

South Australian Government

Annual Energy Efficiency Report

2010-11



Government of
South Australia

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Executive Summary

The *South Australian Government Annual Energy Efficiency Report 2010-11* has been prepared in accordance with the verification and reporting requirements of the *South Australian Government 2002 Energy Efficiency Action Plan*. The Annual Energy Efficiency Report specifically reports on the Government's progress towards South Australia's Strategic Plan target, 61: "Improve the energy efficiency of government buildings by 30 per cent by 2020 (baseline 2000-01). Milestone of 25 per cent by 2014."

Performance of Government Building Energy Efficiency

Since 2000-01, the South Australian Government has achieved a 17.3 per cent overall energy efficiency improvement in its (owned and leased) buildings. This is more than halfway towards achieving South Australia's Strategic Plan target 61 (SASP T61).

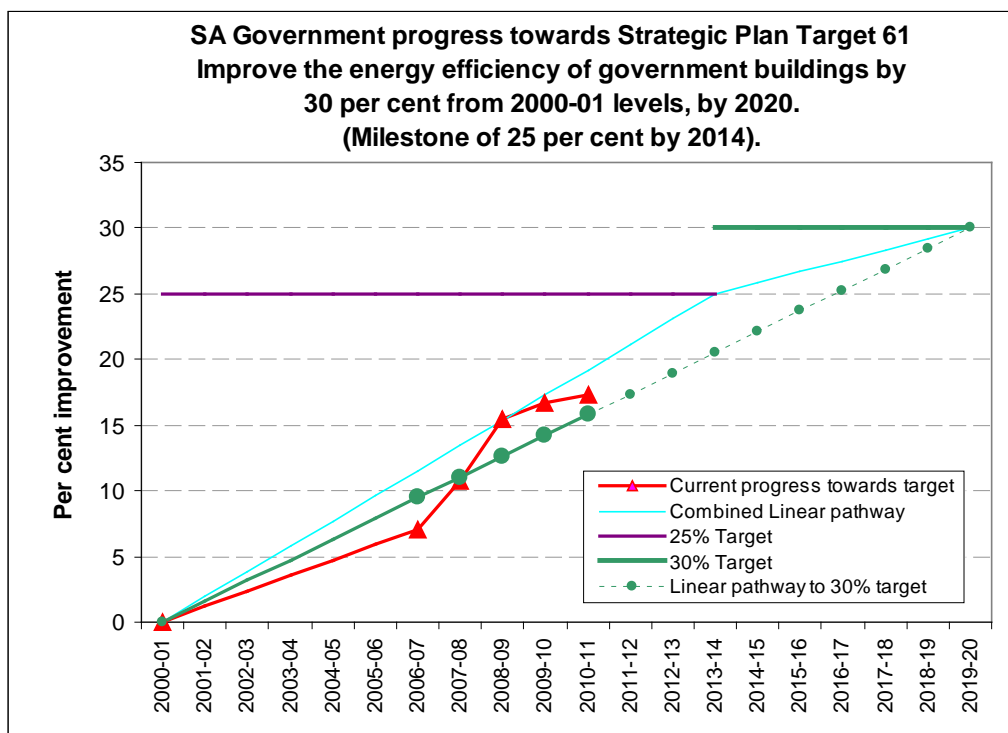
Energy efficiency measurements are expressed as the amount of energy in GJ per business measure. The vast majority of energy efficiency in Government departments is reported using an area (m²) business measure. Just over five per cent of energy use is attributed to other business measures, such as FTEs or number of buildings. To assess whether government as a whole has achieved the target, the improvement from the base year is calculated for each business measure and multiplied by its relative contribution to the whole of government's energy use.

As of 30 June 2011, there were 15 portfolios, comprising all agencies of Government, which report energy consumption and business measures. Portfolios reported individual energy efficiency improvements (since 2000-01) of up to 73.4 per cent.

Energy efficiency improvements can generally be attributed to portfolios moving to more energy efficient buildings, undertaking building upgrades or refurbishments that utilise more efficient equipment, adopting behavioural change programs, and increasing the output of services, people or space without a significant effect on their total energy consumption.

The extent to which the results of individual portfolios influenced the overall Government target was a function of the portfolios' percentage of total Government energy consumption.

Figure i - Whole of Government Performance



Other Reporting Changes 2010-11

The previous *Annual Energy Efficiency Report 2009-10* reported an overall energy efficiency improvement of 16.7 per cent from 2000-01. In 2010-11 two portfolios reported for the third time only, some agencies incorporated new entities or sites which were not reported on previously, altered their reporting structures and corrected errors in energy and business measure data. The changes are detailed in the following sections. These variations have resulted in no net change to the previously reported 2009-10 result.

1. Introduction

The South Australian Government Annual Energy Efficiency Report 2010-11 has been prepared in accordance with the Verification and Reporting requirements of the 2002 Government Energy Efficiency Action Plan. This report is the ninth in the series of South Australian Government Annual Energy Use reports, although the report has been renamed the South Australian Government Annual Energy Efficiency Report to reflect the changes in the South Australia's Strategic Plan (SASP) in 2007.

This report relates to Target 61 of the 2011 revision of the SASP, which is to *“Improve the energy efficiency of government buildings by 30 per cent by 2020 (baseline 2000-01). Milestone of 25 per cent by 2014.”*

1.1 Scope of the Strategic Plan target

As per the guidelines of the Energy Efficiency Action Plan, Government buildings under SASP T61 include all non-commercial agencies. The definition of non-commercial is any Agency in the *General Government Sector* of the South Australian budget papers, published annually by the Department of Treasury and Finance (DTF). A list of the South Australian Government Controlled Entities is available on the Treasury and Finance web site at www.treasury.sa.gov.au.

For the purposes of this report, the following portfolios are included: (note that this list is based on the 2010-11 financial year)

- Department of Health (Health)
- Department of Education and Children's Services (DECS)
- Department of Justice (Justice)
- Department of Further Education, Employment, Science and Technology (DFEEST)
- Department of the Premier and Cabinet (DPC)
- Department for Transport, Energy and Infrastructure (DTEI)
- Department of Primary Industries and Resources SA (PIRSA)
- Department for Families and Communities (DFC)
- Department for Environment and Natural Resources (DENR)
- Department of Treasury and Finance (DTF)
- Department of Planning and Local Government (DPLG)
- Department for Water (DFW)
- Department of Trade and Economic Development (DTED)
- Environment Protection Authority (EPA)
- Defence SA (Defence)

From the beginning of 2010-11, the Department for Environment and Heritage (DEH) has been renamed to Department of Environment and Natural Resources (DENR) and the Department for Water, Land, Biodiversity and Conservation (DWLBC) has been renamed Department for Water (DFW).

In October 2011, the Premier, Hon Jay Weatherill MP, announced new structures for some government departments. The new departments, for reporting in the 2011-12 financial year will be:

- Department of Health and Ageing (Health)
- Department of Education and Child Development (DECD)
- Department of Justice (Justice)
- Department of Further Education, Employment, Science and Technology (DFEEST)
- Department of the Premier and Cabinet (DPC)
- Department for Planning, Transport and Infrastructure (DPTI)
- Department of Primary Industries and Regions SA (PIRSA)
- Department for Communities and Social Inclusion (DCSI)
- Department for Environment and Natural Resources (DENR)
- Department of Treasury and Finance (DTF)
- Department for Water (DFW)
- Department of Manufacturing, Innovation, Trade, Resources and Energy (DMITRE)
- Environment Protection Authority (EPA)
- Defence SA (Defence)

1.2 Energy Efficiency Reference Group

The Energy Efficiency Reference Group (EERG) was established by Cabinet to oversee the implementation of SASP T61 across Government, via the Energy Efficiency Action Plan. The EERG meets bi-monthly, with representatives from all portfolios. It is chaired by the Energy Markets and Programs Division. DMITRE (formerly Energy Division of DTEI).

1.3 Verification and Reporting Requirements

An integral component of the Energy Efficiency Action Plan is reporting and publishing results. By reporting energy efficiency improvements and significant energy management initiatives in the agency annual reports there is a public record of performance against the SASP target.

An Independent Verification exercise is undertaken annually by a third party to provide assurance concerning the accuracy and robustness of the performance being reported by Government. KPMG undertook the independent verification of performance on the 2010-11 financial year data.

In 2010-11, as part of the independent verification exercise, KPMG verified the accuracy and identified limited weaknesses and opportunities in the methods of reporting energy consumption and business measures data by agencies, and estimated their relative impact on the whole of

government results. The 2011 Independent Verification Report is available publicly at <http://www.sa.gov.au>¹.

1.4 Information Availability

Since the introduction of the new energy efficiency target in 2006-07, additional collection of information has been required, particularly business measures at the site level. In 2010-11 the vast majority of this information is now available. Further processes are being investigated to ensure all information is readily available.

¹ <http://www.sa.gov.au/subject/Water%2C+energy+and+environment/Energy/Energy+efficiency/Improving+energy+efficiency+in+South+Australia/Improving+the+energy+efficiency+of+SA+Government+buildings>.

2. Government Energy Efficiency Performance

2.1 Introduction

Determining the South Australian Government's energy efficiency performance in its buildings requires weighting and aggregating the performance of all portfolios according to their proportion of total government building energy consumption. The process for assessing portfolios' energy efficiency performance was agreed by the EERG in February 2007. Details can be found in Appendix C.

For the purposes of monitoring the progress of SASP T61, a 'Government building' is defined as a building in which public sector employees work, or where Government administered services and activities are either partly or completely carried out (in the general Government sector). Government buildings do not include infrastructure such as water pumps or air monitoring stations, and these are therefore not included in the measurement of SASP T61.

2.2 Business Measures

The calculation of energy efficiency improvement in South Australian Government portfolios requires the use of business measures.

Business measures are measures of, or proxies for, an agency's output. For example, subject to data availability, a hospital might record its activity in terms of occupied patient bed days or a school might count FTE students. In some cases a proxy might be used, such as the area occupied by an agency or staff numbers. This is on the basis that there is a correlation between the number of people employed in an agency or the area it occupies and its output.

In this way, an energy efficiency improvement could be said to have occurred if an agency increased its building floor area or its staffing levels without an equivalent increase in its energy use.

For example, Agency A occupied a building of 2 000 m² (business measure value) and used 15 000 Giga-Joules (GJ) of energy in the 2010-11 year. As a result, the energy efficiency performance of the building is:

$$\frac{15000\text{GJ}}{2000\text{m}^2} = 7.5\text{GJ}/\text{m}^2 = 7500\text{MJ}/\text{m}^2$$

If the same calculation was undertaken for 2000-01, an energy efficiency improvement can be determined. Where the energy use per area was higher in the base year than in 2010-11, energy efficiency has improved.

Business measures used by agencies to calculate progress towards SASP T61 in the 2010-11 year include:

- Number of people (staff) occupying the building (Occupancy – people)
- Number of full time equivalent employees (Occupancy - FTE's)
- Area occupied by an agency (m²)
- Number of buildings

Some portfolios also report additional business measures (in addition to area or occupancy measures) that are not used in the calculation of SASP T61 including:

- Number of occupied bed days (in hospitals)
- Number of visitors (in public buildings)

Further information on the calculation of energy efficiency improvement is provided in Appendix C, including the business measures used by individual agencies, which are displayed in Table 3.4.3 in Section 3.4. The data per business measure used in the aggregated calculation for the whole of SA government efficiency are shown in Table C2, Appendix C.

2.2.1 Selection of Business Measures for Inclusion in SASP T61

In some cases, agencies reported on more than one business measure for each end-use category. For the purposes of this report, agencies used the business measure of Area (m²) for 94.5 per cent of the total energy use.

It is worth noting that if different business measures were used to calculate the energy efficiency of an agency, such as number of students instead of area in an educational facility, the agency's, and possibly the whole of Government efficiency improvement figure may be different.

2.3 End-use Categories

Agencies reported energy data through the Online System for Comprehensive Activity Reporting (OSCAR), a system administered by the Commonwealth Department for Climate Change and Energy Efficiency (DCCEE).

For the purposes of reporting on OSCAR, agencies were required to allocate their chosen business measure to a specific end-use category. End-use categories define the type of business, or activity, undertaken within agencies which consume energy. End-use categories enable data reported by portfolios to be disaggregated into similar operational types. This allows the comparison of identical end-use categories across Government portfolios.

The following end-use categories were used by agencies for 2000-01 and 2010-11 reporting:

- Custodial Facilities
- Educational Facilities
- Hospitals
- Laboratories
- Law Courts
- Office Buildings Combined Services
- Office Central Services
- Office Tenant Light and Power
- Other Buildings
- Other Healthcare Facilities
- Police, Fire and Emergency Services
- Public Buildings

2.4 Whole of Government Performance

In 2010-11, the energy efficiency of South Australian Government buildings had improved by 17.3 per cent over the 2000-01 baseline. The data used in the improvement calculation is shown in Table 2.4. The aggregated calculation includes a component from each business measure. This component is weighted, based on the contribution it makes to total energy use. See Table 2.5 for the contribution of each business measure to the overall result. See Appendix C, section C.2 for further description and a worked sample of this calculation.

Table 2.4: Total Aggregated Energy Efficiency

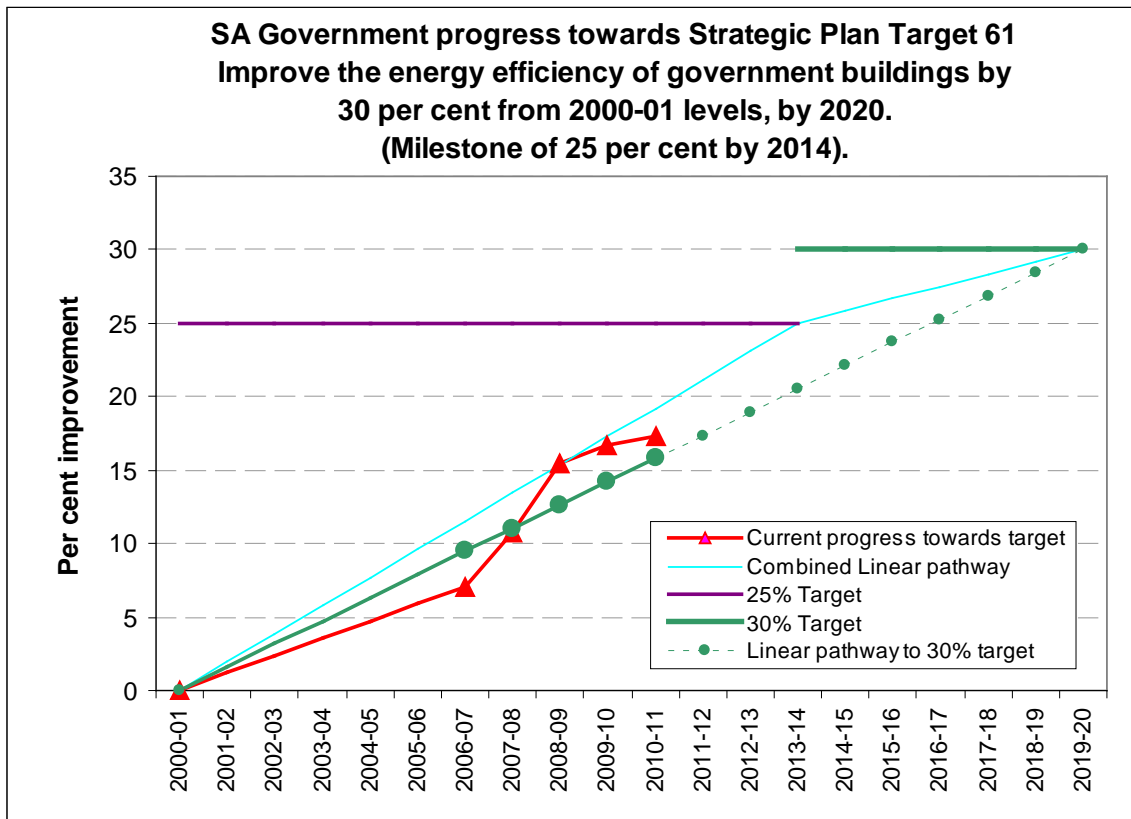
	2000-01	2010-11	2000-01	2010-11	2000-01	2010-11	2010-11 against 2000-01 Baseline
Business Measure	Total Energy Use (GJ)	Total Energy Use (GJ)	Total Business Measure	Total Business Measure	Energy Efficiency (GJ per Business Measure)	Energy Efficiency (GJ per Business Measure)	Per cent Energy Efficiency Improvement
Area (m ²)	2 343 483	2 183 053	4 565 238	5 084 868	0.513	0.429	16.4 %
Buildings (no.)	92 368	54 673	37	36	2 496	1 519	39.2 %
Occupancy (FTEs)	77 324	72 692	5 588	7 316	13.84	9.936	28.2 %

Table 2.5: SA Government Building Energy Efficiency

Business Measure	Percentage of 2010-11 Total Energy	Per cent Energy Efficiency Improvement	Contribution to Overall Result
Area (m ²)	94.5 %	16.4 %	15.46 %
Buildings (no.)	2.4 %	39.2 %	0.93 %
Occupancy (FTEs)	3.1 %	28.2 %	0.89 %
OVERALL TOTAL 2010-11		17.28%	

Figure 2.4 shows that progress is slightly ahead of the linear pathway towards SASP T61, which requires a 15.8 per cent improvement.

Figure 2.4: Whole of Government Performance



As reported last year, in 2009-10, the energy efficiency of South Australian Government buildings improved by 16.7 per cent compared to the 2000-01 baseline, this is equivalent to an average of 1.9 per cent per annum. The 2010-11 result of 17.3 per cent increase, against the 2000-01 baseline, is the equivalent of a 1.7 per cent per annum, which is slightly below this trend.

