Parliament House 2005-2006 Environmental Performance Report

Introduction

1 The information in this report is structured using the core Global Reporting Initiative (GRI) environment performance indicators as a framework. The Global Reporting Initiative is an independent institution whose mission is to develop and disseminate globally applicable Sustainability Reporting Guidelines. These Guidelines are for voluntary use by organisations for reporting on the economic, environmental and social dimensions of their activities, products and services.

Materials

EN 1 Total materials use other than water, by type

2 Parliament House uses a variety of materials for the efficient functioning of Parliament. Some of the major items that have an impact on the environment are paper, fertiliser and chemicals. The number of separate organisations occupying Parliament House and the diverse functions performed by them make it impossible to gather accurate data against this indicator.

3 The purchase of technology by the Department of the Senate focussed on minimising resource consumption, including power, the reusability and recycling of equipment at the end of its life, and having suppliers take back packaging for reuse or recycling. Similar considerations were built into the selection criteria for the standing offer for desktop computer equipment for the Parliament which is now in operation.

4 In the Department of the House of Representatives 'Green purchasing' formed an integral part of purchasing selection criteria and was used for major purchases including chairs, refrigerators, dish washers and fax machines. Elements such as energy consumption, sustainable manufacturing techniques, the reuse of parts on obsolete equipment and the return of packaging were included.

EN 2 Percentage of materials used that are wastes (processed or unprocessed) from sources external to the reporting organisation.

5 In 2005-2006 Parliament House did not use any significant quantity of materials that are wastes from sources external to the organisation.

Energy

EN 3 Direct energy use segmented by primary source.

6 The main components of energy use in Parliament House are gas and electricity. Gas is used for heating, domestic hot water and catering equipment. Electricity is used to provide a variety of services including office lighting, power,

mechanical services, lifts, chillers, computer equipment, catering equipment, water features, central waste plant and boosted hot water heating.

7 Each year Parliament House reports its energy consumption to the Australian Greenhouse Office as part of the report on Energy Use in the Australian Government's Operations. In 2005-2006 Parliament House consumed the following energy:

Parliament House Building

Electricity (kWh)	23,244,060
Natural Gas (GJ)	47,307
Diesel (Generators & Boilers)(L)	11,445
Greenpower (kWh)	2,853,996
Total GJ	141,702
Area (m²)	152,000
MJ/Area (m²)/annum	932

West Block Office - Tenant Light and Power

Electricity (kWh)	304,490
Greenpower (kWh)	26,477
Total GJ	1,191
Occupancy (People)	4
Area (m²)	2,294
MJ/Occupancy (People)/annum	27,709
MJ/Area (m²)/annum	519
m²/person	53.35

Passenger Vehicles

LPG (L)	3,954
Petrol (L)	76,608
Automotive Diesel (L)	0
Total GJ	2,722
Distance Travelled (km)	1,011,251
MJ/Distance Travelled (km)/annum	2.69

Other Transport – Truck, Gardening Equipment & Forklifts

Automotive Diesel (L)	8,856
LPG (L)	1,880
Petrol (L)	3,225
Total GJ	500

Summary

Component	Energy Consumption (GJ)	Cumulative Total (GJ)
Parliament House Electricity	93,953	93,953
Parliament House Gas	47,307	141,260
Parliament House Diesel	442	141,702
West Block Light and power	1,191	142,893
Passenger Vehicles	2,722	145,615
Truck, Gardening Equipment & Forklifts	500	146,115
TOTAL	146,115	146,115

Performance Overview

8 The primary energy used within Parliament House during the 2005-2006 reporting year (electricity and gas) was 141,260 GJ, which is 5.8% higher than the energy consumption in 2004-2005. The reasons for the increase were:

(a) There were more sitting days in 2005-2006 (because 2004-05 included an election period).

(b) DPS took on responsibility for street lighting around Parliament Drive.

(c) The Recreation Centre refurbishment was completed and the centre reopened from 1 August 2005. This meant that the swimming pool plant and air conditioning system contributed to the building load from then.

(d) The installation of compressors to operate the new security bollards.

(e) the lifting of water restrictions in Autumn 2005, when water features around Parliament House were turned on again resulted in increased electricity consumption. If level three water restrictions are introduced again during the 2006-07 summer, electricity consumption will again reduce.

(f) one of the coldest autumns since 1967 resulted in an increase in gas consumption.

9 In 2005-2006 Parliament House purchased 2,853,996 kWhrs of green energy from the Snowy Hydro scheme. This represents 10.9% of total electricity consumption in 2005-2006.

10 In 2005-2006 DPS negotiated a new electricity contract that will come into effect on 1 July 2006. The new electricity contract will see 10% of Parliament House's electricity being sourced from 'new' green energy sources including wind and solar and 15% being sourced from 'old' hydro produced green electricity. In total, 25% of Parliament House's electricity supply will be sourced from renewable energy sources.

11 DPS is reviewing the energy strategy to reduce long-term energy use and greenhouse gas emissions. The strategy is expected to be completed in 2006-07.

