

Executive Summary

Improving energy efficiency and reducing greenhouse gas emissions is a challenge being faced by governments and organisations worldwide. In Australia, the Commonwealth, territory and state governments are responding to this challenge with policies to improve energy efficiency in Government operations.

The NT Government Energy Smart Buildings Policy sets a 10% by 2011 overall target for reductions in NT Government departments' building portfolio energy use per square metre of floor area. Intermediate energy use reduction targets have also been set each year leading up to 2011.

A report on NT Government departments' progress towards these targets will be submitted to Cabinet and Parliament by the end of December each year and will be made available to the public.

Energy saving opportunities of 10%, which do not compromise productivity and working conditions, are regularly uncovered by NT Government building energy audits. Achieving such reductions throughout Government owned and leased buildings would translate to a saving of \$3 million and over 13,500 tonnes of carbon dioxide every year.

Other key elements of the NT Government Energy Smart Buildings Policy include:

- All Government building projects to aim to demonstrate best practice, cost effective, energy efficient and environmental design, commissioning, operation and maintenance
- A commitment to a staged capital works program to finance energy saving building projects
- Energy audits for all medium to large government buildings
- The NT Government to continue considering energy efficiency in negotiations for leased building space



Policy Objective

To achieve and maintain best practice energy management in NT Government operations with the intention that:

- Savings made through reducing government operational costs will be used more productively by agencies to serve the community
- Greenhouse gas emissions saved will contribute to international efforts to stabilise the climate
- NT Government agencies lead Territory greenhouse gas abatement by example through sustainable energy management
- The NT Government supports the sustainable energy industry in the Northern Territory

Policy Scope

- All Northern Territory Government departments and government business divisions with more than fifty full time employees, excluding government owned corporations, must comply with this Policy
- Government owned corporations and business divisions with less than fifty full time employees are encouraged to adopt the principles of the policy
- This 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)
- 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. Separate metering for each tenant is encouraged

Policy Accountability

Chief Executives are accountable to their Ministers for their department's performance in relation to this Policy.

Departments are to submit annual agency summaries of energy use to the Department of Planning and Infrastructure (DPI) which will consolidate data and submit annual Building Energy and Greenhouse Reports to Cabinet and then to Parliament.

Energy Targets

This policy sets targets in annual energy used 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 2004/2005:

Year	Efficiency Target (percentage MJ/m ² reduction compared to 2004/2005)
2005/2006	1%
2006/2007	1.5%
2007/2008	3%
2008/2009	5.5%
2009/2010	8%
2010/2011	10%

Energy use per square metre ('energy intensity') targets have been chosen instead of total energy use targets because energy intensity targets are not as sensitive to changes in department size or building ownership as total energy use targets.

Recognition of early actions

Where high levels of efficiency had already been achieved within particular buildings by 2004/2005, or other asset considerations affect the potential to achieve targets, agencies may negotiate alternative targets with DPI by the end of November 2005.

Monitoring and Reporting

The practice of monitoring and reporting on energy use is a fundamental element of good energy management.

Reporting under this Policy will comprise of annual NT Government Building Energy and Greenhouse Reports.

Departments are responsible for supplying energy usage data to the Department of Planning and Infrastructure (DPI) by the **25th of October each year** for annual NT Government Building Energy and Greenhouse Reports.

Annual NT Government Building Energy and Greenhouse Reports are to be submitted to Cabinet by the Minister for Infrastructure and Transport by the **end of December each year**, prior to being tabled in Parliament and made available to the public.

As a minimum, NT Government Building Energy and Greenhouse Reports are to detail departmental and total NT Government:

- Floor area and occupancy based energy intensity figures for Building Energy Categories (refer Appendix B)
- Total energy use, expenditure and greenhouse gas emissions figures and
- Percentage changes in these performance indicators.

Each department will have the opportunity to explain their performance and comment on energy efficient initiatives in the reports.

Details regarding the reporting databases and guidelines are included in Appendices A and B.

Financial Incentives

Experience has found that access to financial savings is a major incentive for the attainment of best practice energy management.

Departments will retain savings achieved by energy management projects.

Identifying Energy Saving Opportunities

DPI organises and funds energy audits in NT Government leased and owned buildings. Energy audits are to be conducted at least once every five years in all NT Government facilities with annual energy expenditure exceeding \$50,000.

DPI can also advise on how to have other energy efficiency and renewable energy investigations completed.

Financing Energy Saving Projects

Funding to implement energy saving projects can be sourced from:

1. A staged Energy Smart Building Upgrades capital program to be funded through agencies' Minor New Works programs and coordinated by DPI;
2. Agency operating budgets as appropriate; and
3. Allocation of savings from energy management initiatives to future energy saving projects.

