CCSW-HSE-PL-01 (V1)

CONNOR CONSTRUCTION (SOUTH WEST) LTD

Carbon Reduction Plan

EFFECTIVE DATE: DECEMBER 2022

CARBON REDUCTION PLAN

Document ID	Effective Date	Prepared By	Approved By	Next Review Date
CCSW-HSE-PL-01 (V1)	December 2022	Graham Scoulding	Ian Webb	December 2023

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PLAN

1. FOREWORD

Connor Construction (South West) Ltd recognises how important it is for us to make sure we are committed to reducing our carbon emissions and the impact we have on the environment, in everything we do.

This Carbon Reduction Plan (2023-2024) sets out how we will continue to improve the ways in which we use our resources to ensure the least harm to our environment. Each year this grows in importance, as our awareness is raised on the critical importance of changing our behaviours about climate change and sustainability. Legislation and regulation reflect this priority and we are committed to ensuring we meet our requirements and, where possible, exceed expectations.

This year we have calculated our carbon footprint. The engagement with our staff has proved very useful in helping us to identify where we need to change our behaviour and how to do it. This has helped us to prioritise the key areas we want to focus on for the next year, as outlined in the detailed action plan. We also recognise that many of the measures we plan to take to cut our carbon footprint will also help us to operate more efficiently, cut costs, and go some way to protecting us from the inevitable future increases to fuel and energy costs.

This report is prepared in accordance with the **Technical Standard for Completion of Carbon Reduction Plans** and the **Welsh Public Sector Net Zero Carbon Reporting Guidelines**. Links to both sets of documentation are referenced below:

- Technical Standard for Completion of Carbon Reduction Plans
- Welsh Public Sector Net Zero Carbon Reporting Guidelines

2. INTRODUCTION

Connor Construction (South West) Ltd (CCSW) are committed to achieving Nett Zero Carbon Emissions by 2030 and have several processes and methods of working in place. The overall reduction in emissions created by our organisation is to be achieved through the design process, materials selection, construction techniques and operational methods.

As part of our commitment to maintaining the highest levels of environmental management, CCSW has implemented an environmental management system compliant with ISO 14001:2015.

In particular, CCSW will:

- ✓ Take action to eliminate or reduce, as far as practicable, any actual or potentially adverse environmental impacts;
- ✓ Wherever practicable, use appropriate recycled or recyclable materials;
- ✓ Encourage employees to work in an environmentally responsible manner;
- ✓ Obtain support from customers by providing them with products and services that are environmentally responsible in use:
- ✓ Promote a purchasing policy which will give preference, as far as practical, to those products and services which cause least harm to the environment;
- ✓ To minimise the generation of waste, to promote the use of sustainable resources and to make use of all materials, supplies and energy;
- ✓ Ensure, where possible, all waste generated is recycled or disposed of in a responsible manner;

- ✓ Where applicable, the company with take into account the life cycle management of products to reduce whole life impacts.
- ✓ Ensure our personnel are adequately trained on applicable aspects of environmental management.

Climate change is a real and immediate challenge for us all. Carbon dioxide (CO2) levels have already reached their highest level on record and are rising faster than ever. Like all responsible environmentally conscious organisations, (CCSW) has a key role to play in mitigating the effects of climate change, both as a community leader and through the services we provide.

CCSW is a considerable consumer of energy and a direct source of CO2 emissions, arising from our activities and buildings. The U.K will not be immune to the impacts of climate change and therefore we need to act now to adapt and manage risks to service delivery, local communities, infrastructure, businesses, and the natural environment.

3. THE BENCHMARK

To calculate the challenge facing the business, we have calculated the Carbon Footprint for the first time. We have not previously calculated our impact, so this has been a learning experience for our organisation and one which we will improve on over time.

For our first calculation, we have considered the most important activities undertaken by our organisation, which are those that contribute to the most overall emissions, along with those where we can target with appropriate action.

