

AUCKLAND REPORTING AREA

STATE OF AUCKLAND GREENHOUSE GAS EMISSIONS REPORT CARD



QUICK FACTS

IN 2016, AUCKLAND'S TOTAL GREENHOUSE GAS (GHG) EMISSIONS WERE

10,128
ktCO_{2e}

(KILO-TONNES OF CARBON DIOXIDE EQUIVALENT, NET EMISSIONS INCLUDING CO₂ REMOVED BY FORESTS OR 6.3 tCO_{2e} PER PERSON)

FROM 2009 TO 2016, GROSS EMISSIONS HAVE INCREASED BY 599 ktCO_{2e} OR **5.6 PER CENT** DUE TO POPULATION AND ECONOMIC GROWTH

TRANSPORT AND NON-TRANSPORT ENERGY SECTORS DOMINATED THE EMISSIONS, ACCOUNTING FOR **70.2 PER CENT** OF GROSS EMISSIONS (EXCLUDING CO₂ REMOVED BY FORESTS)

WHY MUST WE REDUCE CARBON EMISSIONS?

Our climate is changing with rising temperature mainly due to increased greenhouse gas (GHG) emissions into the atmosphere by human activities.

We must reduce the emissions in order to limit temperature rise and harmful impacts of associated risks such as accelerated sea level rise and more frequent extreme weather events.

Reducing our carbon emissions is a critical element for Auckland to become a world class city. Auckland's Energy Resilience and Low Carbon Action Plan (Low Carbon Auckland) sets out pathways and specific actions to achieve a 40 per cent reduction in greenhouse gas emissions by 2040 (based on 1990 levels). The council is in the process of reviewing Low Carbon Auckland and developing an integrated climate action plan for Auckland, addressing both mitigation and adaptation. An inventory that identifies and quantifies the sources and sinks of GHGs in Auckland is essential to evaluate our progress. This provides an important evidence base to inform development of the plan.

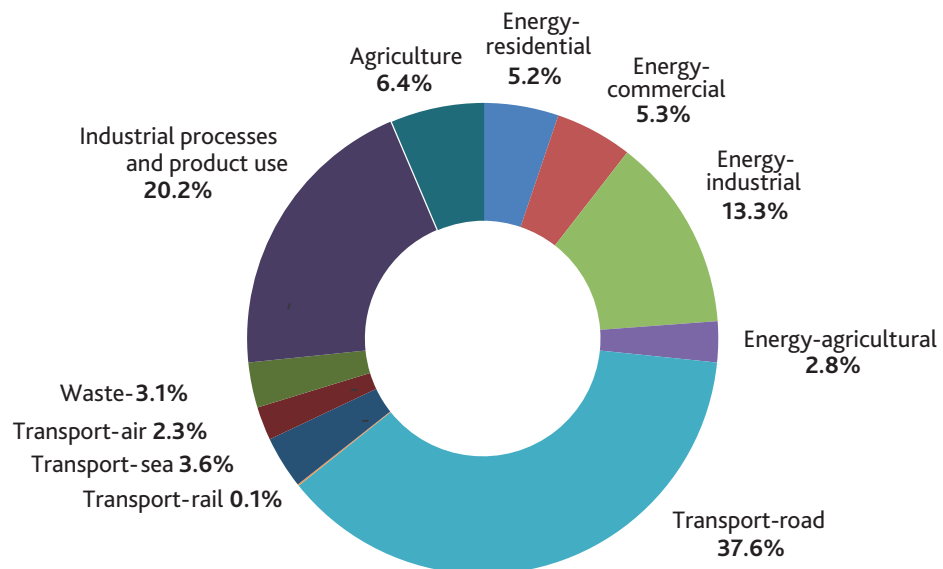
HOW DO WE MEASURE CARBON EMISSIONS?

Data on a range of activities which are responsible for producing emissions, such as the volume of fuel used by cars and electricity consumption, is collected to quantify their associated carbon emissions.

WITH A PROJECTION OF INCREASING EMISSIONS

AUCKLAND MUST TRANSFORM FROM A FOSSIL FUEL-DEPENDENT, HIGH ENERGY-USING, HIGH-WASTE SOCIETY TO A MOBILE, QUALITY, COMPACT CITY.

Auckland's gross emissions in 2016



Carbon emissions are calculated by multiplying activity data by an emission factor (the amount of carbon emissions relative to a unit of activity), for example, the number of litres of petrol used by our cars in a calendar year multiplied by CO₂ emissions in g from the use of petrol in litre, gCO₂/litre.

