

The title 'CARBON REDUCTION MANAGEMENT PLAN' is written in large, bold, white, sans-serif capital letters. It is centered on a dark green rectangular background that has a white line graph with an upward-pointing arrow overlaid on it. The background of the entire page is a collage of various business documents, including 'GREEN BUSINESS' reports and 'FINANCIAL REPORT' sheets, with a person's hands visible at the bottom, holding some of the papers.

Produced by: **Adrian Clamp**  
Sustainability & Systems Director

Endorsed by: **Eddie Barrett**  
Group Managing Director

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To drive culture change in any business, it is essential to have effective leadership which leads through interventions to behavioral change and if a proactive approach by Directors and Senior Management is seen to be endorsed and encouraged by dissemination through the layers of project management to the operatives on the ground; then you can have a seamless application of best practice which can deliver the carbon emission reduction objectives both in operational support and in project delivery.

**To embed this cultural shift, an Environmental Campaign has been introduced across all projects whereby appointed 'Agents for Change' drive the various sustainability requirements.**

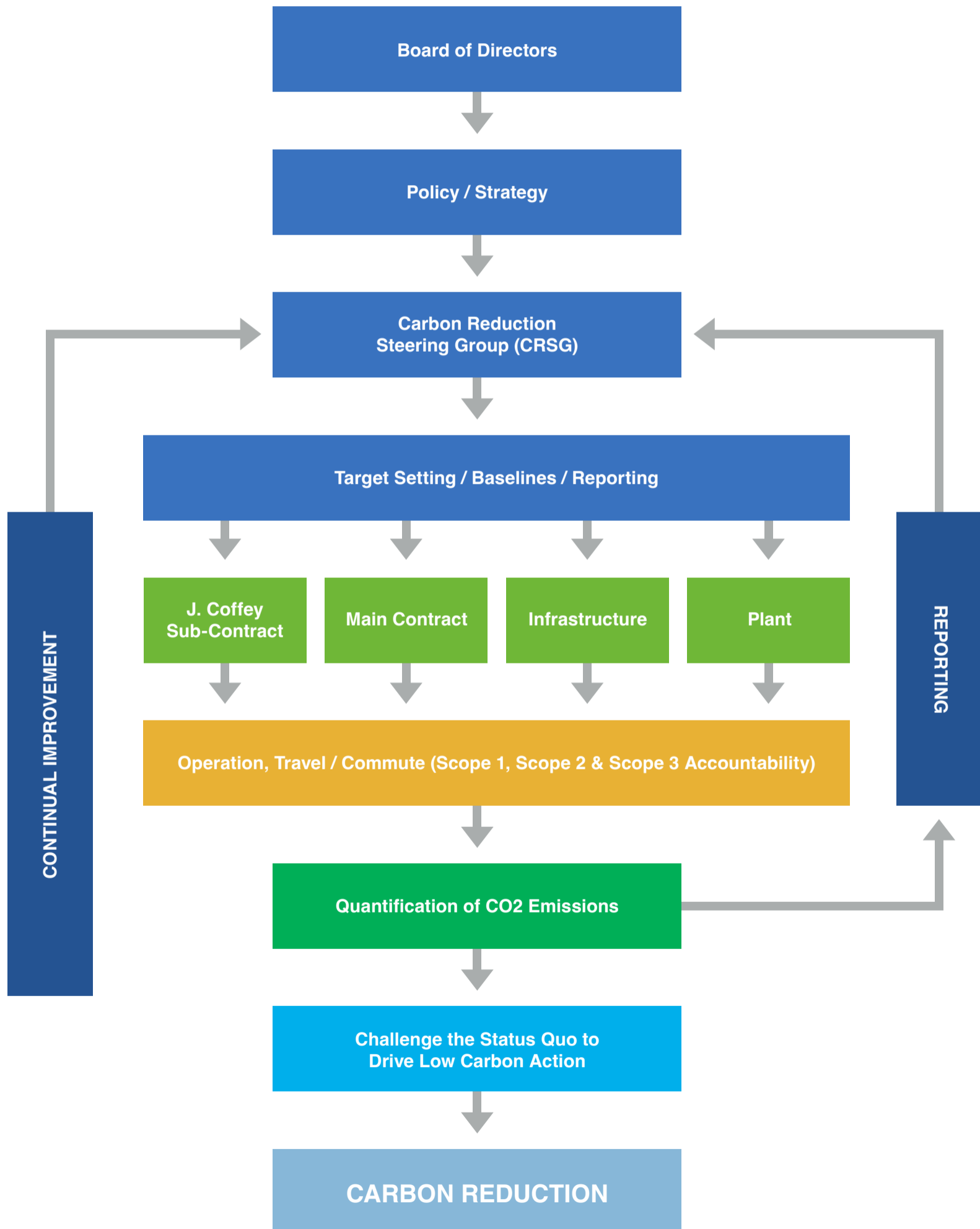
Appointed Agents for Change (AfC) will employ the following in order to qualify for AfC status:

