

Our carbon footprint 2021



Due to methodological changes, our carbon footprint has now been re-baselined at 2020/21. This report will form as the starting point for progress assessment going forward.

Introduction

We're committed to building a transport network fit for the future and we have set targets to decarbonise our network and operations by 2030.

The Welsh Government has set out its legal commitment to achieve net zero emissions by 2050, but is pushing to "get there sooner".

At Transport for Wales (TfW) we're committed to play our part in building a brighter future for future generations and our environment.

We're taking steps to reduce our impact on climate change

We're;

- » electrifying 172km of track
- » introducing new rolling stock
- » encouraging more sustainable modes of travel
- » helping to build better, more accessible active travel routes with our partners

- » aiming for zero-net-loss in biodiversity by creating habitats
- » working with our supply chain to reduce our effect on carbon emissions together
- » developing our Climate Change Adaptation plan
- » crafting a costed plan to help us to decarbonise, as a transport operator, by 2030

Our carbon footprint tool

A carbon footprint tool has been developed by the Carbon Trust to calculate our carbon footprint.

This tool has been structured so that the sources of data can be input and then this automatically calculates the footprint.

This allows us to create a year on year comparison of its footprint and monitor that progress is being made.

What are scope emissions?

SCOPE

1

Direct emissions resulting from operations and activities that TfW owns or controls.



Transport fuels



Owned building emissions



Road fuel

SCOPE

2

Indirect emissions from grid-supplied energy



Purchased energy

SCOPE

3

Indirect emissions resulting from activities related to TfW operations, but not within our direct control.



Employee commute



Electricity (transmission & distribution)



Supply chain



Waste



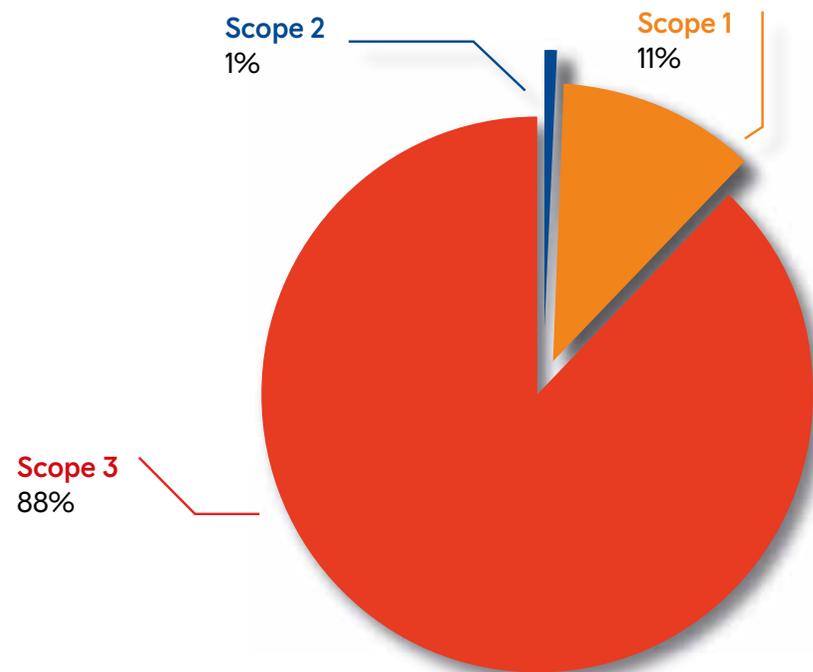
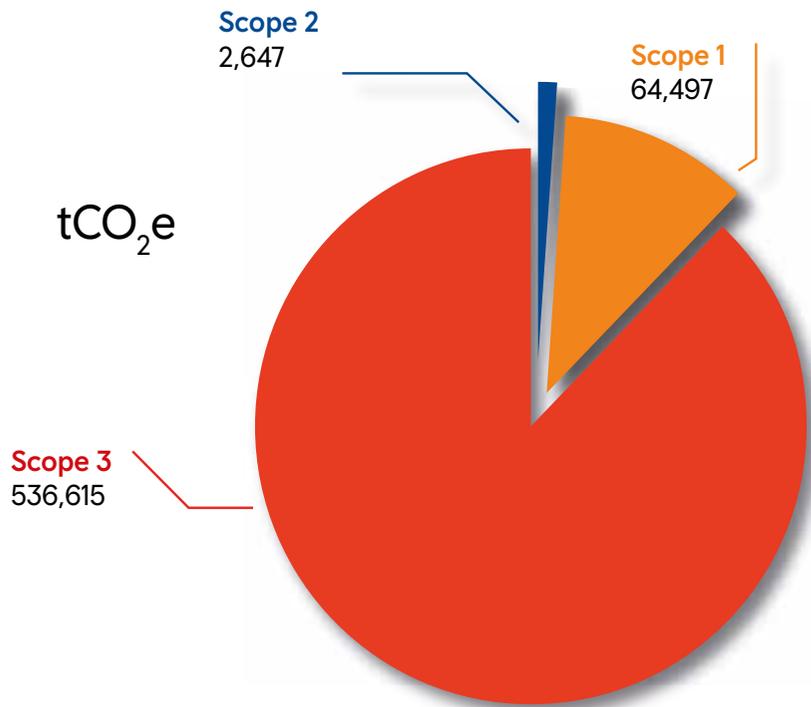
Well-to-tank