The Auckland greenhouse gas inventory was prepared in accordance with the Global Protocol for Community-Scale Greenhouse Gas Emission Inventories (GPC) – this is international best practice. 2009 is the base year for carbon emissions in Low Carbon Auckland and 2016 is the most recent year that emission data is available for the New Zealand's Greenhouse Gas Inventory. The study covers all seven GHGs required by the GPC. Emissions are reported as metric tonnes of each GHG as well as CO₂ equivalents (CO₂e). Individual GHGs are converted into CO₂e by multiplying the global warming potential (GWP) values (the amount of CO₂ which would have the equivalent GWP). Emissions are classified into five sectors: stationary energy; transport; waste; industrial processes and product use (IPPU); and agriculture, forestry, and other land use (AFOLU). GHG emissions are also termed as carbon emissions.

HOW IS AUCKLAND DOING?

In 2016, Auckland's GHG emissions were 10,128 ktCO₂e (kilo-tonnes of CO₂e, net emissions accounting for CO₂ removed by forests) or 11,326 ktCO₂e (gross emissions excluding CO₂ removed by forests). Carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O) contributed 83.1, 10.5 and 1.7 per cent of gross emissions. The remaining 4.7 per cent came from other gases. Transport and non-transport

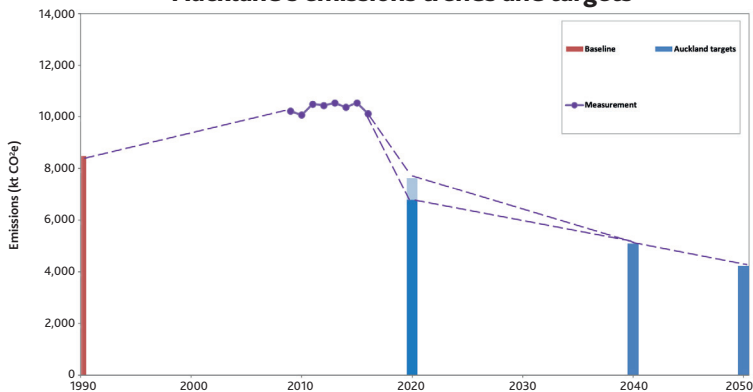
energy sectors dominated the emissions, accounting for 70.2 per cent of gross emissions.

Between 2009 and 2016, gross emissions have increased by 599 ktCO₂e or 5.6 per cent, but net emissions have decreased by 94 ktCO₂e or 0.9 per cent due to more carbon sequestration from forestry. Over this timeframe, the population increased by 13.6 per cent, and GDP increased by 20.2 per cent. Subsequently, the emission intensity by population decreased from 7.2 to 6.3 tCO₂e per capita. Similarly, emission intensity by GDP decreased from 146 to 121 tCO₂e per million \$NZ (2009/2010 price). In other words, gross emissions didn't increase at the rate of population and economic growth.

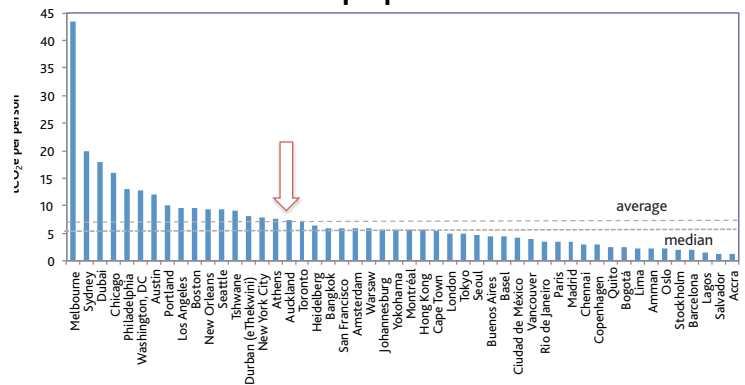
Auckland joins the C40 Cities Climate Leadership Group, a global network of over 90 cities committed to tackling climate change. Benchmarking Auckland against other cities helps us to work with and learn from leading global cities facing similar climate challenges. In comparison with other C40 cities, Auckland's emissions are higher than the median and close to the average.

Without further intervention, our GHG emissions are projected to increase. Auckland is taking action. Better transport choices, waste management and energy efficiency are starting to propel us in the right direction as per capita emissions are declining. The Auckland's climate action plan will set a path to rapidly reduce emissions and help prepare Auckland for the impacts of climate change. Raising our ambitions in addressing climate change will also provide major opportunities and benefits to Auckland. This includes cleaner air and water, healthier communities and better places to live with more accessible transport and housing choice.

Auckland's emissions trends and targets



GHG emissions per person of C40 cities



FIND OUT MORE

This report card is part of a series prepared by the Auckland Council's Research and Evaluation Unit, which undertakes monitoring and research to provide information and evidence to inform the council's activities and reporting. More report cards can be found at: aucklandcouncil.govt.nz/environment. The report card series includes reporting on freshwater, terrestrial, marine, air, soil, capacity for growth, demographics and quality of life.

For more information: e-mail rimu@aucklandcouncil.govt.nz or call us on 09 301 0101.

GET INVOLVED

Auckland Council provides more than 20 environmental programmes across the region that you can get involved in. To find out more on how you can help visit: aucklandcouncil.govt.nz