway to achieve the stated objectives. This plan must provide clear, actionable steps, measurable targets, and timelines to ensure accountability and progress tracking.

A summary of Koalaa Ltd.'s objectives and plans following the above response over the next 12 months is as follows.

1. Establish a Measurable and Transparent Pathway

- Develop detailed milestones for 2025, 2030, and 2040, ensuring steady progress toward net zero.
- Implement a carbon accounting and reporting system aligned with the Greenhouse Gas Protocol, allowing for annual reviews and adjustments.

2. Immediate Emission Reduction Initiatives (2025–2030)

- **Scope 1 & 2:** Reduce absolute emissions by 50% by:



- Upgrading energy efficiency in manufacturing and office spaces.
- Implementing sustainable procurement strategies for low-carbon materials.
- **Scope 3:** Reduce emissions by 30% by:
 - Prioritising sustainable supply chain partnerships.
 - Establishing a low-carbon travel policy for employees and business operations.
 - Developing a circular economy framework for product lifecycle management.

3. Long-Term Carbon Reduction Strategy (2030-2040)

- Achieve a 90% reduction in absolute Scope 1, 2, and 3 emissions.
- Implement carbon-neutral manufacturing processes using sustainable and bio-based materials.
- Expand carbon offset initiatives through accredited partnerships in reforestation, renewable energy, and circular economy projects.

4. Green Supply Chain and Logistics Optimisation

- Transition to low-carbon freight options, including electric, hybrid, or biofuel-powered transport.
- Establish a supplier carbon assessment program with annual audits.
- Develop a green logistics framework prioritizing sea freight over air transport.

5. Innovation in Sustainable Product Design



- Introduce a sustainability rating for all products, assessing materials, recyclability, and carbon impact.
- Invest in recycled and bio-based materials to minimize carbon footprint.
- Promote modular product design to extend the lifespan and reduce waste.

6. Organisational and Cultural Commitment

- Implement company-wide sustainability training to ensure all employees contribute to carbon reduction.
- Establish a Carbon Reduction Steering Committee to monitor and drive initiatives.
- Integrate carbon impact considerations into all business decisions, including supplier selection, R&D, and operational expansion.

7. Annual Review and Progress Reporting

- The Carbon Reduction Team must provide an annual carbon impact report, highlighting reductions achieved and areas for improvement.
- Conduct third-party verification of emissions data to ensure transparency and credibility.
- Engage with stakeholders, including customers, suppliers, and investors, to reinforce commitment and accountability.



Carbon Reduction Implementation Plan (2025)

1. Purpose

This plan provides a structured pathway to net zero by 2040, detailing measurable milestones, priority actions, and intensity-based reduction targets to ensure sustained emissions reductions while supporting business growth.

2. Implementation Timeline & Key Milestones

- Phase 1: Immediate Actions (2025 - 2027): Establish baseline reporting, transition to renewable energy, optimize operations.
- Phase 2: Mid-Term Targets (2027 - 2030); Reduce absolute Scope 1 & 2 emissions by 50%, Scope 3 by 30%; implement sustainable supply chain policies, introduce green logistics.
- Phase 3: Acceleration (2030 - 2040): Achieve 90% absolute emissions reduction, complete circular economy transition, expand offset initiatives.
- Phase 4: Net Zero Achieved (2040+): Maintain carbon neutrality, ensure long-term sustainability integration.

3. Carbon Intensity Reduction Targets

In addition to absolute reduction goals, we will track emissions relative to business growth, ensuring continued reduction in carbon intensity per unit of output.

- Emissions per unit of production (tCO₂e per prosthetic device) from 1.2 baseline to 2030 target of 0.6 (-50%) to 2040+ target of 0.1 (-92%).



- Emissions per revenue (tCO₂e per £100,000 revenue) from 5.4 baseline to 2030 target of 2.5 (-54%) to 2040+ target of 0.5 (-91%)
- Emissions per employee (tCO₂e per FTE employee) from 8.1 baseline to 2030 target of 3.8 (-53%) to 2040+ target of 0.8 (-90%)
- Logistics emissions per shipment (tCO₂e per 1000 shipments) 2.3 baseline to 2030 target of 1.2 (-48%) to 2040+ target of 0.3 (-87%)

These targets will ensure efficiency improvements as we grow, preventing emissions from rising with increased production or market expansion.

4. Priority Actions (2025 – 2030)

A. Energy & Operational Efficiency

- Transition to 100% renewable energy by 2030.
- Reduce energy intensity per unit produced by 50% through equipment upgrades and smart energy management.

B. Sustainable Supply Chain & Logistics

- Implement supplier carbon reporting, requiring partners to cut emissions intensity by 30% by 2030.
- Shift to low-carbon freight options, reducing logistics emissions per shipment by 50% by 2030.

C. Materials & Circular Economy



- Cut material-related carbon intensity by 40% using recycled and bio-based materials.
- Establish end-of-life recycling to reduce disposal emissions by 50% by 2030.

D. Carbon Offset & Residual Emission Management

- Invest in verified carbon removal projects equal to 10% of total emissions by 2030, rising to 100% by 2040.

E. Employee & Business Travel

- Reduce business travel emissions per employee by 50% through virtual meetings and policy changes.
- Fleet electrification – all company vehicles to be EVs by 2030.

5. Monitoring & Reporting Framework

To ensure progress in 2025, we will implement:

- Annual Emissions Intensity Reports tracking reductions.
- Board Progress Reviews annual.

A dedicated Carbon Reduction Team will oversee implementation, ensuring targets remain aligned with science-based methodologies.

6. Resource Allocation & Risk Mitigation



- **Budget:** Investment in energy transition, supplier engagement, and logistics optimization.
- **Risk Mitigation:**
 - Cost fluctuations in sustainable materials → Secure long-term contracts with suppliers.
 - Technology adaptation delays → Maintain an R&D fund for process optimization.
 - Growth-related emissions increase → Implement strict emissions intensity caps.

7. Next Steps & Final Approval

- **Q1 2025:** Finalize emissions intensity reporting structure.
- **Q2 2025:** First supplier engagement meetings & efficiency audits.
- **Q3 2025:** Initiate renewable energy transition & pilot low-carbon shipping.
- **Q4 2025:** First Board review on intensity reduction progress.

This plan ensures Koalaa’s carbon reduction efforts scale with business growth, setting industry-leading standards for sustainable medical device production.

Board Approval

This plan has been approved by the directors and is signed by the Founder/ Director.

Approval: N MACABUAG

Date: 15th February 2025

Nate Macabuag (Founder/Director)