Water

2021 emissions

Gross emissions by scope 2020/21



2021 emissions

Well-to-tank (WTT) emission estimates have been included for:

- » Electricity generation
- » Electricity transmission & distribution
- » Gas supply
- » Fuels
- » Vehicle mileage

WTT emissions are used to try and account for upstream emissions associated with extraction, refining and transportation of each of the above fuel sources (used by an organisation) before combustion takes place.

All WTT emissions are included in Scope 3 and categorised as “upstream losses”, as the emissions have occurred prior to use and are beyond an organisation’s direct control. Emissions from the transmission and distribution of electricity are also regarded as upstream losses and are included in Scope 3.

2021 emissions breakdown

	Total emissions (tCO ₂ e)
Scope 1 (direct emissions)	
Gas	607
Fuels	63,890
Vehicle mileage	7
Renewable energy generation	-
Scope 2 (indirect emissions from grid-supplied energy)	
Electricity	2,647
Scope 3 (other indirect emissions)	
Gas upstream losses	87
Fuel upstream losses	14,655
Waste & Recycling	13
Water supply	21
Water treatment	42
Supply chain	521,164
Electricity upstream losses	624
Vehicle mileage upstream losses	2
Land use emissions	
Net emissions from TfW land assets	- 689
Total scope 1,2, and 3 emissions	603,070

Total gross annual emissions

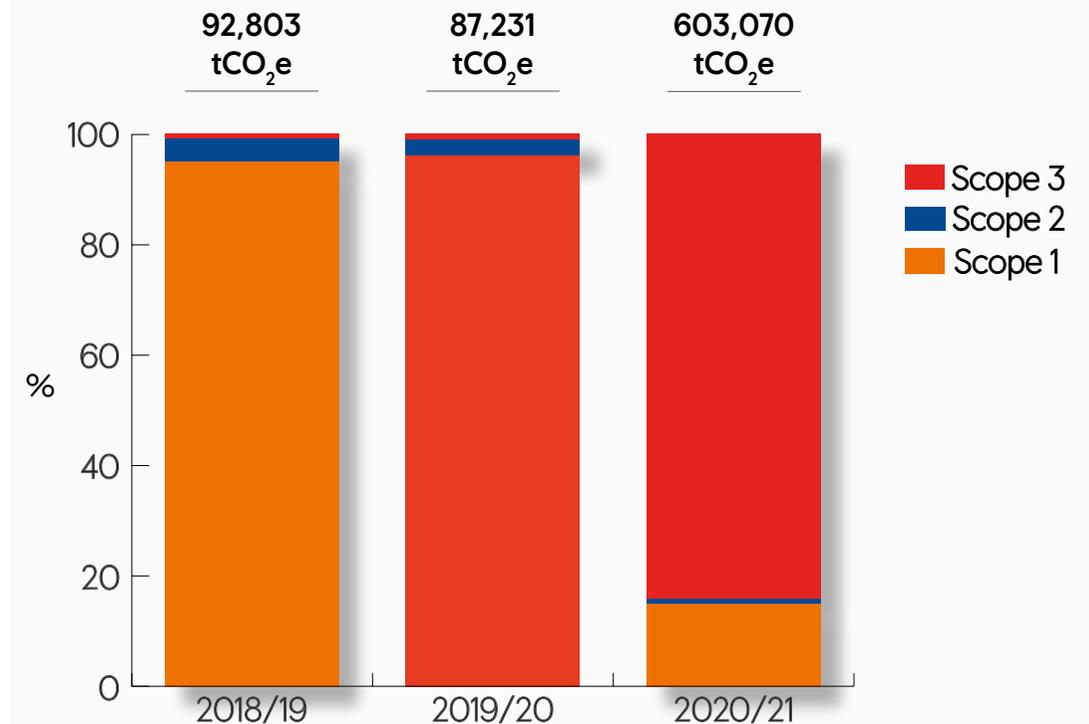
We've revised our carbon footprint in accordance with the Welsh Government Public Sector Net Zero Reporting Guidance.