Progress to date is slightly above the linear pathway of 1.6 per cent improvement per annum for the 30 per cent target and slightly below the linear pathway of 1.9 per cent for the milestone

The achievement of SASP T61 is likely to be contingent on the successful implementation of a number of large projects, particularly within the Health portfolio as it accounts for 51.8 per cent of total government energy use. Importantly, the new Royal Adelaide Hospital is expected to be fully operational in 2016, two years after the current milestone date for the SASP T61.

Another major project, which is commencing in 2011-12, is the building the new \$125 million Sustainable Industries Education Centre at the former Mitsubishi site, Tonsley will replace 3 ½ ageing and inefficient TAFE Campuses. The new centre will become the central point for building and construction training in South Australia and promoting sustainable building techniques. The site is expected to be operational for the start of the 2014 educational year. DFEEST is the fourth largest portfolio, for government building energy use, within the SA Government and consumes 7.3 per of the overall energy used.

These major projects will provide a timely and significant improvement towards the overall target of 30 per cent improvement by 2020.

2.4.1 Coverage of Government Building Energy Use

More than 99 per cent of the South Australian Government's known building energy consumption in 2010-11 has been captured in this report. Most portfolios were able to collect both building energy use and business measure data for 100 per cent of their identified sites. Where energy and business measure information were identified as being incomplete, progress has been made although coverage is not yet complete.

3. Energy Efficiency Performance by Portfolio

3.1 Portfolio Performance

This section reports on progress made by the portfolios within the context of the whole of government energy use. Figure 3.1 shows the proportion of the total government energy use that each portfolio consumes, and their energy efficiency improvement compared to the 2000-01 baseline.

To read the figure below: Energy efficiency improvement is shown on the y-axis (left side scale) and proportion of government use is along the x-axis (scale at the bottom of the graph). For example: Justice’s result was a 15 per cent energy efficiency improvement against the 2000-01 baseline and its energy consumption was 10 per cent of the total SA government building energy use. See Section 4.3 for further details of Justice’s energy efficiency performance.

Figure 3.1: Proportion of Energy Use and Energy Efficiency Improvement by Portfolio (2010-11 against 2000-01 baseline).

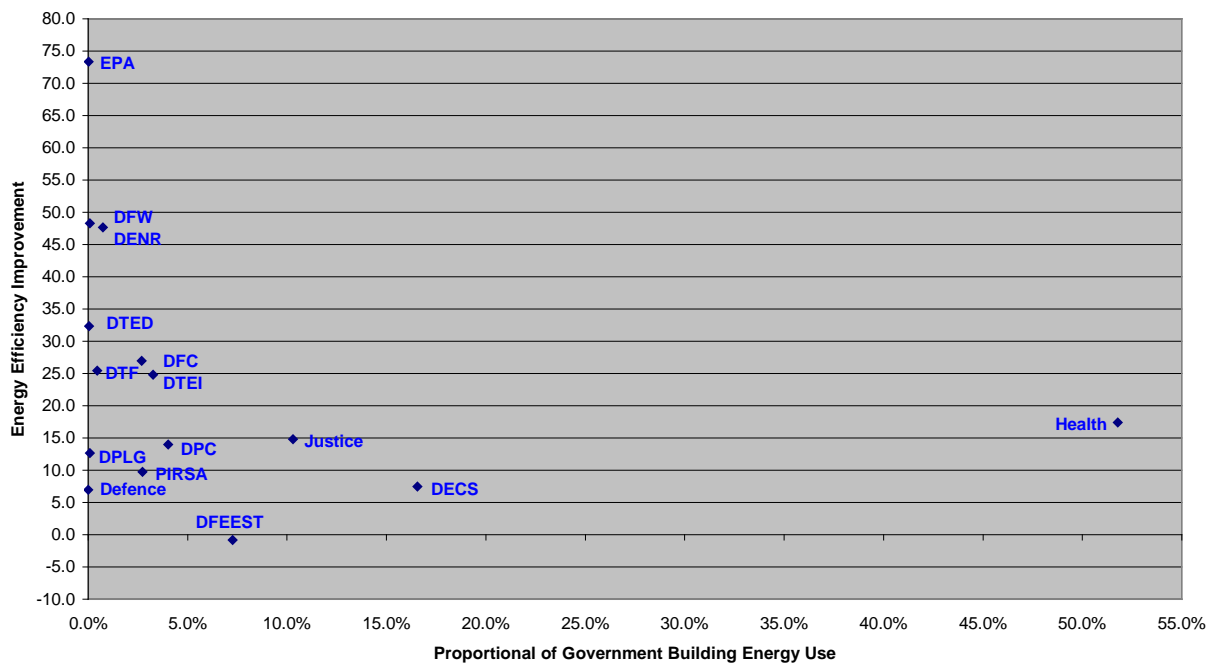


Figure 3.1 indicates that individual agencies improved between 7 per cent and 73 per cent (the average improvement was 24 per cent), compared to the 2000-01 baseline. Due to aging equipment and facilities, DFEEST did not achieve an improvement over the baseline, reducing the whole of government efficiency by 0.06 per cent. An improvement since 2009-10, however is seen and they have mitigated this negative impact, as far as possible, through controlling energy consumption. See Section 4.4 for further details of their energy management activities and achievements.

Seen to the far right side of Figure 3.1, the Department of Health is the largest consumer of building energy use in the South Australian Government, using 51.8 per cent of the Government’s energy. As a result, a 17.4 per cent energy efficiency improvement in the Health portfolio has contributed 9.0 per cent to the total government energy efficiency improvement, i.e. more than half of the total government energy improvement of 17.3 per cent. See section 4.1 for further details of Health’s energy efficiency achievements.

DECS is the second largest consumer of building energy use, with a contribution of 16.6 per cent to the total government energy use. DECS has reported an energy efficiency improvement of 7.4 per cent, down by 11 per cent from the 18.4 per cent reported in 2009-10 due to higher

energy use (as energy data issues for natural and liquid petroleum gas from 2009-10 were resolved). See section 4.2 for more details on DECS performance.

Other large energy consuming agencies include Justice and DFEEST. See sections 4.3 and 4.4 for details of their performance during 2010-11. Though currently behind the linear path to the target, each has significantly improved since 2009-10, by 3.8 and 5.2 per cent respectively.

The next group of agencies for energy consumption, account for between one and five percent of the government's total building energy use. These agencies are: DPC, DTEI, PIRSA and DFC. All other agencies use less than one percent of the overall energy consumption. As seen in Figure 3.1 above, many of the smaller agencies have already reached the milestone or the final target. Four portfolios: DENR, DFW, DTED and EPA, achieved more than a 30 per cent improvement in building energy efficiency. It is also noted that DFC and DTF have achieved the 2014 milestone of 25 per cent improvement over the 2000-01 baseline.

A more detailed overview of each of the portfolio's energy efficiency performance and their planned initiatives are provided in Chapter 4, Portfolio Progress 2000-01 to 2010-11.

3.2 Baseline Revisions

It is acknowledged that portfolio structures change over time and therefore the portfolio baseline and subsequent years' energy figures will need to be revised to represent the structure of the portfolio for the given reporting period. Baselines can be adjusted in legitimate circumstances according to specific procedures developed by the EERG.

The need to revise baselines between portfolios has been acknowledged as an important requirement under this program. The 2002-03 Independent Verification Report contained a recommendation that a standard procedure be developed and implemented by the EERG for this purpose.

Under this procedure, which was developed by the EERG, agencies are not able to revise baselines due to changes in operational characteristics, such as staff number changes, and productivity (service level) fluctuations, or acquisition or disposal of sites. Untenanted sites, a change in tenancy or size of floor space occupied are also not recognised as legitimate circumstances to warrant changes.

Baseline changes are available where:

- Change occurs in portfolio structure (and particular sites must be transferred from one portfolio to another);
- A site was previously excluded from reported data or is a new entity; and
- Data for a site previously reported was either an estimate or reported incorrectly and actual data is now available.

Where a portfolio has made a modification to its baseline energy use data in the 2010-11 financial year, a brief explanation is provided in its overview.

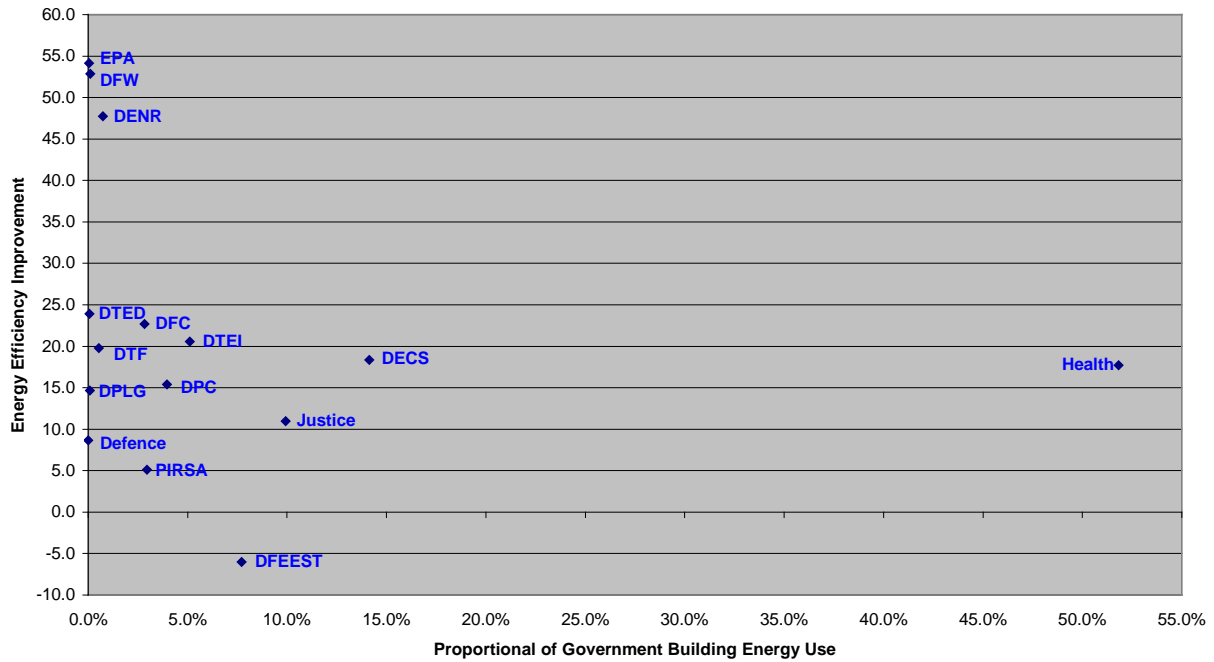
3.3 Revisions to the 2009-10 Energy Efficiency Results

The energy efficiency target was measured for the fourth time in 2009-10. This involved a significant data collection process of both energy consumption and business measures. Since last year, agencies have undertaken a review of their data and reporting procedures to improve

on the information they previously provided. As a result, the energy efficiency figures reported in the 2009-10 report have been recalculated as per the figure below. See section 3.1 above for further details on reading this type of chart.

Descriptions of baseline adjustments are included in each department's part of Chapter 4, Portfolio Progress 2000-01 to 2010-11. Defence SA baseline was significantly reduced due to a number of changes, to remove construction energy use and to reflect full year usage appropriately. More details of these changes are in section 4.15.

Figure 3.2: Proportion of Energy Use and Energy Efficiency Improvement by Portfolio (2009-10 against 2000-01 baseline)



3.4 Data Tables – Energy Use and Business Measure Data (2000-01 to 2010-11)

The South Australian Government used 2 310 414 GJ in the 2010-11 year, compared to 2 513 178 GJ in 2000-01. Table 3.4.1 shows GJ use by end-use category and Table 3.4.2 by Portfolio. Table 3.4.3 shows the business measure data by Portfolio.

Table 3.4.1: SA Government Energy Use from Buildings by End-use Category 2000-01 to 2010-11

End-use Category	2001 (GJ)	2002 (GJ)	2003 (GJ)	2004 (GJ)	2005 (GJ)	2006 (GJ)	2007 (GJ)	2008 (GJ)	2009 (GJ)	2010 (GJ)	2011 (GJ)
Custodial facilities	77,095	69,841	69,136	71,973	71,250	75,248	73,476	75,040	75,166	77,573	82,311
Educational facilities	518,429	544,873	531,045	554,416	527,570	532,840	539,872	502,169	502,199	495,032	542,843
Hospitals	1,250,725	1,233,848	1,245,019	1,293,539	1,279,334	1,277,442	1,282,235	1,248,325	1,218,353	1,176,454	1,179,033
Laboratories	58,474	52,690	52,556	51,710	51,259	53,622	50,175	53,228	51,203	59,046	55,541
Law Courts	36,841	33,555	28,666	29,161	27,959	29,096	30,246	28,898	27,965	27,952	29,017
Office - Central Services	92,453	75,113	71,798	76,572	67,189	69,791	89,795	88,435	88,385	83,079	54,673
Office - Tenant Light and Power	169,660	147,503	119,924	129,143	129,786	125,499	122,458	121,468	120,239	106,213	106,323
Office buildings - combined services	37,430	31,573	13,626	29,148	23,987	25,941	29,823	29,387	29,715	30,876	11,885
Other Buildings	25,487	25,235	25,663	24,921	24,919	17,567	24,623	21,345	23,709	16,130	15,823
Other healthcare buildings	37,142	36,895	30,832	30,192	33,853	33,789	31,840	26,895	26,170	27,268	26,005
Police, Fire and Emergency Services Facilities	115,897	118,570	113,618	106,177	106,281	107,359	112,532	114,059	115,752	117,062	121,585
Public Buildings	93,541	87,104	86,704	87,560	80,426	85,614	85,011	87,158	85,557	83,098	85,375
Total	2,513,178	2,456,798	2,388,588	2,484,514	2,423,816	2,433,809	2,472,088	2,396,406	2,364,413	2,299,784	2,310,414

Table 3.4.2: SA Government Energy Use from Buildings by Portfolio 2000-01 to 2010-11

Portfolio	2000-01 (GJ)	2001-02 (GJ)	2002-03 (GJ)	2003-04 (GJ)	2004-05 (GJ)	2005-06 (GJ)	2006-07 (GJ)	2007-08 (GJ)	2008-09 (GJ)	2009-10 (GJ)	2010-11 (GJ)
Health	1,264,360	1,246,931	1,258,725	1,307,186	1,292,937	1,291,396	1,297,419	1,263,599	1,233,446	1,191,816	1,196,117
DECS	388,414	390,208	388,311	413,872	395,887	382,532	380,276	360,397	347,587	325,229	382,517
Justice	246,595	240,994	226,462	220,658	220,456	224,530	228,221	226,761	226,610	228,522	237,919
DFEEST	156,166	174,973	159,197	151,400	144,044	163,359	172,196	150,114	162,308	177,338	167,651
DPC	105,700	98,544	96,564	97,360	90,518	95,922	94,746	96,857	94,606	91,096	93,057
DTEI	154,212	130,371	91,858	128,051	111,031	106,019	134,285	132,750	133,626	117,639	75,250
PIRSA	72,687	66,016	64,584	63,183	62,725	65,212	60,714	63,240	63,089	67,732	63,151
DFC	68,809	68,562	62,499	61,859	65,674	71,372	65,434	65,100	64,554	65,120	62,068
DENR	32,121	20,567	20,997	20,389	21,455	14,551	19,193	16,560	17,158	16,830	16,929
DTF	14,907	10,709	10,327	11,811	11,679	11,956	12,775	13,933	14,204	12,033	10,643
DPLG	2,018	2,238	2,238	2,061	1,997	1,826	1,875	2,064	2,015	1,722	1,763
DFW	1,815	1,815	1,997	2,356	2,249	2,246	2,238	2,524	2,472	2,551	1,697
DTED	3,461	3,373	3,196	2,835	1,639	1,456	1,257	1,122	1,154	1,188	972
EPA	1,694	1,497	1,633	1,493	1,525	1,432	1,459	1,385	1,398	768	446
Defence SA	219	0	0	0	0	0	0	0	186	200	234
Total	2,513,178	2,456,798	2,388,588	2,484,514	2,423,816	2,433,809	2,472,088	2,396,406	2,364,413	2,299,784	2,310,414

Table 3.4.3: SA Government Business Measure Data from Buildings by Portfolio 2000-01 to 2010-11

* Recording business measures for this target was not introduced until the revised SASP in 2007, data as used for SA government total aggregate.

