

Northern Territory Government

2005-2006

**building energy
and greenhouse report**

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Executive Summary

This is the first annual Building Energy and Greenhouse Report to be released under the *Northern Territory Government Energy Smart Buildings Policy*. The report details energy usage for fifteen agencies in the 2005-06 financial year, as compared to baseline figures established in 2004-05, and summarises how agencies are incorporating energy management into their operations.

The energy efficiency reduction target for each agency's building portfolio for the 2005-06 financial year, as set in the policy, is a 1% decrease in energy use per square metre of floor area. Eight of the fifteen agencies met or exceeded this target, the best performance was reported by the Department of the Legislative Assembly which achieved a saving of 9.7%.

The largest consumer of energy in the NT Government is the Department of Health and Community Services, accounting for 43% of total government building energy use, a consequence of having energy intensive hospitals in the agency's building portfolio. The Department of Health and Community Services was not able to meet the 2005-06 reduction target.

This report also details the energy consumption and intensity of seventeen building types across government. Hospitals were the largest consumers, accounting for 38% of the government building energy use reported. While reporting separately, educational institutions together account for nearly 23% of the government's building energy use.

Changes in greenhouse gas emissions, reported as kilograms of carbon dioxide per square metre of floor area, are also detailed for each agency for 2005-06 compared to 2004-05. Action 1.1 of the *Northern Territory Strategy for Greenhouse Action 2006* states that the government aims to "Reduce greenhouse gas emissions resulting from energy consumption by 1.5% in NT Government controlled commercial buildings by the end of June 2007". Eight of the reporting agencies met this target by June 2006 and are now working to meet the 10% greenhouse reduction target by 2010.

In 2005-06 there was a 1.6% increase in whole-of-government building energy consumption and a 0.9% increase in greenhouse gas emissions.

In summary, the 2005-2006 Northern Territory Government Building Energy and Greenhouse Report illustrates that, across the NT Government, agencies are considering energy management and greenhouse gas emissions in their business operations. However it is challenging for those with large building portfolios, and multiple competing priorities, to focus on energy management. The increasing energy and greenhouse reduction targets in coming years pose an opportunity for the government to continuously improve energy management in its operations.

Introduction

Northern Territory Government Energy Smart Buildings Policy

The *Northern Territory Government Energy Smart Buildings Policy*¹ was approved by Cabinet in March 2005. The key objective of the policy is to achieve and maintain best practice energy management in NT Government occupied buildings to save operating expenditure and greenhouse gas emissions.

The policy sets annual efficiency targets in energy usage per square metre of floor area for each NT Government department's total owned and leased building portfolio compared with their portfolio's energy use in 2004-05, as shown below.

Year	Efficiency Target (percentage MJ/m ² reduction compared to 2004-05)
2005-06	1 %
2006-07	1.5 %
2007-08	3 %
2008-09	5.5 %
2009-10	8 %
2010-11	10%

Energy use per square metre (energy intensity) targets were chosen instead of total energy use targets because energy intensity targets are not as sensitive to changes in department size or building ownership as energy use targets. Appendix One translates the percentage targets into MJ/m² targets for each agency.

¹ Available at www.nt.gov.au/buildingsustainability

All NT Government agencies with more than fifty full time employees, excluding government owned corporations, must comply with the policy. Government owned corporations and business divisions with less than fifty full time employees are encouraged to adopt the principles of the policy.

The policy covers the direct use of energy generated from fossil fuels in buildings occupied by the NT Government where the energy is paid for directly by the NT Government (including leased buildings and excluding residential buildings).

The Department of Planning and Infrastructure (DPI) oversees the implementation of the policy and compiles data for annual Building Energy and Greenhouse Reports. Each agency is responsible for monitoring and reporting its energy use. Under the policy, each Chief Executive is accountable to their Minister for their department's performance in relation to the policy.

Changes to Reporting Under the Policy

Under the original policy, where the major government tenant of a building pays for the energy used by other government tenants, energy use is to be attributed to parties according to the floor area they occupy. To limit the administrative effort required by agencies in reporting energy usage this requirement has been removed. The agency that pays directly for the energy reports the energy usage for the building.

Where high levels of efficiency had already been achieved in agencies within particular buildings by 2004-05 or other asset considerations affect the potential to achieve targets, agencies were to negotiate alternative targets with DPI by

the end of November 2005. Due to delays in reporting agencies now have until November 2007 to negotiate new targets under the policy in consultation with DPI.

