



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

AUSTRALIAN NATIONAL GREENHOUSE ACCOUNTS



Quarterly Update of Australia's National Greenhouse Gas Inventory **June 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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November 2010

Australia's National Greenhouse Gas Inventory: Update

Quarterly Estimates of Australia's National Inventory: June Quarter 2010

This report provides estimates and shows trends in Australia's National Inventory up to the June 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: June quarter 2010

Emissions Growth Rate, Quarterly Change – Trend	0.3%
Emissions Growth Rate, Quarterly Change – Seasonally Adjusted	-1.0%
Emissions Growth Rate, Annual Change through to June Quarter	-0.1%

- A small 0.3% increase in trend emissions in the June quarter, down from 0.6% in the March quarter, indicates a slowing of the trend emissions growth. Negative growth (-1.0%), in seasonally adjusted emissions, is due to a decrease in emissions from electricity generation in the June quarter.
- The negative annual emissions growth rate of -0.1% indicates that emissions for the 12 months to June have seen a decline on the previous 12 months.

Quarterly Change in Emissions – Key Points

- The reduced trend growth in emissions in the June quarter is mainly a result of reduced emissions from electricity generation due to fuel switching in the generation types from coal to hydroelectricity and natural gas.
- Emissions from other sectors, apart from agriculture, continue to grow on the previous quarter as the economic recovery continues, with the strongest growth occurring in stationary energy other than electricity generation.
- The quarterly change in the national emissions growth rate from June 2004 to June 2010, in both trend and seasonally adjusted terms, is shown in Figure 1. The trend shows a return to growth in recent quarters after the decline experienced in 2008/09.

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

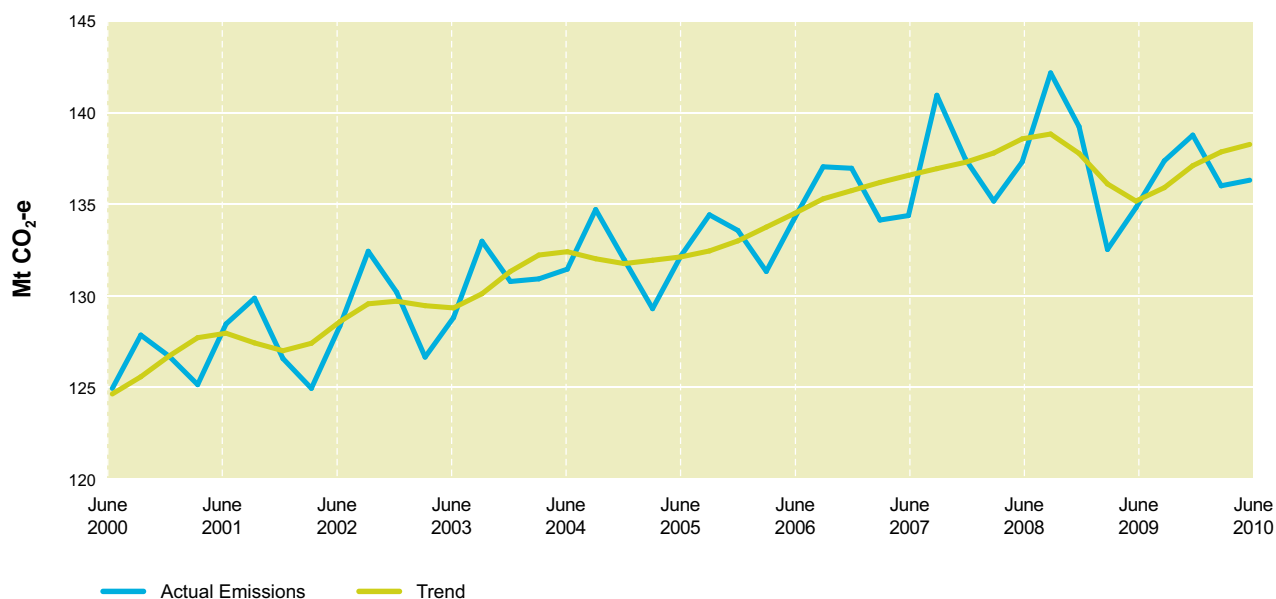


Note: The national inventory total does not include estimates of net emissions from article 3.3 Land Use, Land Use Change and Forestry activities, which are estimated on an annual basis only.

- Negative seasonally adjusted emissions growth is largely attributable to lower emissions from electricity generation, reflecting a surge in hydro electricity generation in the National Electricity Market (NEM) (increasing 33% on the previous quarter) and continued growth in natural gas generation in the NEM (increasing 9% on the previous quarter). Marked decreases occurred in electricity generation from black and brown coal resulting in the lowest quarterly levels of coal based electricity generation in the NEM since 2003.
- Growth in several other sectors partially offset the decrease in emissions from electricity generation. The largest contributor was stationary energy reflecting strong activity in the non-ferrous metals and mineral manufacturing sectors. Fugitive emissions continued to grow driven largely by increases in coal mining. Emissions from industrial processes also grew largely due to growth in cement production.
- The actual quarterly data has been adjusted using SEASABS¹ 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 and 2).
- In Figure 2, the actual emissions estimate and the trend emissions estimate for each quarter are shown.

¹ SEASABS is the main seasonal adjustment tool used by the Australian Bureau of Statistics.

Figure 2: National Inventory, actual quarterly emissions estimate and trend emission estimate – June quarter 2000 to June 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 ± 1 per cent (ie there is a 90 per cent probability that future revisions will be limited to ± 1 per cent of the current estimate).