There are several different gases that contribute to global climate change. However, this guide focusses on the three key gases that contribute the greatest climate change impact, from the perspective of public sector activities.

These are:

- Carbon dioxide (CO2)
- Methane (CH4)
- Nitrous Oxide (N2O)

There are four possible parts of emission factors, these are:

- Direct Emissions
- Indirect Emissions
- Well to Tank
- Outside of scope

A brief explanation of these is detailed below, however, more information regarding these classifications are available in the referenced reports and guidance detailed within the Foreword.

Direct Emissions:	Emissions that are released directly by your operations for example, burning fuel in a boiler or combustion of fuel in a vehicle owned by the reporting organisation.
Indirect Emissions:	Emissions attributable to the activity but not occurring directly by the operational activities of the reporting organisation e.g. generation of electricity causes emissions at power stations but the electricity is consumed by the reporting organisation.
Well to tank:	the upstream emissions associated with extraction, refining and transportation of the fuel sources to our organisation's site (or asset), prior to combustion.

Outside of Scopes:	Used to account for the direct carbon dioxide impact of burning biomass and biofuels. The emissions are labelled 'outside of scopes' because the direct impact of these fuels has been determined to be net zero (since the fuel source itself absorbs an equivalent amount of CO2 during the growth phase as the amount of CO2 released through combustion).

In accordance with the **Welsh Public Sector Net Zero Carbon Reporting Guidelines**, we confirm that our data sources are initially calculated using a mixture of Tier 1 through to 3 levels of data sources and for each source of data we confirm how we have derived our emissions data.

Further explanation regarding Tiers is available in the referenced reports and guidance detailed within the Foreword. As an example, Tier 1 being the least accurate form of data (based upon theoretical emissions, based upon m2 of floor plan), through to Tier 3 (based on actual usage of fuels and emissions generated by the building).

We have calculated our emissions for the following source categories:

- Buildings (Offices, Workshops)
- Fleet and mobile equipment (site-based equipment through to lorry movements and vans)
- Waste Generated through our operations (including municipal waste)
- Procurement (purchased Services and goods including subcontractors)
- Business Travel (including private car for commuting)

For each source category, we have separated the emission figures into their relevant emission factors as described previously.

Source: Buildings Offices (fig1)

Description	Fuel Emission	Category	Methodology	Quantity	Unit	Total EF (kg C02e/Unit	Total Emissions (kg C02e)
Office And Workshop	Oil	Consumption	Tier 3	36265	Ltr	0.13567	11447.77
	Electricity	Consumption	Tier 3	15386	Kwh	0.2913	41.33
	Water	Mains Supply	Tier 3	277.4	M3	0.149	41.33
						Total	**15971.05**
						Tonnes	**15.97**

The above is based upon our head office based in Frome and considers both the Offices with connected workshop and yard office. Data in Tier 3 is based upon actual Consumption Figures obtained from usage bills over the year of 2022.

Source: Fleet and Mobile Equipment (fig2)

Description	Fuel Emission	Category	Methodology	Quantity	Unit	Total EF (kg C02e/Unit	Total Emissions (kg C02e)
Plant And Equipment, including lorries,	Diesel	100% Mineral Diesel	Tier 3	5286891	Kwh	0.3123	1651096.06

vans, planers and spray tankers							
Site-based plant and equipment (Pavers, Rollers, Airmasters etc).	Diesel	100% Mineral Diesel	Tier 1	6540275	kWh	0.3123	2042527.88
						Total	**3693623.94**
						Tonnes	**3693.62**

The above data, for Plant and Equipment including lorries and vans, planers and spray tankers, is based upon usage data obtained from vehicle trackers connected to the Samsara network. Site-based vehicles taken on "average residual gang equipment usage of 350 ltr shift x average nr of gangs in operation per annum.

