



Australian Government
Department of Climate Change

AUSTRALIAN NATIONAL GREENHOUSE ACCOUNTS



Quarterly Update of Australia's National Greenhouse Gas Inventory **September Quarter 2009**



thinkchange

Published by the Department of Climate Change.

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The Australian National Greenhouse Accounts are available on the Internet at the following address: <http://www.climatechange.gov.au/inventory>.

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

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January 2010

Australia's National Greenhouse Gas Inventory: Update

This report provides estimates and shows trends in Australia's National Inventory up to the September quarter of 2009. 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 under article 3.3 of the Kyoto Protocol, Land Use, Land Use Change and Forestry (LULUCF) activities, for which data are not yet available.

Summary – Emissions Growth Rates

Table 1: Change in National Greenhouse Gas Inventory: September quarter 2009

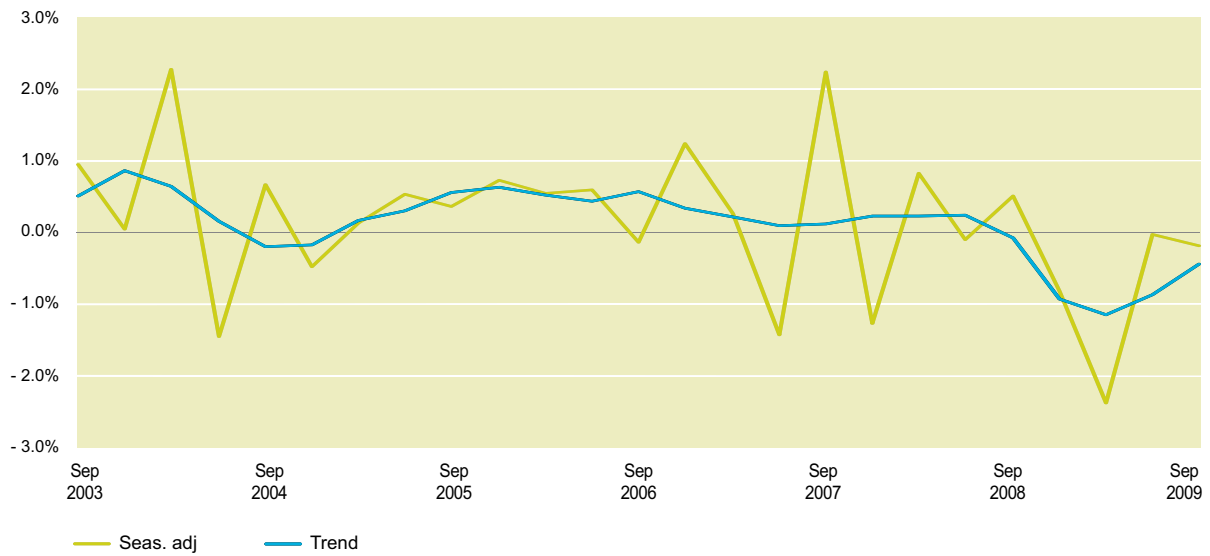
Emissions Growth Rate, Quarterly Change - Trend	-0.4%
Emissions Growth Rate, Quarterly Change - Seasonally Adjusted	-0.2%
Emissions Growth Rate, Annual Change through to September Quarter	-2.1%

- Negative emissions growth in both trend (-0.4%) and seasonally adjusted (-0.2%) terms indicates that emissions have declined in the September quarter.
- The negative annual emissions growth rate of -2.1% indicates that emissions for the whole year to September have also seen a decline on the previous year.
- Negative emissions growth experienced in recent quarters is considered to be temporary and is mostly attributable to relatively low emissions in key sectors such as steel production and agriculture, mainly reflecting the international economic slowdown and recent weather conditions. Pressure for a return to positive emissions growth is expected principally on the back of stronger international economic growth.
- In this issue, seasonally adjusted estimates have been introduced for the first time. The original quarterly data has been adjusted using SEASABS 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. See Figure 1.