Under the original policy agencies are to report on their structure as it exists on June 30 each year as if it existed for the whole year. However significant departmental restructuring occurred after 30 June 2005 and it was decided that the baseline data should allocate energy use according to the post-June 2005 departmental structures. This simplified baseline data gathering and allows for meaningful comparisons of energy data each year.

Data Gathering and Reporting

The majority of electricity data used in reporting has been provided to agencies through an energy database developed by DPI. The database compiles consumption and cost data from the Power Water Corporation as well as asset and floor area information from the Building Asset Management System (BAMS), providing details required by agencies for energy reporting. Agencies are responsible for checking and correcting the data where necessary and for gathering non-electricity data and electricity data where Power and Water was not the supplier.

Under the *Northern Territory Government Energy Smart Buildings Policy*, agencies are not required to report energy usage in residential buildings. A small number of remote facilities use diesel for power generation in both residential and non-residential buildings. Where this situation occurred in the 2004-05 financial year, DPI engaged a consultant to estimate the proportion of diesel used in power generation for the non-residential buildings, through the examination of diesel billing records and establishing patterns of use at each

site. The ratio established for the baseline period is applied to diesel generation figures for each subsequent reporting period where the operation of the site has not changed significantly.

Energy data related to non-building operations, such as the energy used in the operation of heavy machinery and to pump bores has been excluded from the reporting.

The Commonwealth developed EDGAR (Environmental Data Gathering And Reporting) system was used by agencies to enter energy data through an internet based user interface.

End Use Categories

Energy data is reported under seventeen 'end use' or 'building energy' categories. An end use category defines the primary function for a site, definitions of end use categories used in this report can be found at Appendix Two.

Each end use category has a normalisation factor that must be reported to determine the energy intensity of a facility. The floor area of each facility must be reported. Occupancy figures are also required for facilities reported under the end use categories 'Office – Tenant Light and Power' and 'Office - Combined Services'.

The energy intensity of facilities classified under the same end use category can be compared between agencies as the facilities are recognised as having similar activity levels.

Greenhouse Gas Coefficients

Greenhouse gas coefficients set in EDGAR to calculate emissions from NT Government energy use are taken from the *'Australian Greenhouse Office Factors & Methods Workbook'* August 2004. The greenhouse gas coefficients used for each fuel type are listed in Appendix Three.

The greenhouse gas coefficients will be maintained throughout the life of the policy to allow meaningful comparison of greenhouse gas emissions each reporting year.

Limitations in Reporting

Agencies reporting under the *Northern Territory Government Energy Smart Buildings Policy* have endeavoured to report energy usage in all non-residential buildings occupied by the NT Government. Due to a range of circumstances energy data for 24 facilities could not be reported. A list of facilities occupied by the NT Government but absent from energy reporting can be found at Appendix Four.

Agency baseline figures will be adjusted in future years as more data becomes available.

Cost changes have not been reported for 2005-06 compared to 2004-05 as an unresolvable problem with August 2005 cost data downloaded from Power Water Corporation's database corrupted the financial information for the 2005-06 financial year. The *2006-2007 Northern Territory Government Building Energy and Greenhouse Report* should be able to include energy cost performance indicators.

DPI has undergone a data checking and quality control process prior to compilation of this report.

Agency Results

Agency Energy Performance

Whole-of-government energy usage increased by 11,122 GJ (1.6%) compared to 2004-05.

The agency target for 2005-06 was a 1% reduction in energy usage per square metre of floor area. The results for the agencies varied, with the largest reduction being 9.7%, achieved by the Department of the Legislative Assembly, and the greatest increase being 4.4% as reported by the Department of Health and Community Services. Eight of the fifteen reporting agencies achieved the efficiency target.

The Department of Health and Community Services is the largest energy user, accounting for 43% of total government energy use, followed by the Department of Employment, Education and Training which is responsible for 24%.

The Department of Corporate and Information Services and the Department of Planning and Infrastructure reduced their energy intensity but were unable to reach the 1% target.

