

Frontier Networks Limited Carbon Report

31st August 2023

Frontier Networks Limited pledge to be Net Zero in Scope 1 and 2 by 31st August 2026

Executive Summary

Frontier Networks Limited have an ambitious plan to be Net Zero in Scope 1 and 2 by 31st August 2026. This last 12 months was primarily about understanding and measuring our carbon emissions, but we've already made a good deal of progress. Work so far includes a large solar deployment, a central ground source heat pump and changes in practices to reduce road miles.

We were keen that any offsets required should be local and offer additional benefits to the environment. Having grown up in the area it was important for me not to just to offset with vouchers, so far have planted over 100 semi-mature native species trees and maintain a 10 acre wildflower meadow adjacent to our rural site. In the next stage of our plan we aim to plant 4000 trees over a 2 hectare area adjacent to an existing woodland and stream. This local approach doesn't just offset carbon it also creates biodiversity, this includes our resident Barn owl imaginatively called "Barney".

In the proceeding 12 months Frontier became ISO 14001 with a view to ongoing improvements in our general environmental management. Work has already taken place to improve water management, waste management and pollution risk. This includes, rainwater harvesting, waste segregation, a new filtered bunded pole storage area alongside revised processes to minimise waste.

I personally feel our report below highlights the work done to date and a credible roadmap to Net Zero in Scope 1 and 2 by 31st March 2025.

- Steve Jagger MD Frontier Networks Limited

Introduction

The following is our first annual report of our carbon position as of 31st August 2023, it was approved by the board on 11th September 2023 for publishing, the location of this and future updates and reports will be on our website www.frontiernetworks.co.uk

We have first monitored and measured our impact and have then created a multi-level strategy to reduce impact where possible, in all activities, mitigate if we can and then offset locally any remainder to complete the cycle. Our approach is to use innovation and lateral thinking to produce long term, sustainable solutions that directly benefit the locality. We also aspire to create jobs and other social benefits from our activities, alongside physically enhancing the environment.

Our Net emissions stand at 133.4 tonne CO2 in Scope 1 and 2, after local offset, for the period 1st September 2022 to 31st August 2023. This figure is to be used for the purpose of creating our ambitious targeted plan to be Net Zero in Scope 1 and 2 by 31st August 2024.

Overview of Current position

The figures below relate to the period 1st September 2022 to 31st August 2023 unless they state to the contrary. Where a full year's data was not available data was prorated.

Collecting Accurate Data

An important first step is accurate data and ongoing monitoring of scope 1 and 2 inputs, this is achieved primarily through the following investments;

1. Electric production, import, export, and usage areas are now monitored 24/7, in hourly increments, by the installation of automated check meters. Data is sent via GSM to a central platform for analysis.
2. Fuel used from the onsite storage is logged per vehicle at fill up and, where this is not possible, fuel cards are used, this again facilitates logging of fuel usage per vehicle. This data is consolidated monthly for analysis.

Scope 1

Emissions in Scope 1 are those directly from the activities of the business, it was quickly obvious these are mainly from our fleet. Policy changes were quickly put into place to mitigate some of this, these include;

- We reduced road miles by allowing staff, where possible, to take their commercial work vans home, therefore eliminating a high percentage of commute mileage.
- We keep centralised meetings to a minimum and have replaced most external meetings with video conferencing to keep non-essential travel to a minimum.
- Vans are kept up to date, serviced regularly and are purchased considering efficiency.

Fleet Emissions

- Diesel used = **55,700 litres** (**26,400 litres** from onsite tank + **29,300 litres** from fuel cards) = **139,937 kgCO₂e^(a)**

Other Factors Affecting Source 1 Emissions

Although imported electricity is Source 2 (indirect emissions) we produce much of our own power through a large Solar PV system, exporting the surplus clean energy to the grid. This, combined with investment in technology to reduce our energy consumption on site, has already had a good mitigating effect on our direct emissions.

- Solar produced onsite in the period was **37,650kWh** of which **7,750kWh** was exported and **29,990kWh** was consumed by the business. The quantity consumed was **29,990kWh x 0.233^(b)** = a saving of **7.0 tonne CO₂** but for the purposes of this report this is zero emissions.
- Office heating and DHW is via a central Ground Source heat pump with a large buffer tank, to take advantage of the solar PV generated on site. Heat Pump energy saved according to the export meter is **87,870 kWh x 0.233^(b)** = a saving of **20.5 tonne CO₂** but for the purposes of this report this is zero emissions.
- All onsite lighting has been converted to low consumption LEDs.
- Investment in the IT system design has eliminated the requirement for servers further saving power.