- Undertake associated specific 'Learning Pathways' as provided by the resources available on the Supply Chain Sustainability School and as arranged by the school to meet the requirements of the AfC, in the position in which they have been appointed either internally or operationally. The level of status will be recognised by the following, AfC1 / AfC2 / AfC3. according to the levels of Learning Pathways the AfC has completed such as Level1 Beginner, Level 2 Intermediate & Level 3 Advanced.
- To monitor and implement the previous actions as conducted by the formally named Sustainability Champions (Now renamed AfC's) on projects to include the following but not limited to:
  - i. Monitoring and ensuring environmental project controls are in place & implemented.
  - ii. Ensuring CCS controls are organised, in place (Posters, Abatement Plan Community Engagement Plan and displayed to meet a CCS Assessors compliance.
  - iii. To understand the Section 106 contractual requirements on their project and assist with implementation, monitoring and recording actions taken.
  - iv. To understand the BREEAM contractual requirements for the project and support implementation according to the project BREEAM target.
  - v. To be point of contact, to monitor & report back monthly to the Sustainability Department on all the above.

**To meet the targets set in our objective, the following will be applied:**

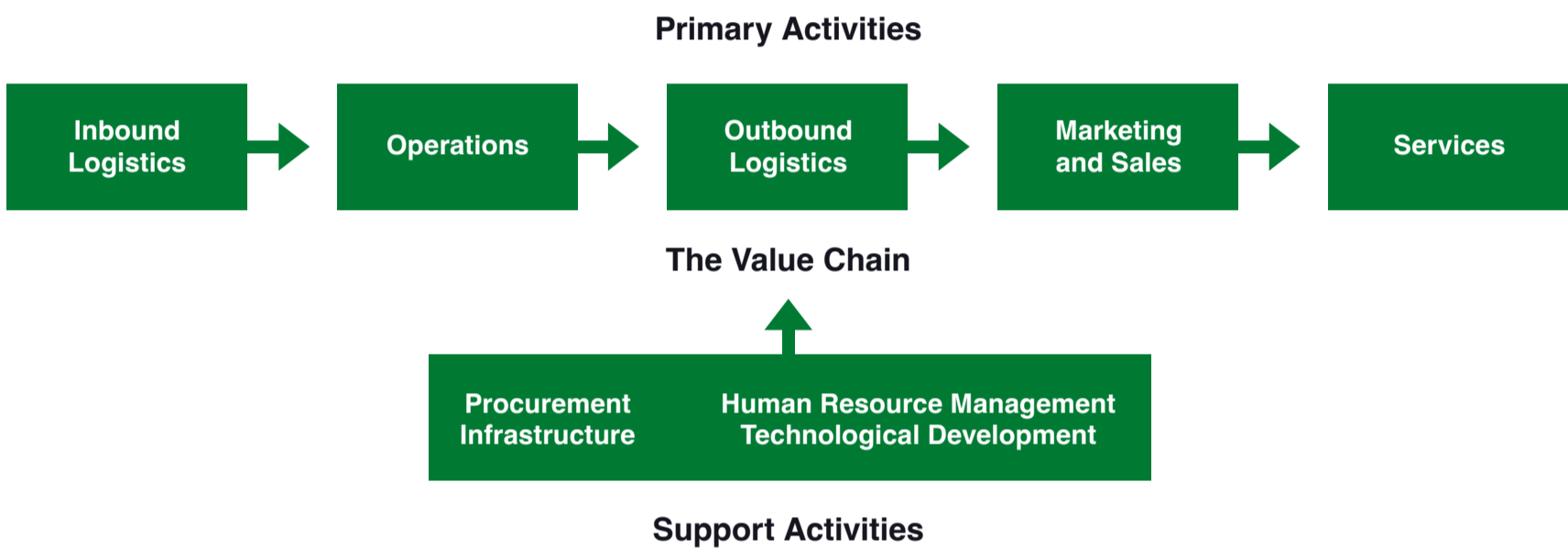
- Embedding our policy and strategy for carbon management within our organisation, which will be consistently communicated to all our staff at all levels and through to the value chain.
- To have a Carbon Reduction Steering Group (CRSG) approved by the Board of Directors and made up of technical and senior management, to have quarterly meeting reviews on how to deliver the strategy.
- To ensure that the gaps in carbon knowledge and skills are met by a implementing a comprehensive 'Learning Pathway' programme through online e-learning CPD accredited modules for project teams through the Supply Chain Sustainability School and provision of carbon reduction awareness Toolbox Talks to site operatives.
- To ensure that all decision making which will have a material effect on the reduction of carbon emissions, receives appropriate senior management level approval.
- Clearly communicating results of operational input for carbon reduction and associated outcomes for projects and the organisation.
- To ensure individual targets and objectives are set that align to organisational goals, ambitions and objectives related to carbon reduction as well as other project drivers (such as cost, programme & sustainability considerations etc.).
- To ensure that roles and responsibilities to help meet the accountability for carbon reduction performance are clearly delegated to appropriate staff and champions within the organisation to spread the desired behaviors and carbon management values.
- To maintain a licensed carbon measurement tool to capture the carbon data input and have a third party provide monthly reports for all projects.
- Investment to be a key consideration in innovation and equipment that can assist delivering our Carbon Reduction objective.

