



**Australian Government**  
**Department of Climate Change  
and Energy Efficiency**

## AUSTRALIAN NATIONAL GREENHOUSE ACCOUNTS



# Quarterly Update of Australia's National Greenhouse Gas Inventory **March Quarter 2010**

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<http://www.climatechange.gov.au/en/climate-change/emissions.aspx>

Suggestions and comments would be appreciated. They should be addressed to:

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August 2010

# Australia's National Greenhouse Gas Inventory: Update

## Quarterly Estimates of Australia's National Inventory: March Quarter 2010

This report provides estimates and shows trends in Australia's National Inventory up to the March quarter of 2010. The quarterly National Inventory includes emission sources listed under Annex A of the Kyoto Protocol – energy, industrial processes, agriculture and waste sectors – but does not include emissions from the Land Use, Land Use Change and Forestry (LULUCF) activities under article 3.3 of the Kyoto Protocol, for which data are not yet available.

### Summary – Emissions Growth Rates

**Table 1: Change in National Greenhouse Gas Inventory: March quarter 2010**

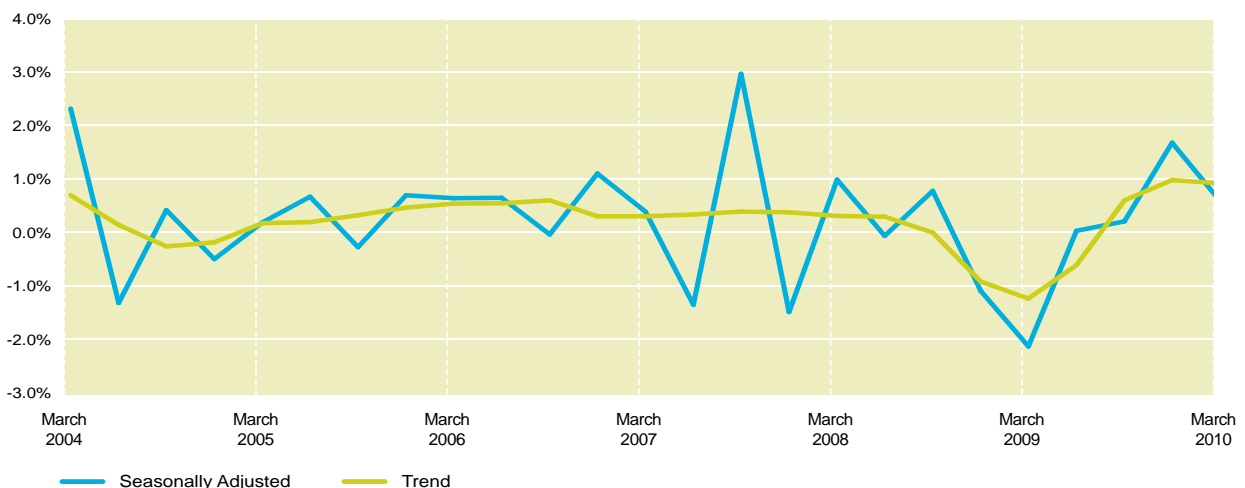
Emissions Growth Rate, Quarterly Change – Trend	0.9%
Emissions Growth Rate, Quarterly Change – Seasonally Adjusted	0.6%
Emissions Growth Rate, Annual Change through to March Quarter	-1.0%

- Positive emissions growth in both trend (0.9%) and seasonally adjusted (0.6%) terms indicates that emissions have increased in the March quarter.
- The negative annual emissions growth rate of -1.0% indicates that emissions for the 12 months to March have seen a decline on the previous 12 months, driven by relatively low emission levels in the July 2009 and September 2009 quarters.

### Quarterly Change in Emissions – Key Points

- The positive growth in seasonally adjusted emissions in the March quarter is mainly due to a continued rebound in key sectors such as electricity generation, other stationary energy and industrial processes. Emissions from iron and steel production continue to increase after the particularly low production levels experienced in the first half of 2009.
- The quarterly change in the national emissions growth rate from March 2004 to March 2010, in both trend and seasonally adjusted terms, is shown in Figure 1.