12 Since Parliament House was opened in 1988, DPS has achieved the following results over the 1988–89 baseline year.

(a) Electricity reduction of 40%;

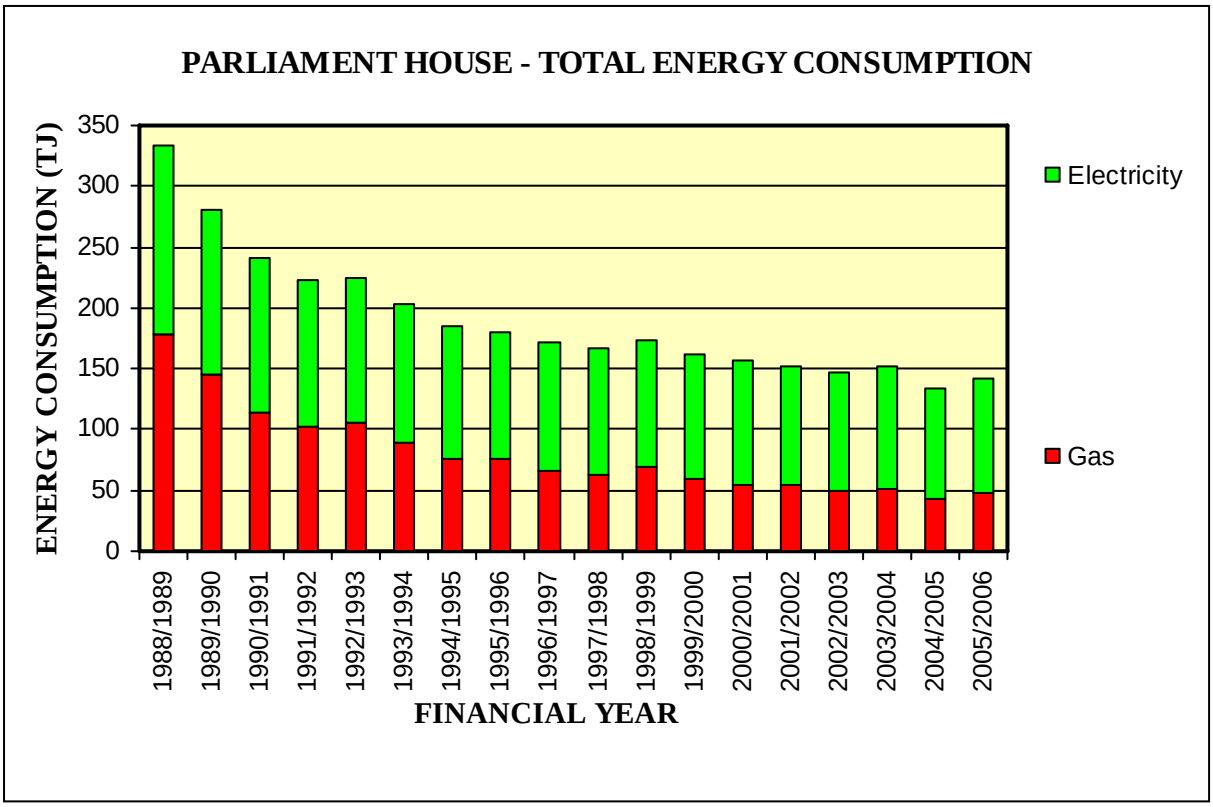
(b) Gas reduction of 73%;

(c) Carbon dioxide emission equivalent reduction of 45%; and

(d) Total energy consumption reduction of 58%.

13 DPS complied with all the applicable requirements of the Government's policy for improving energy efficiency in Commonwealth Government operations. Details can be found on the environmental portal accessible from the Parliament House web site at http://www.aph.gov.au/dps

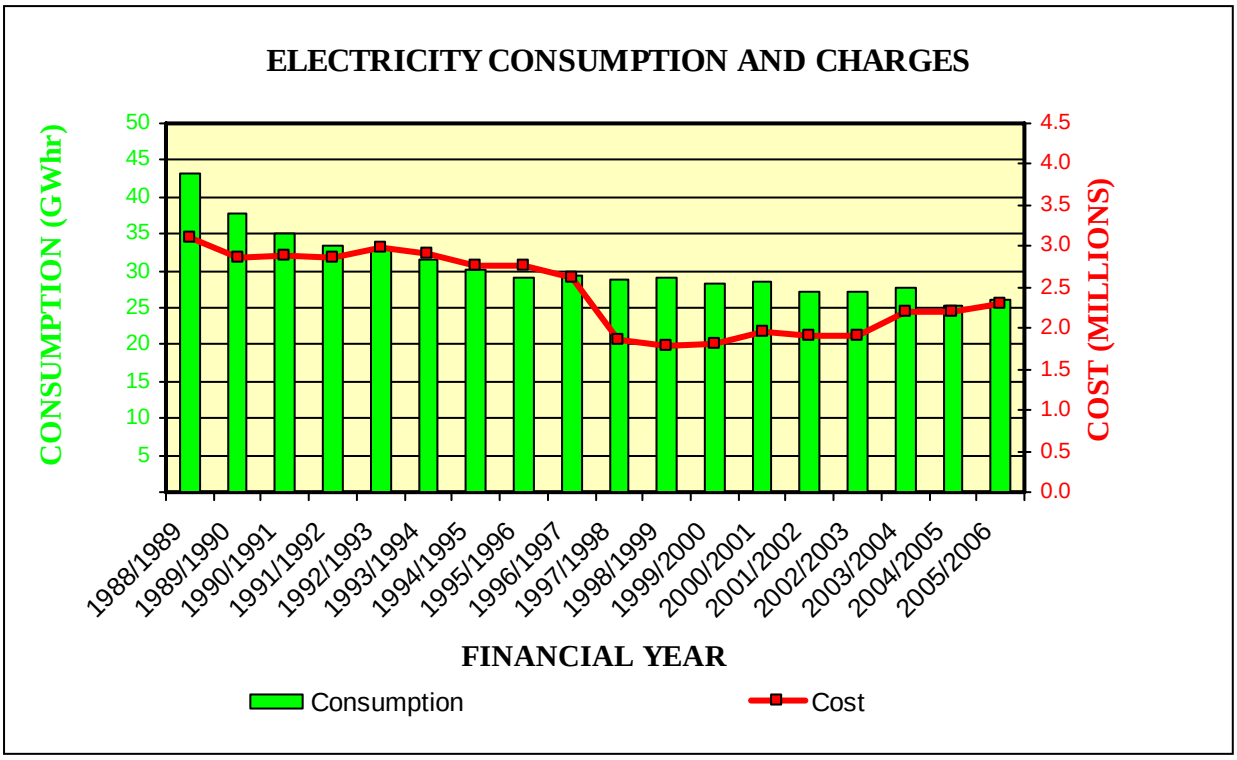
14 The reduction in energy consumption is shown in the following graph.



