

Customer: JN Bentley

Project: Carbon Reduction Transportation

Date Range: July 2023

Carbon Saving: 10,540.59kg CO₂e



Scope of Project

With sustainable options being crucial for many businesses, JN Bentley partnered with Go Green for an innovative solution to their material transportation needs. JN Bentley required 1600 tonnes of 6l Granite from Bardon Hill Quarry, Coalville to be delivered to the Holderness Drain Pumping Station in Hull.

Challenge

Traditionally, smaller suppliers tend to rely on 8-wheel tippers which can carry up to 20 tonnes maximum. This approach would require a minimum of 80 movements to transport the 1600 tonnes of 6l Granite; the environmental impact and logistical efficiency of so many movements were considerable concerns for JN Bentley.

Solution

Together, we found an alternative which was to utilise an Artic Tipper, which has a maximum carrying capacity of 28 tonnes. This increased capacity means we could reduce the number of movements to a minimum of 57, taking at least 23 x 8-wheel tipper wagon movements off the road.

Quarry Address	Delivery Address
Bardon Hill Quarry, Bardon Road, Coalville, LE67 1TD	Holderness Drain Pumping Station, King George Dock, Hull, HU95PS

Total distance between sites = 113 miles each way.

Calculations

The below calculations, which use the GHG Protocol 2023 conversion factors, show the reduced emissions impact, this solution was able to achieve.

8-Wheel Tipper Emissions Calculations	Arctic Tipper Emissions Calculations
1 load at 0% laden = 1.20186kg CO2e per mile	1 load at 0% laden = 0.99072kg CO2e per mile
1 load @ 113 miles = 135.81kg CO2e per movement	1 load @ 113 miles = 111.95kg CO2e per movement
1 load at 100% laden = 1.72186 kg per mile	1 load at 100% laden = 1.47627kg per mile
1 load @ 113miles = 194.57kg CO2e per movement	1 load @ 113 miles = 166.82kg CO2e per movement
Total emissions for one delivery and return to quarry would be 330.38kg CO2e.	Total emissions for one delivery and return to quarry would be 278.77kg CO2e.
Based on 80 x estimated number of movements: 330.38 x 80 = 26,430.4kg CO2e	Based on 57 x estimated number of movements: 278.77 x 57 = 15,889.81 kgCO2e
Total carbon emissions created would have been 26,430.4 kgCO2e.	Total carbon emissions created were calculated at 15,889.81 kgCO2e.
<i>CO2 conversion taken from DEFRA Freighting Goods, Diesel HGV Rigid (>17t)</i>	<i>CO2 conversion taken from DEFRA Freighting Goods, Diesel HGV Articulated (>3.5 - 33t)</i>

Outcome

By using Arctic Tippers as an alternative, we were able to see a significant environmental benefit through a reduction of over 10.5 tonnes of carbon created. Alongside the carbon saving, we also saw an increased efficiency in the project through less traffic, shorter delivery times and less wear and tear on infrastructure.

This project showcases our commitment to providing environmentally conscious and efficient solutions, to a client base whom that is of equal importance to. By finding this complementary method of transportation, we were able to provide JN Bentley with their immediate material needs, but also contributed to their broader sustainability goals. It demonstrates our strong relationship and our dedication to understand customer requirements whilst delivering an efficient service.