The model below shows the layers of Governance dissemination.



A **value chain** is a business **model** that describes the full range of activities needed to create a product or service. The purpose of a **value-chain** analysis is to increase **production** efficiency so that a company can deliver maximum **value** for the least possible cost.

**Porter's Value Chain:**



Most organisations engage in hundreds, even thousands, of activities in the process of converting inputs to outputs. These activities can be classified generally as either primary or support activities that all businesses must undertake in some form.

According to Porter (1985), the primary activities are:

- 1 Inbound Logistics** - involve relationships with suppliers and include all the activities required to receive, store, and disseminate inputs.
  - 2 Operations** - are all the activities required to transform inputs into outputs (products and services).
  - 3 Outbound Logistics** - include all the activities required to collect, store, and distribute the output.
  - 4 Marketing and Sales** - activities inform clients about services, induce clients to purchase them, and facilitate their purchase.
  - 5 Service** - includes all the activities required to keep the service working effectively for the client after being appointed for delivery of service.
- 
- 1 Procurement** - is the acquisition of inputs, or resources, for the organisation.
  - 2 Human Resource Management** - consists of all activities involved in recruiting, hiring, training, developing, compensating and (if necessary) dismissing or laying off personnel.
  - 3 Technological Development** - pertains to the equipment, hardware, software, procedures and technical knowledge brought to bear in the firm's transformation of inputs into outputs.
  - 4 Infrastructure** - serves the company's needs and ties its various parts together, it consists of functions or departments such as accounting, legal, finance, planning, public affairs, government relations, quality assurance and general management.

## Initial Value Chain Management

Any starting point for value chain engagement, should commence with some dialogue with the tender enquirer's design team, to establish design parameters and any potential energy reduction value engineering. Consider the following:

### Design / Estimating Team (Input):

Is there any opportunity for off-site manufacture (OSM), pre-fabrication such as steel cages for beams and pad foundations to minimise deliveries & travel time, modular construction, all the forementioned to reduce use of plant.

Use of BIM technology to design alternative construction methodologies and propose opportunities to reduce embodied carbon in relation to our package of works.

Substitute formwork for Beamform & Trick Track spacers to reduce excavation and use of timber.

Understand the life cycle analysis of materials such as aggregate options for sub-base, concrete, backfill etc. to procure more locally and reduce the impact of long-distance logistics and to choose more eco-friendly materials subject to approved specification.

Low carbon concrete specification options for high content of GGBS, cement substitute, considering impact and design mitigation measures that compensate for a concrete product that takes longer to cure.

Ensure Purchasing Dept. has been accurately informed of material type and supplier certification compliance.