Electricity Consumption

15 Electricity consumption during 2005-2006 was 26,098,056 kWhrs, an increase of 3% compared with 2004-05. Electricity consumption is approximately 40% higher on a sitting day compared with a non-sitting day. As noted above, there were more (27) sitting days in 2005-06 than in 2004-05.

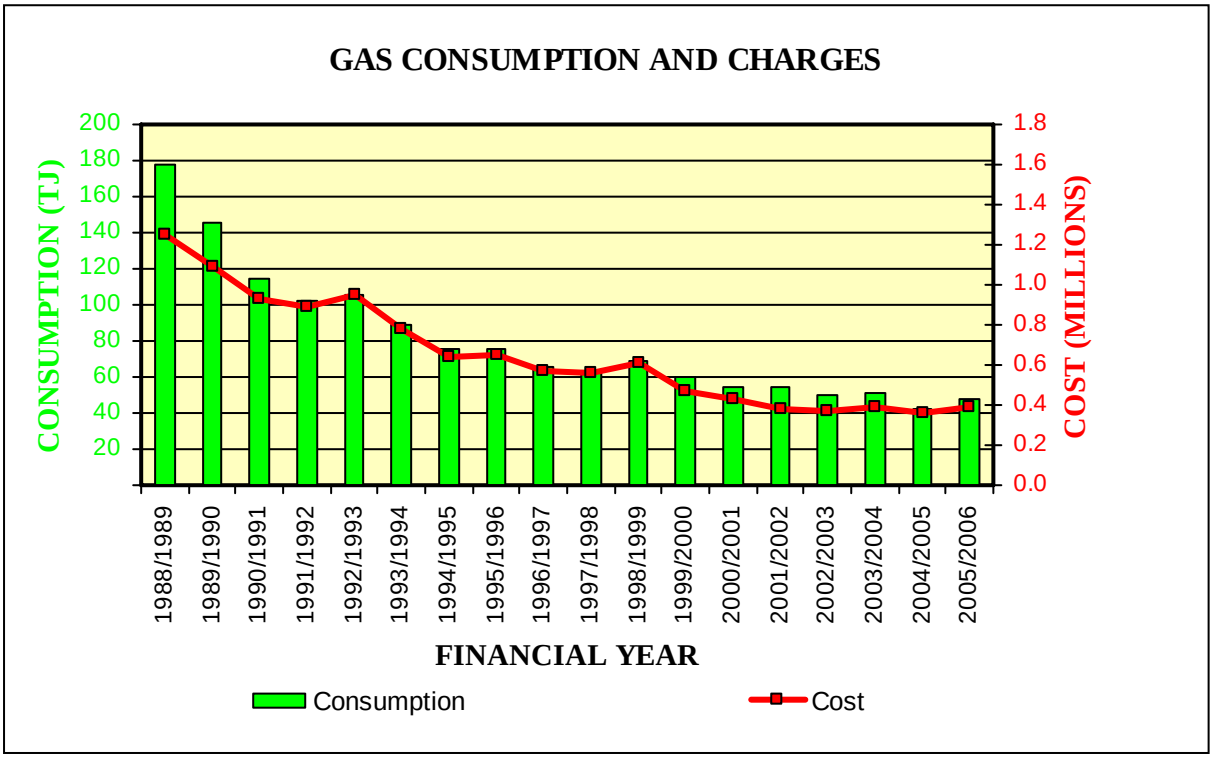
16 When compared with 2003-2004 (a year with a more typical sitting pattern) electricity consumption decreased by 6%.



Gas Consumption

17 The increase in sitting days also contributed to higher gas costs. Gas consumption during 2005-06 was 47,307 GJ, an increase over 2004-05 of 11.8%.