Table 1: Summary of agency energy performance in 2005-06

Agency	Energy Consumption		Energy Intensity	Variation in energy intensity
	GJ	% of Total	(MJ/m ²)	% Reduction/ (% Increase)
Darwin Port Corporation	3,703	0.54%	1,097	(0.9%)
Department of Business, Economic & Regional Development	7,646	1.12%	928	(0.4%)
Department of Corporate & Information Services	23,472	3.44%	922	0.2%
Department of Employment, Education & Training	162,739	24.43%	430	2.3%
Department of Health & Community Services	290,175	42.5%	1,349	(4.4%)
Department of Justice	39,925	5.85%	548	2.1%
Department of Local Government, Housing & Sport	6,966	1.02%	293	6.6%
Department of Natural Resources, Environment & the Arts	46,249	6.77%	683	(0.2%)
Department of Planning & Infrastructure	15,239	2.23%	543	0.37%
Department of Primary Industry, Fisheries & Mines	20,827	3.05%	433	1.4%
Department of the Chief Minister	3,077	0.45%	445	3.3%
Department of the Legislative Assembly	14,761	2.16%	717	9.7%
NT Police, Fire & Emergency Services	43,488	6.37%	722	(2.3%)
Northern Territory Treasury	3,485	0.51%	579	2.9%
Office of the Commissioner for Public Employment	1,024	0.15%	236	4.5%
Total	682,778			

Agency Building Greenhouse Targets

Action 1.1 of the *Northern Territory Strategy for Greenhouse Action 2006* states that the government aims to “Reduce greenhouse gas emissions resulting from energy consumption by 1.5% in NT Government controlled commercial buildings by the end of June 2007, compared to emission levels in 2004-05”². Eight agencies successfully met this target in 2005-06.

Whole-of-government greenhouse gas emissions for 2005-06 increased 0.9% compared to 2004-05.

Table 2: Agency greenhouse gas emissions during 2005-06 and progress towards emission reduction target.

Agency	Greenhouse Gas Emissions		Greenhouse Intensity	
	Kilograms	% Total	KgCO ₂ -e /m ²	Variation in greenhouse intensity % Reduction/ (% Increase)
Darwin Port Corporation	762,867	0.61%	226	(0.89%)
Department of Business, Economic & Regional Development	1,575,003	1.26%	191	(0.53%)
Department of Corporate & Information Services	4,835,193	3.85%	190	0%
Department of Employment, Education & Training	33,023,091	26.32%	87	3.33%
Department of Health & Community Services	46,090,666	36.74%	214	(3.88%)
Department of Justice	8,167,630	6.51%	112	2.61%
Department of Local Government, Housing & Sport	1,435,075	1.14%	61	6.15%
Department of Natural Resources, Environment & the Arts	8,842,198	7.05%	131	0.76%
Department of Planning & Infrastructure	3,038,045	2.42%	108	1.82%
Department of Primary Industry, Fisheries & Mines	4,190,716	3.34%	87	1.14%
Department of the Chief Minister	632,818	0.50%	92	3.16%
Department of the Legislative Assembly	3,035,864	2.42%	148	9.20%
NT Police, Fire & Emergency Services	8,889,074	7.09%	148	(2.78%)
Northern Territory Treasury	717,984	0.57%	119	3.25%
Office of the Commissioner for Public Employment	211,043	0.17%	49	3.92%
Total	125,447,267			

² The Strategy (available at <http://www.nt.gov.au/nreta/environment/greenhouse/publications>) also states “This target to extend beyond the life of this Strategy, increasing to 10% by 2010/2011”.

Energy Usage by End Use Category

Energy usage in buildings varies depending on the nature of building use. In the 2005-06 financial year agencies reported data in seventeen different end use categories. A definition of each end use category can be found in Appendix Two.

Table 3: Energy use, greenhouse gas and energy cost by end use category

End Use Category	Energy Consumption		Greenhouse Emissions	
	GJ	% Total	Tonnes CO ₂ -e	% Total
Hospitals	257,772	37.80%	39,415	31.44%
Primary Schools	100,980	14.81%	20,301	16.20%
Secondary Schools	50,046	7.34%	10,309	8.22%
Police, Fire and Emergency Services Facilities	43,199	6.33%	8,829	7.04%
Office buildings - Combined Services	37,852	5.55%	7,696	6.14%
Public Buildings	32,303	4.74%	6,407	5.11%
Other Buildings	29,518	4.33%	6,078	4.85%
Office - Tenant Light and Power	24,071	3.53%	4,959	3.96%
Other Healthcare Buildings	20,528	3.01%	4,229	3.37%
Parks and Wildlife Facilities	18,918	2.77%	3,456	2.76%
Custodial facilities	17,752	2.60%	3,657	2.92%
Agricultural Facilities	17,078	2.50%	3,418	2.73%
Law Courts	11,966	1.75%	2,408	1.92%
Climate Controlled Stores	11,213	1.64%	2,310	1.84%
Non School Educational Facilities	7,737	1.13%	1,594	1.27%
Entertainment and Sporting Complexes	1,760	0.26%	363	0.29%
Childcare Facilities	85	0.01%	18	0.01%
Total	682,778		125,447	

The largest single end use category for the 2005-06 financial year was hospitals, accounting for 38% of government building energy usage. While listed separately in the above table, educational institutions together account for 23% of the NT Government's building energy use.

