



Cabinet Office

## CARBON REDUCTION PLAN GUIDANCE

### Notes for Completion

Where an In-Scope Organisation has determined that the measure applies to the procurement, suppliers wishing to bid for that contract are required at the selection stage to submit a Carbon Reduction Plan which details their organisational carbon footprint and confirms their commitment to achieving Net Zero by 2050.

Carbon Reduction Plans are to be completed by the bidding supplier<sup>1</sup> and must meet the reporting requirements set out in supporting guidance and include the supplier's current carbon footprint and its commitment to reducing emissions to achieve Net Zero emissions by 2050.

The CRP should be specific to the bidding entity, or, provided certain criteria are met, may cover the bidding entity and its parent organisation. In order to ensure the CRP remains relevant, a Carbon Reduction Plan covering the bidding entity and its parent organisation is only permissible where the detailed requirements of the CRP are met in full, as set out in the Technical Standard<sup>2</sup> and Guidance<sup>3</sup>, and all of the following criteria are met:

- The bidding entity is wholly owned by the parent;
- The commitment to achieving net zero by 2050 for UK operations is set out in the CRP for the parent and is supported and adopted by the bidding entity, demonstrated by the inclusion in the CRP of a statement that this will apply to the bidding entity;
- The environmental measures set out are stated to be able to be applied by the bidding entity when performing the relevant contract; and
- The CRP is published on the bidding entity's website.

Bidding entities must take steps to ensure they have their own CRP as soon as reasonably practicable and should note that the ability to rely on a parent organisation's Carbon Reduction Plan may only be a temporary measure under this selection criterion.

The Carbon Reduction Plan should be updated regularly (at least annually) and published and clearly signposted on the supplier's UK website. It should be approved by a director (or equivalent senior leadership) within the supplier's organisation to demonstrate a clear commitment to emissions reduction at the highest level. Suppliers may wish to adopt the key objectives of the Carbon Reduction Plan within their strategic plans.

A template for the Carbon Reduction Plan is set out below. Please complete and publish your Carbon Reduction Plan in accordance with the reporting standard published alongside this PPN.

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<sup>1</sup>Bidding supplier or 'bidding entity' means the organisation with whom the contracting authority will enter into a contract if it is successful.

<sup>2</sup>Technical Standard can be found at:

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/991625/PPN\\_0621\\_Technical\\_standard\\_for\\_the\\_Completion\\_of\\_Carbon\\_Reduction\\_Plans\\_\\_2\\_.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/991625/PPN_0621_Technical_standard_for_the_Completion_of_Carbon_Reduction_Plans__2_.pdf)

<sup>3</sup>Guidance can be found at:

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/991623/Guidance\\_on\\_adopting\\_and\\_applying\\_PPN\\_06\\_21\\_\\_Selection\\_Criteria\\_\\_3\\_.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/991623/Guidance_on_adopting_and_applying_PPN_06_21__Selection_Criteria__3_.pdf)

# TXM Plant Carbon Reduction Plan

Supplier name: TXM Plant Ltd

Publication date: 25/05/2023

## Commitment to achieving Net Zero

TXM Plant is committed to achieving Net Zero emissions by 2050.

## Baseline Emissions Footprint

Baseline emissions are a record of the greenhouse gases that have been produced in the past and were produced prior to the introduction of any strategies to reduce emissions. Baseline emissions are the reference point against which emissions reduction can be measured.

**Baseline Year: 2018**

### **Additional Details relating to the Baseline Emissions calculations.**

The Green House Gas (GHG) emissions of TXM Plant Ltd.'s operations for the 52-week period ending 31 December 2018. This is the first carbon footprint report completed by Johnsons Green Ltd and will be used as a baseline for future carbon reporting by TXM Plant Ltd. The calculation procedures used within is in accordance with the Greenhouse Gas Protocol (GHG), the most widely used international carbon calculation methodology, compatible with other GHG standards such as the ISO 14064, which also allows for direct integration with national and international greenhouse gas (GHG) registries.

The greenhouse gas emissions for TXM Plant Ltd is equivalent to 4695 tCO<sub>2</sub>e. This includes emissions from energy use in buildings (natural gas for heating and power generation, and purchased electricity), from mobility activities (owned vehicles and business travel) and company operations (diesel for hire plant and equipment).

The most significant source of emissions (53% of total net emissions) relates to the company's core operations followed by own vehicle use, grey fleet & fuel card (43% of total net emissions).

