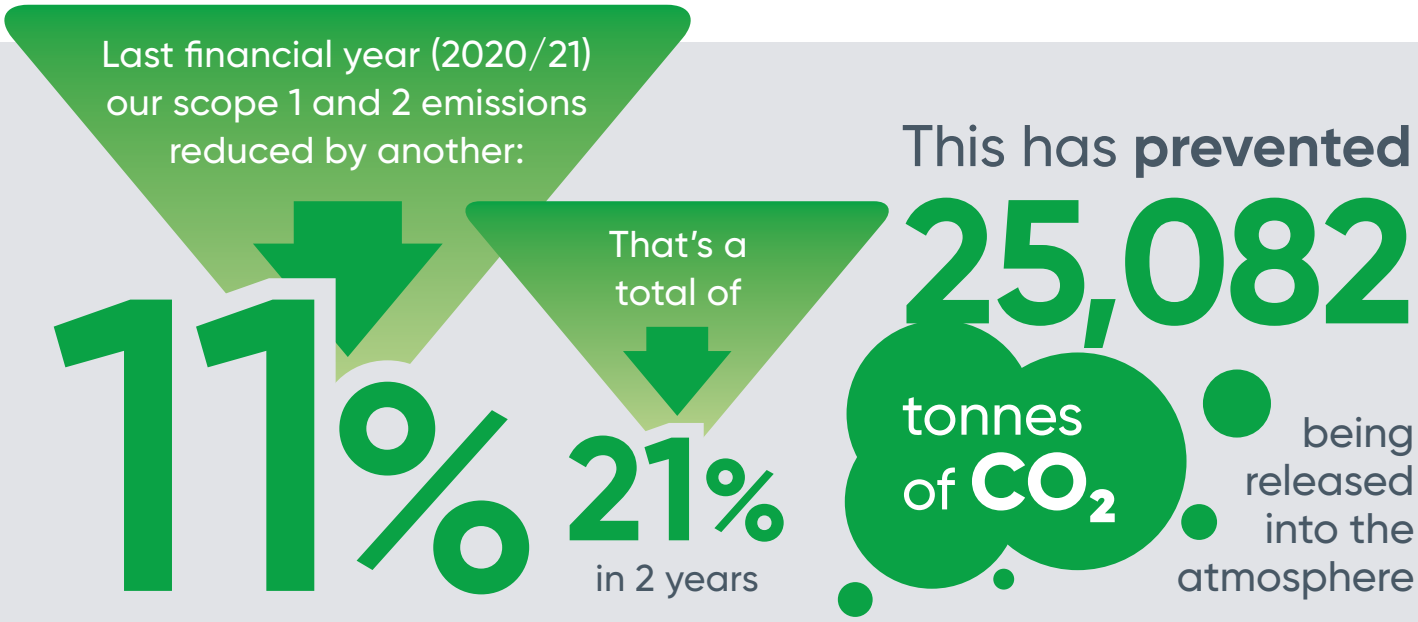
Environment and Energy Annual Report 2021.

greateranglia

Environment and Energy Annual Report 2021



The main factor influencing this reduction was due to more renewable sources of energy being provided to the national grid to then create the electricity that powers our electric trains. We have also continued to review opportunities to increase energy efficiency across our portfolio and continue to introduce more new trains on the network which have features that will help us to reduce our environmental impact.

Traction Energy – powering the trains

Our traction carbon figure for 2020/21 financial year including both direct emissions (from diesel fuel) and indirect emissions (from electricity consumption) was 85,276 tCO2e from the energy used to power the trains.

This reduced by 10% compared to 2019/20 and 22% compared to 2018/19, which is likely to be due to fleet improvements, decarbonisation of the national grid and the impact of Covid-19 on rail services.

More electric trains are now running across the GA network with Class 720s now operating on all routes. All of our brand new trains have regenerative braking which means additional energy can be transferred back to the electrical supply network rather than being wasted through heat.

As the remaining new fleet is rolled out we hope to see more benefits. All of the new trains also have on train energy meters which means we will be able to analyse their consumption more effectively and will be able to understand the impact of uses such as onboard systems and different driving styles. Energy use from traction (trains) accounts for approximately 94% of GA's carbon footprint and so even a small improvement in traction consumption can therefore make significant improvement to our overall carbon impact.

Domestic energy consumption

We continue to review energy use from our station buildings and depots and continue to seek opportunities to improve overall efficiency. Current projects include extending WEMS (Wireless Energy Monitoring Systems) to more sites, reviewing options for loft insulation and improvements to windows.

As we seek to put together plans for decarbonisation we are also looking at opportunities for alternative power sources which includes looking at options for renewable power such as solar and wind.

A recent report has also shown that since the implementation of Wireless Energy Management Systems in May 2019, there has been a total saving of 4.3 million kWh, the equivalent saving of more than 1000 tonnes of CO2e.

Water usage

We continue to work to accurately monitor and reduce our water consumption. Our asset management team work to fix and minimise leaks as soon as possible.

We also have new carriage wash machines installed across the network which are more efficient compared to previous models, using around 10% less water compared to the system it replaced. Each wash is logged electronically, showing exactly how many litres were used per train.

Waste

In 2020/2021 we generated 996 tonnes of waste, the equivalent of 79 double decker buses.

Whilst that might seem a lot, it is still less than pre-covid waste levels. Since an increase in passenger numbers overall waste and recyclable material has increased but it is still much lower than before the start of the pandemic.

Unfortunately, this has meant that the impact of less overall composition of recyclable material in our waste continues e.g. less paper newspapers and plastic bottles.

Despite this, when you take into consideration our rates of energy recovery from waste, where non-recyclable material is converted to energy rather than sent to landfill, our recycling plus recovery rate was 99.8% during this period.

Energy recovery is a positive way of converting waste into usable energy which can be transferred back into the national grid. This process has also helped us to ensure that zero waste created from stations goes to landfill.

Biodiversity

During the financial year 2020/21, the total area of land at our stations dedicated to wildlife projects has continued to grow:

- The completion of work to restore Saxmundham station after a fire has seen an area dedicated to wildflowers created next to the new car park.
- Ely station now has its own wildlife garden complete with a house for the resident hedgehog named 'Tiggywinkle Towers', bird boxes and a 'Buggenham Palace' insect house.
- The Essex and South Suffolk Community Rail Partnership has worked with the Bee Friendly Trust on projects to support bees and other insects at Alresford, Althorne, Bures, Clacton-on-Sea, Colchester, Great Bentley, Kirby Cross, Mistley, South Woodham Ferrers and Witham.
- Bee and insect houses have also been installed at Diss, Shelford and Norwich station's staff garden.
- In total over 6,800 square metres of gardens are tended to across Greater Anglia's network – the equivalent of 34 tennis courts.
- All of this land has been pledged to WildEast, a nature recovery movement that aims to return 20% of East Anglia to nature by 2050.

The station gardens, some of which have been developed over many years, are becoming havens for local wildlife populations and with the railway increasingly being recognised by ecologists as a 'green corridor', they provide a sanctuary for many kinds of flora and fauna.

Our commitment to sustainability and continual improvement

This year we worked with WSP to quantify our environmental impact and improve our understanding of our total carbon emissions which has included looking at emissions associated with our supply chain. As we make more progress and work towards are plans for total decarbonisation we will explore our supply chain emissions in more detail, establish a reliable baseline and then look towards how our supply chain impacts can be minimised.

We also continue to operate and be certified to international standards of ISO14001 and ISO50001 which helps to demonstrate continual improvements to environment and energy management at Greater Anglia.