Fuel Type

The primary fuel type used in buildings by agencies reporting under the *Northern Territory Government Energy Smart Buildings Policy* is electricity, accounting for nearly 84% of all energy used and 94% of associated greenhouse gas emissions. The greenhouse gas coefficients for each fuel type can be found at Appendix Three.

Table 4 Energy consumption, greenhouse gas emissions and cost by fuel type

Fuel Type	Energy Consumption		Greenhouse Emissions	
	GJ	% Total	Tonnes CO ₂ -e	% Total
Electricity	571,332	83.68	117,694	93.82
Automotive Diesel	73,005	10.69	5,658	4.51
Natural Gas	35,901	5.26	1,924	1.53
LPG	2,540	0.37	171	0.14
Total	682,778		125,447	

90% of diesel use is by hospitals, for example in boilers to generate steam.

Performance Indicators

Each end use category reported has associated performance indicators. All facilities use megajoules per square metre of floor area as a measure of energy intensity and, in addition, agencies report occupancy levels in office buildings to allow calculation of the megajoules per person.

Performance indicators enable the energy intensity of similar facilities to be compared. Table 5 shows the range of agency portfolio average energy intensities for each category. Where only one agency occupies buildings of a particular category, that category has not been included as the lower, upper and average performance indicators are the same.

The data compilation process for this report has provided each agency with a list of performance indicators for all their facilities which will allow them to identify, assess and, where possible, correct poorly performing buildings.

Table 5: Variations in energy intensity of individual buildings for each end use category

End Use Category	Performance Indicator	Performance Range		
		Lower	Upper	Average
Office - Tenant Light and Power	MJ/m ² /annum	79	365	295
	MJ/person/annum	1,401	10,777	7,290
Office Buildings - Combined Services	MJ/m ² /annum	239	1,348	876
	MJ/person/annum	16,445	46,595	26,447
Other Buildings	MJ/m ² /annum	27	1,570	471
Public Buildings	MJ/m ² /annum	693	774	741
Climate Controlled Stores	MJ/m ² /annum	516	2,870	2,486

Agency Energy Use and Performance Indicator Results by End Use Category

Table 6 provides agency energy consumption and performance indicators for each end use category. A wide range in performance indicators can be seen between agencies in some end use categories.

The MJ/person energy intensities are only reported for office buildings, this performance indicator reflects the combined efficiencies of agency use of space and energy.

Table 6: Performance of agencies by end use categories

End Use Category/Agency	Energy Consumption	Performance Indicator	
	GJ	MJ/m ² /annum	MJ/person/annum
Office - Tenant Light and Power			
Department of Corporate & Information Services	2,612	321	7,877
Department of Employment, Education & Training	2,172	294	4,500
Department of Health & Community Services	3,571	301	7,318
Department of Justice	1,673	187	4,891
Department of Local Government, Housing & Sport	3,502	361	10,777
Department of Natural Resources, Environment & the Arts	2,443	324	9,929
Department of Planning & Infrastructure	3,439	285	7,609
Department of Primary Industry, Fisheries & Mines	1,273	365	8,968
Department of the Chief Minister	1,246	297	10,011
NT Police, Fire & Emergency Services	28	79	1,401
Northern Territory Treasury	1,086	306	6,241
Office of the Commissioner for Public Employment	1,024	236	5,888
<i>Sub Total</i>	<i>23,749</i>		
Office buildings - Combined Services			
Darwin Port Corporation	1,096	861	35,339
Department of Business, Economic & Regional Development	7,646	928	29,876
Department of Corporate & Information Services	4,195	874	17,702
Department of Employment, Education & Training	1,197	1,348	38,095
Department of Health & Community Services	8,231	751	17,257
Department of Justice	1,703	1,102	37,845
Department of Local Government, Housing & Sport	551	603	32,410
Department of Natural Resources, Environment & the Arts	1,713	720	29,031
Department of Planning & Infrastructure	8,527	1,025	46,595
Department of Primary Industry, Fisheries & Mines	214	239	16,445
Department of the Chief Minister	381	736	42,293
Northern Territory Treasury	2,399	973	32,913
<i>Sub Total</i>	<i>37,852</i>		