All emissions are calculated using emission factors and reported as carbon dioxide equivalent gases (CO<sub>2</sub>e), as required by the GHG Protocol. The greenhouse gases covered by this calculation are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF<sub>6</sub>) and nitrogen trifluoride (NF<sub>3</sub>)

**Baseline year emissions: Reporting Year 2018**

<b>EMISSIONS</b>	<b>TOTAL (tCO<sub>2</sub>e)</b>
<b>Scope 1</b>	4557.30
<b>Scope 2</b>	130.97
<b>Scope 3</b> (Included Sources)	6.76
<b>Total Emissions</b>	4695.03

**Current Emissions Reporting**

**Reporting Year: 2021**

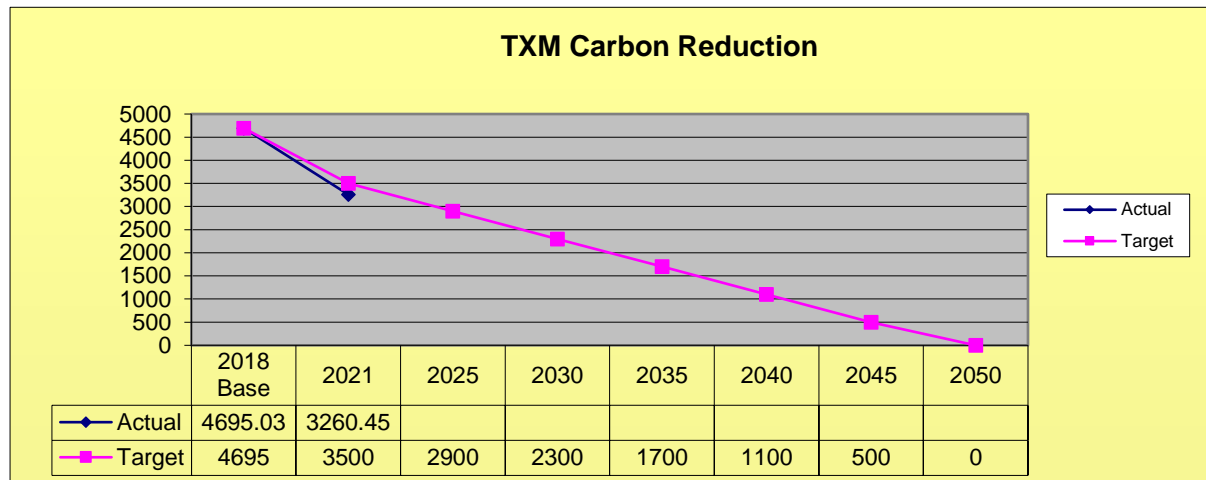
<b>EMISSIONS</b>	<b>TOTAL (tCO<sub>2</sub>e)</b>
<b>Scope 1</b>	3,177.80
<b>Scope 2</b>	74.80
<b>Scope 3</b> (Included Sources)	7.85
<b>Total Emissions</b>	3260.45

**Emissions reduction targets**

In order to continue our progress to achieving Net Zero, we have adopted the following carbon reduction targets.

We project that carbon emissions will decrease over the next two years to 2900 tCO<sub>2</sub>e by 2025 and 2300 tCO<sub>2</sub>e by 2030.

Progress against these targets can be seen in the graph below:



## Carbon Reduction Projects

### Completed Carbon Reduction Initiatives

The following environmental management measures and projects have been completed or implemented since the 2018 baseline. The carbon emission reduction achieved by these schemes equate to 1434tCO<sub>2</sub>e, against the 2018 baseline and the measures will be in effect when performing the contract.

Red diesel consumption is mainly from the hiring and use of machine plants for the construction industry. Due to the character of the construction sector, consumption is typically derived by the programme, weather, ground conditions and the type & numbers of plant items on site on every given day.

### Current Policy

TXM Plant Hire has fitted trackers on their fleet of On Track Plant (OTP) machines which enables TXM Plant Hire to monitor if a specific machine is on or off. TXM Plant Hire also implement a regime of onsite inspections audits which monitors the OTP activities and highlights any idling engines. In addition to new OTP, TXM Plant Hire has a procedure to pre-upgrade programme on all OTP which result into a more efficient and less polluting engine performance.

TXM Plant Hire has a policy to ensure all purchase new diesel engines meet EU Stage IV regulations which requires engines in the 174-hp to 751-hp range to reduce NOx emissions and for better fuel consumption. These engines have sophisticated exhaust after-treatment components and reduced combustion temperatures which radically reduce emissions.

