

Appendix 4

Torbay's greenhouse gas reporting and sector emissions monitoring and projections report (draft report) by University of Exeter (2023) – summary of draft findings

Torbay Council, on behalf of the Torbay Climate Partnership, commissioned the University of Exeter's Centre for Energy and the Environment to:

- update Torbay's greenhouse gas (GHG) data for 2020
- quantify the GHG reductions required to achieve net zeroⁱ in 2030
- identify a series measurable trajectories that can be used to monitor progress annually towards 2030.

The results are still in draft format, and subject to further changes.

Management Summary of the report

Torbay Council (TC) declared a Climate Emergency in 2019 and pledged to work towards creating a carbon neutral Torbay by 2030. The target year is 20 years in advance of the 2050 national net zero target.

Torbay's 2020 territorial greenhouse gasⁱⁱ (GHG) emissions totaled 453,000 tonnes of carbon dioxide equivalent (tCO_{2e})ⁱⁱⁱ in 2020. Carbon emissions since 2008 have generally been on a downward trajectory declining 38% by 2020. Changes to date are due largely to the reduction in the carbon intensity of the national electricity grid, which over the period reduced the power sector's GHG emission by 72%. As a result, the sector has been responsible for 70% of the emission reduction in Torbay from 2008.

Currently there is a two-year lag in the publication of carbon emissions statistics together with a difficulty to relate the reduction in quantities of carbon emissions to everyday actions. This presents challenges for setting and achieving easily understood interim CO₂ targets.

Therefore, to help Torbay establish what it needs to do, towards 2030, this report identifies a series of proposed trajectories (or routes) that could be used in the draft Torbay Climate Emergency Action Plan/other to track progress.

These trajectories (routes) show the scale of the changes needed to meet the national 2050 targets set out in the Climate Change Committee's Sixth Carbon Budget by 2030 in Torbay. The annual figures below are accepted to be an average of the trajectory. These include:

- Over 1,850 PV installations each year every year to 2030, compared to 89 in 2021, a ten-fold increase in the long-run average installation rate.
- Installing loft insulation in 32,200 homes by 2030 or over 4,000 homes each year every year to 2030.
- Insulating the walls of 19,000 homes by 2030 at the rate of 2,400 every year.
- Putting 6,300 heat pumps in homes every year to 2030, there are currently 307 heat pumps in Torbay's homes.
- Connecting an extra 13,400 homes to heat networks by 2030; 1,700 each year.

ⁱ This means taking as much carbon dioxide gases out of the atmosphere as we put in. We will reduce Torbay's carbon emissions to as near to zero as possible locally. Where residual emissions exist, these will be balanced by removals from the atmosphere

ⁱⁱ Greenhouse gases are gases in the earth's atmosphere that trap heat and include carbon dioxide and methane

ⁱⁱⁱ This report refers to carbon emissions equivalents. A CO₂ equivalent (CO_{2e}) is a unit of measurement that is used to standardise the climate effects of various greenhouse gases. This report abbreviates this to carbon emissions.

- Improving the energy efficiency of 340 non-domestic buildings every year to 2030 and switching 390 every year to low carbon heating.
- Reducing driving in Torbay by 8 million kilometres each year, every year to 2030.
- Continuing the exponential growth in electric vehicle ownership (aiming for 200 more in 2023) and putting in an additional 100 charging points in every year to 2030.
- Increasing cycling rates 6.1 million kilometres annually (quadruple the current total level) with matching increases in walking.
- Achieving a 2,500 tonne annual reduction in household waste generation each year, every year and a 4.1% annual increase in recycling rates each year, every year to 2030.

All of the trajectories identified are extremely challenging with the majority needing to overcome significant behavioural, funding and other barriers.

More generally, despite the ambition, projections show that measures identified for each sector do not give full coverage for all the reduction measures required to deliver zero carbon emissions in 2030. The report suggests a 64% reduction in carbon emission by 2030.

Total residual emissions are projected at 162 kt CO₂e.

The projections suggest that achieving net zero in Torbay requires GHG removal or offsetting. The development of GHG removal technologies such as direct air capture with carbon capture and storage in Torbay on the scale needed to remove 162 kt CO₂e annually in 2030 would seem unlikely. Fully offsetting 162 kt CO₂e with measures such as tree planting requires land equivalent to 1.9 times the area of Torbay planted with conifers.

The findings above show that achieving a carbon neutral Torbay in 2030, 20 years in advance of the national programme, is a significant challenge and will require GHG removal to achieve net zero.

Please note these results are different to the results of the Net Zero Torbay Report (2020) due to more recent data availability and the development and refinement of national policy over the past few years since the Net Zero Report was written.