End Use Category/Agency	Energy Consumption	Performance Indicator	
	GJ	MJ/m ² /annum	MJ/person/annum
Other Buildings			
Darwin Port Corporation	2,608	1,240	
Department of Corporate & Information Services	5,832	668	
Department of Employment, Education & Training	608	1,570	
Department of Health & Community Services	72	27	
Department of Justice	6,830	758	
Department of Natural Resources, Environment & the Arts	4,221	364	
Department of Planning & Infrastructure	3,188	435	
Department of Primary Industry, Fisheries & Mines	2,261	152	
Department of the Chief Minister	1,450	660	
Department of the Legislative Assembly	2,187	822	
NT Police, Fire & Emergency Services	261	243	
<i>Sub Total</i>	<i>29,518</i>		
Public Buildings			
Department of Local Government, Housing & Sport	1,153	693	
Department of Natural Resources, Environment & the Arts	18,576	774	
Department of the Legislative Assembly	12,574	702	
<i>Sub Total</i>	<i>32,303</i>		
Climate Controlled Stores			
Department of Corporate & Information Services	10,833	2,870	
Department of Natural Resources, Environment & the Arts	380	516	
<i>Sub Total</i>	<i>11,213</i>		
Hospitals			
Department of Health & Community Services	257,772	1,602	
<i>Sub Total</i>	<i>257,772</i>		
Other healthcare buildings			
Department of Health & Community Services	20,528	713	
<i>Sub Total</i>	<i>20,528</i>		
Law Courts			
Department of Justice	11,966	485	
<i>Sub Total</i>	<i>11,966</i>		
Custodial facilities			
Department of Justice	17,752	618	
<i>Sub Total</i>	<i>17,752</i>		
Police, Fire and Emergency Services Facilities			
NT Police, Fire & Emergency Services	43,199	734	
<i>Sub Total</i>	<i>43,199</i>		
Primary Schools			
Department of Employment, Education & Training	100,980	443	
<i>Sub Total</i>	<i>100,980</i>		

End Use Category/Agency	Energy Consumption	Performance Indicator	
	GJ	MJ/m ² /annum	MJ/person/annum
Secondary Schools			
Department of Employment, Education & Training	50,046	404	
<i>Sub Total</i>	<i>50,046</i>		
Non School Educational Facilities			
Department of Employment, Education & Training	7,737	392	
<i>Sub Total</i>	<i>7,737</i>		
Parks and Wildlife Facilities			
Department of Natural Resources, Environment & the Arts	18,918	882	
<i>Sub Total</i>	<i>18,918</i>		
Agricultural Facilities			
Department of Primary Industry, Fisheries & Mines	17,078	593	
<i>Sub Total</i>	<i>17,078</i>		
Entertainment and Sporting Complexes			
Department of Local Government, Housing & Sport	1,760	156	
<i>Sub Total</i>	<i>1,760</i>		
Childcare Facilities			
Department of Planning & Infrastructure	85	256	
<i>Sub Total</i>	<i>85</i>		

Agency Summaries

The following pages summarise the 2005-06 performance of each agency covered by the *Northern Territory Government Energy Smart Buildings Policy*. Energy management project information provided by agencies, and lists of individual facility results, provided the basis of the agency summaries.

Agencies are listed in alphabetical order.

Darwin Port Corporation

An increase in energy use at the Darwin Port Corporation (DPC) Administration Office has resulted in a slight increase in their energy intensity for 2005-06.

The majority of the DPC energy consumption occurs on the wharves rather than in buildings. Recent wharf lighting control improvements are expected to save wharf energy use.

DPC will continue efforts to reduce power usage in 2006-07.

Department of Business, Economic and Regional Development

The Department of Business, Economic and Regional Development (DBERD) reported a 0.4% increase in energy use per square metre.

Tourism House underwent a significant change in occupancy levels towards the end of the 2005-06 reporting period which may account for its 5.7% increase in energy use per square metre. However, Development House saved 4.1% in the same period. The planned relocation of Tourism NT to Development House, and efficiency outcomes resulting from new lease negotiations, should reduce DBERD energy use in the future.

Department of Corporate and Information Services

Nine out of the Department of Corporate and Information Services' (DCIS's) twelve facilities saved energy in 2005-06 and an overall reduction of 0.2% energy use per square metre was achieved.