Portfolio	Business Measure*	2000-01 (Baseline)	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
Health	Area (m ²) Occ (FTE) ²	978,517 673	988,580 728	988,580 777	1,010,239 850	1,065,949 861	1,098,905 958	1,100,053 983	1,102,753 1,065	1,108,175 1,138	1,118,253 1,167	1,119,572 1,132
DECS	Area (m ²)	2,246,295	-	-	-	-	1,897,896	2,260,612	2,364,537	2,380,334	2,378,684	2,474,763
Justice	Area (m ²)	434,322	53,793	-	-	106,592	444,408	506,948	490,832	487,724	515,203	542,508
DFEEST	Area (m ²)	408,636	-	-	-	-	446,275	446,149	435,317	438,341	437,636	434,871
DPC	Area (m ²)	186,819	1,335	1,335	8,606	11,132	178,166	192,952	192,409	192,215	191,776	193,652
DTEI	Area (m ²), Buildings (no.) ³	98,892 37	-	-	-	-	61,343 -	78,877 42	78,877 42	78,267 42	129,598 38	96,081 36
PIRSA	Area (m ²)	62,915	39,878	42,582	42,582	42,582	42,902	42,626	42,512	40,684	64,384	63,714
DFC	Occupancy (People. FTE)	4,712	4,712	4,712	4,712	4,877	5,390	5,563	5,507	5,629	5,729	5,817
DENR	Area (m ²)	86,823	-	-	-	-	-	101,072	101,072	101,072	101,072	101,072
DTF	Area (m ²)	42,280	11,767	10,295	12,570	13,799	20,623	31,477	50,224	42,710	46,507	44,672
DPLG	Area (m ²)	4,389	4,389	4,389	4,389	4,389	4,389	4,389	4,389	4,389	4,389	4,389
DFW	Occ (FTE)	203	390	409	409	490	519	541	570	588	605	367
DTED	Area (m ²)	10,019	10,019	10,442	5,999	3,925	4,474	4,452	4,452	4,125	4,519	4,160
EPA	Area (m ²)	4,494	-	-	-	4,615	5,035	5,035	4,907	4,388	4,444	4,444
Defence SA	Area (m ²)	844	-	-	-	-	-	-	-	1,211	844	969
Total	Area (m²) Buildings (no.) Occ (FTE)	4,565,245 37 5,588	1,109,761 - 5,830	1,057,623 - 5,898	1,084,385 - 5,971	1,252,983 - 6,228	4,204,416 - 6,867	4,774,642 42 7,087	4,872,281 42 7,142	4,883,635 42 7,355	4,997,309 38 7,501	5,084,867 36 7,316

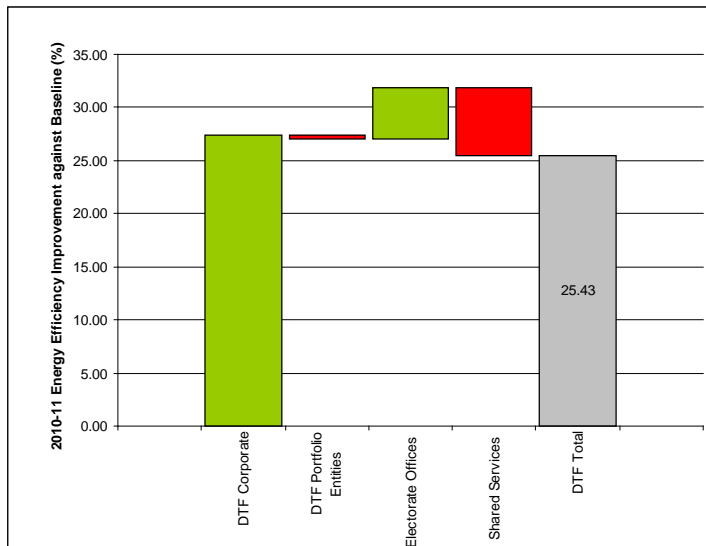
² FTE used instead of Area (m²) for SA Ambulance section of the Health Portfolio.

³ Buildings (no.) used only for Base Building section of the DTEI Portfolio.

4. Portfolio Progress 2000-01 to 2010-11

Chapter four presents the energy efficiency performance of each portfolio between 2000-01 and 2010-11.

The type of graphs used for displaying the progress of the portfolios, has been changed to a waterfall chart. This chart is best viewed in colour. An improvement in energy efficiency is shown as a green bar and a decrease in efficiency is shown as a red bar. The graph segments the cumulative impact of each portfolio's sub-group, as a step. Each step continues from the end of the previous step.



For example in DTF:

DTF Corporate contribute +27.37 per cent to the overall DTF Total.

The next small step is DTF portfolio Entities, which contribute a -0.32 per cent (a red step from 27.37 to 27.05 per cent).

Electorate Offices contribute +4.77 per cent (a green step up from 27.05 to 31.81 per cent).

Shared Services contribute -6.38 per cent (a red step down from 31.81 to 25.43 per cent).

The final total from these four steps is 25.43 per cent.

This graph is shown for each Portfolio that reports different sub-groups (such as agencies or divisions within the portfolio) or different end-use categories into OSCAR.

The annual trend for energy efficiency (against the 2000-01 baseline), for 2007-08 to 2010-11 is shown for each of the portfolios. These are also shown as a waterfall chart and each year is shown as a step up or down from the energy efficiency result of the previous year.

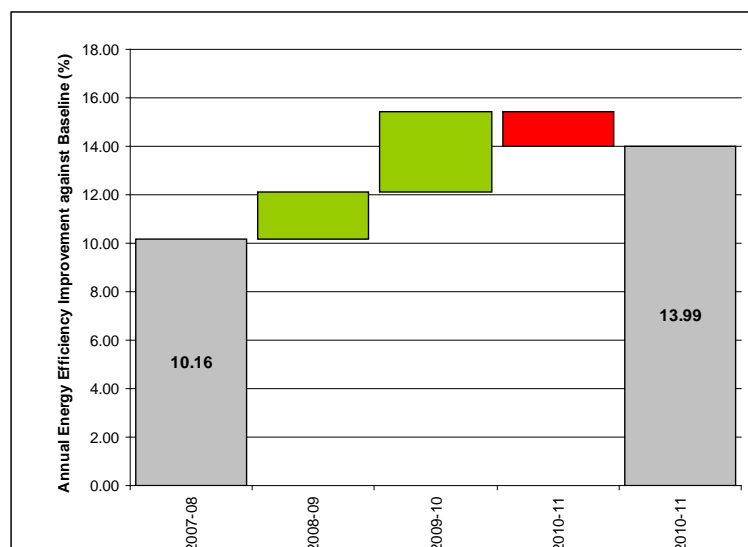
For example in DPC:

In 2007-08, 10.16 per cent energy efficiency against the 2000-01 baseline was achieved.

In 2008-09, a further increase of 1.97 per cent was achieved (stepping up from 10.16 to 12.14 per cent).

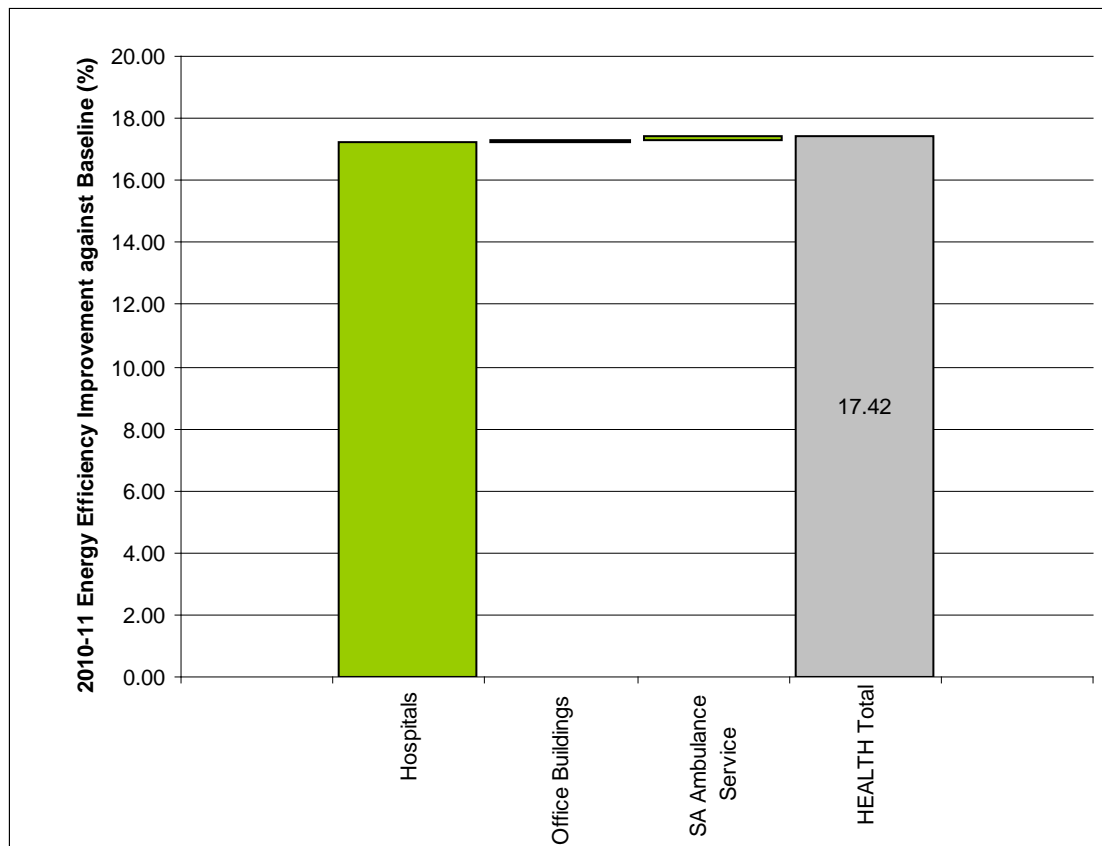
In 2009-10, the green step is an increase from 12.14 to 15.12 (3.29 per cent increase).

In 2010-11, a reduction compared to the previous year was seen, with a red step down from 15.12 to 13.99 per cent.



4.1 Department of Health (Health)

Figure 4.1.1: Health Building Energy Efficiency Improvement 2010-11 against Baseline



Overview of Performance to 2010-11

Health consumes over half (51.8 per cent) of the total building energy used by the South Australian Government, and as such has a significant influence on the overall progress to SASP T61. In the overall government calculations, area (m^2) is used as the standard business measure for a more consistent comparison between portfolios. Health also records FTEs across the department, and Occupied Bed Days for Hospitals (which use 98.9 per cent of Health's total energy).

Health department has improved against the baseline for each measure and in particular FTE. The increase in output has surpassed the increase in energy use.

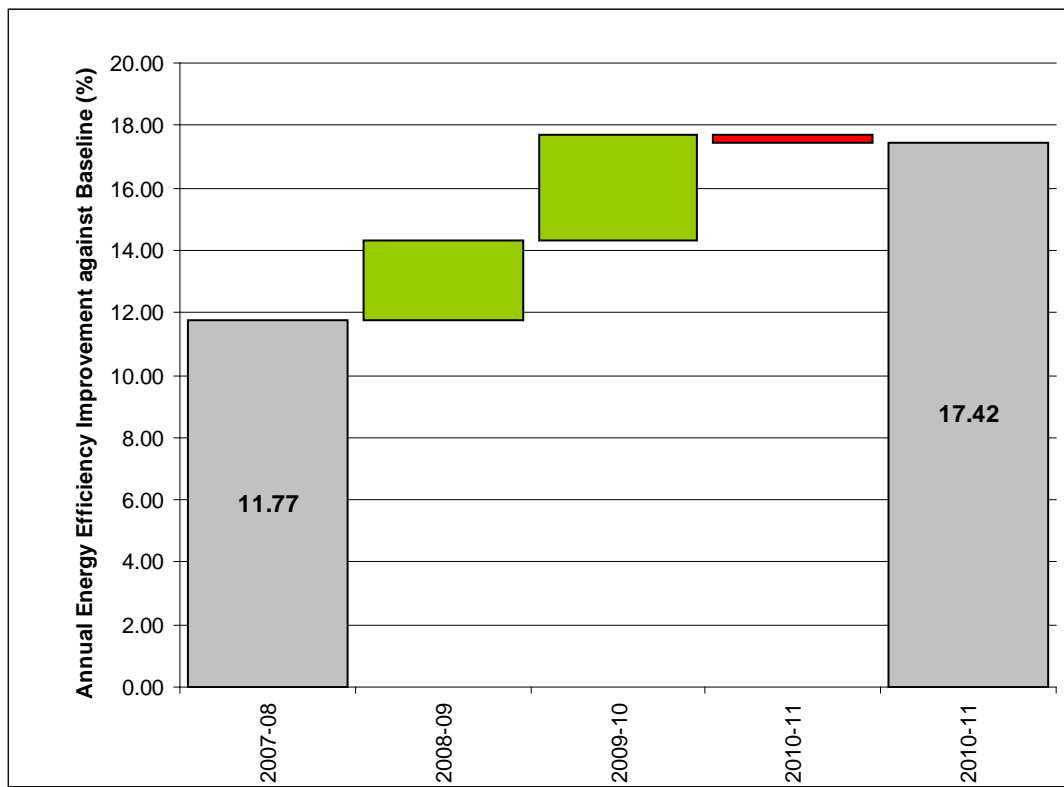
Similar to last year's result, health has decreased its energy consumption in hospitals per square metre from 1307 MJ/m^2 in 2000-01 to 1079 MJ/m^2 in 2010-11, an overall improvement of 17.4 per cent compared to 1706 MJ/m^2 , which was a 17.7 per cent improvement over the 2000-01 baseline in 2009-10. The annual trend from 2007-08 to 2010-11 is shown below in Figure 4.1.2.

Health's improved energy efficiency contributes approximately 9 per cent towards the Government's overall energy efficiency.

Changes in Baseline and/or Subsequent Years' Energy Use

Nil.

Figure 4.1.2: Health Building Energy Efficiency Trend, 2007-08 to 2010-11



Significant Energy Management Achievements

SA HEALTH LIGHTING UPGRADES

- Table 4.1.1 shows the sites in which SA Health has made significant investments in lighting upgrades in recent years. Cumulatively these upgrade are conservatively calculated to have reduced energy use by 2 300 000 kWh per annum and reduced recurrent energy costs by \$310 000 per annum.
- The preferred solution generally adopted is the complete rebuild of the most common type of light fitting across SA Health facilities (twin T-8 fluorescent fitting with iron core ballasts) and replacing with a single high quality centred T8 tube, a high performance reflector and a warm start electronic ballast. This solution provides a 59 per cent reduction in lighting energy use for each fitting upgraded, whilst delivering high quality lighting conditions and reduced maintenance costs.

Table 4.1.1: Lighting Upgrades 2008-09 to 2010-11

	2008-09	2009-10	2010-11	TOTAL	Status
FMC	\$200 000	\$250 000	\$250 000	\$700 000	More funding required.
SA Pathology	\$300 000	\$45 000		\$345 000	More funding required.
Hampstead		\$200 000		\$200 000	More funding required.
RGH			\$148 000	\$148 000	More funding required.
WCH		\$80 000	\$54 000	\$134 000	More funding required.
SAAS (Head Office)	\$70 000			\$70 000	Completed.
TOTAL	\$570 000	\$575 000	\$452 000	\$1 597 000	

SOLAR HOT WATER (SHW)

- Solar Hot Water was installed on an additional two country hospitals in 2010-11. At present, approximately two thirds of all country and regional hospitals and three of the seven major metropolitan sites (Lyell McEwin Hospital, Repatriation General Hospital and Flinders Medical Centre) have SHW installed.
- The Glenside, The Queen Elizabeth Hospital and Modbury campuses will also have SHW progressively installed as part of their ongoing redevelopments. Additional SHW capacity will also be installed at Lyell McEwin Health Service as part of the next stage of its redevelopment.

SOLAR PHOTOVOLTAIC (PV)

- On 01 July 2010 a new South Australia Government policy came into effect mandating that all new and substantially refurbished government buildings would be required to installed a minimum five kW solar PV system.
- A ten kWh PV system has now been selected for Lyell McEwin Health Service and will be installed during 2011-12. Five kW systems have also been designed for the Berri and Whyalla hospital redevelopments and are scheduled to be installed during 2012-13.

DUAL PHOTOVOLTAIC / SHADING PROJECT - SA PATHOLOGY

- During 2010-11 consultants were engaged to prepare the detailed design documentation for an innovative proposal to fit ten kW of Solar PV cells to the North, face of SA Pathology's Hanson Institute. This PV array, in addition to generating renewable energy, will also reduce air-conditioning energy consumption by providing shading to the large currently unshaded glazing on the northern facade. The reduction in air-conditioning energy use associated with the shading element of this project has been calculated to be equivalent to almost three times the amount of energy generated by the PV cells. This project will be subject to further financial evaluation during 2011-12 and considered for funding support during 2012-13.

CITI CENTRE ENERGY EFFICIENCY INITIATIVES

- The 24-hour supplementary air-conditioning system to cool the main communications room in CitiCentre is currently being redesigned. When complete this new cooling system is expected to reduce the supplementary air-conditioning energy use at CitiCentre by approximately 80 per cent.
- In August 2010 Citi Centre tenancy underwent a formal NABERS (National Australian Building Energy Rating) and achieved 4.5 (not including Greenpower). The CitiCentre Building has also signed up to the CitySwitch Green Office program and has committed to maintaining a minimum 4.5 Star NABERS tenancy energy rating.

FLINDERS MEDICAL CENTRE REDEVELOPMENT – PERFORMANCE TO DATE:

The table below shows that significant improvement in energy efficiency have been achieved at FMC as a result of the ongoing major redevelopment. Additional energy savings are projected to be achieved in 2011-12 and beyond as new plant and equipment are commissioned and their efficiency optimised:

- A substantially upgraded energy efficient air-conditioning system.
- A lighting upgrade that is occurring progressively over the life of the redevelopment.
- An emphasis on energy efficiency for the design of new build areas.
- Solar hot water, coupled with a high efficiency warm water system.

Year	Floor Area (m ²)	Total Energy use (MJ)	MJ / m ²	% Change since 2007-8
2007-08	121 957	198 520 092	1 628	-
2008-09	121 957	154 415 890	1 266	-22 %
2009-10	121 957	145 313 586	1 192	-27 %
2010-11	126 331	134 542 966	1 065	-35 %

Proposed New Initiatives in 2011-12 and Beyond

LIGHTING UPGRADES

A business case is currently being developed during 2011-12 substantiating the case for a large scale multi site lighting upgrade proposed to be undertaken at selected sites across the SA Health Portfolio in 2012-13. Initial indications are that a \$4 million Stage 1 lighting upgrade program across 12 large SA Health acute care sites, if it proceeds, would reduce overall building energy use by approximately 4 700 000 kWh per annum or 1.4 per cent of SA Health's 2010-11 energy use.