Each year covered by this Policy, DPI is to advise Cabinet on agency projects within the Energy Smart Building Upgrades capital program, and identify corresponding savings anticipated for each agency.

Cost Effectiveness Criteria

In line with the "Northern Territory of Australia Procurement Policy and Strategies" Value For Money principle, energy efficiency and renewable energy initiatives are deemed to be cost effective if they have equivalent or better life cycle costs compared to the status quo or non-sustainable energy solutions.

In many cases a simple payback period of eight years or less can be used as cost effectiveness criteria¹.

Use of renewable energy is encouraged where overall greenhouse gas emissions are less than alternative solutions and a positive Net Present Value is predicted.

Government Building Projects

Government building projects play an important role in demonstrating, and developing industry capability in, energy efficient and environmental design and technologies.

All Government building projects are to aim to demonstrate best practice, cost effective, energy efficient and environmental design, commissioning, operation and maintenance.

Technical guidelines for cost effective energy efficient and environmental design are to be developed and applied where feasible.

Trials of new cost effective energy efficient and environmentally-friendly technologies and practices in Government projects are encouraged.

Footnote: ¹ Calculated using an 8% discount rate over a 15 year period.

Leased Buildings

To ensure building owners have the economic incentive to invest in their base building² energy efficiency, wherever feasible the NT Government is only to pay directly for energy used by tenant lighting and general power³ and after hours air conditioning.

The NT Government will continue considering energy efficiency issues, which directly affect the Government's energy expenditure, in lease negotiations.

In the future, as benchmarking tools become available in the Territory, the Government also aims to consider base building energy efficiency in lease negotiations. The property industry will be consulted prior to the finalisation of such initiatives.

Departmental Energy Management Programs

An Energy Management Program is a process of continuous improvement and comprises a set of well-planned actions aimed at reducing an organisation's energy consumption and expenditure. Departments are encouraged to establish in-house Energy Management Programs.

Information on establishing an Energy Management Program can be found at www.ipe.nt.gov.au/energymanagement

Development of Sub-Policies

Sub-policies are to be developed to ensure consistent implementation of energy saving measures across government, for example with respect to the purchasing and operation of equipment and appliances.

Policy Reference Group

An NT Government Energy Smart Buildings Reference Group, consisting of departmental Energy Managers, or their representatives, is to meet at least quarterly to oversee implementation of this Policy.

Policy Review

The first independent review of this policy will occur after the 2005/2006 annual performance report has been completed. The review will assess Policy implementation, including data verification, investment levels and savings achieved. Subsequent independent reviews will then occur every two years. Review results and recommendations will be presented to Cabinet.

Where To Go For Help

Building Sustainability Services, a business unit within the Department of Planning and Infrastructure, can provide information on the implementation of this policy as well as energy audits and energy management advice. Their website (www.ipe.nt.gov.au/energymanagement) provides information on establishing energy management programs and ways to save energy.

Footnotes:

² Building central services such as air conditioning, lifts and common area lighting.

³ General power refers to electricity used by office equipment via power points.

Appendix A – Reporting Databases

The NT Government Energy Smart Buildings Policy requires that departments take responsibility for monitoring and reporting on their energy use.

Departments are to submit annual energy use summaries using electronic reporting templates contained within the online Energy Data Gathering And Reporting (EDGAR) system.

The administrative effort required to do this will be greatly reduced by the development of the building Energy Database extension of DPI's Building Asset Management System.

Energy Database (ED)

ED will be ready for use in time for agencies' 2004/2005 baseline reporting. It is initially be used to store and report on electricity usage in NT Government leased and owned buildings. Over time ED may be expanded to help departments record details of gas, diesel and LPG use in buildings.

Electricity billing information will be obtained from PowerWater Corporation by the Department of Planning and Infrastructure on a monthly basis and uploaded into ED.

Only nominated agency personnel will be able to view energy data within ED.