Most significant of the three buildings that increased their energy use, the Chan Building (DCIS's largest energy consumer) experienced an increase of 9.5% after the 2004-05 baseline was corrected for the transfer of an air conditioner from a DPI meter to a DCIS meter.

DCIS is currently trialling some energy efficiency initiatives at Palm Court.

Department of Employment, Education and Training

The Department of Employment, Education and Training (DEET) achieved a 2.5% reduction in energy use per square metre across its building portfolio. This result appears to have been influenced by Darwin schools.

Bureau of Meteorology data for Darwin in 2005-06, compared to 2004-05, suggests that there was 10 percent more daytime cloud cover in the latter year, which could be expected to result in slightly reduced heat loads on school air conditioning systems.

The individual facility results show a large range in school performances, ranging from a 65% reduction in energy use per square metre through to a 223% increase in energy use. The range of energy performance in remote schools varied markedly compared to urban schools.

Overall, 70 DEET facilities increased their energy use and 100 decreased their energy use in 2005-06.

The sustainable schools program is encouraging schools to implement energy management initiatives.

Department of Health and Community Services

Overall the Department of Health and Community Services' (DHCS) energy use per square metre increased by 4.4% across its build portfolio.

The five hospitals account for 89% of DHCS energy use. Alice Springs and Tennant Creek Hospitals each increased their energy use per square metre by 15% in 2005-06. A review of Alice Springs Bureau of Meteorology data found that the ambient enthalpy (a combination of temperature and humidity) increased by 6 percent in 2005-06 compared to 2004-05 in the hours where hospital cooling and heating would be required.

Gove Hospital's energy use per square metre remained constant; Katherine Hospital's increased by 0.4% and Royal Darwin Hospital increased its energy intensity by 1.4%.

As with other agencies, DHCS's individual facility results show a large range in performances, ranging from a 90% reduction in energy use per square metre through to a 113% increase. Overall, 38 DHCS facilities increased their energy use and 34 decreased their energy use.

A 90% reduction was achieved at the DHCS archives facility in Winnellie by relocating staff out of the inefficient building into other premises and minimising air conditioning and lighting use.

DHCS plans to specify energy efficient solutions in all new works briefs.

Department of Justice

The Department of Justice (DoJ) decreased its energy use per square metre by 2.1%. Again a large range in individual facility results is apparent (from a 46% increase to a 38% decrease in energy use per square metre).

The Nichols Place Magistrates Court had two air conditioning condensers replaced and was the largest energy using facility to save energy (5.7% saving per square metre). DoJ's energy use has also benefited from the move to Old Admiralty House Office Tower which has highly efficient lighting.

Department of Local Government, Housing and Sport

The Department of Local Government, Housing and Sport (DLGHS) saved 6.6% of their energy use per square metre in 2005-06. Only four of eleven DLGHS facilities used more energy per square metre in 2005-06 than in 2004-05.

The most significant energy saving was in Construction House. Other savings resulted from initiatives at Ethos House and an improvement in space use efficiency – with the relocation of staff from Darwin Central to RCG House

Energy audits of three DLGHS facilities in 2005-06, and a commitment to implement audit recommendations, suggest that even more savings are achievable in future years.

***Department of Natural Resources,
Environment and the Arts***

The Department of Natural Resources, Environment and the Arts (NRETA) reported a 0.2% increase in energy intensity during 2005-06. Thirty-five facilities decreased their energy use whilst 22 reported increases.

Notably, the Museum and Art Gallery of the Northern Territory, NRETA's largest energy using facility, saved 5.6% energy use per square metre in 2005-06. Stage two of the museum cladding project is expected to further improve its efficiency.

The apparent discontinuity in results, where NRETA saved 0.76% of its greenhouse gas emissions whilst using fractionally more (0.2%) energy, is a result of the higher greenhouse impact of diesel use at remote sites compared to grid-connected electricity.

There may be some inaccuracies in NRETA's data due to the need to estimate the proportion of diesel use consumed by non-residential buildings at remote parks. NRETA is working to improve diesel metering at these sites.

One of NRETA's energy management initiatives is to ensure maintenance procedures involve installing the most efficient equipment possible.

***Department of Planning and
Infrastructure***

The Department of Planning and Infrastructure (DPI) achieved a 0.4% saving in energy use per square metre, and invested in energy saving projects at five sites, during 2005-06.