18 Gas consumption is approximately 35% higher on a sitting day compared with a non-sitting day and, as noted earlier, there were 27 more sitting days in 2005-06.



EN 4 Indirect energy use.

19 Indirect energy refers to the total amount of energy used to provide electricity to Parliament House and includes the energy used to produce and transmit the electricity to Parliament House. In 2005-2006 most of Parliament House's electricity came from coal fired power stations with 10% 'old' green energy being purchased from the Snowy Hydro scheme.

20 For 2005-2006 the figures used to calculate indirect energy were based on the National Greenhouse Gas Inventory 2002 Table 4-19 published by the AGO.

21 Based on this factor indirect energy consumption for Parliament House in 2005-2006 was 253,526 GJ.

Water

EN 5 Total water use

22 Water consumption for 2005-2006 was 268,470 kL. This represented a 38% increase in water consumption compared with the 2004-2005 financial year.

23 This significant increase was due to the following factors:

(a) A considerable amount of landscape redevelopment work was undertaken in 2005-06 following completion of the security enhancement project, and also replanting of trees, shrubs and turf following the drought. The new plantings required considerably more water than established plants. The work undertaken included:

(i) laying 1.6 ha of turf;

(ii) seeding 0.9 ha of lawn in spring;

(iii) laying 2,000 m^2 of buffalo turf;

(iv) planting 2,500 trees and shrubs as part of the replacement following the drought; and

(v) establishing 10,134 plants on the Senate, House of Representatives and Ministerial access road banks.

(b) The Australian Capital Territory experiencing a very dry period from December 2005, with a total evaporation loss of 1,082 mm during the seven months from 1 December (based on rainfall and evaporation data from the Bureau of Meteorology). The long-term average for that period is 793 mm.

(c) A fault with the irrigation system, and a burst irrigation main that ran for two and a half hours before isolation, resulted in excessive water consumption.

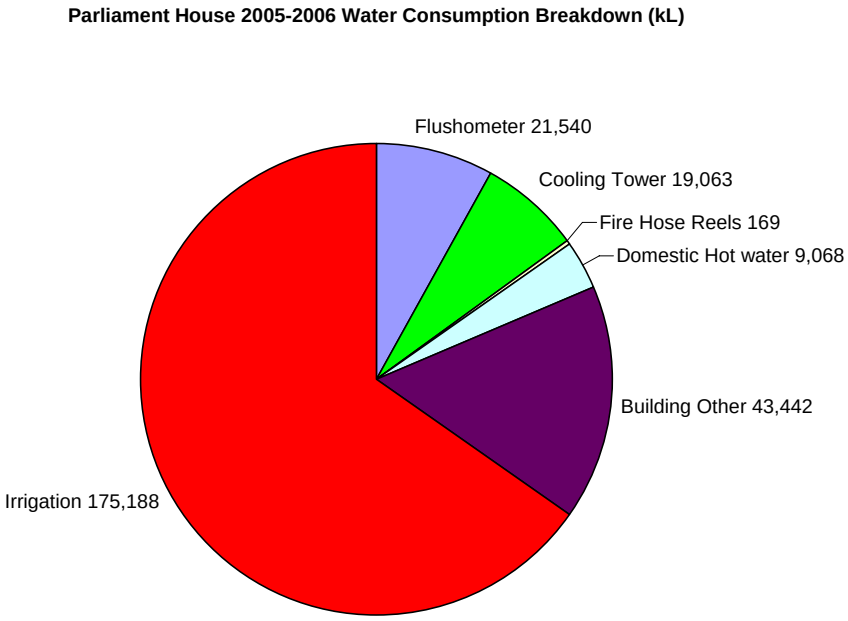
(d) Most of the 21 water features around Parliament House were turned off in 2004-2005 because of water restrictions and the water display upgrade project. The swimming pool and spa were also closed due to refurbishment. In 2005-2006 the water features and pool were fully operational again resulting in increased water consumption due to backwashing and evaporation from these water features and pools.

(e) Water consumption for toilet facilities, catering facilities and air conditioning plant is higher on sitting days due to an increased building population and operating hours. There were 27 additional sitting days in 2005-2006 compared with 2004-2005 resulting in an increase in water consumption.