Due to the new accounting methodology and the inclusion of other source activities, our footprint has increased by **515,839 tCO₂e** compared to 2019/20.

Emissions from commuting and public transport are currently absent from this year's reporting. We're developing processes to quantify this data.

Following re-assessment of our emissions, our supply chain is now the highest emitting activity. As we progress our transformation programme our supply chain emissions will continue to be difficult to treat or even increase as a result. However, whilst our supply chain emissions are currently high, the investment in the creation of an integrated, multi-modal sustainable transport system is considered to counter-balance this through the long-term reduction in emissions from Wales' transport sector.

Total gross annual emissions 2018-21



How we're reducing our emissions

Following analysis of our supply chain emission, the three highest emitting categories in 2020/21 were:

- » **Construction**
255,858 tCO₂e
- » **Railway transport (services)**
209,686 tCO₂e
- » **Architectural and engineering services; technical testing and analysis services**
24,454 tCO₂e

Estimates for TfW supply chain emissions have been calculated from spend data provided by our Finance and Contracting teams.

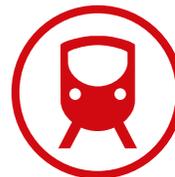
Spend activity has been aligned closely with the supply chain categories. The current standard methodology does not take into account purchasing decisions, such as items procured through sustainable sources.

Our supply chain emissions will likely increase as we invest in new infrastructure to support the decarbonisation of the transport sector in Wales.

We're committed to reducing emissions from our supply chain where possible. We'll perform ongoing analysis of our supply chain emissions to establish an accurate representation of the carbon footprint from the goods and services we buy, identifying opportunities for emission reductions to support our 2030 decarbonisation targets.



15,600 kWh of zero emission renewable electricity is generated by our solar panels per year. We directly consume this energy and plan to double the panel area by end of 2022.



Our new train fleet, which will start to run on our network from 2022, will be more **fuel efficient**, and will use a mix of diesel, battery and electric.



Our Pontypridd headquarters uses a rainwater harvesting system that **holds up to 45,000 litres**, reducing our demand on water supplies.



We're committed to taking a nature first approach when building climate change resilience into our network. We'll look to use **nature based solutions** in our climate change adaptation plan.

Appendix A

Reporting requirements

Scope 1

- » Emissions associated with our fuel consumption don't include bus replacement services. These emissions will be included in the 2021/22 round of reporting and our Scope 1 footprint is likely to increase.
- » All required estimates for Well-to-Tank (WTT) emissions are included in Scope 3.
- » Emissions for our direct gas consumption have decreased by 382 tCO₂e compared with 2019/20
- » Emissions from our direct fuel use are 18740 tCO₂e lower than 2019/20. Reductions in both gas and fuel consumption emissions are likely to be COVID-19 related, due to downturns in passenger footfall and service provision.

Scope 2

- » The Welsh Government requires all reporting public sector organisations to calculate Scope 2 electricity emissions using the location-based method. This method takes into consideration the fuel mix of the national grid using the standardised emissions factor for the UK electricity grid. It does not reflect any procurement decisions, such as green tariffs.
- » We purchase our electricity through a "green" tariff. A percentage of the supplied energy was generated by renewable sources. The tariff is supported by Renewable Energy Guarantee of Origin (REGO) certificates to authenticate the renewable generation
- » The GHG Protocol recommends dual reporting, however, we've decided to report in accordance with the Welsh Government guidance for 2020/21. We acknowledge the Welsh Government's concerns for potential double-counting with the dual-reporting method and consider the location-based approach to be more pragmatic until further clarity around the market-based approach has been obtained.
- » Our electricity consumption has decreased by 856 tCO₂e compared with figures from 2019/20. This downward trend is attributed to reduced passenger numbers and services due to the COVID-19 pandemic.