Consider use of **Bastech BFRP** (Basalt Fibre Reinforced Polymer) in place of Steel rebar accounting for a 60% reduction in carbon emissions. Subject to cost and design approval <http://basalt-frp.co.uk/>

Procurement of next generation battery powered Hilti 'Nuron' battery powered plant & equipment, which is more efficient.

[https://www.youtube.com/watch?v=Fg0RXDjTC1o&ab\\_channel=HiltiGreatBritain](https://www.youtube.com/watch?v=Fg0RXDjTC1o&ab_channel=HiltiGreatBritain)

### Purchasing (Input):

- Ensure material specification has been correctly advised to avoid returns or materials not meeting compliance.
- Request Environmental Product Declarations (EPD's).
- Request no application of cling film wrap to palletised materials unless necessary.
- Request packaging/pallet take back scheme.
- Ensure local purchase where practicable to reduce journey distance of delivery.
- Consider bulk purchase of materials to storage holding area to avoid multi delivery requirement from long distant material providers, to enable call off as required from local source.

**Suppliers & Service Providers (Inbound Logistics):**

- Inform key members of the supply chain of the Organisations Carbon Reduction aspirations and ask how they can support our objective by way of alternative materials or efficiency in service delivery.
- Ask what they are doing to reduce their own carbon footprint.
- Request information associated to the delivery vehicles i.e., Euro 6, to enable data capture.
- Record source of delivery to project destination distance.
- Request service providers to utilize their own employees that are local to the project to reduce commute.
- Our waste contractor O'Donovan are using HVO D+ Biofuel on all their fleet.

**Internal Logistics (Outbound Logistics):**

- Ensure deliveries are planned with vehicles materials loaded in sequence to the planned route for an efficient outbound and inbound journey.
- Avoid peak times on roads to reduce journey time and carbon emissions.
- Ensure the size of vehicle is appropriate to the material or plant to be delivered.
- Ensure the delivery fleet is robustly serviced for optimum performance.
- Use Euro 6 vehicle fleet for emission zone compliance for internal & external logistic deliveries.

**Operations (Outputs):**

- Use electronic plant on site as far as is reasonably practicable.
- Ensure plant & equipment is maintained for optimum performance.
- Do not over specify heavy plant for use on site if a smaller machine will do the job.
- Ensure diesel plant & equipment issued to site is retrofitted where practicable to mitigate fume emission.
- Use HVO D+ Biofuel instead of diesel on 94% of operational plant.
- Ensure the company 'No Idling Policy' is adhered to by delivery vehicles and plant on site that is not in use for short periods.
- Suppliers and service providers have provided delivery vehicle information along with origin of delivery to enable data collation.
- Ensure operative post codes are identified and where practicable appoint local operatives to project to reduce aggregate commute.



- Head office to collate Scope 3 emissions monthly and issue to 'Compare Your Footprint' for the annual report.
- Conduct CRSG meetings to review data quarterly and evaluate findings to mitigate negative outcomes.
- Ensure competent Carbon Reduction Champions (Can be same as Waste Champion) are appointed on all projects.
- Ensure skips are fully utilized to mitigate voids to reduce skip delivery requirements.
- Waste contractor using HVO D+ Biofuel on all their fleet.
- Two-week look ahead reviews are carried out to ensure relevant deliveries can be planned to mitigate reactive delivery requirements.
- Reporting carbon reduction outputs to Main Contractor.
- Ensure waste end destinations divert 100% of waste from landfill.
- For waste timber, use so far as is reasonably practicable the Community Wood Recycling Scheme <https://www.communitywoodrecycling.org.uk/>
- Eliminate single use plastic from office/welfare areas & material packaging.
- Adopt a paperless administration in project offices.
- Utilise opportunities to save water by capturing grey water run-off (Rain water harvesting) into barrel type containers from covered storage areas where possible for use in damping down/concrete cutting/drilling operations.
- Utilise waterless or closed loop wheel washing systems (When responsible for the service provision).

### Human Resource Management:

- Promote Company 'Green Skills' Learning Pathways initiative introduced into company.
- Ensure staff have access to our Carbon Reduction Plan.
- Train/Instruct Project Management to deliver carbon reduction training via online learning e.g., MACE Business School and the Supply Chain Sustainability School.
- Ensure agency workforce providers are aware of our Carbon Reduction aspirations with a view to provide local labour for projects.
- Publicise to workforce of the companies 'Cycle to Work Scheme'.
- Encourage staff to ride to work or use public transport.
- Promote in-house knowledge & mentor/share to staff & operatives.

