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Australia Has World's Highest Greenhouse Emissions Per Capita: New Study

Australia has the highest per capita emissions of greenhouse gases in the world, the Senate Reference Committee on the Environment was advised today.

In a submission to the Committee, the policy research centre, The Australia Institute, provided new research based on UN figures.

The calculations demonstrate that when all sources of greenhouse gas emissions are factored in, Australians emit 26.7 tonnes of greenhouse gases per capita per year, double that of other wealthy countries and 25 per cent more than emissions per person in the United States (see table).

The data will have significant implications for Australia in continuing negotiations over the details of the Kyoto Protocol. The signatories are meeting in Bonn this week. Under the polluter pays principle, nations with high per capita emissions would have more stringent emission targets.

The data

The researchers examined data for all Annex B countries – that is, the 35 developed nations which have signed and accepted emissions reduction targets under the Kyoto Protocol – and the calculations are based on their official returns to the UN. The research team, led by Dr Clive Hamilton of The Australia Institute, have for the first time collated these statistics into one report for comparison purposes. The research forms part of a larger project with the Centre for Population and Urban Research at Monash University to be published later this year.

The data include emissions of the three main greenhouse gases, carbon dioxide, methane and nitrous oxide. Non-energy emissions have been factored in for the first time. These main non-energy emissions are from land-use change and forestry (LUC&F) and emissions from agriculture (mostly from livestock).

Australia's position is exacerbated by exceptionally high emissions from land-use change; Australia is one of only two countries (the other is the UK) where land use is a net source of greenhouse gas emissions, as opposed to a net greenhouse gas sink.

Polluter pays principle

The report says: “The concepts of burden sharing and ‘common but differentiated responsibilities’ enshrined in the UN Framework Convention on Climate Change (UNFCCC) are based on the widespread belief that nations that have contributed most to the problem of climate change should do most to solve it.

“One of the most important principles referred to internationally is that of polluter pays. The most common interpretation is that national targets for the reduction of greenhouse gas emissions should be based on the historical contribution of each nation to global emissions.

“The most important factor in determining this contribution is the level of emissions per capita and a number of studies of burden sharing or differentiation have identified emissions per capita as the foremost criterion on which emission reduction targets should be based.

“Until now, perceptions of emissions per capita have been based on energy consumption and it was widely believed that the United States had the world’s highest emissions per capita.

“Now, with data from all sources and all greenhouse gas sinks, it is possible to make a more thorough and accurate comparison of national emissions.”

The full report can be read at the Australia Institute’s website - www.tai.org.au.

Net greenhouse gas emissions per capita for selected countries, 1995

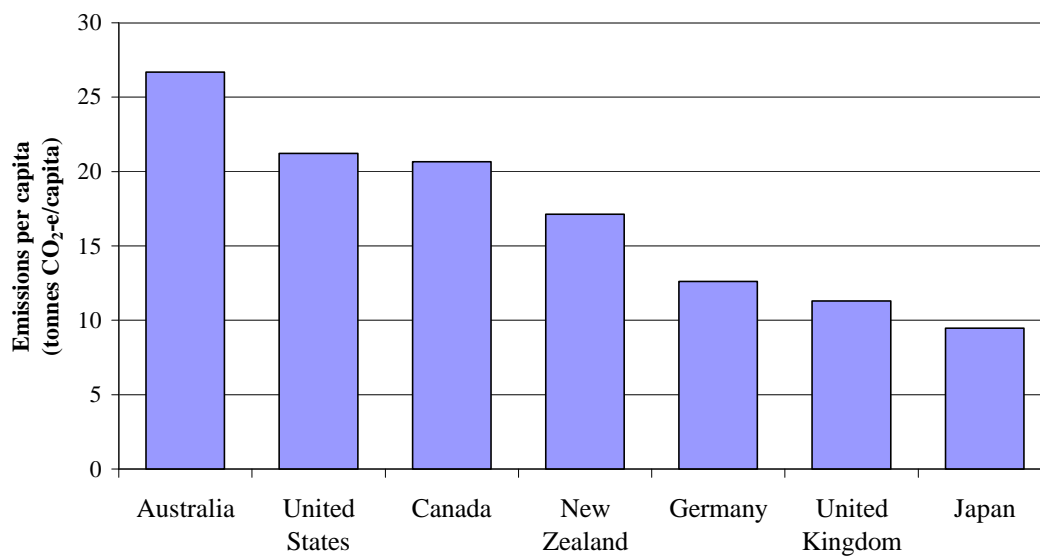


Table 1 Total emissions, breakdown by source and per capita emissions for Annex B countries, 1995 (Mt CO₂-equivalents)^a

