# Tourism Industry Greenhouse Gas Emission Series

## Analysis of Stats NZ Greenhouse Gas Emissions Report

## 25 June 2020

---

**Introduction**
This paper draws on analysis published by Stats NZ to measure New Zealand's greenhouse gas emissions by industry and households.[1] For the first time, the Stats NZ analysis includes tourism industry greenhouse gas emissions.

**Background**
Measurement of greenhouse gas emissions is key to gaining understanding of the tourism industry's emission profile and then to managing the reduction of these emissions.

New Zealand's obligations under the Paris Agreement and New Zealand's Climate Change Response (Zero Carbon) Act 2019[2] require rapid progress to reach the required emission levels. Under the Act, targets are set for domestic greenhouse gas emissions to: '*reduce net emissions of all greenhouse gases (except biogenic methane) to zero by 2050*.'

Along with other requirements (including to establish a system of emission budgets to act as stepping-stones toward the long-term target and the establishment of the new Climate Change Commission), there will be increasing requirements on industries, including tourism, to reduce and ultimately eliminate their net greenhouse gas emissions.

**Measurement of Tourism Industry Emissions**
Stats NZ has developed an inventory of greenhouse gas emissions using the United Nations' System of Environmental-Economic Accounting (SEEA)[3] framework. This framework integrates economic and environmental data to provide a view of the interrelationships between the economy and the environment, and to track changes over time. Because tourism is not a single industry under the standard ANZSIC industry groups, it has not been included in the inventory to date.

The latest release by Stats NZ addresses this gap by using methodological guidelines from the United Nations' World Tourism Organisation (UNWTO) to include tourism by linking SEEA industry results to New Zealand's Tourism Satellite Account data to generate estimates of tourism contribution to each of the industry categories. The statistics set out greenhouse gas emissions on a standard industrial classification basis and this allows emissions to be compared to other statistics such as GDP or employment.

With this tourism greenhouse gas emission series in place, it is now possible to track changes in tourism industry emissions over an extended period. This will allow the effectiveness of industry emission strategies to be measured and evaluated.

---

[1] https://www.stats.govt.nz/information-releases/greenhouse-gas-emissions-industry-and-household-year-ended-2018 Note that the data tables are available via this link
[2] https://www.mfe.govt.nz/climate-change/zero-carbon-amendment-act
[3] https://seea.un.org/

**Definitions**
Included in the tourism series are all domestic emissions, including all domestic aviation and international aviation emissions by New Zealand operators. The international aviation emissions by overseas based airlines servicing New Zealand are the responsibility of the country in which the airlines are based.

The key metric in the analysis is 'carbon dioxide equivalent' which means that a range of emissions can be considered on the same basis, including methane and nitrous oxide that are significant for primary industries.

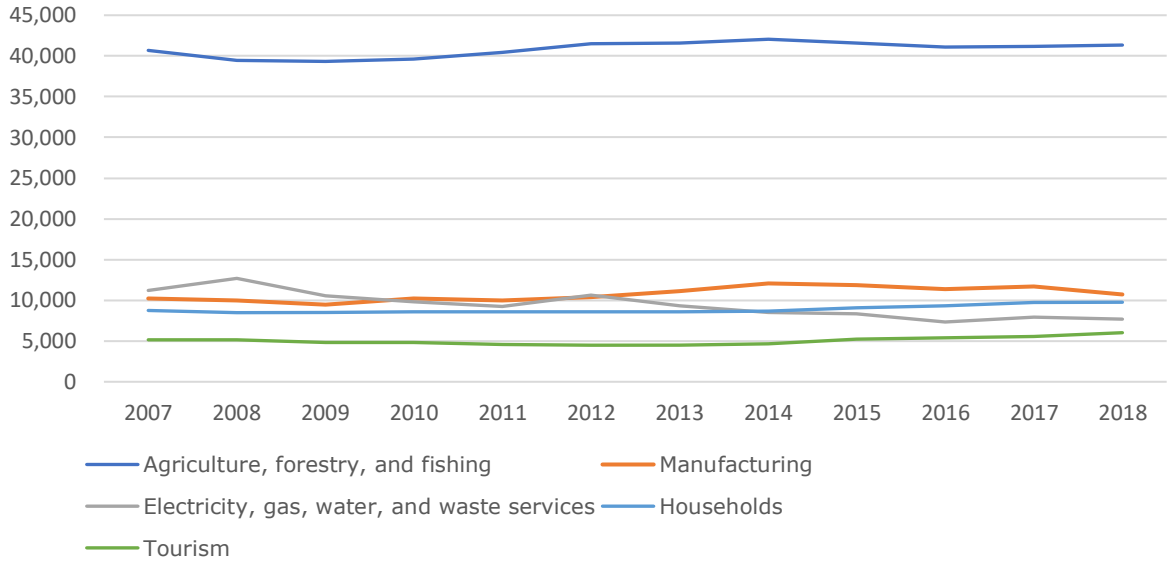
The analysis sets out the emissions produced but does not incorporate any offsetting of greenhouse gases and so does not present a net emission position. The significance of carbon offsetting initiatives is not known.