- Actual emissions fluctuate during the year as a result of seasonal weather patterns and variations in economic activity. Higher emissions in the June and December quarters from economic activity tend to be offset by relatively low emissions from electricity generation in those quarters. 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.

Annual Emissions to June Quarter – Key points

- Over the four quarters to the June quarter of 2010, Australia's national inventory was an estimated 548 Mt CO₂-e (million tonnes of carbon dioxide equivalent), down 0.1% on the previous year. See Table 2.

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

Category	Annual emissions through to the June quarter Mt CO ₂ -e ^a		Per cent change in annual emissions ^d
	June quarter 2009 ^c	June quarter 2010 ^c	
National Inventory – Annex A sectors			
Energy – Electricity	207	201	-2.7%
Energy – Stationary energy excluding electricity	89	90	1.7%
Energy – Transport	83	84	1.1%
Energy – Fugitive emissions	39	42	5.9%
Industrial processes	29	31	6.0%
Waste	15	15	1.5%
Agriculture	86	85	-1.6%
National Inventory total^b	548	548	-0.1%

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

Notes: (a) Carbon dioxide equivalent, CO₂-e; this concept enables the aggregation of individual greenhouse gases through the use of Global Warming Potentials (GWPs).

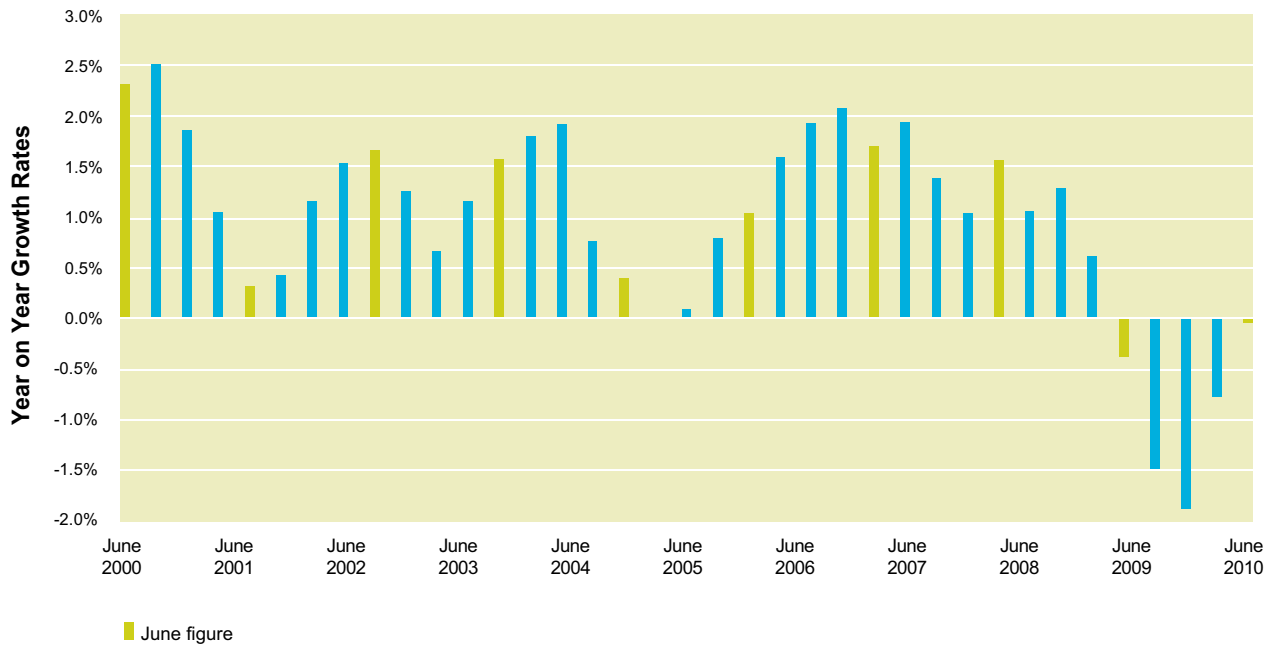
(b) The national inventory total does not include estimates of net emissions from the article 3.3 Land Use, Land Use Change and Forestry activities, which are estimated on an annual basis only. Totals may not add due to rounding.

(c) Values are estimates of annual emissions through to the end of the June quarter.

(d) The percentage change is the year on year growth rate for the June quarter (i.e. the increase in emissions for the four quarters to the June 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 reduction in emissions from electricity generation has been the dominant influence on negative year on year emissions growth. Emissions from electricity generation, which represents approximately 37% of the national quarterly inventory, declined by -2.7% on the previous year reflecting a slight softening in demand and increases in generation in the NEM from lower emission technologies including hydro (14% annual increase in generation) and natural gas (21% annual increase in generation).
- The reduction in emissions from electricity generation has been partially offset by strong annual growth in fugitive emissions and emissions from industrial processes. This growth largely reflects increases in mining activity and the rebound from the effects of the international economic slowdown. Emissions from iron and steel production have returned to normal levels after the particularly low production levels experienced in the first half of 2009.
- The year-on-year growth rates of emissions are presented in Figure 3, updated on a quarterly basis. Australia's average annual emissions growth rate since June quarter 2000 has been 1.0%

Figure 3: National Inventory, year on year emissions growth rate – June quarter 2000 to June quarter 2010



- The annual emissions estimates for the four quarters up to the June quarter for each year from 2000 to 2010 are presented in Figure 4. The national inventory has increased from 496 Mt CO₂-e in 2000 to 548 Mt CO₂-e in 2010.

Figure 4: National Inventory, annual emissions – four quarters to June quarter 2000 to 2010