Direct current offsets

The direct current offsets, by this we mean the ones onsite, or immediately local to the site, are **15.9 tonne CO₂**, this comprises;

- Exported Electricity = 7750kWh x 0.233 kgCO₂e per kWh^(b) offsetting **1.8 tonne CO₂**
- 100 Trees x 21kgCO₂ per tree^(c) offsetting **2.1 tonne CO₂**
- 4 hectare wildflower meadow at 3 tonne CO₂ per Hectare ^(d) offsetting **12 tonne CO₂**

This gives Scope 1 emissions of **149.3 tonne CO₂** less offset of **15.9 tonne CO₂**, which equals a Scope 1 total of **133.4 tonne CO₂** in the period.

Scope 2

Scope 2 is from indirect emissions from imported energy, this for Frontier is electricity. Although having changed to green energy the output is zero for the purposes of this report reduction in power consumption means we export more clean energy for benefit elsewhere.

Scope 2 Emissions

Imported Green Electricity - **108,670 kWh** would have produced **23,074 kgCO₂e^(b)** but due to buying green energy this is reduced to zero for the purposes of this report.

Business flights are zero and most meetings are local or virtual and already accounted for in Scope 1.

So there is currently a negligible additional effect from Scope 2 in the period.

References for Scope 1 and 2 Calculations

- (a) Using the Carbon Trust Footprint Calculator
- (b) The current UK electricity carbon factor as published by the Department for Environment, Food & Rural Affairs (DEFRA) is 0.233 kgCO₂e per kWh of electricity consumed.
- (c) Trees absorb an average of 21kgCO₂ per annum. Although these trees are young and will currently be below this figure in the previous year their carbon cycle is 100 years plus hence using the average figure.
- (d) 4 Hectares of wildflower meadow absorbs 12 tonnes of carbon per year. Research carried out by Miles King, Director of Conservation for the Grassland Trust, shows that grasslands lock up a fifth of all soil carbon in the UK. 3 tonnes per Hectare of carbon is absorbed and stored in fibrous root mats and organic matter.

Scope 3

For clarification we are not including Scope 3 for carbon purposes in this report. Scope 3 is yet to be fully calculated because; a) due to the level of complexity, and, b) it is quite subjective. As Frontier is an engineering business and materials are provided “free issue” we just have the role of storage and transportation of these goods, the associated emissions from these activities have already been taken into account in our scope 1 and 2 calculations. Waste and water management is an area where we have invested heavily, and this is within the scope of our ISO14001. Details on this are covered later in the report.

Reaching Net Zero

In Scope 1 and 2 we have calculated to have produced 133.4 tonne CO₂ in the 12 months to 31st March 2023.

This is compared to an average household producing 8.1 tonne CO₂ so we recognise there is work to be done.

To meet this target we are this year (23/24);

1. Increasing the efficiency of our solar production and further optimising electric usage.
2. Keeping it local, setting a policy of only operating within a 100km radius of our base.
3. Moving some cars to EV with solar charging.
4. Planting 4000 trees on our neighbouring farming operation this planting this season. These will be native species trees and form part of the Great Northern Forest. This equates to 4000 x 21kgCO₂ per tree per year average = 84 tonne CO₂.

At current levels we recognise this alone may not meet our commitment to be Net Zero by 2025. In addition to these activities we will continue to look at means of reducing direct emissions, areas under current evaluation include;

- We are evaluating further electric replacements within the fleet alongside the practicalities of remote charging. It is envisaged that some vans and handling equipment, mainly the ones that run from our warehouse facility, could be changed to EV. (Forklifts, stores vans, supervisor vehicles etc.)
- Battery storage is being evaluated to further extend self-sufficiency, though this will not reduce CO₂ for the purposes of this report.

Following our 2024 report we will look to locally offset further CO₂ as required.

Other Environmental Work.

Frontier is ISO 14001 (Environmental Management), within its scope we continue to improve our facilities and processes.

Waste Management

- We follow the hierarchy of Reduce, Reuse, Recycle
- We work with an on-site up-cycling company, Riverbank Farm Designs, who make furniture and other items from much of our otherwise timber waste.
- Waste is separated on site to reduce general waste to a minimum, our main waste products are bailed and stored for efficient recycling.

Water Management

- A 30,000l rainwater harvesting system, collects rainwater from the main building, stores it underground and supply's it to the site's WC's and outside taps which are used for wash down and irrigation. Saving up to 200 tonne of mains water per year.
- Waste water from the building is processed through an on site digester to the latest environmental standards.
- Pole storage area is bunded with run off water filtered through specialist creosote filters, protecting the groundwater and the knock on environmental costs of sump waste.
- Keeping the site clean and tidy gives a good working environment for the team, activities such as keeping the roads clean and controlling wind blown litter help the wider environment as well.