	Energy		Industry	Agriculture	Waste	LUC&F	Other	Total	Population 1995 (millions)	Per capita emissions (t CO ₂ -e/capita)
	Fuel combustion	Fugitive								
Australia	291.77	25.58	7.45	87.36	16.36	51.87	1.55	481.94	18.07	26.67
Austria	50.05	2.46	11.49	5.41	4.63	-13.58	4.13	64.59	8.06	8.01
Belgium ^c	112.83	0.95	14.27	11.52	4.99	-2.06	0.06	142.56	10.14	14.06
Bulgaria	59.34	5.57	8.18	3.40	10.96	-7.52	0.06	79.98	8.41	9.51
Canada	478.96	48.20	36.34	25.04	19.47	0.00	3.31	611.32	29.62	20.64
Czech Republic	130.37	8.51	5.22	3.45	3.02	-5.45	0.30	145.42	10.33	14.08
Denmark	58.91	0.71	1.31	16.17	1.55	-0.96	0.46	78.14	5.23	14.94
Estonia	20.93	0.00	0.22	0.84	0.67	-13.27	0.00	9.39	1.49	6.30
Finland	57.33	0.08	1.77	4.64	2.79	-10.50	0.08	56.19	5.11	11.00
France	365.79	14.33	40.79	48.88	19.15	-46.80	9.93	452.06	58.14	7.78
Germany ^e	885.13	24.57	50.31	61.52	39.90	-30.00	0.00	1031.43	81.66	12.63
Greece	84.79	1.03	8.33	8.37	2.77	0.00	0.00	105.29	10.45	10.08
Hungary	58.97	6.62	2.28	3.06	6.11	-4.80	0.00	72.23	10.23	7.06
Iceland	1.77	0.08	0.46	0.29	0.04	0.00	0.01	2.65	0.27	9.81
Ireland	33.27	0.23	2.58	19.28	2.95	-6.23	0.75	52.83	3.6	14.68
Italy	425.20	10.07	29.31	41.84	21.65	-24.51	12.39	515.95	57.3	9.00
Japan ^e	1162.10	3.55	68.65	20.65	28.54	-94.62	1.51	1190.38	125.57	9.48
Latvia	12.16	0.46	0.13	5.81	0.64	-10.48	0.04	8.76	2.52	3.48
Lithuania ^b	37.75	0.55	2.64	7.15	3.49	-8.85	4.09	46.81	3.72	12.58
Luxembourg	9.16	0.04	0.41	0.51	0.08	-0.30	0.01	9.92	0.41	24.19
Monaco ^d	0.08	0.00	0.00	0.00	0.05	0.00	0.00	0.13	0.03	4.30
Netherlands	183.66	3.57	7.61	18.31	9.13	-1.70	1.48	222.06	15.46	14.36
New Zealand	24.95	1.19	2.74	44.33	2.77	-13.49	0.20	62.69	3.66	17.13
Norway	29.89	2.35	8.52	3.88	6.78	-13.64	0.34	38.12	4.36	8.74
Poland ^c	365.18	18.90	13.76	22.87	17.96	-41.95	0.23	396.94	38.59	10.29
Portugal ^c	47.92	0.26	4.01	6.33	13.77	-1.15	0.27	71.41	9.92	7.20
Russian Fed ^c	1607.27	297.20	24.37	114.53	41.04	-568.00	9.95	1526.37	148.2	10.30
Slovakia	45.99	2.25	3.43	4.24	1.45	-5.12	0.19	52.42	5.37	9.76
Slovenia ^b	13.60	1.07	0.64	2.35	1.60	-2.29	1.79	18.75	1.99	9.42
Spain ^c	221.62	13.41	18.85	37.64	15.30	-28.97	0.04	277.88	39.21	7.09
Sweden	56.29	0.02	5.17	4.20	1.28	-30.00	0.25	37.21	8.83	4.21
Switzerland	40.95	0.34	2.71	5.84	2.85	-5.10	0.12	47.72	7.08	6.74
Ukraine ^b	671.17	130.81	33.70	50.50	19.68	-51.98	7.25	861.12	51.55	16.70
United Kingdom	533.77	23.94	28.93	26.19	38.44	9.95	1.53	662.75	58.61	11.31
United States	5206.40	202.49	96.43	268.23	236.44	-428.00	0.00	5581.99	263.17	21.21
Total	13385.31	851.36	542.98	984.59	598.30	-1409.50	62.33	15015.37	1106.36	13.57

a: Main gases (CO₂, CH₄, N₂O), excluding bunkers and non-CO₂ emissions from LUC&F. Year is 1995 unless stated otherwise.