All company drivers carry the AA drive tech e-learning training which has a module on ecological and economical driving. This training programmed is renewed every three years. In addition to compulsory training, there is a strategy to assess high and medium risk drivers for additional training.

TXM Plant Hire Ltd has a robust Road/Rail Vehicle Maintenance policy which has a framework to provide preventive maintenance and scheduled tune-ups for engines to operate efficiently.

The maintenance plan has been developed in line with best practice standards and the TXM Head of Engineering is responsible of its implementation.

TXM Plant conducted a trial on use of Gas to Liquid Fuel Gas-to-liquids (GTL) is a process that converts natural gas to liquid fuels such as diesel rather than producing these fuels from crude oil. GTL has the potential to reduce nitrogen oxide (NOx) emissions by up to 70%, and particulate matter (PM) by up to 90% compared to conventional diesel. The current cost of GTL is slightly higher than the equivalent diesel, but GTL can be used with existing diesel engines without the need for engine modification, new infrastructure or vehicle investment. CO2 emissions are lower for GTL than for diesel. For example, Tank-to-Wheels emissions from Shell GTL Fuel have typically been measured at 4% to 5% lower than conventional crude-derived diesel. A 5% reduction of CO2 at TXM Plant would translate into a savings of 92,899 KgCO2e.

Encouraging video conferencing and use of public transport. Using communications technology rather than making a journey by road is the most effective way of cutting business mileage.

TXM is also certified for ISO14001 and has a yearly audit with an external certified company.

**In the future we hope to implement further measures such as:**

#### **Driver Training**

The biggest single influence in cutting fuel is the person behind the wheel. Training helps drivers to anticipate better, reduce idling and maintain momentum. It is estimates that many fleets could achieve a 10 percent fuel economy improvement through driver training and monitoring. Therefore, it is recommended TXM Plant Hire implements a robust and comprehensive driver training through a dedicated system which provides a streamlined approach to training. The training program should promote energy-efficient driving and target operators to help them reduce fuel consumption, operating costs and harmful vehicle emissions. The programme should focus on energy-management factors that are within the operator's control. These include start/stop techniques, maintenance procedures and haul operations.

#### **Hybrid or Electric Car and Van Fleet**

We are looking into replacing our company petrol and diesel car fleet with EVs, to be followed by our van fleet when charging infrastructure and EV range has improved, with the aim of having a completely emission-free fleet by 2030.

#### **Hybrid or electric for On Track Plant machines.**

TXM Plant will look into the Hire offers of hybrid plant alternative to their clients. A good alternative would be hybrid excavators. A hybrid hydraulic excavator has a swing system integrating electric motors. It charges a capacitor the power generated during swing deceleration, in order to assist the hydraulic motor for swing acceleration. Furthermore, another motor which is connected to the hydraulic pumps adjusts the amount of electric energy stored in the capacitor. It assists power generation and support engine. In this way, fuel consumption can be reduced. A typical hybrid excavator can reduce fuel consumption by 15% compared to the standard model.

#### **Install cab heaters to reduce engine idling:**

This is a simple cost-effective solution to heat up the cab during cold weather and prevent the engine from idling, thus, decreased engine wear and fuel consumption. A good quality air heater cost around £250 each and can reduce idling time by 10% during the winter period.

**Use of solar panels on all 'On Track Plant' trailers and wheeled attachments:**

Reduce the consumption of diesel by providing photovoltaic cells mounted on panels connected to the 'On Track Plant' trailer and wheeled attachment. Sunlight is converted into electricity and energy produced is stored within the batteries of the generator. The inverter within the generator is used to step up the voltage, for using the generator.

**Green Fleet Review:**

Engage with the Energy Saving Trust to conduct a Green Fleet Review. The review is free and funded by the Department of Transport and run by the Energy Saving Trust. The aim of the Green Fleet Review is to identify cost effective actions that will reduce transport emissions, help lower running costs, and improve the environmental performance of business travel. As well as calculating a fleet carbon footprint, the Energy Saving Trust will analyse and advise TXM Plant in the following areas:

- company car policy
- fuel management systems and processes
- grey fleet management
- data management
- mileage reduction strategies.

Recent figures from the Energy Savings Trust suggest a Green Fleet Review could save £1,000 per year for every vehicle in the fleet. For example, with a fleet of 300 cars this could translate into a saving of £300,000.