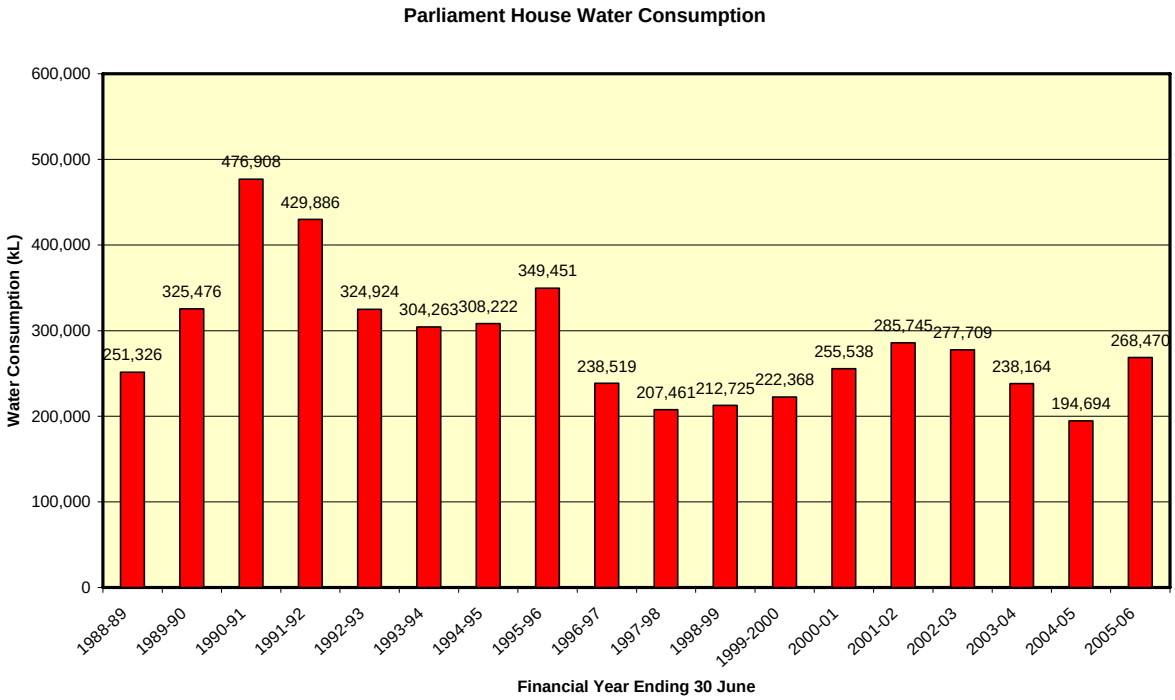
24 As part of the Recreation Centre upgrade project new dual flush toilets and five waterless urinals were installed in the male change rooms.

25 A second waterless urinal system using microbial bacteria cubes was trialled in three urinals in the private areas of Parliament House. The observed results included no deterioration in the presentation of urinals, no visible build up of crystalline uric acid or sulphate discolouration in pipework and no unpleasant odours. The results of this trial are being added to work being undertaken by consultants—analysing the range of reduced flow or waterless urinals now available in Australia—prior to a decision being made on which technology to implement throughout the rest of the 62 male toilet facilities in the building.

26 The consumption of water can be broken down into the following categories.



27 The following graph shows the consumption of water since the building was opened in 1988.



Biodiversity

EN 6 Location and size of land owned, leased, or managed in biodiversity-rich habitats

28 In 2005-2006 DPS did not own or lease any land in biodiversity rich habitats.

EN 7 Description of the major impacts on biodiversity associated with activities and/or products and services in terrestrial, freshwater, and marine environments

29 In 2005-2006 there were no major impacts on biodiversity associated with activities and/or products and services in terrestrial, freshwater, and marine environments.

Emissions, Effluents and Waste

EN 8 Greenhouse gas emissions

30 DPS is a member of the Greenhouse Challenge Program and has been reporting on greenhouse gas emissions from Parliament House since 1997.

31 The following is an extract from the 2005-2006 Greenhouse Challenge report.

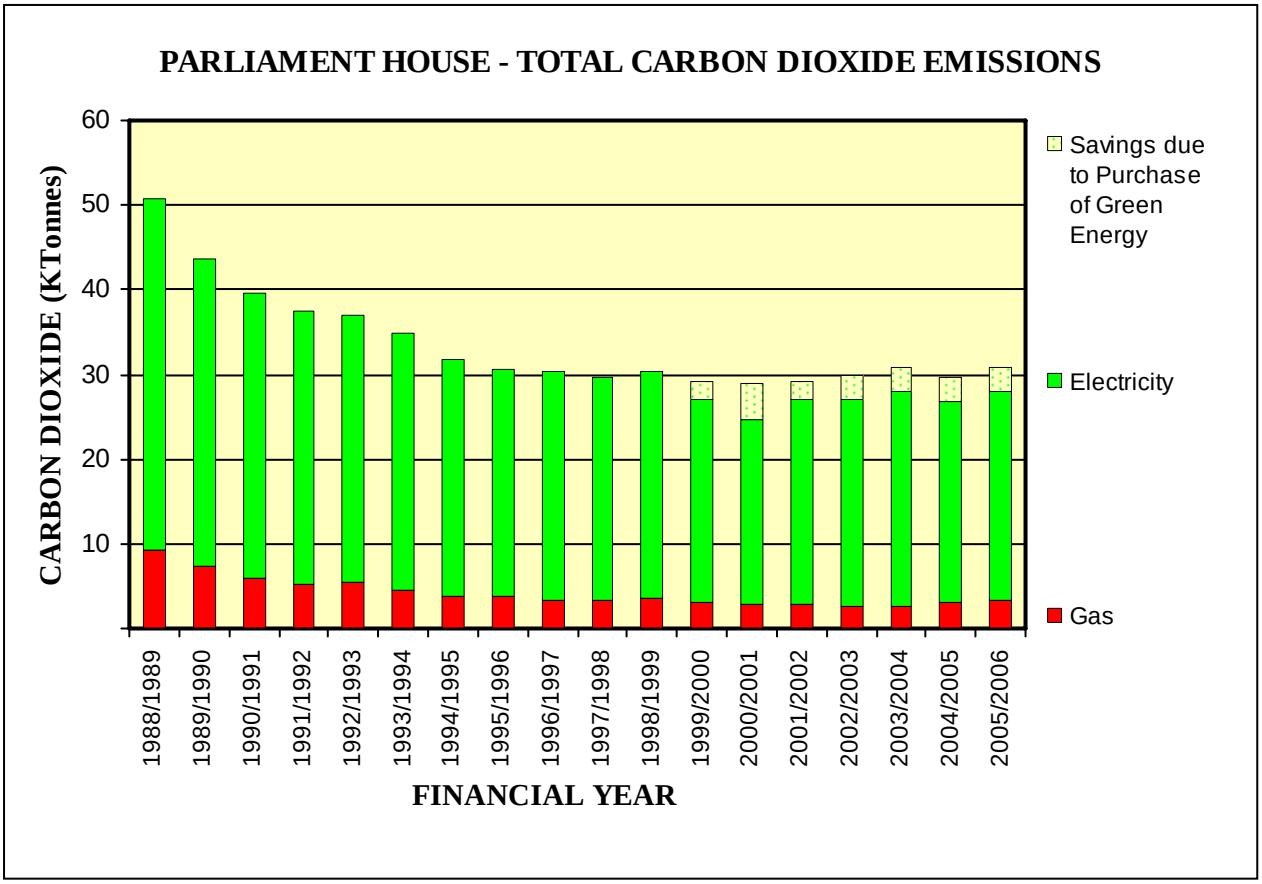
	Consumption		Emissions (tonnes CO2 -e)
Emissions			
Stationary energy			
Electricity	26,098,056	kWh	27,528
Natural gas	47,307	GJ	3,373
Automotive diesel	11	kL	34
Transport energy			
Automotive diesel	9	kL	27
Automotive gasoline (Petrol)	80	kL	222
LPG	6	kL	10
Waste to landfill			
CO2-e	494	tonnes	494
Total for emissions			**31,688**
Offsets			
Stationary energy			
Greenpower	2,853,996	kWh	(3,010)
Nett inventory for FY2005-2006			**28,678**[1]