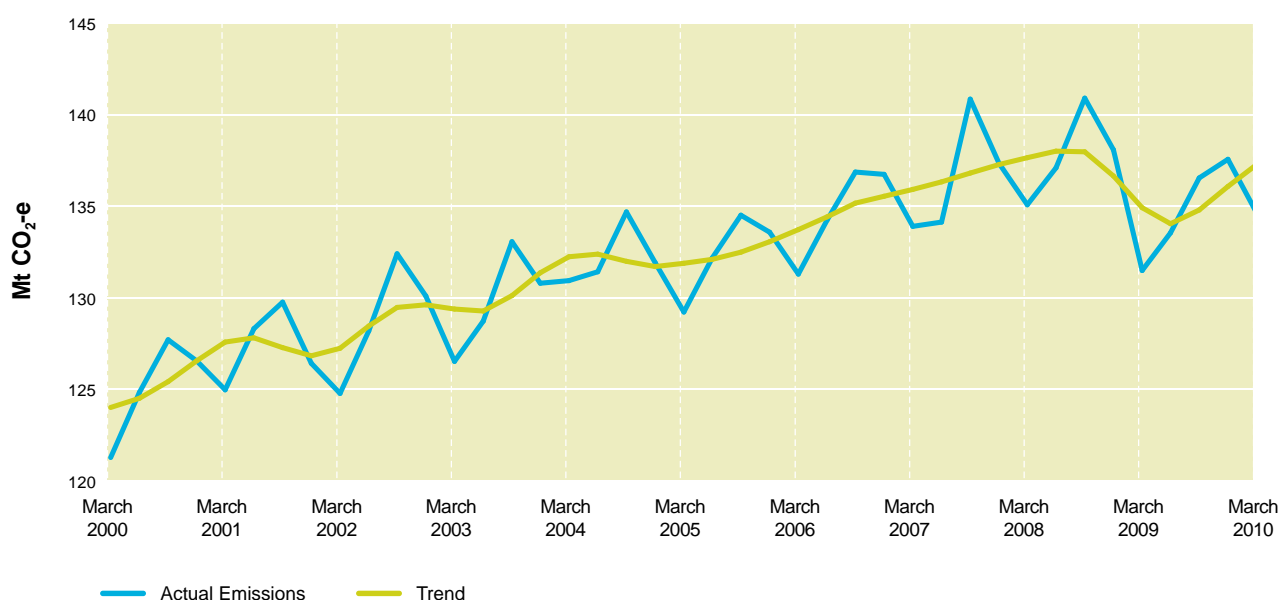
**Figure 1: Seasonally adjusted emissions growth rates, quarterly change – March quarter 2004 to March quarter 2010**



Note: The national inventory total does not include estimates of net emissions from article 3.3 Land Use, Land Use Change and Forestry activities, which are estimated on an annual basis only.

- Negative emissions growth experienced in the previous quarters was primarily attributable to relatively low emissions in electricity generation, steel production and agriculture, mainly reflecting the international economic slowdown and weather conditions. The last three quarters have seen a return to positive growth which is expected to continue principally on the back of stronger economic growth.
- The original quarterly data has been adjusted using SEASABS<sup>1</sup> to remove the effects of seasonal factors. The trend series reflects the seasonally adjusted series with irregular components smoothed and provides the best indication of underlying movements in the inventory (Figure 1).
- In Figure 2, the actual emissions estimate for each quarter and the trend emission estimate are shown. The trend shows a bounce back in the last three quarters from the marked decline experienced in previous quarters.
- Actual emissions fluctuate during the year as a result of seasonal weather patterns and variations in economic activity. The March quarter tends to have lower emissions reflecting relatively lower levels of economic activity particularly in the manufacturing, commodities and transport sectors. The September quarter corresponds to the winter months and generally has higher emissions due to a higher level of electricity use. Higher emissions from a relatively high level of economic activity in the December quarter tend to be offset by relatively low emissions from electricity production in that quarter.

**Figure 2: National Inventory, original quarterly emissions estimate and trend emission estimate – March quarter 2000 to March quarter 2010**



Note: The national inventory total does not include estimates of net emissions from article 3.3 Land Use, Land Use Change and Forestry activities, which are estimated on an annual basis only. Emission estimates have been compiled by the Department of Climate Change and Energy Efficiency using the estimation methodologies incorporated in the Australian Greenhouse Emissions Information System (AGEIS) and preliminary activity data obtained under the National Greenhouse and Energy Reporting System and from a range of publicly available sources – principally ABARE, the ABS, the Australian Energy Market Operator and the Department of Resources Energy and Tourism. As more data becomes available from the Department's reference sources – in particular the National Greenhouse and Energy Reporting System – these preliminary activity data will be replaced and the estimates of emissions revised before submission to the UN. The Department's assessment is that the 90 per cent confidence interval for the national inventory (before taking account of article 3.3 activities) is  $\pm 1$  per cent (ie there is a 90 per cent probability that future revisions will be limited to  $\pm 1$  per cent of the current estimate).

<sup>1</sup> SEASABS is the main seasonal adjustment tool used by the Australian Bureau of Statistics.

## Annual Emissions to March Quarter – Key points

- Over the four quarters to the March quarter of 2010, Australia's national inventory was an estimated 542 Mt CO<sub>2</sub>-e (million tonnes of carbon dioxide equivalent). See Table 2.