**Improve fuel data set:**

Improving the data set will enable TXM Plant to track the effect on emissions of changes made within the fleet profile and its operation, and therefore to see the effect of the implementation of measures put in place in the future to reduce emissions more clearly. A system needs to be in place to allow fuel use to be aligned with mileage for all staff with fuel cards in conjunction with the business and private mileage split apportioned to it where staff are not on private fuel benefit. To further improve the fuel data set, staff should be asked to provide accurate odometer readings each time they refuel.

The Energy Saving Trust suggests organisations can realistically achieve savings between a 10-15% reduction in fuel purchases from managing fuel and mileage more precisely. This can be accomplished via approaches such as better data collection and record keeping, monitoring actual fuel economy performance of individual vehicles and monitoring vehicle mileages to help ensure that the most cost effective and efficient methods of carrying out core business activity are being used. It is possible to utilise this information in a variety of ways. One option that TXM Plant is recommended explore is the production internal employee league tables for efficient, sustainable driving. The impact of internal competition & driver league tables can result in a sustained reduction in fuel use and improved driving styles. Due to the diverse nature of a company's fleet of vehicles, monitoring the MPG by driver as a % against the vehicle manufactures recommended MPG figure over a rolling 12-month period ensures individual (vehicle or driver) performance is comparable with other individuals & groups. By listing vehicles/staff by their performance, it becomes possible to identify exceptions by vehicle make/model or driver and reactive action can be taken. In summary the areas to monitor for each vehicle are:

- Average pence per mile (monthly and yearly to date).
- MPG as a % of the manufacturers MPG.
- Exceptions < 80% identified.
- Set targets between the manufacturer MPG and 15% below it is depending upon the area of operation and historical performance indicators.

## **Hydrogen Excavator:**

A hydrogen excavator is an excavator or digger machine that uses hydrogen as a fuel source instead of traditional fossil fuels like diesel or gasoline. Hydrogen excavators are part of the broader effort to reduce carbon emissions and transition to more sustainable energy sources.

Hydrogen excavators typically use a hydrogen fuel cell system to generate electricity, which powers the electric motors that drive the excavator's movements and hydraulic systems. The fuel cell combines hydrogen from onboard storage with oxygen from the air to produce electricity, with water vapor being the only by-product. This emission-free operation makes hydrogen excavators environmentally friendly and helps to reduce greenhouse gas emissions.

The advantages of hydrogen excavators include clean energy: Hydrogen fuel cells produce electricity by combining hydrogen and oxygen, generating only water vapor as a by-product. This makes them a zero-emission energy source, contributing to reducing carbon footprints and air pollution.

Quiet operation: Hydrogen excavators tend to be quieter than their diesel counterparts, reducing noise pollution during construction activities.

Reduced maintenance: Compared to internal combustion engines, hydrogen fuel cells have fewer moving parts and, therefore, require less maintenance.

High torque and performance: Hydrogen excavators can deliver comparable performance to traditional excavators in terms of power and torque, making them suitable for a variety of construction and excavation tasks.

However, there are also some challenges associated with hydrogen excavators:

Infrastructure: The availability of hydrogen refuelling stations is currently limited, which can restrict the operational range and refuelling options for hydrogen excavators.

Cost: Hydrogen fuel cell technology is still relatively expensive compared to conventional fossil fuel-powered excavators. However, as the technology advances and economies of scale are achieved, costs are expected to decrease.

Hydrogen storage: Hydrogen is a highly flammable gas and requires specialized storage and handling. Ensuring the safety of hydrogen storage and refuelling infrastructure is crucial.

Energy efficiency: The overall efficiency of hydrogen production and fuel cell systems is still lower compared to direct electric power or other energy storage methods. Further advancements in technology are needed to improve efficiency and address energy loss during the conversion processes.

As hydrogen technology continues to evolve and infrastructure develops, hydrogen excavators have the potential to play a significant role in the construction industry's transition towards cleaner and more sustainable operations.

## 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<sup>4</sup> and uses the appropriate Government emission conversion factors for greenhouse gas company reporting<sup>5</sup>.

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<sup>6</sup>.

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

### Signed on behalf of the Supplier:



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Richard Romaszko, Assurance Director, TXM Plant

Date: 25/05/23

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<sup>4</sup><https://ghgprotocol.org/corporate-standard>

<sup>5</sup><https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting>

<sup>6</sup><https://ghgprotocol.org/standards/scope-3-standard>