[1] this figure has been recalculated since publication of the Annual Report

32 The following table shows greenhouse gas emissions due to Parliament House electricity and gas consumption in the 2005-2006 financial year.

Source	Emissions (tonnes CO2 -e)
Electricity	27,528
Natural Gas	3,373
Greenpower	(3,010)
	27,891

33 The following graph shows annual greenhouse gas emissions from the Parliament House electricity and gas consumption since the building was opened in 1988.



34 Greenhouse gas emissions due to the consumption of electricity and natural gas for the 2005-06 financial year was 27,891 tonnes of CO_2. This represents a 4.3% increase in total greenhouse gas emissions compared with the 2004-2005 Financial Year.

EN 9 Use and emissions of ozone depleting substances

35 The ozone depleting substances used at Parliament House are refrigerants which are used in:

(a) chillers which provide cooling for the building's air conditioning;

(b) coolrooms;

(c) freezers; and

(d) refrigerators.

36 The table below shows the refrigerants that were used in 2005-2006 and the Ozone Depletion Potential for each of these of these refrigerants.

Refrigerant	Qty Used (kg)	Ozone Depletion Potential	CFC-11 equivalent (kg)
404A	104	0	0
R22	48	0.055	2.64
R134a	0	0	0
Total	152		2.64

EN 10 NOx, SOx, and other significant air emissions by type

37 The combustion of natural gas for heating, hot water and cooking purposes generates quantities of NOx, SOx, and other air emissions from Parliament House. Each year Parliament House reports on these emissions to the National Pollution Inventory. The following table lists the emissions from Parliament House for 2005-2006.

Substance	**Total Emissions (kg)**
Carbon monoxide	1,800
Oxides of nitrogen	1,900
Particulate matter (PM10)	170
Total Volatile organic compounds	120
Sulfur dioxide	11
Polycyclic aromatic hydrocarbons	0.0150

