

# South Africa's Greenhouse Gas Inventory 2000

Compiled by  
Energy Research Centre  
University of Cape Town



& Council for Scientific &  
Industrial Research



For



environment  
& tourism

Department:  
Environment Affairs and Tourism  
REPUBLIC OF SOUTH AFRICA

## Summary Report of CO<sub>2</sub> equivalent Emissions

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub> <sup>(1)</sup>	CH <sub>4</sub>	N <sub>2</sub> O	HFCs <sup>(2)</sup>	PFCs <sup>(2)</sup>	SF <sub>6</sub> <sup>(2)</sup>	Total
	CO <sub>2</sub> equivalent (Gg)						
<b>Total (Net Emissions) <sup>(1)</sup></b>	<b>333,395</b>	<b>76,072</b>	<b>23,554</b>	<b>-</b>	<b>2,219</b>	<b>-</b>	<b>435,240</b>
<b>1. Energy</b>	<b>301,100</b>	<b>40,871</b>	<b>1,913</b>				<b>343,884</b>
A. Fuel Combustion (Sectoral Approach)	301,076	485	1,913				303,473
1. Energy Industries	212,226	91	986				213,303
2. Manufacturing Industries and Construction	38,879	10	146				39,036
3. Transport	38,655	258	503				39,416
4. Commercial/institutional	1,902	0	9				1,911
5. Residential	5,547	122	259				5,928
6. Agriculture/forestry/fishing	3,706	3	10				3,718
5. Other	160	0	0				161
B. Fugitive Emissions from Fuels	24	40,386	NA,NO				40,411
1. Solid Fuels	24	40,366	NA,NO				40,391
2. Oil and Natural Gas	-	20	NO				20
<b>2. Industrial Processes and Product Use</b>	<b>52,574</b>	<b>4,287</b>	<b>2,388</b>	<b>NA,NO</b>	<b>2,219</b>	<b>NA,NO</b>	<b>61,469</b>
A. Mineral Products	6,863	NA	NA				6,863
B. Chemical Industry	23,752	4,284	2,388	NO	NO	NO	30,424
C. Metal Production	21,959	3	-	NA	2,219	NA,NO	24,182
D. Other Production	NO						NO
E. Production of Halocarbons and SF <sub>6</sub>				NA,NO	NA,NO	NA,NO	NA,NO
F. Consumption of Halocarbons and SF <sub>6</sub> <sup>(2)</sup>				NE	NE	NE	NE
G. Other	NA	NA	NA	NA	NA	NA	NA
<b>3. Agriculture, Forestry and Land Use</b>	<b>-20,279</b>	<b>22,137</b>	<b>18,636</b>				<b>20,494</b>
A. Enteric Fermentation		18,969					18,969
B. Manure Management		1,905	415				2,320
C. Forest Land	-13,021	NA,NO					-13,021
D. Cropland	-7,730						-7,730
E. Grassland							
F. Wetlands		191					191
G. Settlements							
H. Other Land							
I. GHG Emissions from Biomass burning	471	1,072	794				2,337
J. Liming							
K. Urea Application							
L. Direct N <sub>2</sub> O emissions from managed soils							
M. Indirect N <sub>2</sub> O emissions from managed soils			17,427				
N. Rice Cultivation		NA	NA				NA
O. Harvested wood products							
P. Other							-
<b>4. Waste</b>	<b>-</b>	<b>8,776</b>	<b>617</b>				<b>9,393</b>
A. Solid Waste Disposal on Land		8,085					8,085
B. Waste-water Handling		691	617				1,308
C. Waste Incineration							
D. Other							
<b>5. Other (as specified in Summary 1.A)</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>
<b>Memo Items: <sup>(3)</sup></b>							
<b>International Bunkers</b>	11,646	17	96				11,758
Aviation	2,906	0	25				2,932
Marine	8,740	17	70				8,827
<b>Multilateral Operations</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>				<b>NO</b>
<b>CO<sub>2</sub> Emissions from Biomass</b>	<b>4,700</b>						<b>4,700</b>
Total CO <sub>2</sub> Equivalent Emissions without Land Use, Land-Use Change and Forestry							414,746
Total CO <sub>2</sub> Equivalent Emissions with Land Use, Land-Use Change and Forestry							435,240

<sup>(1)</sup> For CO<sub>2</sub> from Land Use, Land-use Change and Forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

<sup>(2)</sup> Actual emissions should be included in the national totals (2006 IPCC Guidelines)

<sup>(3)</sup> Countries are asked to report emissions from international aviation and marine bunkers and multilateral operations, as well as CO<sub>2</sub> emissions from biomass, under Memo Items. These emissions should not be included in the national total emissions from the energy sector. Amounts of biomass used as fuel are included in the national energy consumption but the corresponding CO<sub>2</sub> emissions are not included in the national total as it is assumed that the biomass is produced in a sustainable manner. If the biomass is harvested at an unsustainable rate, net CO<sub>2</sub> emissions are accounted for as a loss of biomass stocks in the Land Use, Land-use Change and Forestry sector.

**Document Status:** Please note that, although this is the final draft of the document compiled as an output of the Department of Environmental Affairs and Tourism's Greenhouse Gas Information Management Project, it has not been subjected to an independent audit, peer review or public comment process. The Project Steering Committee will still engage with the documents before they are reviewed by an external reviewer. Thus, although this document has been circulated at the Climate Change Summit 2009 in order to initiate a process of public engagement around its content and findings, the broad circulation and/or citation of this document is discouraged until such time as the independently audited and peer reviewed draft is formally published for public comment in the Gazette.

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## Selected Greenhouse Gas Emissions above 1% of Total Emissions

	CO2 eq Gas Emissions (kt)			Total CO <sub>2</sub> e Gg (Kt)
	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	
<b>ENERGY</b>				
<b>ENERGY INDUSTRY</b>				
Sub Bituminous coal for public electricity	170,716	37	825	171,578
Autoproducers	7,819	2	38	7,858
Refinery coal	28,562	19	56	28,638
<b>MANUFACTURING AND CONSTRUCTION</b>				
Other bituminous coal	24,378	5	120	24,503
Blast furnace gas	4,822	0	1	4,823
<b>TRANSPORT</b>				
Road Gasoline	24,412	244	349	25,005
Road Gas/Diesel	11,521	13	62	11,596
<b>INTERNATIONAL BUNKERS</b>				
Marine RFO	7,759	15	62	7,836
<b>FUGITIVE EMISSIONS</b>				
Underground mining	20	35,444	-	35,463
<b>INDUSTRIAL PROCESSES</b>				
<b>MINERALS INDUSTRY</b>				
cement production	4,443			4,443
<b>CHEMICAL INDUSTRY</b>				
Gas production processes	23,531			23,531
<b>METAL INDUSTRY</b>				
Iron production - Blast furnaces (t)	6,825	-	-	6,825
Steel production oxygen furnace (t)	298	-	-	298
<b>AFOLU</b>				
<b>LIVESTOCK</b>				
Enteric Fermentation		18,969		18,969
<b>LANDS</b>				
Indirect N <sub>2</sub> O emissions from managed soils			17,427	17,427
<b>WASTE</b>				
Solid waste disposal on land		8,085		8,085

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