Scope 3

- » All participating organisations are asked to estimate emissions from their supply chain using the spend-based method, which uses average data and cradle-to-gate emissions factors. The methodology does not take into consideration any procurement decisions, made by a company, to reduce the carbon footprint of its supply chain.
- » During completion of Llys Cadwyn in 2020/21, we made the conscious decision to reduce the environmental impact of internal fittings by procuring second-hand furniture that was re-purposed by a local, social enterprise company in Wales. The spend-based method does not take this procurement decision into account, as it estimates emissions from spend, rather than the product purchased. Rype Office, our partner on the project, reported a saving of 90,000 kgCO₂e thanks to our procurement choice.
- » It's expected that our supply chain emissions are over-inflated and not truly representative of the most likely environmental impact of the goods and services we have procured.
- » We'll be conducting analysis of our supply chain emissions to establish a more accurate representation of the carbon footprint from our procurement. Alternative accounting methodologies will be explored as part of this work. The project will also seek to identify opportunities for emissions reductions within our supply chain.
- » Emissions from business travel (air) and staff commuting have not been included due to limited availability of data. COVID-19 restrictions have resulted in a reduction in staff commuting to work or flying for business purposes.
- » Business travel (road) emissions have been included in this report, however, there are likely to be inaccuracies in the current data. This process will be reviewed and refined for 2021/22 reporting and emissions are likely to change for this activity
- » We discovered an error in the accounting method for water emissions in our previous reports. This has subsequently been amended, but has seen our emissions from water supply increase by 21.3 tCO₂e compared to 2019/20

Scope 3

- » The Welsh Government require public sector companies to report on mileage from public transport (taxi, black cab, local bus, coach and rail). Emissions from these activities are absent from this report, as it was not previously a reporting requirement. Processes are being developed to collate the relevant data going forward and emissions estimates will be calculated for 2021/22. Scope 3 emissions will, likely increase.
- » Emissions from waste generation have decreased by 25 tCO₂e in comparison with 2019/20. This change is likely to be COVID-19 related, due to reduced services and passenger numbers, and colleagues on site.
- » An error was found in the accounting method of vehicle mileage during previous years. As such, trends in vehicle mileage emissions will begin from 2020/21.
- » Mileage emission estimates in this report only account for those from TfW Group, not TfW Rail. The data for Group colleagues does not include vehicle data and fuel types, only mileage travelled, and amount claimed. Estimates in this report have been calculated on "Average" vehicle types with "Unknown" fuel types. Going forward, processes will be developed to refine the emission estimates calculated for vehicle mileage.
- » Well-to-tank (WTT) emissions for our gas, fuel and electricity consumption, and vehicle mileage, have been included in Scope 3, as per GHG Protocol guidance.
- » Electricity transmission and distribution (T & D) emissions are a Welsh Government reporting requirement and have been included in Scope 3 for 2020/21 reporting.
- » The Welsh Government's Public Sector Net Zero Reporting Guide requires all public sector organisations in Wales to report on emissions from their supply chain. Inclusion of supply chain emissions has seen our carbon footprint increase by 521,164 tCO₂e. The guidance also requires us to report on a series of additional activities. As a result, our footprint has increased from 516,736 tCO₂e compared to 2019/20.

Land use emissions

- » Estimates for our land assets have been calculated in accordance with the Welsh Government reporting methodology for the Land Use, Land Use Change and Forestry (LULUCF) sector.
- » Ordnance Survey Map data was utilised by our GIS team to quantify estimates for land area (in hectares) per land use type. The land use types are: crop land, forest land, grassland, other land, settlement, and wetland.
- » At present, soil type is unknown, therefore “mineral” soil was selected for each land use category.
- » Previous land use type is also unknown for each category, and all were assumed to have remained unchanged in over 20 years.



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