Technical fact sheet on the proposed industrial emissions intensity target

What data was used to produce the target?

The target is an emissions intensity measure (emissions in CO_2-e divided by Real GDP) for selected industries. The Ministry of Business, Innovation and Employment's greenhouse gas (GHG) emissions data has been used in the numerator and Statistics New Zealand's Real GDP (chain volume 2009/10 prices) was used for the denominator.

Where possible, all industries that use process heat were included. However, some industries were excluded for the following reasons:

- Basic Metals, and Chemical manufacturing industries – these industries were excluded as they have a small number of large firms that heavily affected the measure and its usefulness.
- Petroleum refining could not be included because of data availability. This industry is part of the 'Chemical industry' category of Real GDP and could not be separated out for this analysis.
- Electricity generation was excluded because it is not relevant in measuring process heat.

How might emissions change if the target is reached?

Emissions could increase even if the target is met because as industries grow they produce more emissions. Whether emissions rise or fall depends on how efficient the industries' use of energy is, compared with how fast they grow. Current NZIER growth forecasts expect the selected industries to grow over the draft replacement strategy period (2017 to 2022).

If the emissions intensity target is met and the current NZIER growth forecasts are used then emissions would fall by 160 kt CO_2-e between 2014 and 2022. In comparison, if emissions intensity was to remain at the 2014 level and the same NZIER growth forecasts were used then emissions would increase by 376 kt CO_2-e. The difference in these two scenarios suggest that 539 kt CO_2-e could be avoided if the target is met.

How was the target level developed?

The graph below shows how emissions intensity in the selected industries has fallen historically. A number of methods were tested to forecast emissions intensity, and the best one was chosen to set the target. This method estimates that emissions intensity fell by 1.0 per cent per annum on average between 1990 and 2014, and forecasts this to continue out to 2022. As with any forecast, there is a range of uncertainty around it, and emissions intensity could instead rise by 0.8 per cent per annum on average or fall by 3.0 per cent per annum on average between 2017 and 2022.

Emissions intensity for selected industries, historical and projected 1990-2022