EN 11 Total amount of waste by type and destination

Waste to Landfill

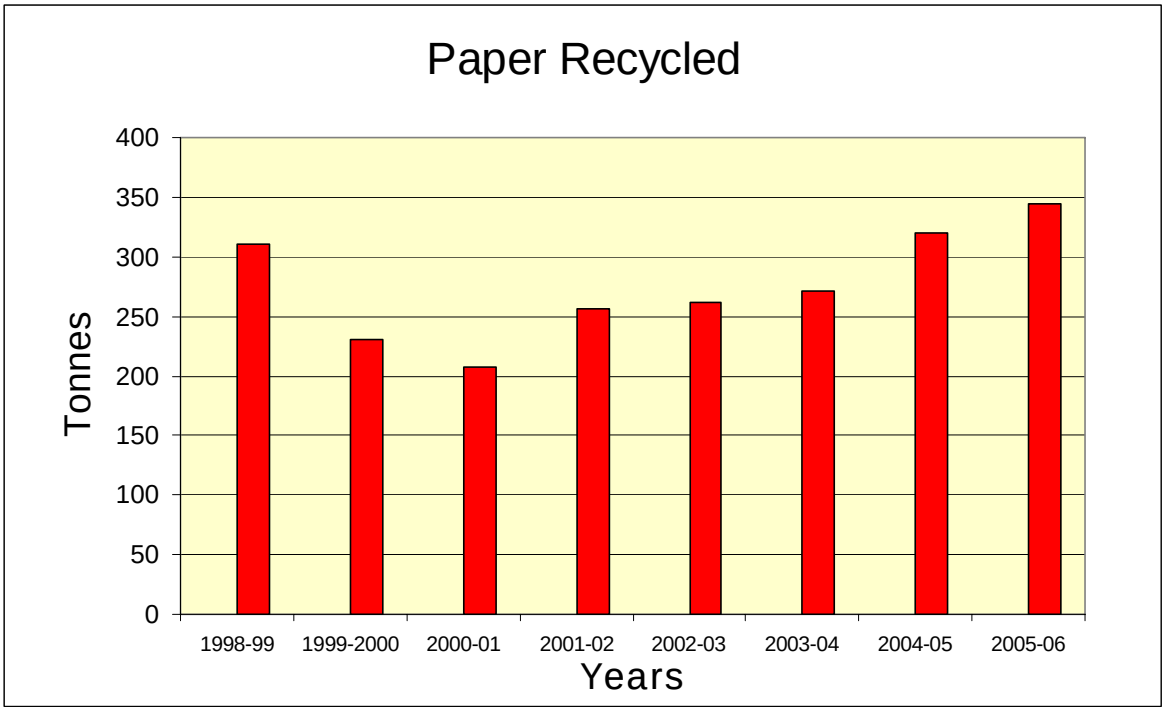
38 Waste to landfill includes all the waste sent to landfill from the operations of Parliament House. It does not include waste generated from large projects such as the security wall.

39 In the 2005-2006 financial year the amount of waste sent to landfill was 475 tonnes.

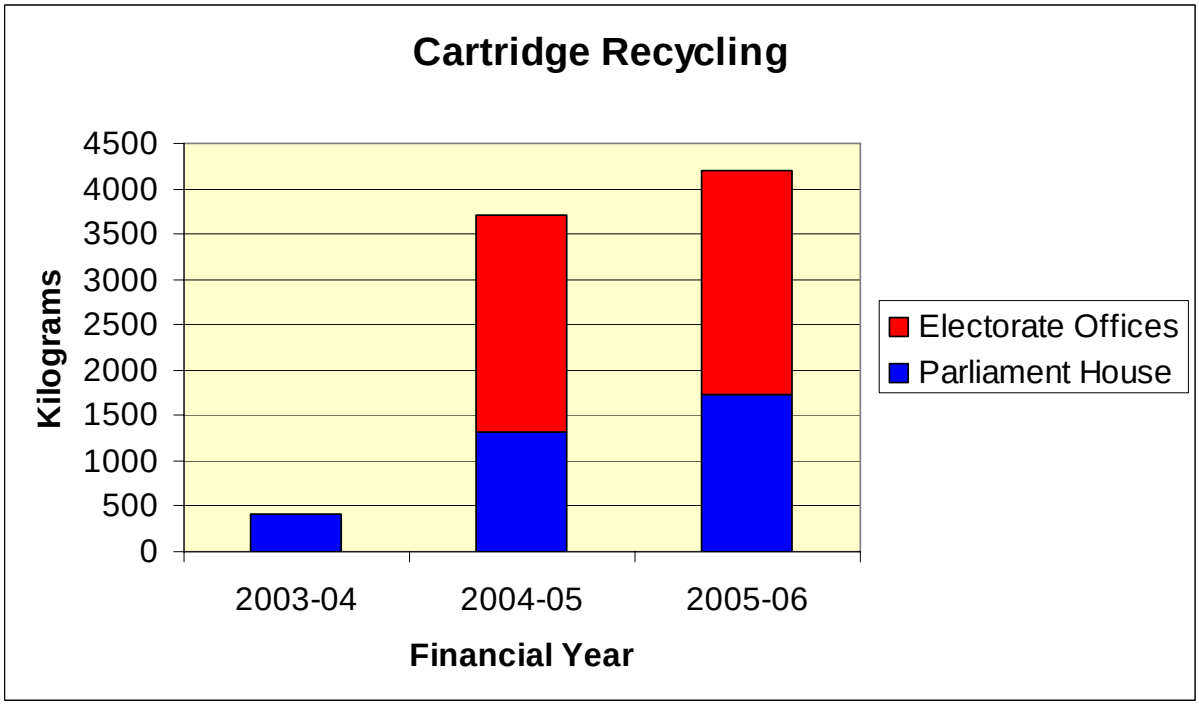
Recycled Waste

40 Recycled Waste includes recycled paper, recycled cardboard, classified paper waste, commingled waste, printer cartridges, lamps, used oil, grease and batteries. It does not include any landscape or construction waste that is recycled.

41 Paper recycling rates continued to improve, with 345 tonnes of paper and cardboard being diverted from landfill in 2005-06. A waste audit conducted in 2005 identified that Parliament House is recycling 63% of available paper and cardboard.



42 Printer cartridge recycling resulted in 1,736 kg (an increase of approximately 400 kg) of toner cartridges being recovered and recycled from Parliament House. Cartridge recycling opportunities in electorate offices saw 2,454 kg of cartridges being recovered and recycled (an increase of approximately 50 kg). This resulted in a total of 4.19 tonnes of cartridge materials being removed from the waste stream over the reporting year.