Quarterly Change in Emissions – Key Points

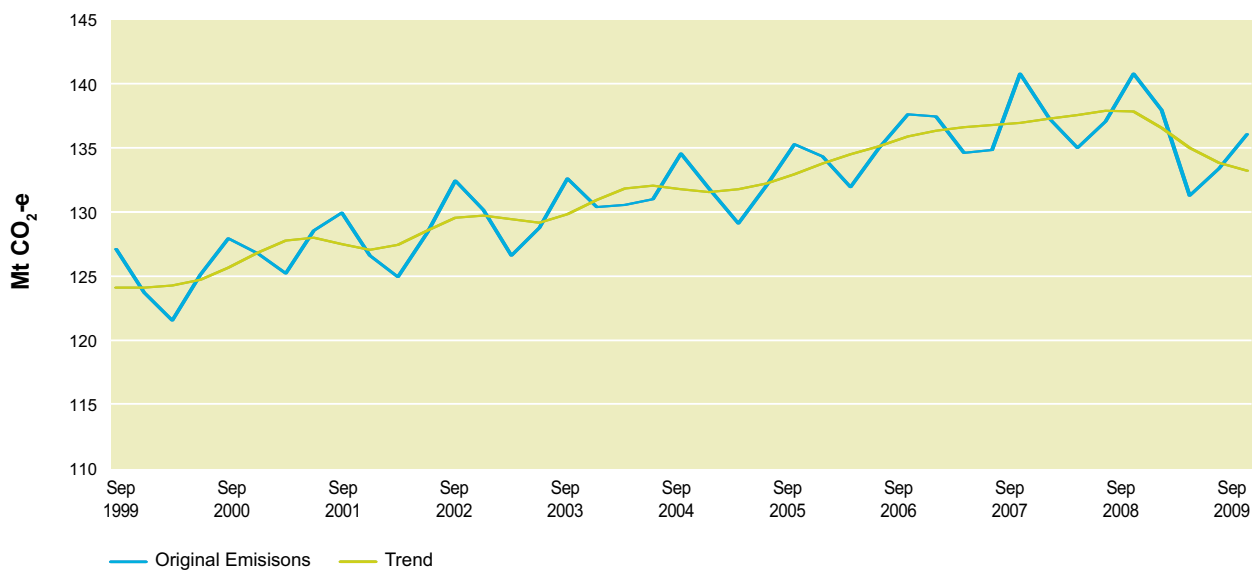
- The negative growth in seasonally adjusted emissions in the September quarter is mainly due to relatively low emissions from electricity production and agriculture in that quarter. Low emissions from electricity production are due to a decrease in demand for electricity resulting, in part, from Australia's warmest August on record. The emissions contraction in agriculture is mainly due to a continued gradual decline in methane emissions from livestock which dominate agricultural emissions.
- The quarterly change in the national emissions growth rate from September 2003 to September 2009, in both trend and seasonally adjusted terms, is shown in Figure 1.

**Figure 1: Seasonally adjusted emissions growth rates, quarterly change
– September quarter 2003 to September quarter 2009**



- In Figure 2, the actual emissions estimate for each quarter and the trend emission estimate are shown. The trend series shows the marked decline in emissions in recent quarters.
- Actual emissions fluctuate during the year as a result of seasonal weather patterns and variations in economic activity. The September quarter corresponds to the winter months and generally has higher emissions due to a higher level of electricity use. The March quarter tends to have a relatively low level of economic activity which influences emissions directly, particularly as a result of lower activity in manufacturing, commodities and transport. 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
– September quarter 1999 to September quarter 2009**



NOTE: Emission estimates have been compiled by the Department of Climate Change 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 National Electricity Market Management Company 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).

Annual Emissions to September Quarter – Key points

- Over the four quarters to the September quarter of 2009, Australia's national inventory was an estimated 539 Mt CO₂-e (million tonnes of carbon dioxide equivalent). The national inventory does not include emissions under article 3.3 of the Kyoto Protocol, LULUCF activities, for which data are not yet available. See Table 2.