Source: Waste (fig3)

Description	Disposal	Methodology	Quantity	Unit	Total EF (kg C02e/Unit	Total Emissions (kg C02e)
Commercial and industrial waste	Landfill	Tier 3	36	T	467.046	16813.66
Mixed plastics	Recycling	Tier 3	12	T	12.294	147.53
Mixed glass	Recycling	Tier 3	5	T	12.294	61.47
Mixed Paper	Recycling	Tier 3	9	T	12.294	110.65
					Total	**17133.30**
					Tonnes	**17.13**

Waste based upon invoiced costs and tonnages obtained through waste taken from our head office and site-based locations.

Source: Procurement (fig4)

Supply Chain Group	SIC Code	Product Category	Amount Spent	Emission Factor	Total C02e (av high/low)
Mining and quarrying	8	Other mining and quarrying products	£4,250,000.00	0.81	3442500
Manufacturing	14	Wearing apparel	£24,365.00	0.68	16568
	1675	Paper and paper products	£1,500.00	1.18	1770
	18	Printing and recording services	£1,800.00	0.58	1044
	16	Wood and wood products	£1,920.00	0.68	1306

	20.4	Soap and detergents, cleaning and polishing, perfumes and toilet preparations	£384.00	1.44	553
	22	Rubber and plastic products	£3,245.00	0.96	3115
	28	Machinery equipment	£2,750,000.00	0.56	1540000
Construction	41-43	Construction	£6,875,000.00	0.37	2543750
Professional, scientific and technical activities	69.1	Legal services	£16,251.00	0.1	1625
	69.2	Accounting	£3,460.00	0.12	415
				Total	**7552646**
				Tonnes	**7553**

Spend figures taken from management accounts for 2022 and sorted into relevant SIC codes to match reporting requirements.

Source: **Business Travel (fig5)**

NOTE: *Some business travel is included within previous calculations from Samsara data. As to not duplicate this is based upon travel in personal or company cars so excludes for vans.*

Emission Source	Category 1	Category 2	Methodology	Quantity	Unit	Total EF (kg C02/Unit	Total Emissions (kg C02e)
Private car	Medium	Diesel	Tier 2	72000	Miles	0.20514	14770.08
Hire car	Medium	Petrol	Tier 2	3187	Miles	0.24051	766.51
Flight	Domestic	Average	Tier 2	1860	Miles	0.27278	507.37
Public transport	Rail	National Rail	Tier 2	956	Miles	0.04282	40.94
						Total	**16084.89**
						Tonnes	**16.08**

Business travel taken from employees claims for expenses.

Summary of Emissions (per annum)

- Buildings Offices – 15.97T
- Fleet and Mobile Equipment – 3,693T
- Waste – 17.3T
- Procurement – 7553.00T
- Business Travel – 16.08T

TOTAL EMISSIONS 2022 – 11,295T

4. STRATEGIC APPROACH

The **Wellbeing of Future Generation (Wales) Act 2015** is at the heart of the decision making across the service. Our service priorities are aligned to the seven wellbeing goals and the five ways of working. One of our main strategic themes is 'Protecting the Environment' and outlines *"Executing our activities in a manner that helps sustain the planet for our future generations"*, therefore, to highlight our commitment to mainstreaming carbon reduction and protecting the environment, we aim to inform our staff and our communities of our commitment and allocate sufficient resources to deliver our objectives and achieve the challenging targets.

The objectives which have been identified for 2023- 2024 are:

- Take action to eliminate or reduce, as far as practicable, any actual or potentially adverse environmental impacts;
- Wherever practicable to use appropriate recycled or recyclable materials;
- Encourage employees to work in an environmentally responsible manner;
- Obtain support from customers by providing them with products and services that are environmentally responsible in use:
- Promote a purchasing policy which will give preference, as far as practical, to those products and services which cause least harm to the environment;
- To minimise the generation of waste, to promote the use of sustainable resources and to make use of all materials, supplies and energy;
- Ensure, where possible, all waste generated is recycled or disposed of in a responsible manner;
- Where applicable, the company with take into account the life cycle management of products to reduce whole life impacts.
- Ensure our personnel are adequately trained on applicable aspects of environmental management.

