

Senate Standing Committee on Environment and Communications
Legislation Committee
Answers to questions on notice
Environment portfolio

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Hearing: Additional Estimates
Outcome: Outcome 2
Programme: Climate Change and Renewable Energy (CCARE)
Topic: GHG Emissions Quarterly Report
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Question Type: Spoken

Senator Urquhart asked:

Senator URQUHART: ... I am talking about the data that was released on Christmas Eve that does not show a reduction in the Australian GHG emissions. Can you provide some commentary on the increases that were in that data.

Ms Brunoro: I think you are referring to the quarterly update component of the documents that were released before Christmas. That covered the financial year 2014-15. Overall, there was a 1.3 per cent increase in emissions compared to the previous year. The major elements of that in terms of changes were a three per cent increase in the electricity sector, some smaller increases in fugitives and—

Senator URQUHART: Sorry?

Ms Brunoro: There were some smaller increases in other sectors of the inventory. There was a 0.5 per cent increase in industrial processes and product use, fugitive emissions increased by 1.6 per cent and transport had a very small percentage increase at 0.3 per cent. That was partially offset by a 3.4 per cent decrease in agricultural sector emissions. They were the major movements at the sectoral scale. Do you want me to step down into those sectors and their major drivers?

Senator URQUHART: Is that a long drawn-out process? I would be interested in what some of the drivers were. How quickly can you do it?

Ms Brunoro: Perhaps I should just talk about the ones that had changes of larger amounts. The three per cent change in the electricity sector was an increase. The demand did not change between those two financial years. The drivers were changes in the fuel mix. There was a very large decrease in hydro-electric generation in that period—some 30.3 per cent. Also, gas generation saw a 6.2 per cent decrease in that period. The increase was on the other side. The other renewals, beyond hydro, were up 12.2 per cent. But there was a 1.4 per cent increase in black coal and a 9.7 per cent increase in brown coal. So it was a fuel mix story. As to the hydro-electricity change, hydro-electricity was operating at unsustainably high levels during the carbon tax period, but water storages have gone to below long-term averages, and so that was not able to be maintained. Obviously—

Senator URQUHART: In some cases, they have gone to an extreme record low, as in Tasmania at the moment.

Ms Brunoro: Yes. As to the other element of that, with gas generation, obviously you would be aware of gas pricing issues there. It is actually the fuel mix that has changed.

Senator WHISH-WILSON: Could you just clarify whether the hydro was in Tasmania and other states or across the board. Do you have a breakdown?

Ms Brunoro: We can provide a breakdown to you on notice. That is probably preferable.

Senator URQUHART: I was going to ask if you can provide more detail. What you told us was great, but a more detailed breakdown on notice would be great.

Ms Brunoro: Sure.

Answer:

2014-15 national emissions: drivers

The June 2015 *Quarterly Update of Australia's national greenhouse gas inventory*, released on 22 December 2015, reports that annual emissions for 2014-15 increased 1.3 per cent compared to the previous year.

Table 1: National Greenhouse Gas Inventory, 'unadjusted' emissions by sector, 2013-2014 and 2014-15

Sector	Annual emissions (Mt CO ₂ -e)		
	2013-14	2014-15	Change (%)
Energy – Electricity	180.8	186.1	3.0%
Energy – Stationary energy excluding electricity	93.7	94.4	0.8%
Energy – Transport	92.5	92.7	0.3%
Energy – Fugitive emissions	37.3	37.9	1.6%
Industrial processes and product use	31.8	31.9	0.5%
Agriculture	84.1	81.2	-3.4%
Waste	12.7	12.7	0.0%
National Inventory Total (excluding LULUCF)	532.9	537.0	0.8%
Land Use, Land Use Change and Forestry*	9.2	12.3	33.1%
National Inventory Total (including LULUCF)	542.1	549.3	1.3%

* includes deforestation, afforestation/reforestation, forest management, crop and grazing land management

The drivers of the most significant percentage changes in emissions over that twelve month period (see Table 1) were:

- Agriculture: driven by a reduced beef cattle herd partially due to drought conditions and partially due to increased beef prices pushing up slaughter rates.
- Electricity generation: driven by changes in the fuel mix.
 - Changes in the fuel mix used to generate electricity in the National Electricity Market (NEM) in 2014-15 included generation from black coal increasing 1.4 per cent, brown coal increasing by 9.7 per cent, and wind and other renewables (excluding small-scale solar) increasing 12.2 per cent.
 - Conversely, gas generation decreased 6.2 per cent and hydroelectric generation decreased 30.3 per cent.
 - This result reflects in part hydro generation in Tasmania operating at high levels during the carbon tax period.
 - Water in storage for hydro generation declined by over 45 per cent during the two year carbon tax period.
 - In Tasmania the level of water available in storage and the level of generation from hydroelectricity are currently below long-term averages.

- Changes in Land Use, Land Use Change and Forestry (LULUCF) emissions are always preliminary because processed satellite images to support emissions calculations are not available for the preceding twelve month period. The preliminary estimate for this *Quarterly Update* was based on anticipated higher levels of land clearing in Queensland and recovering national timber production.

2014-15 national estimates: hydroelectric generation

- The 30.3 per cent reduction in hydroelectric generation reported in the *Quarterly Update* includes only generation from the NEM, which covers all jurisdictions except the Northern Territory and Western Australia. A breakdown of generation and per cent by State is set out in Table 2.

Table 2: Hydroelectric generation from the NEM by Australian jurisdiction

State	Hydro generation 2013-14 (GWh)	Hydro generation 2014-15 (GWh)	% change
New South Wales	2,610	1,504	-42.4%
Victoria	2,379	2,288	-3.8%
Queensland	821	644	-21.5%
South Australia	0	0	0
Tasmania	11,668	7,738	-33.7%
Total	17,478	12,175	-30.3%

* Note: Totals may not add due to rounding.