Energy use in 15 of DPI's 24 facilities decreased and the remainder increased their energy use. Energy House saved 15% energy use per square metre and Cavenagh House saved 5%. However DPI's two biggest energy using facilities, the

Greatorex Building and the Chan Building, used more energy in 2005-06 than in 2004-05 (10.6% and 16.5% respectively).

***Department of Primary Industries,
Fisheries and Mines***

During 2005-06 the Department of Primary Industries, Fisheries and Mines (DPIFM) formed a working group with the primary objective to achieve and maintain best practice energy management in the agency's operations.

DPIFM achieved a 1.4% saving in energy intensity in 2005-06. Seven of DPIFM's 13 facilities reported energy savings.

High performers included the Coastal Plains Research Station, which saved 32.7%, the Katherine Research Station which saved 16.7% and Berrimah Farm (which accounts for 55% of DPIFM's energy use) saved 0.6%.

Department of the Chief Minister

The Department of the Chief Minister (DCM) saved 3.2 % of its energy use per square metre in 2005-06.

DCM instigated a staff awareness program and saved 4.9% of its NT House energy use and 3.9% of the Administrator's Offices' energy use.

Only two of six facilities used more energy in 2005-06 than in 2004-05.

Department of the Legislative Assembly

The Department of the Legislative Assembly saved 9.7% of their energy use in 2005-06. Most of this saving is attributable to Parliament House where air conditioning energy use reduced as a result of the installation of a low load chiller and an after hours efficiency initiative on 5th floor. It is also thought that milder weather in 2005-06 contributed to the results.

There was also a 6.7% average saving per square metre for electorate offices and only five of 20 electorate offices increased their energy use in 2005-06 compared to 2004-05.

Northern Territory Treasury

As with many other agencies the Northern Territory Treasury had been working on improving their energy efficiency prior to the introduction of the NTG Energy Smart Buildings Policy.

Treasury's building portfolio consists of two buildings and Treasury showed their commitment to the policy by achieving a 2.9% reduction in their energy intensity through the implementation of the following initiatives during 2005-06:

- Staff education and awareness raising
- Setting computers to enter power off mode after shut down
- Reducing operating hours programmed into the Cavenagh House lighting time control system
- Including energy management information in annual reports

Northern Territory Police, Fire and Emergency Services

The Northern Territory Police, Fire and Emergency Services (NTPFES) energy use per square metre increased by 2.3% in 2005-06.

NTPFES energy consumption since 2004-05 has been influenced by key government initiatives such as the Building Our Police Force Strategy which has increased the number of police officers and changed business practices. These changes include a 24 hour operational Darwin Police Station (Mitchell Centre), new facilities at Humpty Doo and Mutitjulu and 24 hour operational units at the Peter McAulay Centre such as the Joint

Emergency Services Communications Centre and Child Abuse Task Force and increased usage of the college's training facilities in line with additional police officers. Energy targets will be reviewed with respect to these issues.

Notwithstanding this, there is capacity for energy intensity reductions at Peter McAulay Centre which will be investigated jointly by DPI/NTPFES.

Forty of 60 NTPFES facilities had decreased energy use in 2005-06. Individual facility results range from a 53% increase in energy use per square metre to a 38% saving.

Office of the Commissioner of Public Employment

The Office of the Commissioner of Public Employment reports energy consumption in Harbour View Plaza. Changes in occupancy levels and patterns have resulted in the 4.5% savings in energy use per square metre reported for 2005-06.

APPENDICES

Appendix One:

Energy Intensity Targets

The *Northern Territory Government Energy Smart Buildings Policy* sets a 10% reduction in NT Government departments' building portfolio energy use per square meter of floor area compared to energy use in the 2004-05 financial year.

The baseline energy efficiency (MJ/m²) for each agency and annual targets are listed in below.