**Table 2: National Inventory: for the four quarters to March quarter 2010**

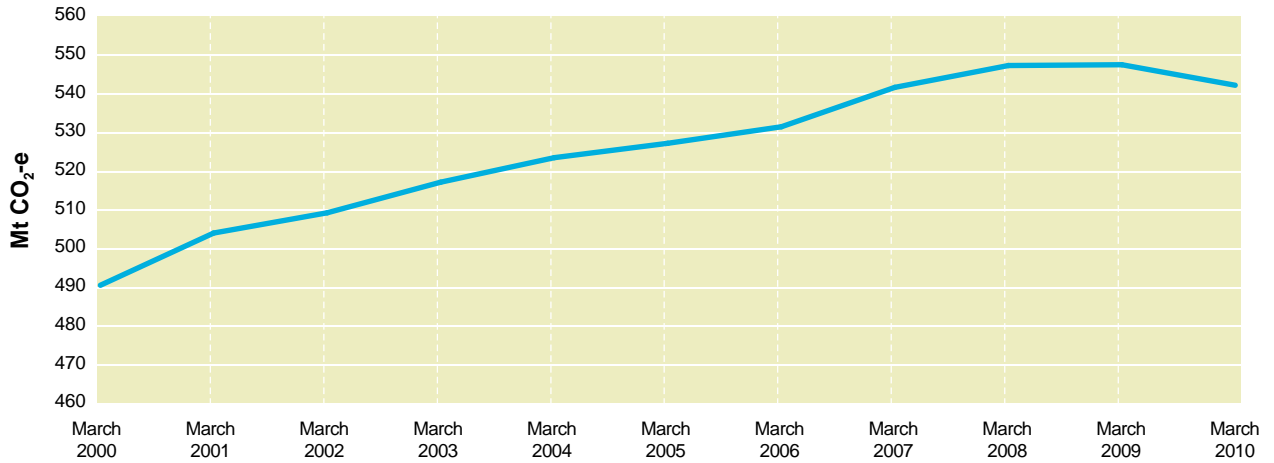
Category	Annual emissions through to the March quarter Mt CO <sub>2</sub> -e <sup>a</sup>		Per cent change in annual emissions <sup>d</sup>
	March quarter 2009 <sup>c</sup>	March quarter 2010 <sup>c</sup>	
<b>National Inventory – Annex A sectors</b>			
Energy – Electricity	206	203	-1.8%
Energy – Stationary energy excluding electricity	91	90	-1.6%
Energy – Transport	79	80	0.2%
Energy – Fugitive emissions	40	42	5.1%
Industrial processes	29	29	-3.1%
Waste	15	15	1.5%
Agriculture	86	85	-1.8%
<b>National Inventory total <sup>b</sup></b>	<b>547</b>	<b>542</b>	<b>-1.0%</b>

Source: Department of Climate Change and Energy Efficiency preliminary estimates.

NOTES: (a) Carbon dioxide equivalent, CO<sub>2</sub>-e; this concept enables the aggregation of individual greenhouse gases through the use of Global Warming Potentials (GWPs). (b) The national inventory total does not include estimates of net emissions from the article 3.3 Land Use, Land Use Change and Forestry activities, which are estimated on an annual basis only. Totals may not add due to rounding. (c) Values are estimates of annual emissions through to the end of the March quarter. (d) The percentage change is the year on year growth rate for the March quarter (ie the increase in emissions for the four quarters to the March quarter over the corresponding period of the previous year). Percentage change reflects a higher degree of precision than is listed in the emission estimates, which are rounded to the nearest million tonnes.

- The dominant influence on the negative annual emissions growth rate has been the international economic slowdown. The year to March has seen negative emissions growth from stationary energy, electricity generation, agriculture and industrial processes. Emissions have been particularly low from the steel industry due to temporary production cutbacks which influences both the stationary energy and industrial processes sectors. Electricity production, which represents approximately 37% of the national quarterly inventory, declined by 1.8% mainly due to lower demand, in part driven by a particularly warm winter in 2009, including the warmest August on record in Australia.
- The annual emissions estimates for the four quarters up to the March quarter for each year from 2000 to 2010 are presented in Figure 3. The national inventory has increased from 490 Mt CO<sub>2</sub>-e in 2000 to 542 Mt CO<sub>2</sub>-e in 2010.

**Figure 3: National Inventory, annual emissions – four quarters to March quarter 2000 to 2010**



- The year-on-year growth rates of emissions are presented in Figure 4, updated on a quarterly basis. Australia’s average annual emissions growth rate since March quarter 2000 has been 1.0%

**Figure 4: National Inventory, year on year emissions growth rate – March quarter 2000 to March quarter 2010**