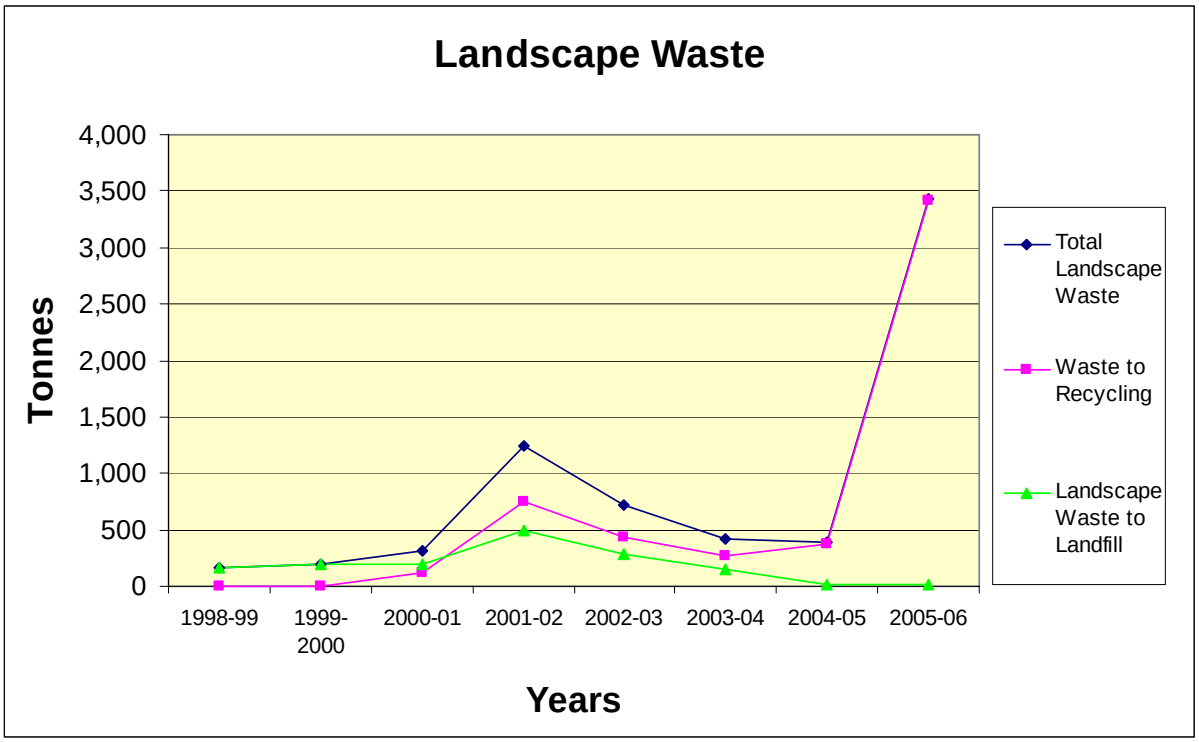
43 The recycling of 28,000 lamps, grease, used oil, metals and batteries, glass and some commingled material added to the Parliament's recycling results.

Landscape Waste

44 Landscape waste disposed of to landfill or recycled is separately recorded and monitored.

45 In 2005-2006, 3,429 tonnes of landscape waste was generated from maintenance activities in the Parliament House landscape. 99.74% of this landscape waste was recycled. Returfing of the grassed ramps at the southern end of the building resulted in 3,075 tonnes of grass and soil being recycled by a local golf course, at no cost to the Parliament. The short distance travelled by trucks removing the material limited diesel consumption and the contribution to greenhouse gas production.

46 Trends over time can be seen in the following graph.



EN 12 Significant discharges to water by type

47 In a typical year approximately 62.8 ML is discharged into the sewerage system. The sewerage is essentially domestic strength. There are a number of installed systems to prevent trade waste from entering the sewerage system. These include:

(a) Grease traps on all of the kitchens (which are cleaned out every 3 months);

(b) A coalescing plate filter on the vehicle washdown bay (to prevent oil from entering the sewer); and

(c) A system to remove paint solids from paint brush washing facilities before they enter the sewer.

48 There was no measurable leachate runoff from the site into the surrounding waterways during the reporting period.

EN 13 Significant spills of chemicals, oils, and fuels in terms of total number and total volume

49 In 2005-2006 there were no significant spills of chemicals, oils and fuels from Parliament House.

50 Procedures are in place to minimise the risk of such incidents occurring and necessary materials are maintained in strategic areas throughout the parliamentary precincts to manage such an incident should it occur.

Products and Services

EN 14 Significant environmental impacts of principal products and services

51 In 2005-2006 Parliament House did not produce any products or services that had significant environmental impacts.

EN 15 Percentage of the weight of products sold that is reclaimable at the end of the products' useful life and percentage that is actually reclaimed

52 In 2005-2006 Parliament House did not sell any products that are reclaimable at the end of the product's useful life.

Compliance

EN 16 Incidents of and fines for non-compliance with all applicable international declarations/conventions/treaties, and national, sub-national, regional, and local regulations associated with environmental issues.

53 In 2005-2006 there were no instances of fines for non compliance with any regulations associated with environmental issues.