Table 2: National Inventory, for the four quarters to September quarter 2009

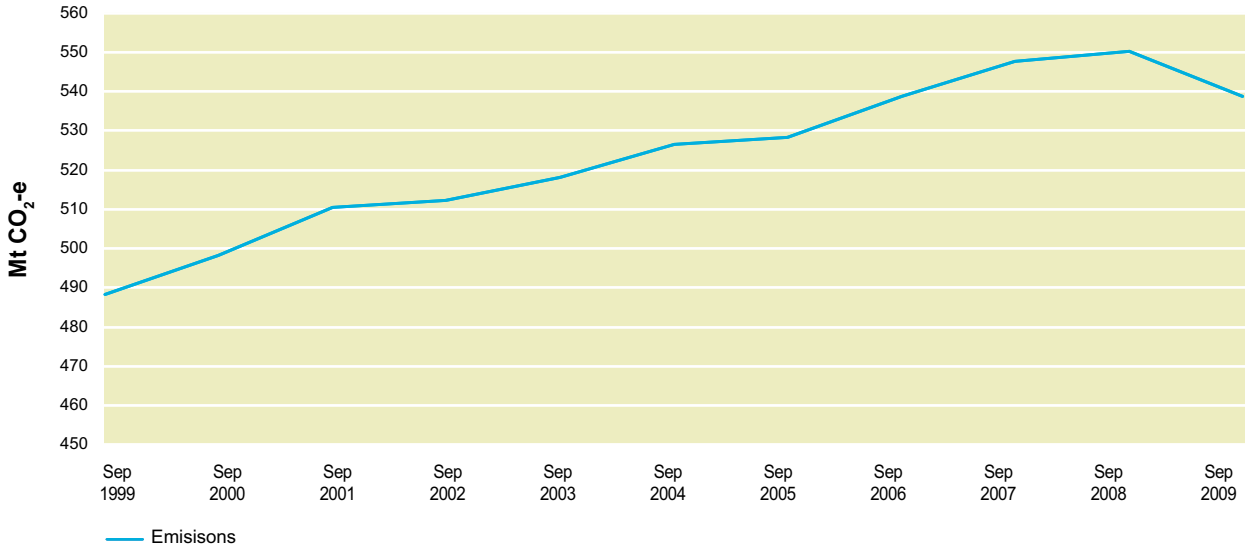
Category	Annual emissions through to the September quarter Mt CO ₂ -e ^a		Per cent change in annual emissions ^d
	September quarter 2008 ^c	September quarter 2009 ^c	
National Inventory - Annex A sectors			
Energy – Electricity	205	203	-1.1%
Energy – Stationary energy excluding electricity	93	90	-3.7%
Energy – Transport	80	79	-1.2%
Energy – Fugitive emissions	39	40	4.2%
Industrial processes	31	27	-12.8%
Waste	15	15	0.5%
Agriculture	87	84	-3.0%
National Inventory total^b	550	539	-2.1%

Source: Department of Climate Change 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 credits from the article 3.3 Land Use, Land Use Change and Forestry activities, which are estimated on an annual basis only. (c) Values are estimates of annual emissions through to the end of the September quarter. (d) The percentage change is the year on year growth rate for the September quarter (ie the increase in emissions for the four quarters to the September quarter over the corresponding period of the previous year).

- The dominant influence on the negative annual emissions growth rate has been the international economic slowdown. The year to September has seen relatively low emissions from most sectors, stationary energy, electricity, agriculture, transport 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. Emissions from electricity generation, which represents approximately 37% of the national quarterly inventory, declined by -1.1% mainly due to lower demand, while agricultural emissions decreased by -3% mainly due to a reduction in livestock numbers.
- The annual emissions estimates for the four quarters up to the September quarter for each year from 1999 to 2009 are presented in Figure 3. The national inventory has increased from 488 Mt CO₂-e in 1999 to 539 Mt CO₂-e in 2009.

Figure 3: National Inventory, annual emissions – four quarters to September quarter 1999 to 2009



- 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 September quarter 1998 has been 1.3%

Figure 4: National Inventory, year on year emissions growth rate – September quarter 1998 to September quarter 2009