## Pledge to Net Zero Annual Progress Report 2022

<https://www.jcoffey.com/wp-content/uploads/2024/02/Pledge-to-Net-Zero-Annual-Report-2023.pdf>



J Coffey Construction committed to Pledge to Net Zero on April 30th 2020. It was clear that with Government requiring to meet a Net Zero target by 2050, businesses would come under increasing pressure to adopt a carbon reduction approach to service provision or not be in a position to tender for future projects.

Much has evolved since the original commitment in terms of accurate data gathering and implemented best practice. Year on year we as an organisation, see the needs and expectations of our client base, to meet their objectives as well as our own. We recognise the position we as a business are in with regards to the limited flexibility of reducing our footprint, that is in the most part subject to the life cycle of the materials we use which to a degree is out of our control, nonetheless, on 'World Environmental Day' 2022, we publicly announced our commitment to using HVO D+ Bio-fuel on 94% of all out plant and equipment to replace diesel fuel, this was also supported by our waste contractor service provider, announcing that they were to use the same bio-fuel on all their fleet waste vehicles.

In support of our Pledge to Net Zero aspirations, we implemented the following but not limited to:

- Increased use of electronic plant
- Procurement of next generation battery powered Hilti 'Nuron' battery powered plant & equipment, which is more efficient.  
[https://www.youtube.com/watch?v=Fg0RXDjTC1o&ab\\_channel=HiltiGreatBritain](https://www.youtube.com/watch?v=Fg0RXDjTC1o&ab_channel=HiltiGreatBritain)
- Increased use of LED telescopic lighting towers.
- Ongoing CPD accredited carbon reduction training & ToolBox Talks for operatives.
- In May 2022, In celebration of 'World Environmental Day,' we uploaded on our website our commitment to using HVO D+ Biofuel to replace diesel on 94% of all our Plant
- We introduced a 'Green Skills' initiative in collaboration with the Supply Chain Sustainability School, to all staff with those who complete the three levels of 'Learning Pathways' to become Affiliated members of IEMA (Institute of Environmental Management Assessment)
- Our Sustainability Director Adrian Clamp, was interviewed by Green Element in front of an audience of company leads, advising on how J Coffey implemented their Carbon Reduction initiatives
- A similar presentation by our Sustainability Director was delivered to ninety plus principles and directors of Dukes Education.
- Procurement of 100% renewable electricity tariff across 3 out of 4 operational sites and procuring over 90% of liquid fuels from HVO vs diesel and petrol.

J Coffey Construction have based their **Pledge to Net Zero** 15-year objective, based on the Science Based Target initiative (SBTi) based on a 2019 baseline year resulting in a 4.2% reduction in carbon emissions year on year till 2034.

As at the time of writing this report, J Coffey Construction are able to report the following findings:

**2019** baseline year carbon footprint was the following:

#### **2019 TOTAL EMISSIONS:**

- 2019 Scopes 1+2 = 436.7 tCO<sub>2</sub>e (Scope 1 = 420.9 tCO<sub>2</sub>e, Scope 2 = 15.9 tCO<sub>2</sub>e)
- 2019 Scope 3 = 35,898.5 tCO<sub>2</sub>e (Inclusive of revised methodology for establishing employee commuting)
- 2019 Scope 3 intensity = 690.4 tCO<sub>2</sub>e per site

#### **2019 EMISSIONS (minus construction materials):**

- 2019 Scopes 1+2 = 436.7 tCO<sub>2</sub>e (Scope 1 = 420.9 tCO<sub>2</sub>e, Scope 2 = 15.9 tCO<sub>2</sub>e)
- 2019 Scope 3 = 1,133.8 tCO<sub>2</sub>e
- 2019 Scope 3 intensity = 21.8 tCO<sub>2</sub>e per site

**2021** carbon footprint was the following:

#### **2021 TOTAL EMISSIONS:**

- 2021 Scope 1+2 = 407.8 tCO<sub>2</sub>e (Scope 1 = 391.7 tCO<sub>2</sub>e, Scope 2 = 16.1 tCO<sub>2</sub>e) 2021 Scope 3 = 41,626.2 tCO<sub>2</sub>e
- 2021 Scope 3 = 42,013.5 tCO<sub>2</sub>e (Inclusive of revised methodology for establishing employee commuting)
- 2021 Scope 3 intensity = 688.8 tCO<sub>2</sub>e per site