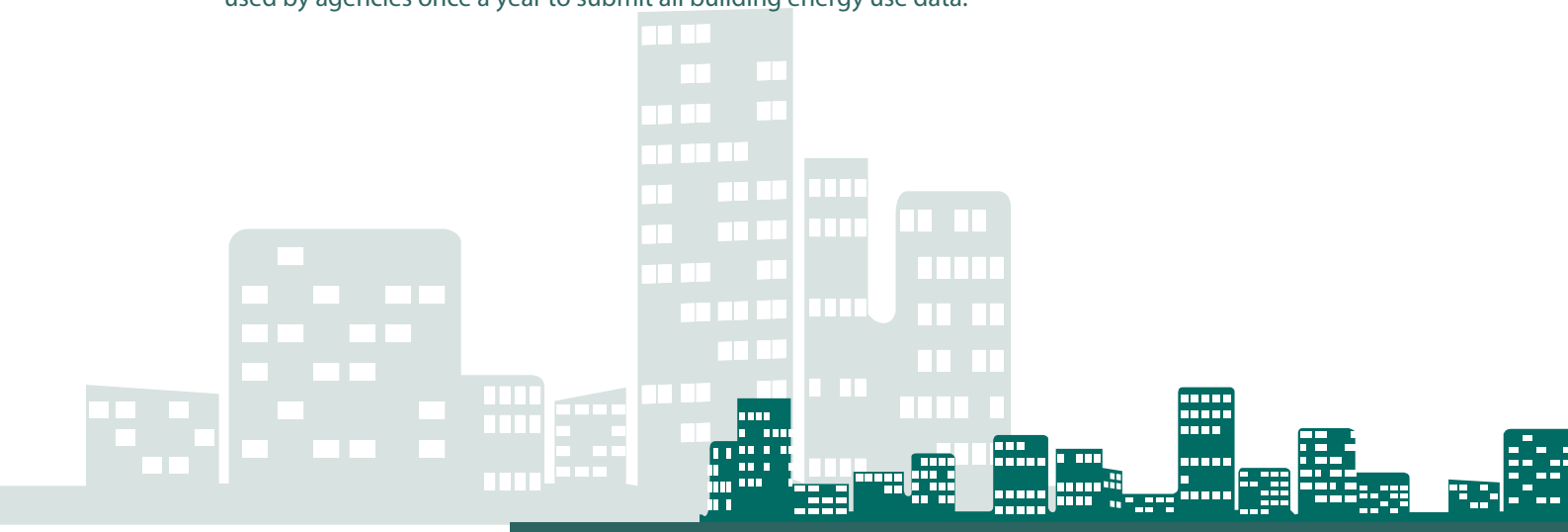
ED will provide departments with information on:

1. buildings within each Building Energy Category, and
2. each building's floor area and electricity consumption and costs

Departments will need to collate gas, LPG and diesel information for their buildings as well as leased building occupancy figures.

EDGAR (Energy Data Gathering And Reporting software)

The Commonwealth Government has developed and maintains the Energy Data Gathering And Reporting (EDGAR) system which is now used by most Australian governments to report on their energy use and greenhouse gas emissions. EDGAR is a user-friendly web based energy reporting tool that will be used by agencies once a year to submit all building energy use data.



Appendix B - Energy Data Reporting Guidelines

Organisational Changes

Government organisations change over time. When reporting energy use, agencies must report on their structure as it exists on June 30 each year as if it existed for the whole year.

A receiving organisation should liaise with the organisation that is losing the operational unit to obtain energy data for the whole year. In some cases energy data may be impossible to obtain and will need to be estimated.

Under this method, if an operational unit is abolished or sold part way through the year, its energy consumption is unreported; a similar methodology is applied to buildings that are sold or demolished during the reporting year. This anomaly is accepted in the interests of reporting simplicity.

Normalisation Factor and Building Energy Category Changes

If building floor areas vary significantly throughout the year, they should be averaged to equivalent full year factors. For example, an occupancy of 500 square metres for 9 months and 1000 square metres for 3 months would have an equivalent full year average of $500 \times 9/12 + 1000 \times 3/12$ equals 625 m² for a full year. Or, as another example, 500m² occupied for 3 months is equivalent to $500 \times 3/12$ equals 125 m² for a full year.

Where a building's Building Energy Category changes then the energy use should be reported under the two relevant Building Energy Categories for that year with equivalent full year average floor areas submitted for each Building Energy Category. For example, if a tenant of a 1000 square metre area pays for all building energy use for 3 months and only tenant light and power for 9 months, then the energy used in each period is included in each of the relevant Building Energy Categories but the area entered for 'Office – Combined Services' would be $1000 \times 3/12 = 250\text{m}^2$ and the area entered in 'Office – Tenant Light and Power' would be $1000 \times 9/12 = 750\text{m}^2$.

Diesel Use in Remote Area Power Systems

Separate information on remote area facilities' use of diesel for power generation in non-residential buildings, verses use in vehicles and power generation for residential buildings, may not be available. Where this is the case, the proportion of diesel used for power generation for non-residential buildings should be estimated in a scientific and consistent manner and every effort made to improve monitoring practices.

Tenants' Proportional Energy Use

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. Separate metering for each tenant is encouraged.



Building Energy Categories

Building Energy Categories are to be selected according to the primary function for each site. Energy use of a site should only be counted once against a single category. Definitions of Building Energy Categories recognised by the NT Government Energy Smart Building Policy, and data required for reporting, are included in Table 1.