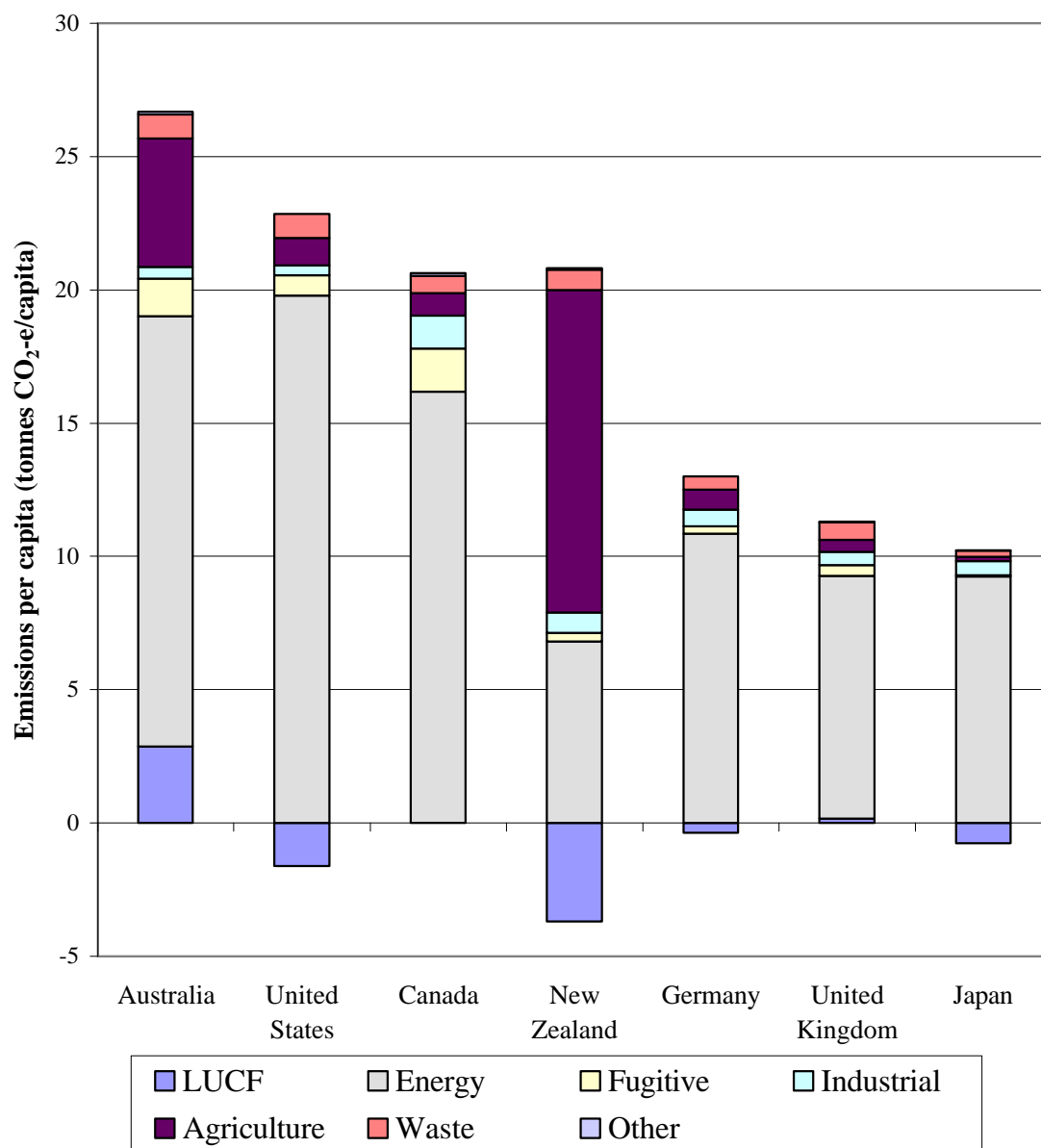
b: 1990 data c: 1994 data d: 1996 data

e: Combination of 1994 and 1995 data

Note: there are a number of instances where countries did not report emissions and emissions have been counted as zero.

Source: UNFCCC 1998. Population data obtained from IEA 1997, p. 48–57. Monaco's population was obtained from <http://www.monaco.monte-carlo.mc/us/presentation/index.html>.

Figure 1 Greenhouse gas emissions per capita by source for selected countries, 1995



Note: For those countries where the LUC&F sector is a net sink, the block of sequestered emissions below the zero line in the figure must subtracted from the emissions above the line to obtain net emissions per capita.