Agency	Year	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
	Efficiency Target	0%	1%	1.5%	3%	5.5%	8%	10%
Darwin Port Corporation		1,087	1,076	1,071	1,054	1,027	1,000	978
Department of Business, Economic & Regional Development		924	915	910	896	873	850	832
Department of Corporate & Information Services		924	915	910	896	873	850	832
Department of Employment, Education & Training		440	436	433	427	416	405	396
Department of Health & Community Services		1,292	1,279	1,273	1,253	1,221	1,189	1,163
Department of Justice		555	549	547	538	524	511	500
Department of Local Government, Housing & Sport		317	314	312	307	300	292	285
Department of Natural Resources, Environment & the Arts		682	675	672	662	644	627	614
Department of Planning & Infrastructure		545	540	537	529	515	501	491
Department of Primary Industry, Fisheries & Mines		439	435	432	426	415	404	395
Department of the Chief Minister		460	455	453	446	435	423	414
Department of the Legislative Assembly		794	786	782	770	750	730	715
NT Police, Fire & Emergency Services		706	699	695	685	667	650	635
Northern Territory Treasury		596	590	587	578	563	548	536
Office of the Commissioner for Public Employment		247	245	243	240	233	227	222

Appendix Two:

Definitions of Building Energy Categories

End Use Category	Description
Office – Tenant Light and Power	Office buildings in which the Government pays only for energy used by tenancy lighting, office equipment, supplementary air conditioning, boiling water units etc.
Office – Combined Services	Office buildings in which Government pays for all energy use.
Public Buildings	Buildings visited by the public in significant numbers, such as art galleries and museums.
Laboratories	Buildings where the main function is that of a laboratory.
Agricultural Facilities	Research farms used for small scale research and development projects that require intensive management and monitoring. Sites often contain a mix of buildings, including laboratories, offices, sheds, workshops and greenhouses.
Climate Controlled Stores	Buildings where main function requires 24 hour climate control for protection of goods they house eg, archives.
Primary Schools	Buildings used primarily as pre- and primary schools.
High Schools	Buildings used primarily as high schools.
Non-School Educational Facilities	Buildings and facilities primarily used for education and training not defined as primary or high schools
Custodial Facilities	Buildings and facilities used primarily for custodial services for adults or juveniles.
Law Courts	Buildings used primarily for court facilities.
Hospitals	Buildings and facilities primarily used as hospitals.
Other Healthcare Buildings	Health care facilities which generally do not involve patients staying over night.
Police, Fire and Emergency Services Facilities	Police stations, fire stations and emergency services facilities.
Other Buildings	Other buildings and facilities.
Entertainment and Sporting Complexes	Entertainment and sporting facilities. This includes theatres, concert halls and sport centres.
Parks and Wildlife Facilities	Ranger Stations, visitor centres, camping grounds, wildlife parks, zoological parks and gardens.
Childcare Facilities	This category is for childcare facilities.

Appendix Three:

Conversion Factors and Greenhouse Gas Coefficients

The greenhouse gas coefficients used to calculate emissions from government energy use are taken from the 'Australian Greenhouse Office Factors & Methods Workbook' August 2004 and are listed in the following table.

Fuel Type	Typical Measured Unit	Abbreviation	To convert to Gigajoules multiply by	Greenhouse gas coefficient kg CO ₂ -e/GJ
Electricity	kilowatt hour	kWh	0.0036	206
Natural Gas	cubic meter	m ³	0.0387	53.6
LPG	litre	L	0.0257	67.2
Diesel	litre	L	0.0386	77.5

Appendix Four:

Facilities Absent from 2005-06 Energy Reporting

Facility	Agency
Alyangula Health Clinic	Department of Health & Community Services
Bonya Health Clinic (new)	Department of Health & Community Services
Canteen Creek Health Clinic	Department of Health & Community Services
Corella Creek Health Clinic	Department of Health & Community Services
Iluwurru Health Clinic	Department of Health & Community Services
Julanimawu Health Clinic	Department of Health & Community Services
Nhulunbuy Child Care Centre	Department of Health & Community Services
Wallace Rockhole Health Clinic	Department of Health & Community Services
Waruwi Health Clinic	Department of Health & Community Services
Waruwi Renal Unit	Department of Health & Community Services
Woodykupilda Health Clinic	Department of Health & Community Services
Nhulunbuy Court House	Department of Justice
Windows on the Wetlands	Department of Natural Resources, Environment & the Arts
Arnhem Electorate Office	Department of the Legislative Assembly
Arafura Electorate Office	Department of the Legislative Assembly
Greatorex Electorate Office	Department of the Legislative Assembly
Millner Electorate Office	Department of the Legislative Assembly
Nhulunbuy Electorate Office	Department of the Legislative Assembly
Barunga School	Department of Employment, Education & Training
Bulla School	Department of Employment, Education & Training
Mutjitjulu School	Department of Employment, Education & Training
Papunya Training Centre	Department of Employment, Education & Training
Ukaka Homeland Centre	Department of Employment, Education & Training
Utopia School	Department of Employment, Education & Training