**Overall Results**
New Zealand's overall greenhouse gas emissions fell by 1.1% between 2007 and 2018 despite the growth of the economy over the period.

In terms of emissions by industry and households (refer Figure 1), primary industries stand out, contributing 53% of total New Zealand emissions in 2018, significantly higher than the other large industry categories, although increasing by just 1.5% since 2007. Household emissions increased by 11.7% while emissions by the 'Electricity, gas, water and waste-water' category fell by 32.4%, reflecting increasing levels of renewable electricity generation.

Tourism emissions were 7.4% of New Zealand's total greenhouse emissions in 2018. Over the period since 2007, tourism emissions increased by 16.3%, a higher rate of growth than any other of the large industry categories.

**Figure 1: Carbon dioxide equivalent emissions by industry and household**
Kilotonnes of carbon dioxide equivalent



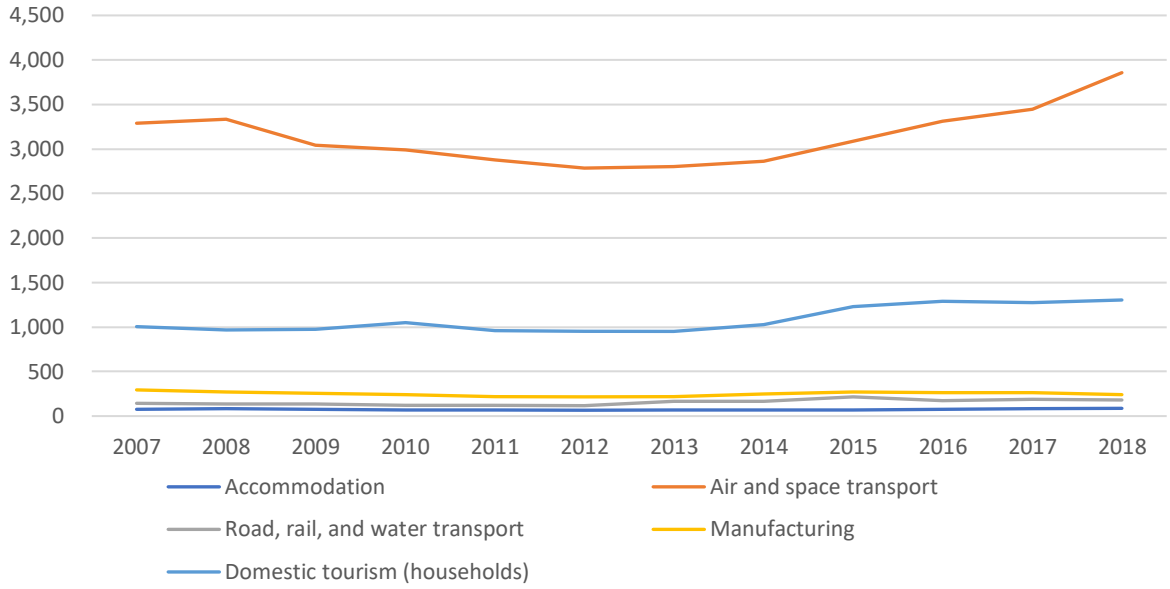

Note: The tourism series is calculated on a different basis than the other series on this graph. This is because the tourism series is calculated using the Tourism Satellite Account methodology that apportions a part of the industry group (ANZSIC06) and households to tourism, based on the levels of tourism demand within each group. This allows tourism emissions to be viewed in relation to the wider economy.

**Tourism-Specific Results**
The analysis provides, for the first time, the profile of greenhouse gas emissions of the various industry categories that make up the tourism industry (refer Figure 2).

In 2018, of the total tourism greenhouse gas emissions, 65% were attributed to the 'Air and space transport' category and 22% to the 'Domestic tourism (households)' category. The next largest categories of 'Manufacturing' and 'Road, rail and water transport' were 4% and 3% respectively.

Over the period since 2007, the two large tourism categories increased: 'Air and space transport' by 17.2% and 'Domestic tourism (households)' by 30%.

**Figure 2: Tourism greenhouse gas emissions (provisional)**
Kilotonnes of carbon dioxide equivalent




The 'Air and space transport' category is therefore the key sector to understand in terms of the quantum of emissions. In effect there is no space tourism, so the category is made up of two parts: 1) all domestic air transport and 2) international transport provided by New Zealand-based operators. In 2018, of the 3,857 kilo tonnes of carbon dioxide equivalents for this category, 1,019 were from domestic air travel and 2,833 from international air travel.

**Conclusion**
With this tourism-specific series in place, it will now be possible to track overall industry performance and to assess the effectiveness of efforts to reduce tourism emissions.

TIA will maintain and update this series as Stats NZ releases new data. This series will also be used as a performance tracking metric for the Tourism Sustainability Commitment's Commitment 12 – Carbon Reduction, along with a wider set of tourism sustainability indicators.

These results also serve to highlight the challenge facing the tourism industry to be zero carbon by 2050 given that aviation forms the largest part of overall tourism emissions and, at current technology, this will be very difficult to change.