Table 1: Building Energy Categories

Building Energy Category	Description	Energy Data Required	Normalisation Factors Required
Office – Tenant Light and Power	Office buildings in which the Government pays only for energy use by tenancy lighting, office equipment, supplementary air conditioning, boiling water units etc.	Electricity consumption (kWh) Electricity cost (\$)	Floor area (m ²) Occupancy (no. Full Time Employees (FTEs))
Office - Combined Services	Office buildings in which Government pays for all energy use.	Electricity consumption (kWh) Electricity cost (\$) Gas consumption (MJ or m ³) Gas cost (\$)	Floor area (m ²) Occupancy (no. FTEs)
Public Buildings	Buildings visited by the public in significant numbers, such as art galleries and museums.	Electricity consumption (kWh) Electricity cost (\$) Gas consumption (MJ or m ³) Gas cost (\$) LPG consumption (L or kg) LPG cost (\$)	Floor area (m ²)
Laboratories	Buildings where the main function is that of a laboratory.	Electricity consumption (kWh) Electricity cost (\$) Gas consumption (MJ or m ³) Gas cost (\$) LPG consumption (L or kg) LPG cost (\$)	Floor area (m ²)
Agricultural Facilities	Research farms.	Electricity consumption (kWh) Electricity cost (\$) Gas consumption (MJ or m ³) Gas cost (\$) LPG consumption (L or kg) LPG cost (\$) Diesel consumption (L) Diesel cost (\$)	Floor area (m ²)
Climate Controlled Stores	Buildings where main function requires 24-hour climate control for protection of goods they house. Eg. archives.	Electricity consumption (kWh) Electricity cost (\$) Gas consumption (MJ or m ³) Gas cost (\$) LPG consumption (L or kg) LPG cost (\$)	Floor area (m ²)

Building Energy Category	Description	Energy Data Required	Normalisation Factors Required
Primary Schools	Buildings used primarily as pre- and primary schools.	Electricity consumption (kWh) Electricity cost (\$) Gas consumption (MJ or m ³) Gas cost (\$) LPG consumption (L or kg) LPG cost (\$) Diesel consumption (L) Diesel cost (\$)	Floor area (m ²)
High Schools	Buildings used primarily as high schools.	Electricity consumption (kWh) Electricity cost (\$) Gas consumption (MJ or m ³) Gas cost (\$) LPG consumption (L or kg) LPG cost (\$)	Floor area (m ²)
Non-School Educational Facilities	Educational facilities other than primary and high schools. For example, rural colleges, TAFEs and universities.	Electricity consumption (kWh) Electricity cost (\$) Gas consumption (MJ or m ³) Gas cost (\$) LPG consumption (L or kg) LPG cost (\$)	Floor area (m ²)
Custodial Facilities	Buildings and facilities used primarily for custodial services for adults or juveniles.	Electricity consumption (kWh) Electricity cost (\$) Gas consumption (MJ or m ³) Gas cost (\$) LPG consumption (L or kg) LPG cost (\$) Diesel consumption (L) Diesel cost (\$)	Floor area (m ²)
Law Courts	Buildings used primarily for court facilities.	Electricity consumption (kWh) Electricity cost (\$) Gas consumption (MJ or m ³) Gas cost (\$) LPG consumption (L or kg) LPG cost (\$)	Floor area (m ²)
Hospitals	Buildings and facilities primarily used as hospitals.	Electricity consumption (kWh) Electricity cost (\$) Gas consumption (MJ or m ³) Gas cost (\$) LPG consumption (L or kg) LPG cost (\$)	Floor area (m ²)



Building Energy Category	Description	Energy Data Required	Normalisation Factors Required
Other Health Care Buildings	Health care facilities which generally do not involve patients staying over night.	Electricity consumption (kWh) Electricity cost (\$) Gas consumption (MJ or m ³) Gas cost (\$) LPG consumption (L or kg) LPG cost (\$)	Floor area (m ²)
Police, Fire and Emergency Services Facilities	Police stations, fire stations and emergency services facilities.	Electricity consumption (kWh) Electricity cost (\$) Gas consumption (MJ or m ³) Gas cost (\$) LPG consumption (L or kg) LPG cost (\$) Diesel consumption (L) Diesel cost (\$)	Floor area (m ²)
Other Buildings	Other buildings and facilities which do not primarily comprise one of the above categories. This category includes Parliament House, storage facilities, workshops, depots, wildlife parks, visitor centres and entertainment and sporting venues.	Electricity consumption (kWh) Electricity cost (\$) Gas consumption (MJ or m ³) Gas cost (\$) LPG consumption (L or kg) LPG cost (\$) Diesel consumption (L) Diesel cost (\$)	Floor area (m ²)