#### **2021 EMISSIONS (minus construction materials):**

- 2021 Scope 1+2 = 407.8 tCO<sub>2</sub>e (Scope 1 = 391.7 tCO<sub>2</sub>e, Scope 2 = 16.1 tCO<sub>2</sub>e)
- 2021 Scope 3 = 368.1 tCO<sub>2</sub>e
- 2021 Scope 3 intensity = 6.0 tCO<sub>2</sub>e per site

**2022** carbon footprint was the following:

#### **2022 TOTAL EMISSIONS:**

- 2022 Scope 1+2 = 320.7 tCO<sub>2</sub>e (Scope 1 = 300.4 tCO<sub>2</sub>e, Scope 2 = 20.3 tCO<sub>2</sub>e)
- 2021 Scope 3 = 21,647.1 tCO<sub>2</sub>e
- 2021 Scope 3 intensity = 400.9 tCO<sub>2</sub>e per site

#### **2022 EMISSIONS (minus construction materials):**

- 2022 Scope 1+2 = 320.7 tCO<sub>2</sub>e (Scope 1 = 300.4 tCO<sub>2</sub>e, Scope 2 = 20.3 tCO<sub>2</sub>e)
- 2022 Scope 3 = 828.9 tCO<sub>2</sub>e
- 2022 Scope 3 intensity = 15.4 tCO<sub>2</sub>e per site

**2023** carbon footprint was the following:

#### **2023 TOTAL EMISSIONS:**

- 2022 Scope 1+2 = 320.7 tCO<sub>2</sub>e (Scope 1 = 300.4 tCO<sub>2</sub>e, Scope 2 = 20.3 tCO<sub>2</sub>e)
- 2021 Scope 3 = 21,647.1 tCO<sub>2</sub>e
- 2021 Scope 3 intensity = 400.9 tCO<sub>2</sub>e per site

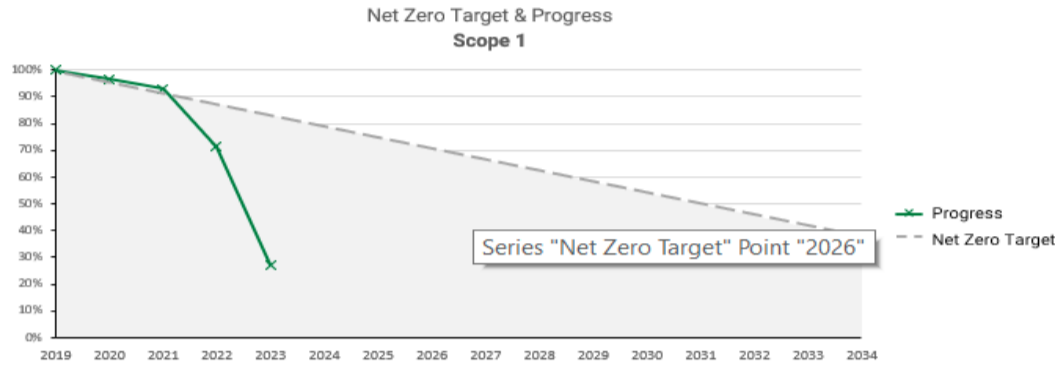
#### **2023 EMISSIONS (minus construction materials):**

- 2023 Scope 1+2 = 115.84 tCO<sub>2</sub>e (Scope 1 = 114.73 tCO<sub>2</sub>e, Scope 2 = 1.11 tCO<sub>2</sub>e)
- 2022 Scope 3 = 681.41 tCO<sub>2</sub>e
- 2022 Scope 3 intensity = 15.8 tCO<sub>2</sub>e per sit

**Progress to 2034 Net Zero Objective:**

**Scope 1 (tCO<sub>2</sub>e): Progress against Net Zero target**

J Coffey have committed to a 4.2% annual reduction in emissions from 2019 – 2034 across all Scopes.