5. AREAS OF FOCUS

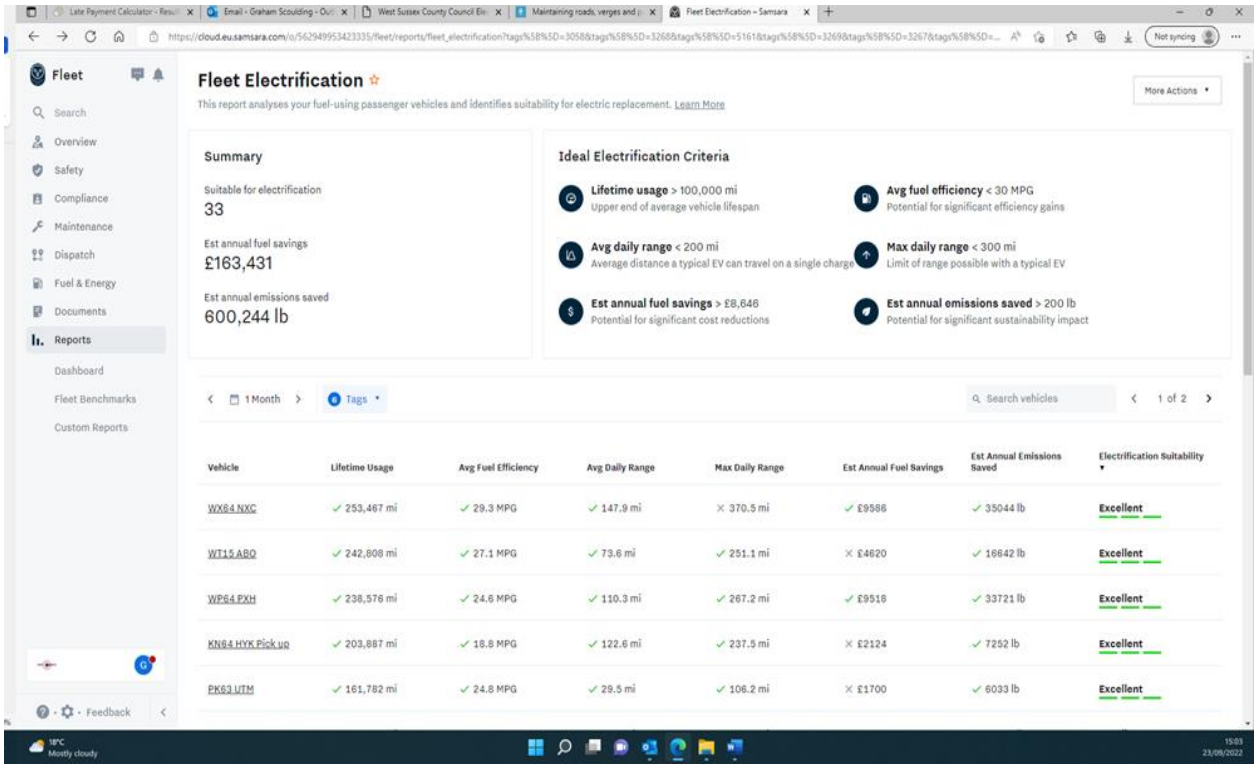
The analysis completed highlights most emissions generated by our business come from our fleet and mobile equipment, which produces circa 3,700T and procurement, of which produces circa 7,553T. So these are the areas that we must focus on going forward. *To address these areas of concern we will make the following changes:*

Fleet

Ninety Percent of our plant and equipment used on site can be run on Shell GTR or HVO fuels. HVO and GTR fuels offer a fast and simple step towards "net zero", with no CAPEX requirement on our part as we have the equipment. They reduce greenhouse gas CO2 emissions by around 90%. Going forward, this means for every 1,000 litres of diesel burned (which would normally produce 2.6 tonnes of greenhouse gas CO2), by using the alternative fuels, we would produce only 195kg GHG CO2 for every 1,000 litres burned. On this basis, assuming a "standard" milling and surfacing shift, where normally we would burn up to 500 litres of diesel, we would produce 97.5kg of CO2 compared to 1.3 Tons.