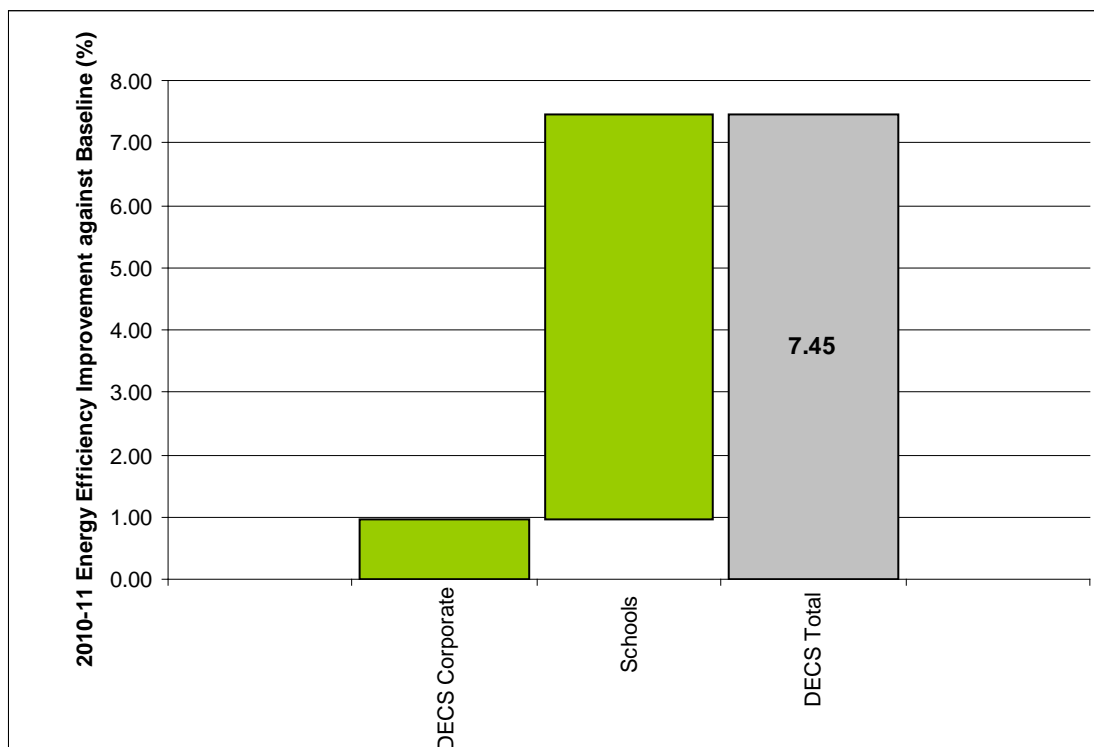
REDEVELOPMENTS

Achievement of the full 30 percent efficiency target by 2020 (milestone 25 per cent by 2014) will be largely contingent on the success of the redevelopment projects in achieving the ambitious energy efficiency targets established for each of these projects.

- The Lyell McEwin Hospital, The Queen Elizabeth Hospital, Glenside, Flinders Medical Centre, the Women's and Children's Hospital and Modbury Hospital in 2010-11 cumulatively accounted for 32 per cent of SA Health's energy use. Each of these sites have major redevelopment programs occurring over the next few years. Ambitious energy efficiency targets established have been developed for each of these redevelopments. Full achievement of these energy efficiency targets on each project would improve SA Health energy efficiency by an additional four to six per cent by or during 2014.
- In addition to the major metropolitan redevelopment projects there are a number of other smaller, but nonetheless significant redevelopment projects in regional South Australia at Berri, Port Lincoln, and Whyalla hospitals. Current estimates are that cumulatively these redevelopments will likely be capable of improving SA Health's energy efficiency by something in the order of an additional one per cent by 2014.
- The four currently funded GP Plus facilities and four new Intermediate Care Centres projects (with a total floor area of 22 000 m²) when completed are projected to improve SA Health's energy efficiency (as measured by MJ/m² per annum) by the order of 0.5 per cent by 2014.
- The Royal Adelaide Hospital (RAH) currently consumes 24 per cent of SA Health's total building energy use. When the old RAH site is closed in 2016 and replaced by the New RAH substantial improvement in energy efficiency are anticipated. Whilst not directly translatable into energy efficiency (MJ/m² per annum) the new RAH has been modelled and designed to achieve annual carbon emission from energy consumption (gas and electricity) of 139 kg CO₂/m² per annum. This is a 46 per cent reduction from the current RAH which in 2010-11 was responsible for 258 kg CO₂/m² per annum.

4.2 Department of Education and Children's Services (DECS)

Figure 4.2.1: DECS Building Energy Efficiency Improvement, 2010-11 against Baseline



Overview of Performance to 2010-11

An improvement of 7.5 per cent since the 2000-01 baseline has been achieved by DECS in 2010-11. Schools (pre-school, primary and secondary schools) account for 98.6 per cent of the energy usage within DECS. DECS Corporate has maintained a consistent improvement over the 2000-01 baseline of more than 70 per cent through the ongoing promotion of sustainable behaviour management.

DECS accounts for 16.6 per cent of the overall government building energy use, and so its contribution to the target is estimated at 1.2 per cent. Energy used includes electricity, natural gas and liquefied petroleum gas (LPG), and the business measure for DECS is Area (m²).

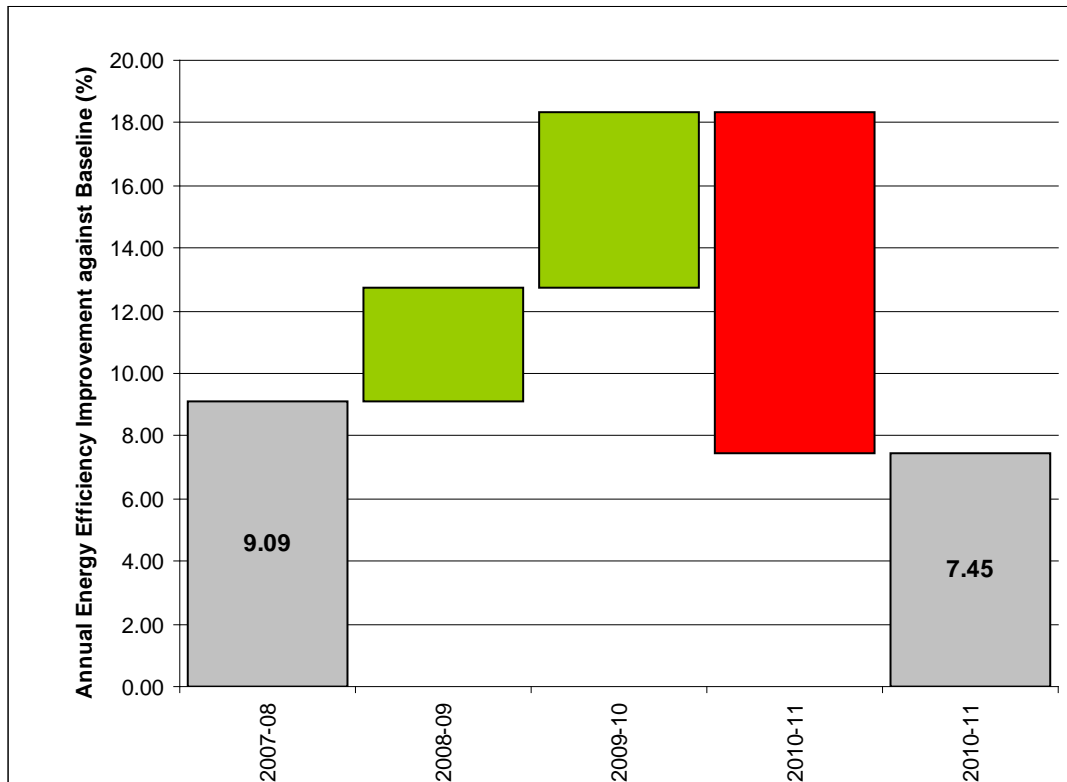
Changes in Baseline and/or Subsequent Years' Energy Use

Nil. Ongoing improvements to data collation, reporting and accuracy:

Currently there are a significant number of changes occurring to the business measure (Area, m²) due to new Building the Education Revolution (BER) projects and due to the removal and demolition of older, out dated facilities. An audit of all sites is currently being performed and due to be completed June 2012 to further improve the accuracy and currency of the information in the asset database.

Improvements in the reporting systems for non-electrical energy types (natural gas, heating oil and LPG) are also being developed and implemented. As noted in the 2009-10 report, the energy use information from these sources was underestimated and resulted in an over estimate of the improvement achieved in 2009-10. The annual trend for DECS is shown below in Figure 4.2.2.

Figure 4.2.2: DECS Building Energy Efficiency Trend, 2007-08 to 2010-11



Significant Energy Management Achievements

Key initiatives implemented by DECS during 2010-11 included:

AUSTRALIAN SUSTAINABLE SCHOOLS INITIATIVE IN SOUTH AUSTRALIA (AUSSI-SA) –

AuSSI-SA is a joint initiative of the Department of Natural Resources (DENR), via the South Australian Natural Resource Management Boards, DECS and the Australian Government Department of Sustainability, Environment, Water, Population and Communities (DSEWPC). DSEWPC coordinates AuSSI, with programs in all Australian states and territories. The program aims to support schools, staff, students and the broader community to develop whole of school and whole of community education for sustainability. Schools are encouraged to develop their knowledge, skills, values and behaviours to pursue sustainable practices and live sustainable lifestyles. The program utilises a range of resources to support education for sustainability in schools. One such resource is ‘Sustainable and Attainable’, a web based climate change education resource that encourages action in energy, biodiversity, waste, water, transport and air quality. The resource is available to all South Australian schools at www.sustainableschools.sa.edu.au/.

ENERGY MANAGEMENT GUIDE –

The DECS Environmental Resources team has developed an Energy Efficiency Management Guide for DECS schools and preschools titled 4 Energy: Energy, Efficiency, Education, Environment based on recommendations from over 300 energy audits conducted as part of the previous Green School Grant program. The guide assists schools to better manage their energy use and have a greater understanding of how to manage their school more sustainably. The Guide is now available on the Capital Programs and Asset Services website at www.decs.sa.gov.au/assetservices/ under topic listing ‘E’.

DECS CENTRAL OFFICE –

Central Office has met the milestone and overall South Australian Strategic Plan Target 61 to improve building energy efficiency by 25 per cent from 2000-01 levels by 2014 and by 30 per cent by 2020. As a tenant, DECS is responsible for its light and power use. DECS Central Office staff continues to make good use of energy efficient lighting and management strategies, light sensors and timers in offices and meeting rooms to assist in reducing DECS corporate energy use.

NATIONAL SOLAR SCHOOLS PROGRAM –

In July 2008 the National Solar Schools Program (NSSP) was launched enabling schools to apply for up to \$50 000 in funding for solar power systems, electricity efficiency installations and rainwater tanks. From 01 July 2011 the Program was reduced by two years. The program now concludes in July 2013. In line with these changes, the NSSP Administrators allowed DECS to reduce the maximum eligible funding amount to \$30 000 to enable more schools to receive funding before completion of the program.

To date 127 DECS schools have completed sustainable projects through Round 1 NSSP funding of \$6.2 million. 89 DECS schools have been approved for the 2010-11 (Round 2) funding round (\$3.8 million funding).

Proposed New Initiatives in 2011-12 and Beyond

DECS became the Department for Education and Child Development in Oct 2011.

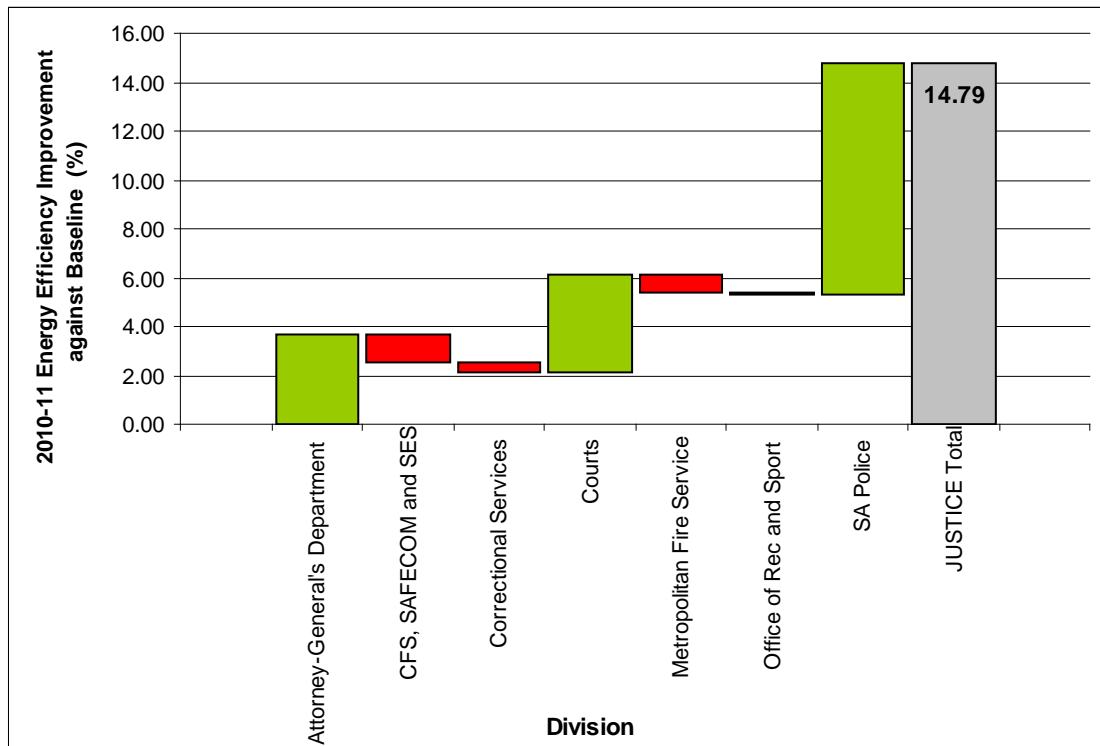
DECD will continue to monitor and identify methods of improving energy efficiency across its corporate, school and preschool sites to assist with the management of progression towards energy efficiency targets and educational initiatives.

DECD will manage the completion and acquittal of projects at schools that are successful in receiving National Solar School Program funding from the 2010-11 funding round. A further 58 schools have been approved for the 2011-12 (Round 3) funding round (\$1.6 million). DECD is also assessing all SA government school applications for the final NSSP funding round (2012/13), which will conclude in June 2013. Total funds for this round - \$1.653M.

The electricity consumption and management at 16 schools that have installed Energy Demand Management Systems will be reviewed and monitored in mid 2012 to determine the financial savings achieved through load shedding.

4.3 Department of Justice (Justice)

Figure 4.3.1: Justice Building Energy Efficiency Improvement, 2010-11 against Baseline



Note - CFS = Country Fire Service, SAFECOM = SA Fire and Emergency Services Commission, SES = State Emergency Service

Overview of Performance to 2010-11

Overall the Justice department achieved an improvement of 14.8 per cent. Incorporating all of the baseline changes below, this is a further 3.8 per cent improvement for 2009-10 adjusted result. The Justice department accounts for 10.3 per cent of the total government energy use and its estimated contribution to the overall target was 1.5 per cent. The annual trend of energy efficiency is shown below in Figure 4.3.1.

SA Police uses 36.1 per cent of the overall Justice building energy. It has achieved a 26.4 per cent improvement since the 2000-01 baseline, due to capital building projects incorporating energy efficiency, such as the new 5-Star green star Police Headquarters building, as described in the achievements below.

Correctional Services accounts for 34.6 per cent of the Justice building energy use. It has opened a new Community Correction Centre in Gawler during the past financial year and increased the prisoner capacity at Port Lincoln Prison, which has a more substantial increase in energy (electricity and gas usage) than Area (m²).

The Metropolitan Fire Service consumes 8.1 per cent of the Justice energy use.

The energy use of CFS, SAFECOM and SES is 3.2 per cent of the total building energy usage of Justice. It has maintained a similar level to last year and the reduction in efficiency compared

with the baseline is again due to the increase in service levels due to new facilities and expansion of emergency service site across the state since the baseline.

The Office of Recreation and Sport uses 0.7 per cent of the Justice total energy. It has reported an increase in energy use for their facility at Kidman Park. The higher energy use for the same business measure (Area, m²) has resulted in a 10.1 per cent reduction in energy efficiency compared to the 2000-01 baseline.

Changes in Baseline and/or Subsequent Years' Energy Use

Baseline changes:

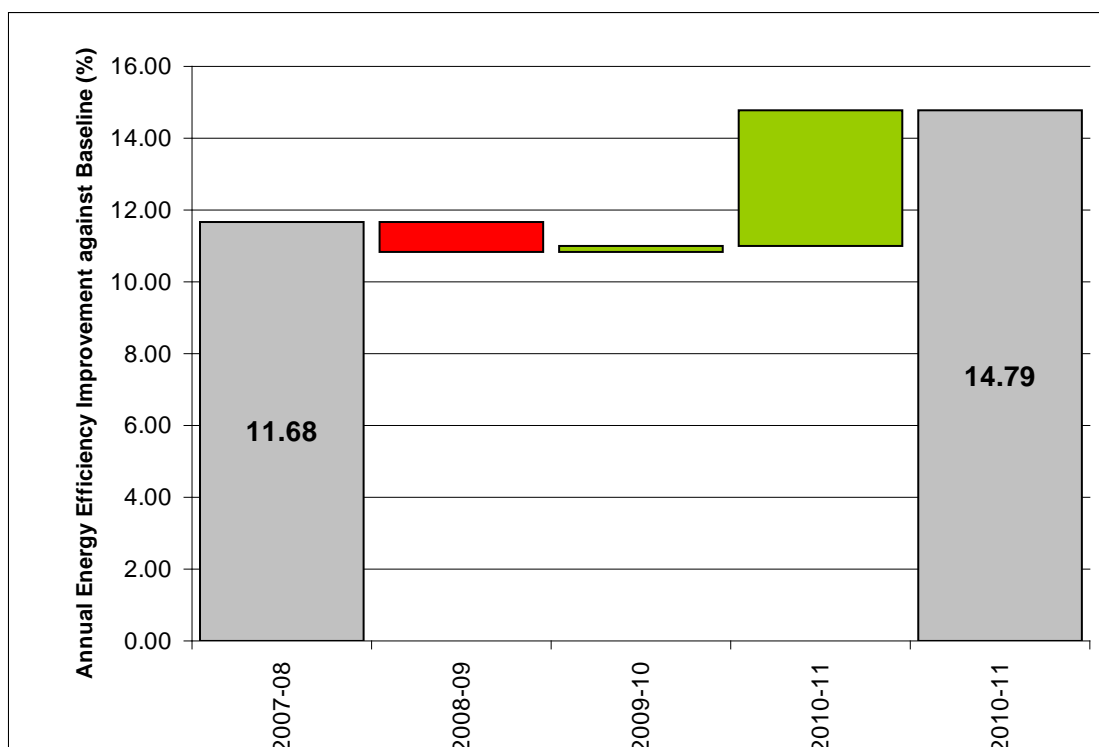
Addition of Area (m²) as the business measure 2000-01 baseline for Attorney-General's Department (AGD), to allow a more consistent comparison across the whole Justice department and the whole of government results. Previously AGD data was reported in FTE.