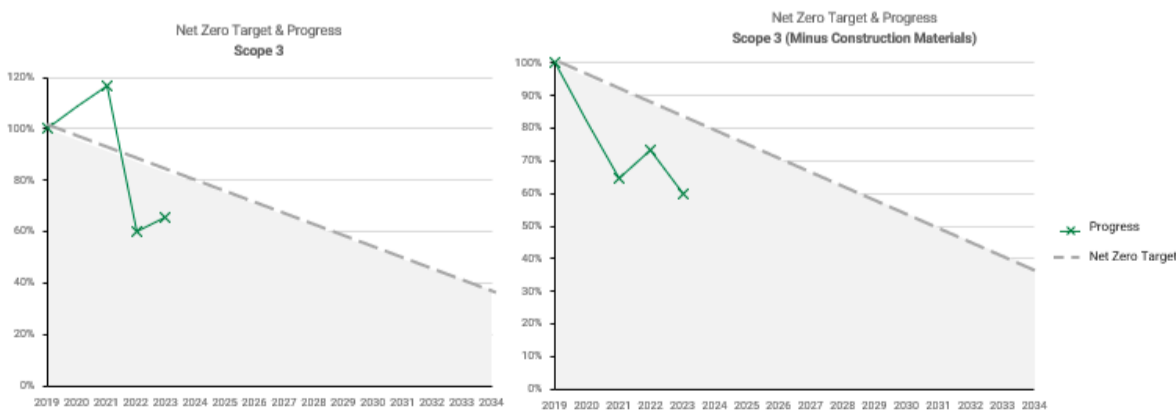
**Scope 2 (tCO<sub>2</sub>e): Progress against Net Zero target**

J Coffey have committed to a 4.2% annual reduction in emissions from 2019 – 2034 across all Scopes.



**Scope 3 (tCO<sub>2</sub>e): Progress against Net Zero target**

J Coffey have committed to a 4.2% annual reduction in emissions from 2019 – 2034 across all Scopes.



**TO SUMMARISE:**

J Coffey's Scope 1 and 2 GHG emissions have significantly decreased since measurement started in 2019, the most significant decrease occurring in the last year (between 2022 and 2023). This is because J Coffey have made progress procuring a 100% renewable electricity tariff across 3 out of 4 operational sites and procuring over 90% of liquid fuels from HVO vs diesel and petrol. As a cumulative result since 2019, Scope 1 and 2 emissions have decreased by 73.5% to date.

All Scope 3 emissions categories have decreased in 2023 compared to a 2019 baseline, with a total 34.9% reduction in absolute Scope 3 emissions. As seen in 2022, the largest emissions reduction this year has been associated with construction waste, reducing by 70.2% in 2023 compared to 2022. This is reflective of O'Donovan's full transition to operating their fleet on HVO D+ Biofuel, diverting more waste from landfill (only 3.52 tonnes of waste went to landfill, compared to 61.8 tonnes in 2022), and a reduction in glass, asphalt, plastic, concrete and wood waste.

The only Scope 3 emissions category that has increased since 2022 is construction materials, increasing by 9.70% in 2023. J Coffey purchased more high-volume items such as concrete and steel rebar in 2023. Therefore, emissions have been normalised by the weight of construction material purchased to assess the changing carbon intensity of purchased materials. Total normalised GHG emissions per tonne product purchased has decreased by 49.9% (from 0.23 tCO<sub>2</sub>e / tonne in 2022 to 0.11 tCO<sub>2</sub>e / tonne in 2023). This suggests that the carbon intensity of the construction materials J Coffey Construction are purchasing has significantly decreased, with more sustainable concrete mixes and recycled aggregate purchases.

J Coffey have also successfully achieved transitioning to the latest ISO 50001:2018 Energy management system standard from the old 2015 version scope of which covers Scope 1 & Scope 2 emissions.

J Coffey have also become a signatory to the UN's 'Race to Net Zero'.

<https://climatechampions.unfccc.int/system/race-to-zero/>

All of the above represents the organisations commitment to proactively engage and implement best practice in our operational delivery, to reduce our carbon footprint in support of our client base and their clients to positively impact on climate change and be the company of choice in leading the fight against Climate Change.

*Adrian Clamp*

Original signed

Adrian Clamp FCIOB CEnv.

**Sustainability & systems Director**

## References:

- Porter, Michael E., "Competitive Advantage". 1985, Ch. 1, pp 11-15.  
The Free Press. New York.