Utilising this method of reduction, we would save approximately 90% of our emissions produced by our fleet of plant and equipment on site. Using the above Fig 2, 2,042T would be reduced to only 204T.

With regards to small vans used to commute to and from site locations, included within Plant and Equipment, including lorries and vans, included in fig2, we have identified 33 vehicles suitable for electrification. The below report produced by Samsara shows that a potential saving of 272T of CO2 could be saved by the business by adopting electrification.



Procurement

Emissions generated by procurement contributes to 7,553T of our emissions (fig4). From the figures, we can determine that circa 40% comes from the purchase of the asphalt that we lay.

We have known for some time that one of the largest causes of pollution comes from the Asphalt that we lay. Often the specification of the Asphalt is dictated to us by our client, so we are limited in what we can do to reduce emissions. However, we actively encourage the use of Low Temperature Asphalts, as they have a reduced environmental impact due to less heat being required to produce the material. We also select the supplier who uses WRAP used within this mix (typically 30 – 40%). Figures taken from the Tarmac suggest that the use of a low temperature asphalt could save 12% embodied carbon. By promoting low temperature Asphalts on our sites, and assuming we can achieve this for half the material we lay, our emissions should reduce by around 206T (3,442.5T x 0.06 taken from fig4).

To provide our clients with a more environmentally conscious choice, CCSW have recently procured a mobile KMA mixing plant. This means we can produce materials, such as Foamix and CGBM products, from waste generated on site that replace high emission conventional materials used in construction, such as Asphalt Road Bases and Binders, as well as conventional concrete mixes. This is a newly formed part of the business, which we hope in the future will form a part of our Carbon Reduction Plan and will provide further emission savings in the area of procurement.

The other leading cause of emissions come from procurement of “construction” related activities. These include, but are not limited to, sub-contracting of labour and specialist activities on site, such as traffic management. To address this issue, we will give preference to suppliers who adopt the use of alternative fuels and have a documented approach to dealing with climate change and set environmental targets. We will be updating our Supply Chain Questionnaire in due course to monitor those suppliers who are making changes in their business.

At this early stage in our Carbon Reduction Plan, the savings in emissions are difficult to predict. However, by promoting alternative fuels etc, we could estimate a saving of 10% from the total emission in this sector of 254T (10% of 2543T taken from fig4).

The total savings anticipated by adopting the above strategy will result in a potential saving of 2179.47T, as demonstrated below; this represents a potential saving of 19%.

Source	2022 Emissions (TCO2e)	Residual (TCO2e) following mitigation
Fleet and mobile equipment		
Plant & Equipment including lorries and vans, planers and Spray Tankers	1651.10	204
Site based plant and equipment (Pavers, Rollers, Airmasters etc)	2042.53	1770.53
Procurement		
Other mining and quarrying products	3443	3237
Construction	2543.75	2289.375
Total	**9679.87**	**7500.40**

6. DELIVERY TARGETS

The proposed targets for reducing our emissions from the baseline of 2022 over the next two years are as follows:

2023 – To reduce our emissions by 10%

2024 – To reduce our emissions by 20%

Going forwards into 2030, CCSW pledge to be carbon neutral by following the current strategic approach in place and looking into new technologies to assist. CCSW will provide an update to this report in December 2023.

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REVISION HISTORY

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1	Initial issue of Plan.	Graham Scoulding	December 2022