Removal of sites that were deemed as not meeting the government buildings within the definition for e.g. infrastructure such as radio towers, and stadiums and the shooting park.

Transfer of Employee Ombudsman, IRCC and Medical Panels SA from DPC to Justice.

Grouping of entities - data for the above transferred entities and for the Minister for IR, Racing and the Office for Racing are all included within the AGD.

Figure 4.3.2: Justice Building Energy Efficiency Trend, 2007-08 to 2010-11



Significant Energy Management Achievements

ATTORNEY-GENERAL'S DEPARTMENT (AGD):

- Environmentally sustainable development (ESD) principles have been adopted when re-negotiating leases, during fit-outs and in specifying the design of new facilities. They include improving building energy performance, reducing water use and reusing and recycling materials.

COURTS ADMINISTRATIVE AUTHORITY (CAA):

- CAA replaced the second of three chillers with a more energy efficient unit at the Sir Samuel Way Building.
- CAA replaced the outdated air conditioning to Jeffcott Chambers with a more efficient unit.

METROPOLITAN FIRE SERVICE (MFS):

- Upgrade of lighting from incandescent globes to compact fluros across all sites.

SA POLICE (SAPOL):

Consideration of greening opportunities and a focus on environmentally sustainable design has been an important objective across the asset base with sustainability a factor now incorporated into all new building initiatives.

The new Roxby Downs police station features passive design principles, energy efficient lighting and air-conditioning, motion activated lighting and electricity sub metering. Three new facilities have been provided in the APY Lands at Amata, Pukatja and Mimili. Each site features specific measures to suit the extreme temperature range experienced from zero to 55 degrees. Energy initiatives include passive design principles, thermal insulation and use of shade structures to complement tailored air conditioning solutions including reversible ceiling fans. Other measures include energy efficient lighting, multi gang switching and electricity sub metering.

New capital projects are being undertaken with a particular focus on energy efficiency through passive design principles and technological innovations. In particular the New Police Headquarters building will achieve a 5-Star green star office fit out and energy rating whilst the New Police Academy will incorporate significant energy and environmental initiatives.

Proposed New Initiatives in 2011-12 and Beyond

ATTORNEY-GENERAL'S DEPARTMENT (AGD):

- Through lease negotiations, improvements by the Building Owner to achieve a higher NABERS rating of 45 Pirie St. Improvements include lighting upgrades, de-lamping and replacing existing lights with T5s, improving building maintenance, hot water and air conditioning systems.
- Completion of the 45 Pirie St Accommodation Project to increase the occupancy rate by around 20% and cease a number of leases to allow more efficient use of energy.
- Upgrades to 45 Pirie Street including installation of occupancy sensors to meeting rooms, motion activated lighting to staircases and toilets.

- In 2012-13 the AGD is working towards further consolidating into 91-98 Grenfell St and 30 Currie St through fit out works.

COURTS ADMINISTRATIVE AUTHORITY (CAA):

- CAA replaced the outdated air conditioning to Jeffcott Chambers with a more efficient unit.

METROPOLITAN FIRE SERVICE (MFS):

- Upgrading pneumatic air-conditioning controls to electric.
- Upgrading of air-conditioning systems at various sites with new more efficient systems.

SA POLICE (SAPOL):

SAPOL are currently developing a strategy for the use of solar panels at sites that meet stringent criteria to ensure maximum environmental benefit and reasonable payback periods. A test site will be established and data collected and analysed to further hone the process. If successful further sites will be considered.

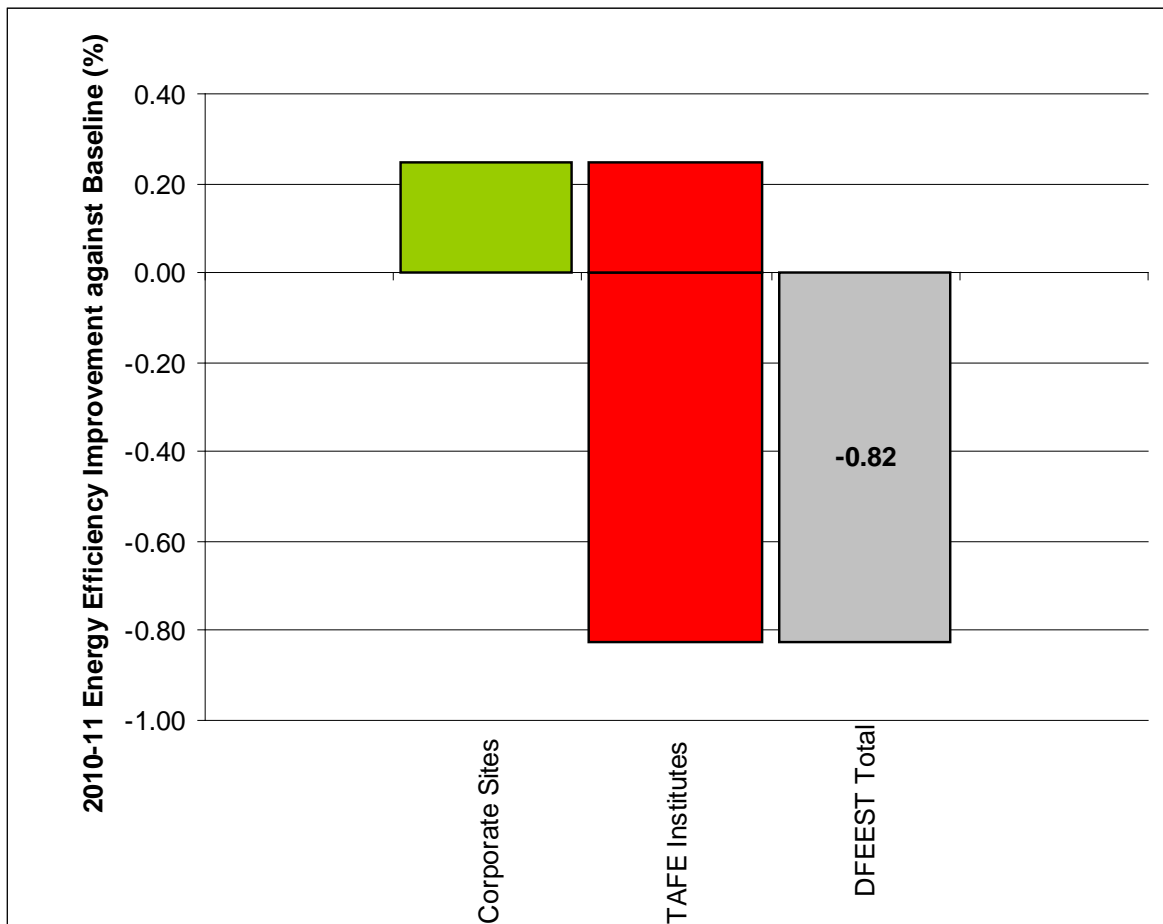
Historically Police Headquarters has been the most energy intensive site in the SAPOL portfolio. With the new 5 Star building energy usage can be monitored and managed right down to individual floor level. SAPOL will establish energy targets and monitor energy usage to deliver energy and financial savings to the agency.

SAPOL are building a replacement station at Murray Bridge that will incorporate ESD principles including energy efficient air conditioning and lighting, efficient tap ware and water harvesting for toilet flushing and landscape watering, both solar hot water and power, and Building Management Systems will turn off appliances and systems when not required including building and car park lighting and air conditioning.

A New Road Safety School is to be built with solar hot water and power, rain water harvesting for toilets and landscaping, energy smart lighting and air conditioning.

4.4 Department of Further Education, Employment, Science and Technology (DFEEST)

Figure 4.4.1: DFEEST Building Energy Efficiency Improvement, 2010-11 against Baseline



Overview of Performance to 2010-11

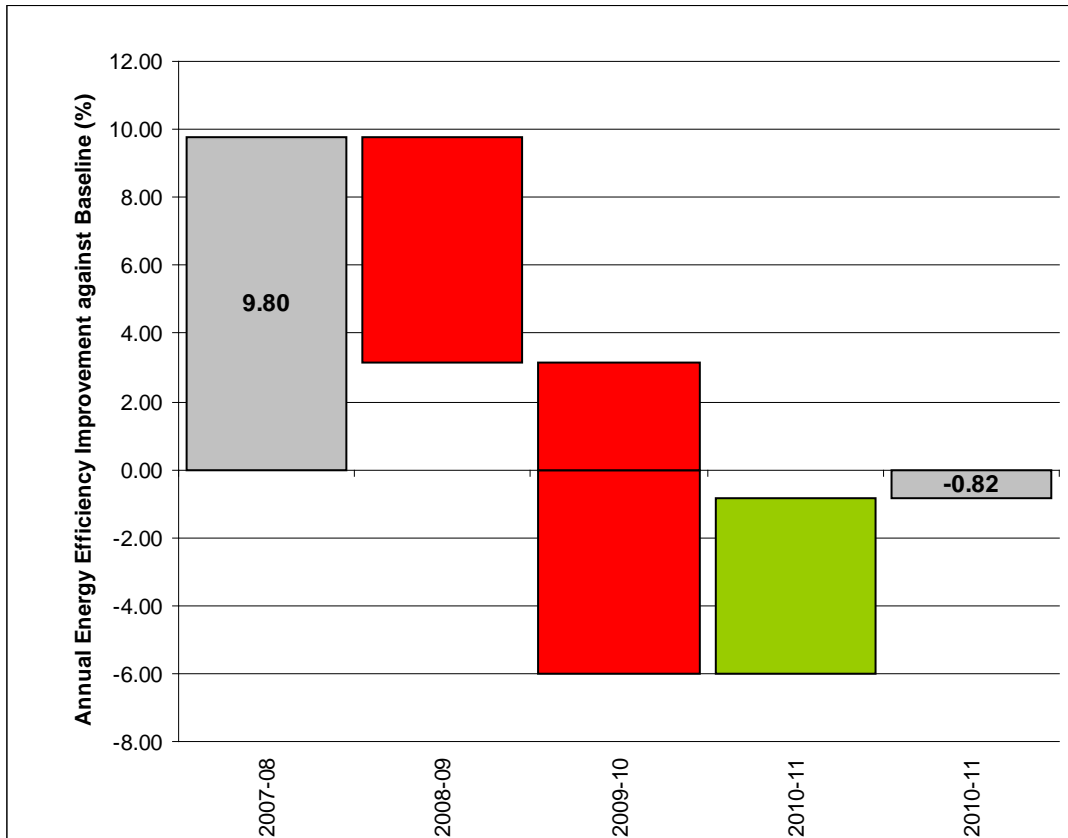
DFEEST accounts for 7.3 per cent of the overall government building energy use. Due to aging facilities and increased business outcomes, energy efficiency compared to the baseline has decreased by 0.8 per cent. The full impact of these factors, however, has been mitigated through significant efforts to reduce energy use and improve efficiency, and DFEEST have achieved a 5.2 per cent overall energy efficiency improvement from 2009-10 to 2010-11. The annual energy efficiency from 2007-08 to 2010-11 are shown in Figure 4.4.2.

TAFE SA North has driven the 2010-11 energy efficiency improvement with a reduction in energy use of 11 per cent. Some of the initiatives, through which DFEEST has endeavoured to improve its energy performance are detailed below.

Changes in Baseline and/or Subsequent Years' Energy Use

Nil.

Figure 4.4.2: DFEEST Building Energy Efficiency Trend, 2007-08 to 2010-11



Significant energy management achievements

CORPORATE DFEEST ACHIEVEMENTS

DFEEST's occupation in the five star Green Star City Central (11 Waymouth St) consumed 9.3 per cent less energy compared to the previous reporting period. A number of initiatives contributed to this success.

- Earth Hour 2011

A review of the building management systems (BMS) across Corporate DFEEST and all TAFE Institutes to maximise energy efficiencies was conducted and staff encouraged to acknowledge our impacts on the environment as part of the Department's participation in Earth Hour 2011. Over 134 countries participated in this event.

- NABERS Energy rating for City Central

DFEEST is the largest tenant in City Central (occupies six levels) and in February 2011 the building was awarded a five star rating for base building energy efficiency. DFEEST undertook a lighting control system review in late 2010 to ensure maximum efficiency of the tenancy's lighting.

- ICT

DFEEST ICT has been instrumental in strongly reducing ICT related energy usage through new 'virtual' equipment (blade servers) replacing inefficient ICT components. The level ICT is located on realised a 13.5 per cent reduction in energy usage, whilst three of the other levels reduced their energy usage by an average of five per cent. A focus on printer settings and equipment utilisation such as automatic power shut down of pc's, and newer more efficient pc's and monitors have contributed to reducing energy consumption.

TAFE ADELAIDE NORTH INSTITUTE ACHIEVEMENTS

This Institute reduced its energy consumption by 11 per cent compared to the previous reporting period. This was a result of a number of initiatives including:

- Regency Cogeneration Unit

This unit has finished testing and is anticipated that the unit will shortly begin to provide onsite power generation and heat, thereby reducing the amount of power purchased from the grid. The ending of testing of the Cogeneration unit resulted in a 20.5 per cent reduction in energy usage at this site. The Cogeneration Unit consumes natural gas to produce heat and electricity for the Regency TAFE Campus.

- Lighting

Further rollout of the Axion Emergency Lighting System to Regency and Tea Tree Gully TAFE Campuses. This system replaces emergency lighting with low wattage LED lighting.

Renewable Energy working in partnership with Royal Rewinds and Mechanical Engineering to install a three kilowatt wind turbine as part of the renewable energy project.

TAFE ADELAIDE SOUTH INSTITUTE ACHIEVEMENTS

This Institute increased its energy consumption by 1.4 per cent compared to the previous reporting period. Initiatives undertaken include:

- Noarlunga TAFE; an \$8.7 million upgrade included a 15 kW solar power generation system with 84 solar panels. This system has generated 27 600 kWh since July 2010. 1 600 light fittings were upgraded to energy efficient T5 lights and additional LED down lights installed in the John Reynella restaurant.

TAFE REGIONAL INSTITUTE ACHIEVEMENTS

This Institute increased its energy consumption by 0.5 per cent compared to the previous reporting period. Initiatives undertaken:

- Gawler TAFE; A \$100 000 project was completed to install energy efficient T5 and LED lighting throughout the campus.
- Murray Bridge TAFE; a \$300 000 project was completed as a first stage in consolidating the Library and Client Services which included upgrades to more efficient lighting.

Proposed New Initiatives in 2011-12 and Beyond

Adelaide TAFE; A new \$3.8 million refurbishment of the old restaurants TIROS and Martina's into a Client Services area will include energy efficient lighting and updated air conditioning.

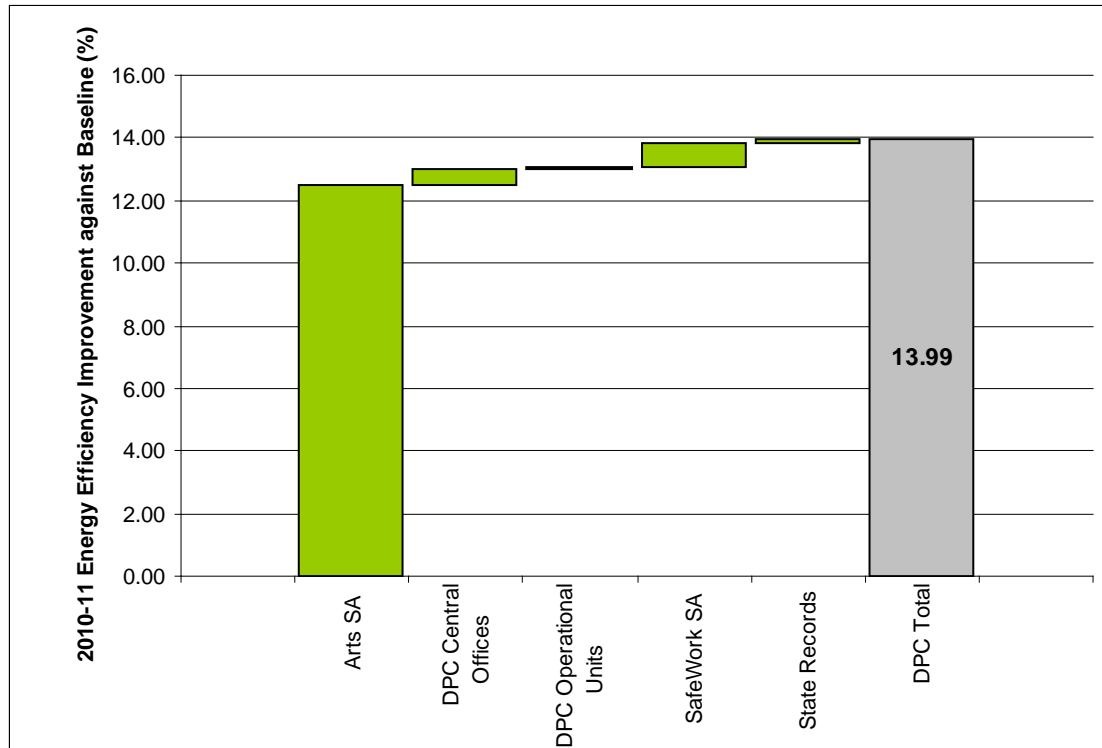
Murray Bridge TAFE; the second stage refurbishment of the Library and Client Services will include replacement of inefficient lighting with more efficient T5 lighting.

