

# Carbon Emission Report for 2024 running season

Two key events in 2024 had a significant impact on our carbon footprint.

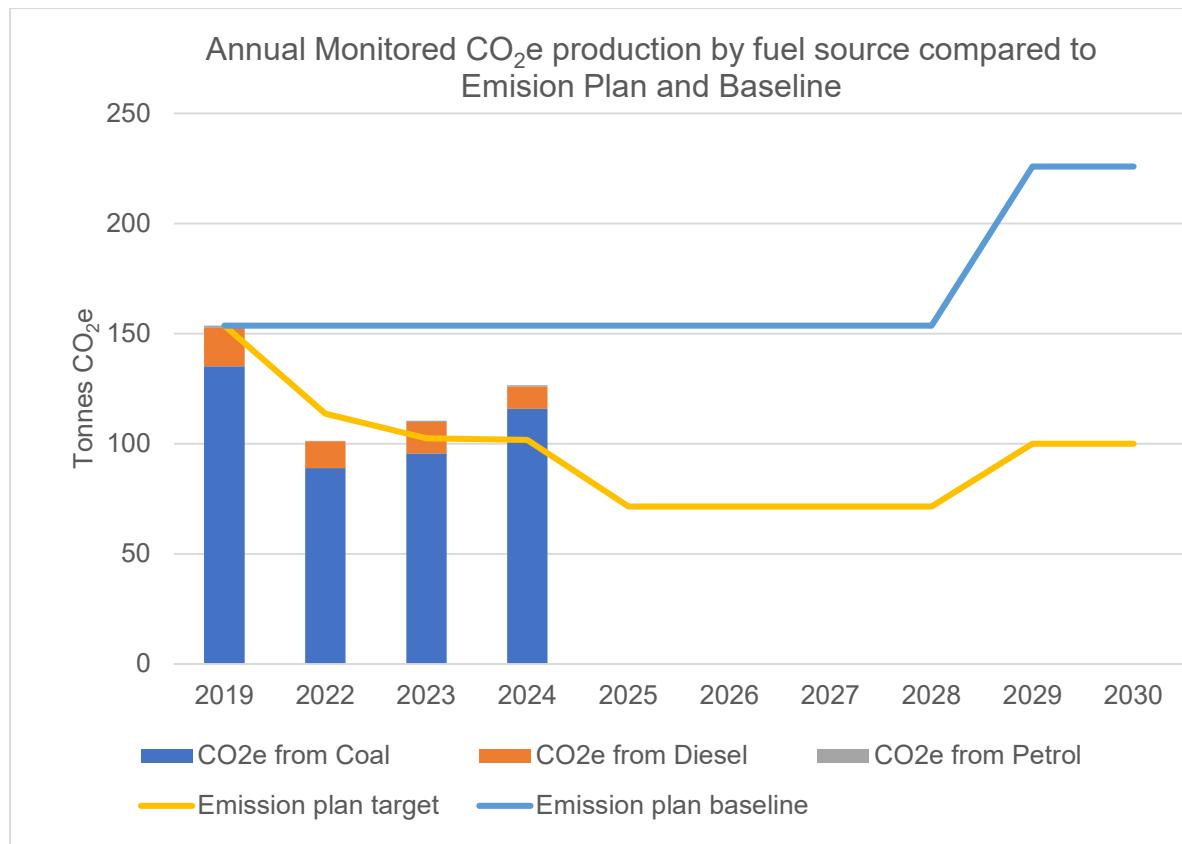
Firstly, and most significantly following the closure of mining operations at Ffos-y-Fran our remaining stock of Welsh steam coal was used up on August 12<sup>th</sup> August 2024. The railway has since been using Heritage Smokeless Steam Coal. This is a UK manufactured product developed by CPL Industries in consultation with the Heritage Railway Association specifically for the heritage steam sector. It is made from a blend of anthracite, coal and coke mixed with a binder and is formed into ovoid lumps. It has proved suitable for our needs. The manufacturers advise that compared to ordinary bituminous coal it produces 80% less smoke and up to 23% less CO<sub>2</sub> but for reporting purposes, this potential reduction in CO<sub>2</sub> has been ignored pending further evidence based tests.

Secondly, on 14<sup>th</sup> August another locomotive Sir George Newnes entered operational service. This locomotive is of comparative size and power to Lyn but being an older and simpler design, it uses approximately 20% more fuel. Lyn, constructed new in 2017 and incorporating several modern engineering refinements is our most efficient locomotive, burning no more fuel than the much smaller and less powerful 1915 built locomotive Axe.

During the year daily fuel consumption, measured in buckets, has been recorded so that we are able to calculate a burn rate in kg/km for each of our locomotives from which annual CO<sub>2</sub>e production can be calculated.

The overall effect of transitioning from Welsh Steam Coal to Heritage Coal and Sir George Newnes entering service combined with an increase in total journeys in the year has resulted in an increase in coal consumption compared to last year with a corresponding increase in CO<sub>2</sub> production. Although the amount of CO<sub>2</sub> produced exceeds the 2024 planned target it is below the 2019 baseline. Petrol consumption by small tools is similar to previous years and diesel consumption has reduced by a significant amount compared to last year.

	Tonnes CO <sub>2</sub> e produced by source										
	2019	2022	2023	2024	2025	2026	2027	2028	2029	2030	
CO <sub>2</sub> e from Coal	135	89	96	116	0	0	0	0	0	0	
CO <sub>2</sub> e from Diesel	18	12	14	10	0	0	0	0	0	0	
CO <sub>2</sub> e from Petrol	1.0	0.2	0.7	0.7	0	0	0	0	0	0	
<b>Total monitored CO<sub>2</sub></b>	<b>154</b>	<b>101</b>	<b>110</b>	<b>127</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
<b>Emission plan target</b>	154	114	102	102	72	72	72	72	100	100	
<b>Emission plan baseline</b>	154	154	154	154	154	154	154	154	226	226	



20th February 2025