The commencement of building the new \$125 million Sustainable Industries Education Centre at the former Mitsubishi site, Tonsley will replace 3 ½ ageing and inefficient TAFE Campuses. The new centre will become the central point for building and construction training in South Australia and promoting sustainable building techniques.

A department wide communications strategy is being developed to encourage stronger staff participation in reducing our energy consumption as part of the DFEST Sustainability Strategy and Action Plan 2010 – 2012.

4.5 Department of the Premier and Cabinet (DPC)

Figure 4.5.1: DPC Building Energy Efficiency Improvement, 2010-11 against Baseline.



Overview of Performance to 2010-11

Since the 2000-01 baseline, DPC has achieved an overall energy improvement of 14.0 per cent. This is less than the 2009-10 result of 15.4 per cent (after baseline changes detailed below) with an increased use of natural gas in public buildings offsetting decreases in electricity use.

DPC consumes 4.0 per cent of the overall government building energy use. Its estimated contribution to the target is 0.6 per cent.

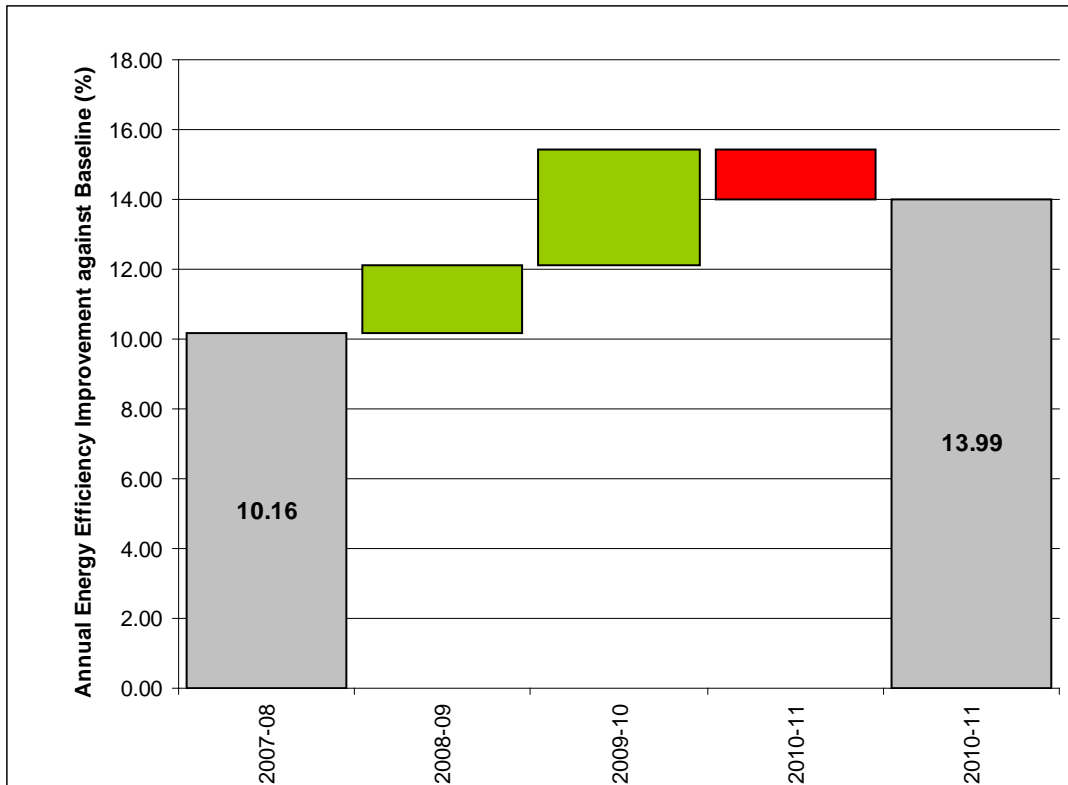
Changes in Baseline and/or Subsequent Years' Energy Use

Baseline changes:

Transfer of Employee Ombudsman, IRCC and Medical Panels SA from DPC to Justice.

Minor adjustments to 2009-10 Arts SA energy data: due to the previous inclusion of Queen's Theatre (deemed not a government building for the purposes of SASP T61); and addition of data for the SA Film Corporation site which did not show in the final OSCAR report due to database error. Overall variation to Arts SA: an increase of 885 GJ (1.0 per cent) for 2009-10 energy use.

Figure 4.5.2: DPC Building Energy Efficiency Trend, 2007-08 to 2010-11



Significant Energy Management Achievements

An energy efficient lighting upgrade of the Elder Wing, Art Gallery of SA, was completed in 2010-11 as the final stage of the Greening of the Gallery project. Funding of \$2.5 million was approved in the 2007-08 budget and contributed to the replacement of the air-conditioning in the Melrose and Elder Wings, and the refurbishment of the Elder Wing. Comparison of data from 2008-09 and 2010-11 has shown a 20 per cent decrease in greenhouse gas emissions and a 10 per cent decrease in total energy use (gas use decreased by 20 per cent). In the same period visitor numbers have increased, with an overall 25 per cent improvement in energy efficiency per customer.

The development of the new Adelaide Studios at the Glenside Campus addressed energy efficiency in all aspects of the building infrastructure and operation, and has provided for solar panels with five kWh capability. The facility was opened for business in August 2011.

Three SafeWork SA sites were consolidated into a new head office, with a five star NABERS rating. This produced excellent results for rationalisation of printers and copiers. The new site has eight multifunction devices, replacing 22 printers, copiers and standalone devices from the previous locations. The 249 staff use a printing management program which ensures confidentiality and reduced waste from uncollected print jobs.

The printing management program was also rolled out to all DPC sites with multifunction devices, and rationalisation of printers and standalone devices continued across DPC.

A five star NABERS rating was achieved for the Chesser House tenancy.

Other energy efficiency works included the installation of small hot water units in nine kitchens of the State Administration Centre; and installing E-therm blanket insulation in the mechanical workshop of the National Motor Museum, Birdwood. The latter work provided greater flexibility in the workshop's use, improved working conditions and produced energy savings.

Proposed New Initiatives in 2011-12 and Beyond

An Adelaide Festival Centre (AFC) Master Plan business case is being developed for a 2012-13 capital funding budget bid. Potential redevelopment of the AFC will address energy efficiency through improved mechanical infrastructure and increased visitor numbers to the precinct.

An approach has been developed for resolving the electricity metering issues for the Art Gallery, State Library and South Australian Museum (DPC's highest energy use sites after the Adelaide Festival Centre). This work is expected to begin in 2011-12.

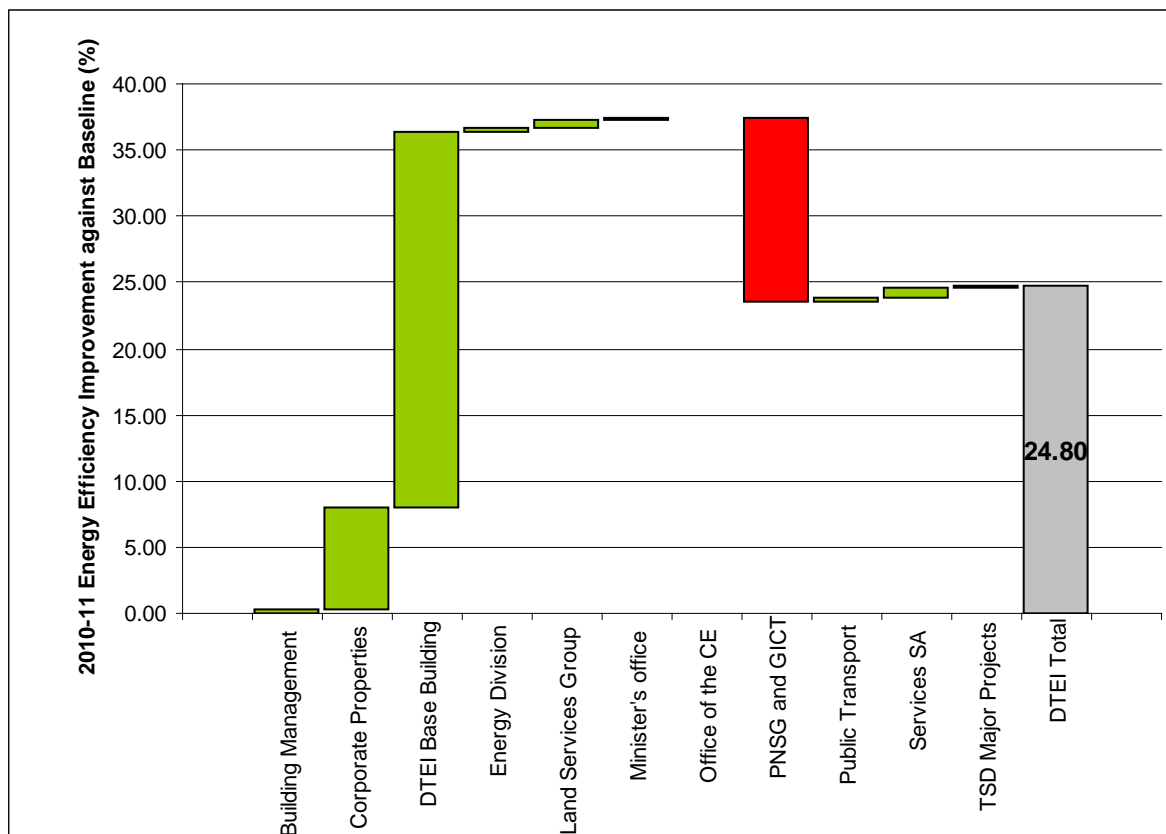
A once-off treatment which improves the operational efficiency of air-conditioners is being trialled at a DPC site, with estimated savings of 20 per cent reduced energy. If the results are satisfactory, the suitability of further sites will be assessed for future work.

Establish a NABERS rating for the DPC tenancy in the State Administration Centre.

Review settings for all DPC printers to ensure optimal energy efficiency defaults have been applied. Continue to investigate and act on further opportunities for printer rationalisation. Finalise provision to business managers of green printing reports, which monitor paper and energy use and identify potential savings.

4.6 Department for Transport, Energy and Infrastructure (DTEI)

Figure 4.6.1: DTEI Building Energy Efficiency Improvement, 2010-11 against Baseline.



GICT = Government Information Communication Technology, PNSG = Parliamentary Network Support Group.

* Office of the CE was an improved by 0.03 per cent, which is not seen on this scale.

Overview of Performance to 2010-11

Overall DTEI is very close to the milestone for 2014, having improved its energy efficiency by 24.8 per cent over the 2000-01 baseline during 2010-11. DTEI consumed 3.3 per cent of the overall government building energy, with an estimated 0.8 per cent contribution to the 30 per cent target by 2020.

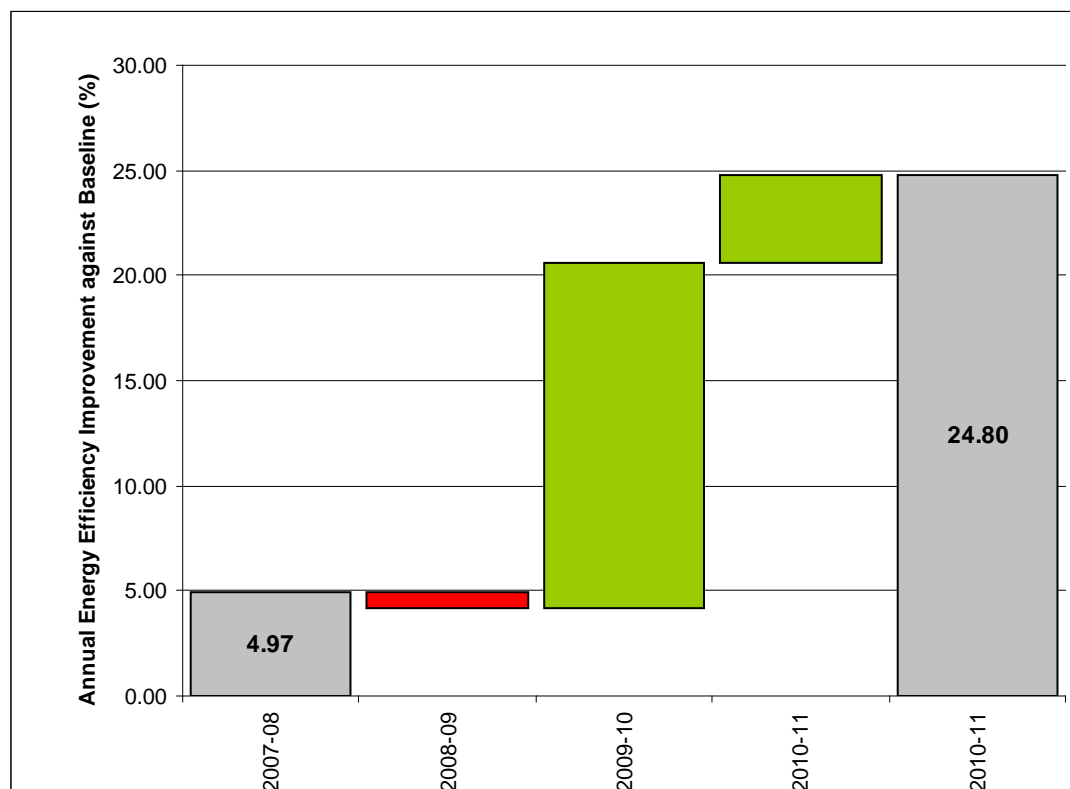
PNSG and GICT have shown a significant decrease in energy efficiency due to the consolidation of sites. Area occupied has been reduced to 36 per cent of the 2000-01 baseline measure, while the over the same period, energy usage has been reduced by five per cent.

Changes have been made to last year's division structure to reflect the department's current organisational structure, these have no impact on the overall department data:

Changes in Baseline and/or Subsequent Years' Energy Use

Baseline change – removal of sites that are deemed infrastructure rather than government buildings within the definition e.g. streetlights, traffic lights and Crafer's tunnel.

Figure 4.6.2: DTEI Building Energy Efficiency Trend, 2007-08 to 2010-11



Significant Energy Management Achievements:

ASSET MANAGEMENT

- Completed the \$3.5 million Glenside Hosting Facility upgrade program. Project scope included installation of:
 - energy efficient chiller systems, variable speed drives and LED light fittings in the data centre.
- New thermal plant was installed in Citi Centre building and chiller replacement for Wakefield House was completed in 2010.
- Plant has been replaced for eight lifts in the Education Centre, five in Wakefield House and four in the Forensic Science Centre which is expected to deliver an estimated five per cent in energy savings.
- Air conditioning plant and equipment was replaced at the Walkley Heights industrial facility and three regional office buildings (163 Nicholson Ave, Whyalla; 37 Dauncey St, Kingscote and 5 Whitehead Street, Whyalla) to provide greater energy efficiency.
- Lighting improvement project (T5 lighting) at Murray Bridge regional office.
- Annual NABERS ratings on all rateable buildings greater than 2 000 m².
- Energy ratings improvements have been achieved as a result of conducting NABERS Energy audits of five significant government owned office buildings in the Adelaide CBD which represent 75 per cent of all Government owned office space by area. The audits identified opportunities with reasonable payback periods that are implemented as part of the ongoing capital works program. The remainder of the actions will occur as replacement of plant and services in these assets are required.

- The post improvement NABERS ratings are:
 - State Administrative Centre 4.0 stars
 - Roma Mitchell House 3.5 stars
 - Citi Centre 3.5 stars
 - Wakefield House 4.0; and
 - Education Centre 4.5 stars

NB: 3.0 stars is considered 'average'.

LEASING MANAGEMENT

- When government is seeking new or renewed leases for offices with areas greater than 2 000 m², it is a requirement for building owners to disclose the base building NABERS Energy rating; this is addressed when market calls for leased space are sought from private sector building owners. Existing buildings with a NABERS rating greater than 4.5 Stars and new buildings with a NABERS rating greater than 5 Stars are given preference when leasing options are being considered.
- DTEI encourages all agencies to seek to achieve and maintain a 5 Star Green Star Tenancy rating over the term of leases for office areas greater than 2 000 m² where new fitouts are constructed for both Government owned and leased office accommodation.
- The following leases that commenced in 2010/11 have achieved or are projected to achieve a minimum 4.5 Star NABERS Energy rating for base building:

Location	Department	NLA
400 King William Street	Correctional Services	3,251.0 m ²
World Park, Richmond Road	Safework SA	4,447.0 m ²
22 King William Street	Health	1,545.8 m ²
99 Gawler Place	DPC	374.0 m ²
91-97 Grenfell Street	AGD	225.0 m ²

- 51 per cent of Government's leased office accommodation in the CBD (116 770.19 m²) has a base building NABERS Energy star rating, as follows:
 - 31 per cent (8 leases) - 5 Star rating
 - 25 per cent (10 leases) - 4.5 Star rating
 - 43 per cent (17 leases) - 4 Star rating
- DTEI incorporates such initiatives as penalties in leases should a NABERS rating not be achieved/maintained.
- The National Green Lease Policy (NGLP) was endorsed by the Government Property Group (GPG). The SA Government is a member of the GPG through DTEI representation.
- Building Management Division of DTEI is a member of the City Switch Program, a national initiative of the Council of Capital City Lord Mayors for commercial office tenants. Involvement in the program has delivered an energy efficiency review and an indicative NABERS Energy tenancy rating for Building Management Division's tenancy

at 211 Victoria Square, Adelaide. The aim is to develop and implement an Energy Action Plan to achieve and maintain a 4 Star or higher accredited NABERS Energy tenancy rating by improving office energy efficiency.

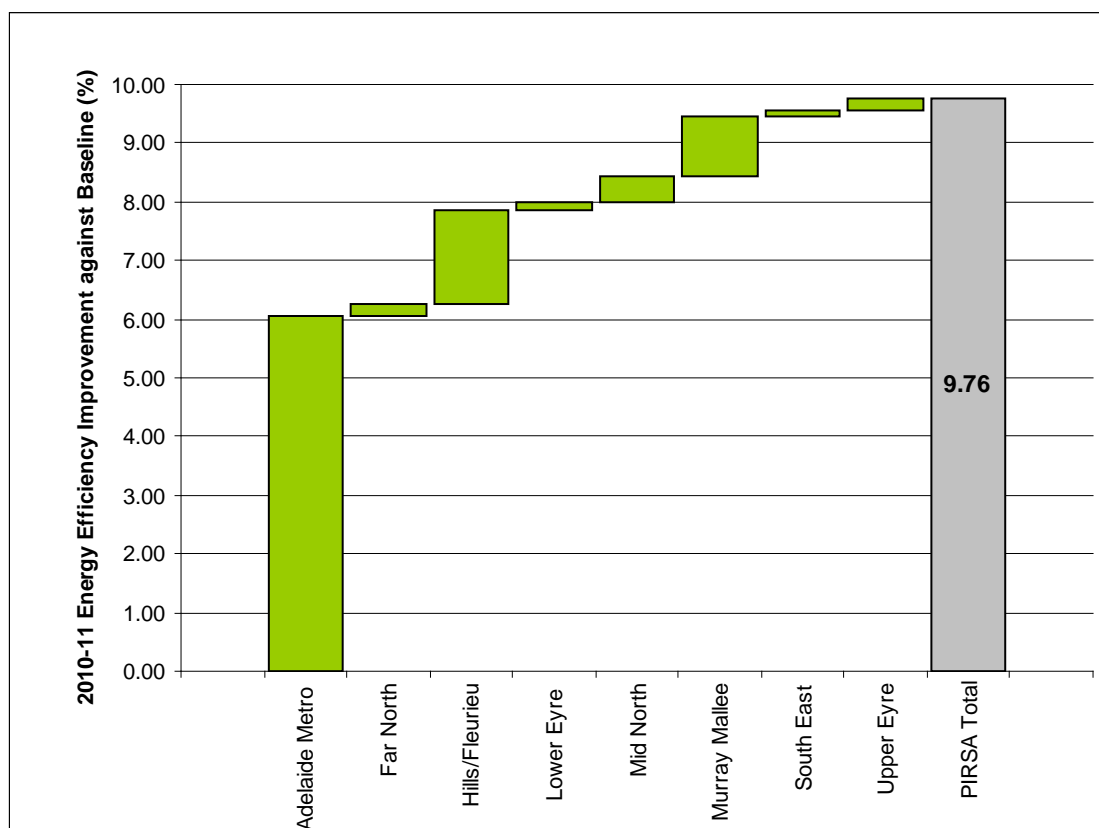
- As a result of the review, a project to improve the lighting and energy efficiency of the tenancy was completed to improve the NABERS rating to an indicative 5-star and reduce annual energy consumption and costs by an estimated \$4 100 per annum (additional sensors installed, globe lights replaced with lower voltage and changing meeting room switches).
- The Green Fit-out Guide was completed and uploaded on the departmental website (<http://www.infrastructure.sa.gov.au/buildingmanagement/policies>) where it remains available to provide Ecologically Sustainable Development (ESD) considerations to design teams and building occupants for government fit-outs.

Proposed New Initiatives in 2011-12 and Beyond

- Implementation issues associated with the NGLP are now being investigated and strategies developed.
- NABERS ratings in Government owned assets with a NLA greater than 2 000 m² will be updated regularly.
- The GPG will be focusing its activities on tenant behaviour and tenancy management opportunities for reducing energy consumption in leased assets.
- Progressively upgrade the existing lighting to T5 lighting for both CBD and regional buildings, commencing with 5 El Alamein Road, Port Augusta and initial stages for 30 Wakefield House.
- Energy Division (now Energy Markets and Programs Division, within DMITRE) is joining the City Switch Program in 2011-12, including having a NABERS rating completed for their tenancy in the City Central Building Tower 1. Waymouth St.

4.7 Primary Industries and Resources SA (PIRSA)

Figure 4.7.1: PIRSA Building Energy Efficiency Improvement, 2010-11 against Baseline.



Overview of Performance to 2010-11

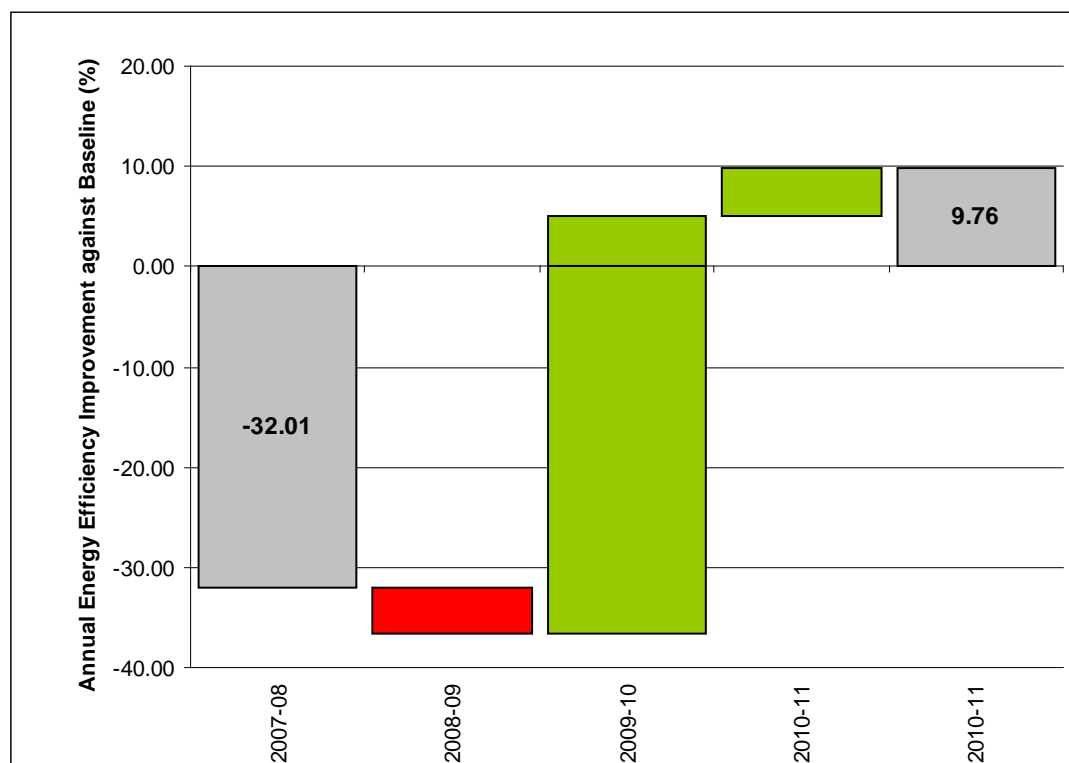
During 2010-11, PIRSA achieved an overall weighted improvement of 9.8 per cent, compared to the 2000-01 baseline. This is an improvement of 4.7 per cent since 2009-10 (after baseline adjustments as described below). All regions except Adelaide Metro achieved more than the 30 per cent target. As the Adelaide Metro area uses 93.9 per cent of the total building energy consumed by PIRSA, it significantly influences the weighted energy efficiency of the overall department. The Adelaide Metro has improved by 5 per cent since 2009-10. The annual trend for PIRSA from 2007-08 to 2010-11 are showing in Figure 4.7.2.

PIRSA consumes 2.7 per cent of the overall government building energy use and contributed approximately 0.3 per cent to the overall government target.

Changes in Baseline and/or Subsequent Years' Energy Use

The completion of the review of PIRSA sites, against the definition of government buildings resulted in further sites being removed from the reporting, as per the building types that had been deemed not to meet the definition of T61 buildings in 2009-10, such as sheds and seismographs. Other sites were also deemed as infrastructure and/or not meeting the definition, such as marinas, vacant land and mining sites.

Figure 4.7.2: PIRSA Building Energy Efficiency Trend, 2007-08 to 2010-11



Significant Energy Management Achievements

- Replacement of chiller at 33 Flemington St, Glenside with energy efficient air-cooled chiller was completed in 2009-10. Whilst the mechanical plant is not individually metered, a review of consumption data indicates a 15 per cent reduction for 2010-11 compared with 2009-10.
- Refurbished part level 3 of 33 Flemington Street, Glenside and utilised T5 lighting.
- Facilities plan undertaken to consolidate staff into one building at Loxton research centre with vacant building to be “mothballed”. Resultant reduction in operating costs including electricity anticipated.
- Review of PIRSA leased sites in regional areas has led to the closure of some sites and a consolidation of staff and reduced footprint in other regions, and a corresponding reduced carbon footprint.
- Continue to utilise T5 lighting for all building refits.
- Major Energy Efficiency building works to the base building air conditioning system by the building owner at 25 Grenfell Street, Adelaide. 25 Grenfell Street is an A-Grade office building, constructed in the mid 70’s and still retaining mostly original plant, the building’s operational environmental impact was relatively high by today’s standards. This projects aim was to reduce Carbon Emissions (CO₂) by approximately 30 per cent. Works included:
 - Replacement of two centralised chillers.
 - Upgrade of centralised air conditioning systems.
 - Modifications and control upgrade to individual air conditioning systems on each floor.

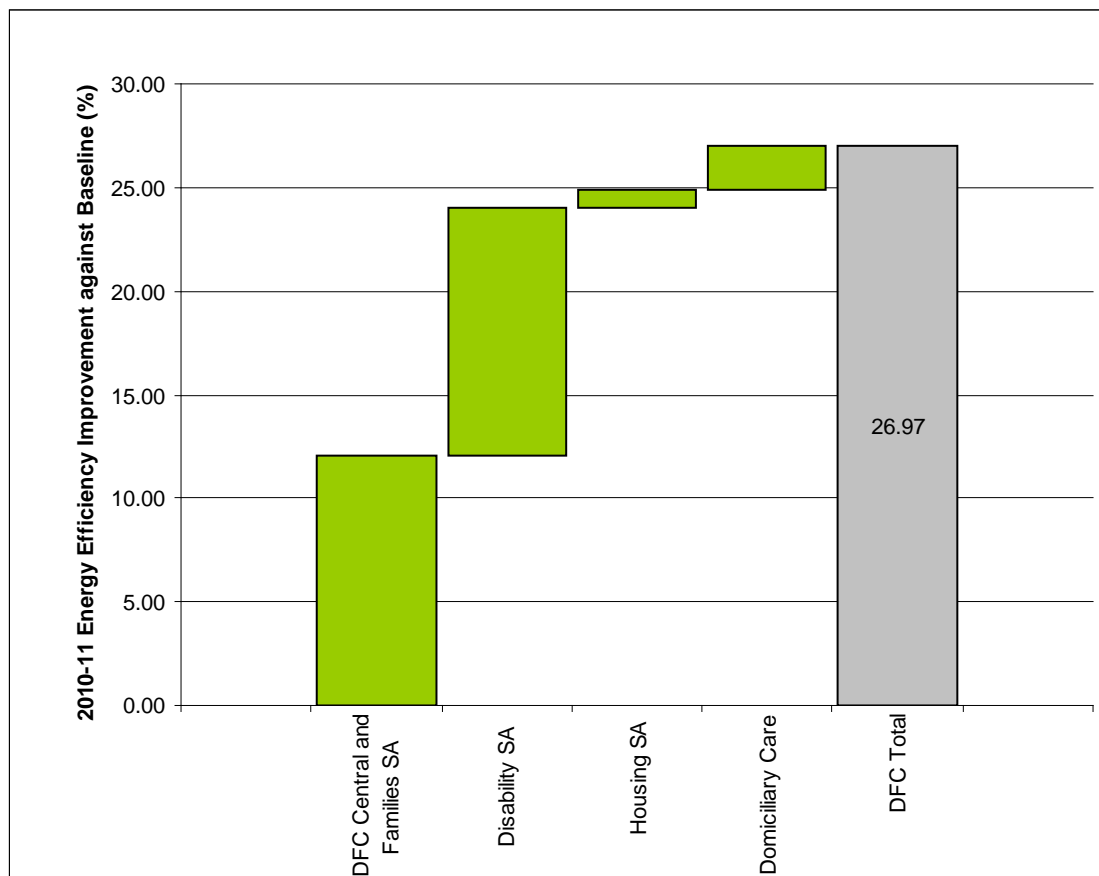
- Upgrade to central air handling plant monitoring systems.
- A central energy monitoring and management strategy.

Proposed New Initiatives in 2011-12

- Continue to utilise T5 lighting for tenancy refits.
- A business case for a new core library building is being developed for submission into the 2012-13 budget cycle. Energy efficiency initiatives will be utilised where ever possible including the inclusion of solar panels.

4.8 Department for Families and Communities (DFC)

Figure 4.8.1: DFC Building Energy Efficiency Improvement, 2010-11 against Baseline.



Overview of Performance to 2010-11

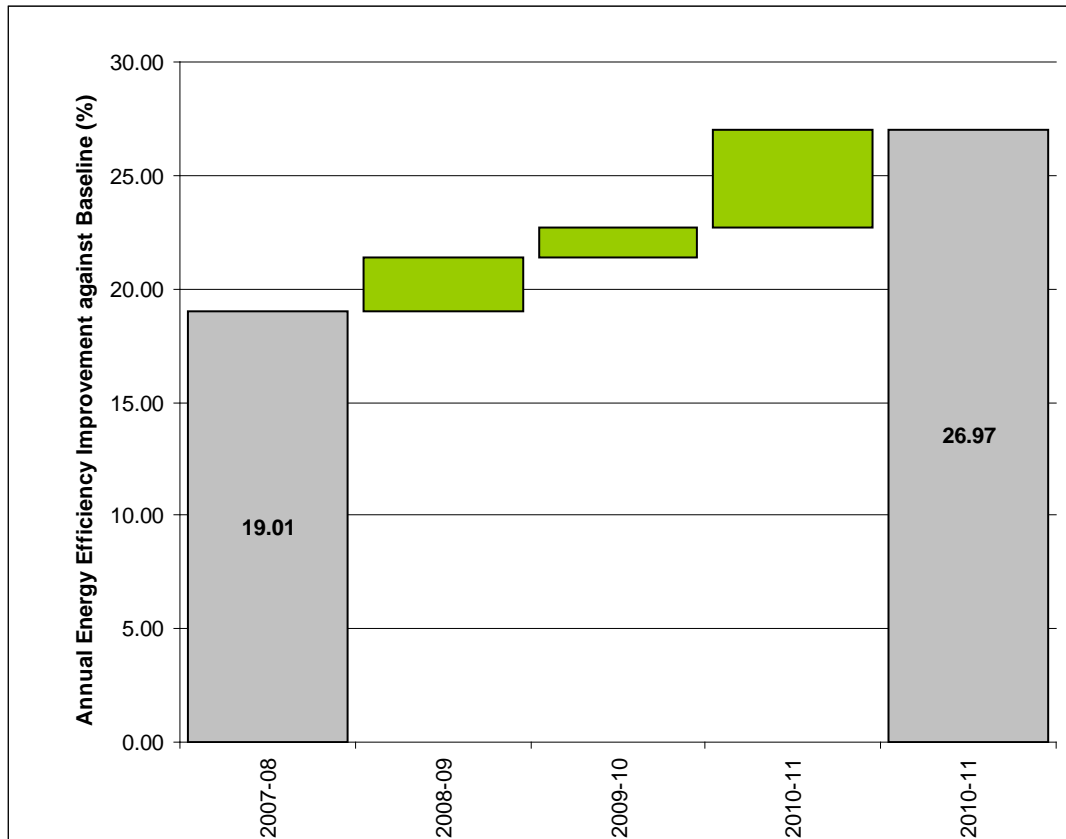
DFC achieved an overall weighted improvement of 27.0 per cent in 2010-11 compared to the 2000-01 baseline. This surpasses the SASP T61 milestone of 25 per cent improvement ahead of the 2014 target date. An improvement of 4.3 per cent since 2009-10's result of 22.7 per cent was achieved through all areas improving in the energy efficiency reported, with the highest improvement, of 22.4 per cent, in Domiciliary Care.

The DFC consumes 2.7 per cent of the overall government building energy use and contributed approximately 0.7 per cent to the target of 30 per cent improvement by 2020.

Changes in Baseline and/or Subsequent Years' Energy Use

Nil.

Figure 4.8.2: DFC Building Energy Efficiency Trend, 2007-08 to 2010-11



Significant Energy Management Achievements

In 2010-11, a number of ongoing programs to improve energy efficiency continue to be implemented:

GREENING DFC PROGRAM

- Greening DFC has undertaken employee engagement and branding initiatives to increase its profile and influence achievements of State Strategic Plan 2007, DFC and greening of government targets.
- The Greening Ambassadors Program was launched during 2010-11. The program involves collecting individuals with an interest in environmental sustainability to join together to foster ideas for efficiencies and to spread Greening efforts across the department.
- DFC has become a vibrant member of member of the Adelaide City Switch Program which is committed to promoting sustainability in buildings throughout the Adelaide CBD. The DFC Riverside Tenancy won the inaugural National State Award for sustainable practices for a tenancy over 2 000 m².
- DFC achieved a NABERS tenancy energy rating on its Riverside tenancy of 4.5. This has set a benchmark 'score' for energy efficiency that can be used to monitor the success of energy saving initiatives in the future.
- During 2010-11 DFC continued to initiate and implement greening and sustainability standards and benchmarks throughout all DFC Offices and sites.

PRINT CONSOLIDATION PROGRAM

In 2007, DFC commenced removing unnecessary print devices from office and commercial spaces, and consolidated those that remained. This five-year program is to be rolled out across all sites and divisions. The program has involved the following divisions so far: DFC Corporate, Housing SA and Disability SA. Significant financial savings and reductions in environmental impacts have been achieved as a result. They are summarised below:

- Printers reduced from 778 to 340 (56.3 per cent reduction).
- Total cost of owning⁴ printing devices reduced by approximately \$2.02 million.
- CO₂ emissions have been reduced by 151 tonnes per annum.
- Maintenance and IT support has reduced, yielding significant cost savings.
- The need for consumables such as toners has been reduced, yielding cost savings.
- The fleet has been standardised thereby creating greater efficiency from staff and less training / support is needed when staff move from floor to floor or site to site.

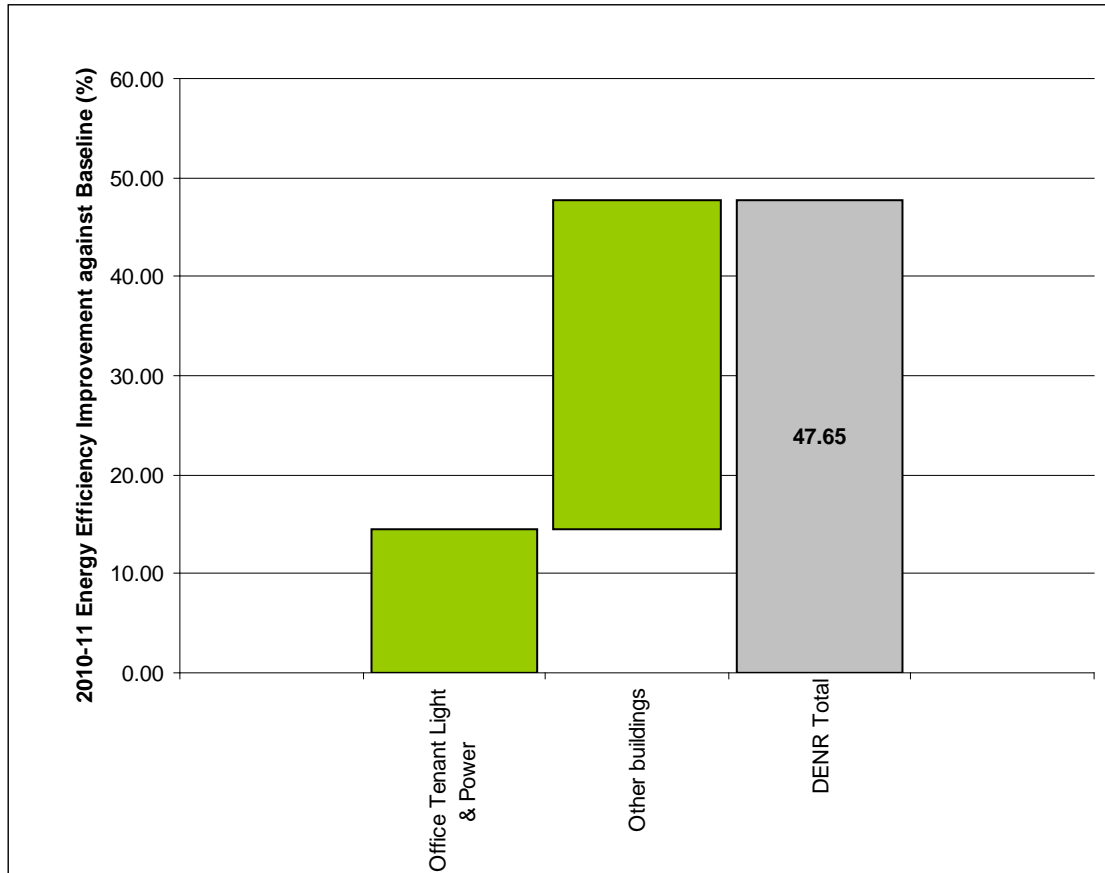
Proposed New Initiatives in 2011-12 and Beyond

- In 2011-12, DFC will continue to improve energy efficiencies from the DFC energy baseline created in 2000-01.
- The waste management system pioneered in the DFC Riverside tenancy will be fully implemented in all offices and sites across DFC and be the first South Australian government department to achieve zero waste.
- In 2011-12, the target of 90 print devices will have been achieved In Riverside Centre through the Print Device Consolidation Program this will be the benchmark per ratio of staff to all DFC facilities within Housing SA, Disability SA, Families SA and Domiciliary SA.
- DFC will continue to match Greening Action Plan targets, goals and operations outlined in the Greening of Government Operations (GoGO) Framework and initiate and implement greening standards and benchmarks throughout all DFC offices and sites.
- DFC will continue to be a vibrant member of the Adelaide City Switch Program which is committed to promoting sustainability in buildings throughout the CBD.
- During 2011-12, DFC will continue to initiate and implement greening standards and benchmarks throughout all DFC offices and sites.

⁴ Total Cost of Ownership (TCO) defined as: Capital cost plus operating cost (i.e. toner & consumables) plus warranty / maintenance cost over a five year device lifecycle.

4.9 Department for Environment and Natural Resources (DENR)

Figure 4.9.1: DENR Building Energy Efficiency Improvement, 2010-11 against Baseline.



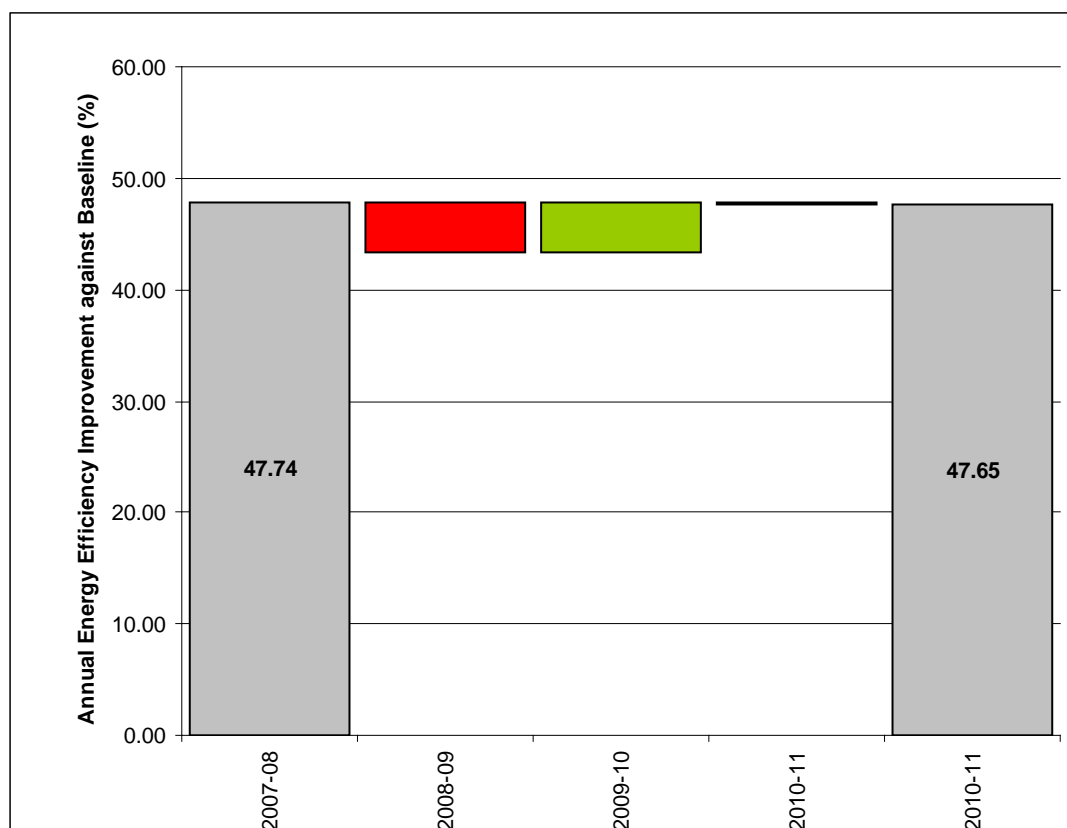
Overview of Performance to 2010-11

In 2010-11, DENR has maintained their overall energy efficiency improvement since 2000-01 at 47.7 per cent and exceeded the SASP T61 of 30 per cent in all building type categories. DENR consumed 0.7 per cent of all total government building energy and its estimated contribution to the target is 0.4 per cent.

Changes in Baseline and/or Subsequent Years' Energy Use

Nil.

Figure 4.9.2: DENR Building Energy Efficiency Trend, 2007-08 to 2010-11



Significant Energy Management Achievements

DENR undertook the following energy efficiency measures in 2010-2011:

- Kelly Hill Conservation Park Lighting Upgrade to more efficient cave lighting.
- Replaced power supply batteries at the “Antro” in the Bimbowrie Conservation Park, and undertake assessment to determine viability of upgrading complete generation system.
- Undertook a state-wide RAP (Remote Area Power) system review.
- Continued with T8 Lighting retrofits to Cleland Conservation Park Workshop.

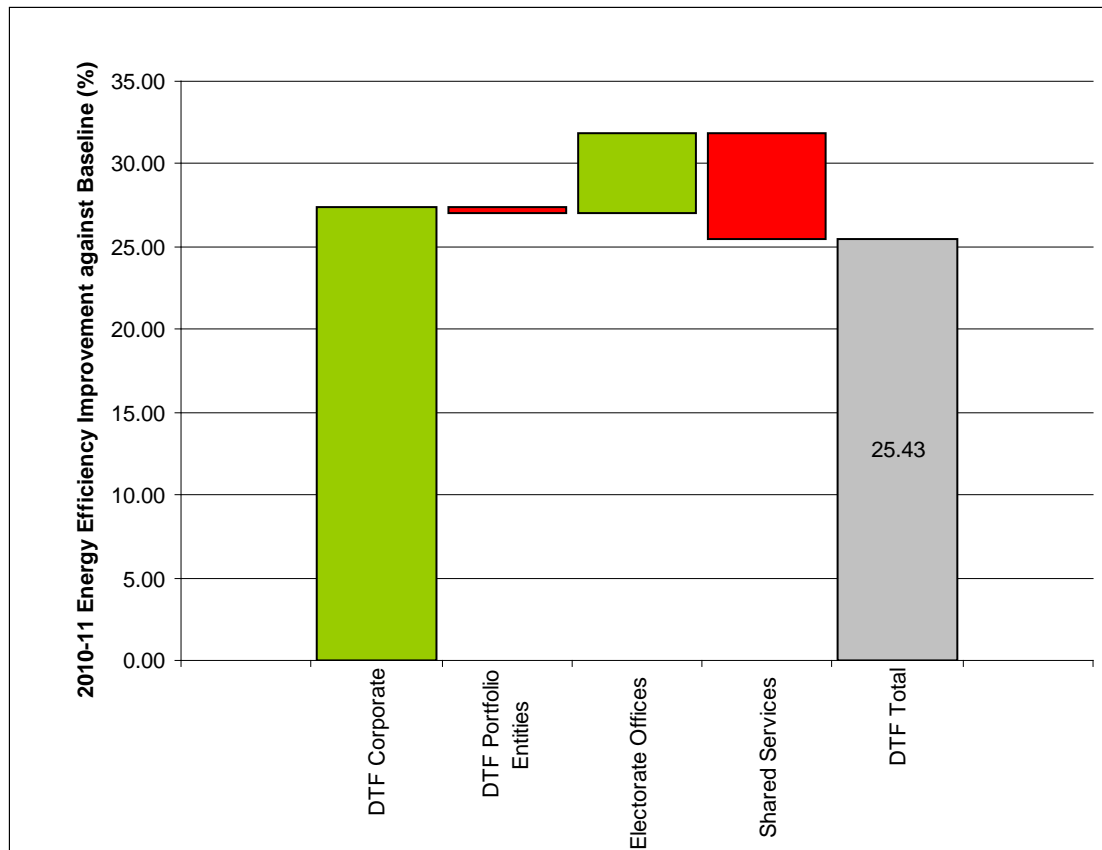
Proposed New Initiatives in 2011-12 and Beyond

DENR are planning the following activities for 2011-2012:

- Installation of T5 Lights to Cleland Conservation Park Workshop.
- Installation of a 8.36 kW grid connection of solar panels at Naracoorte Caves National Park.
- Continue with state-wide RAP System Review.
- Installation of 3.8 kW Grid Connect of Solar Panels to one of the main buildings to reduce operating cost at Cleland Wildlife Park, and Building 3 at Blackhill Conservation Park.
- Installation of Bulk Gas at Mt Remarkable NP and Dutchmans Stern.
- Pre Wire of Danggali Shearers Huts with Power Light for upgraded power supply.
- Installation of T8 lights in Building 1 at Blackhill Conservation Park.

4.10 Department of Treasury and Finance (DTF)

Figure 4.10.1: DTF Building Energy Efficiency Improvement, 2010-11 against Baseline



Overview of Performance to 2010-11

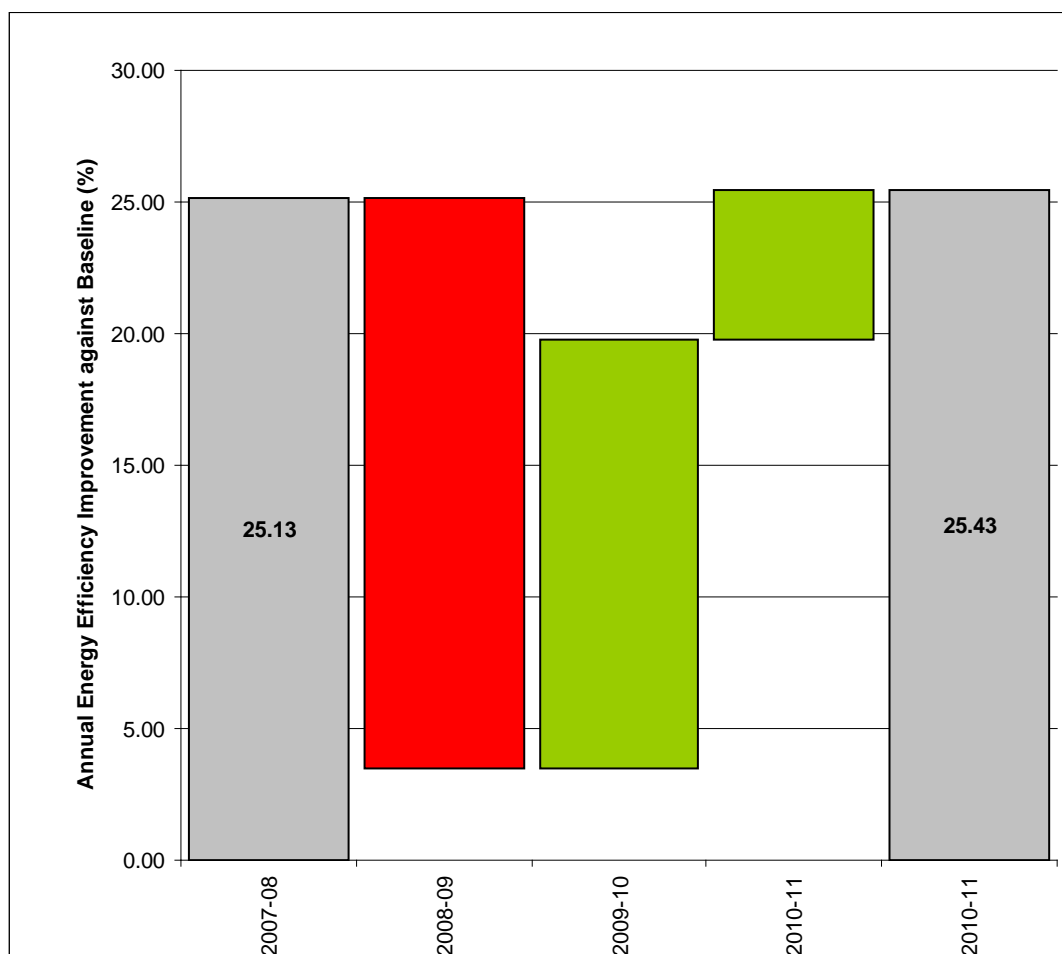
DTF has achieved the SASP T61 milestone of 25 per cent by 2014, improving by 25.4 per cent over the baseline in 2010-11. Since 2009-10, DTF have gained a further 5.6 per cent improvement in energy efficiency. Of the overall government building energy use, DTF consumes 0.5 per cent and contributed 0.1 per cent to the target. The trend of annual energy efficiency for DTF is shown below, in Figure 4.10.2.

Shared Services was established in 2006 and since then the area of the overall facilities has remained similar but the number of FTEs and the total energy consumption has increased along with increased services requirements.

Changes in Baseline and/or Subsequent Years' Energy Use

Nil.

Figure 4.10.2: DTF Building Energy Efficiency Trend, 2007-08 to 2010-11



Significant Energy Management Achievements

DTF undertook the following energy efficiency measures in the 2010-11 year:

- Continual rollout of Strategic Accommodation Plan to incorporate a more efficient open plan office environment.
- Relinquished an office accommodation lease at Level 3, 63 Pirie Street to consolidate staff in the State Administration Centre.
- Successful trial of an energy efficiency product that improves air-conditioning efficiency.
- Converting offices / conference / meeting rooms back to sensor operated lights.
- Delamping of floors within the State Administration Centre while maintaining correct lighting levels.
- Continual rollout of multi-functional devices and the reduction of printers.
- Installation of more efficient hot water systems in kitchen/utility areas.
- Installation of fixed timers on water boiling units to limit operations between 6.00am and 6.00pm, Monday to Friday.

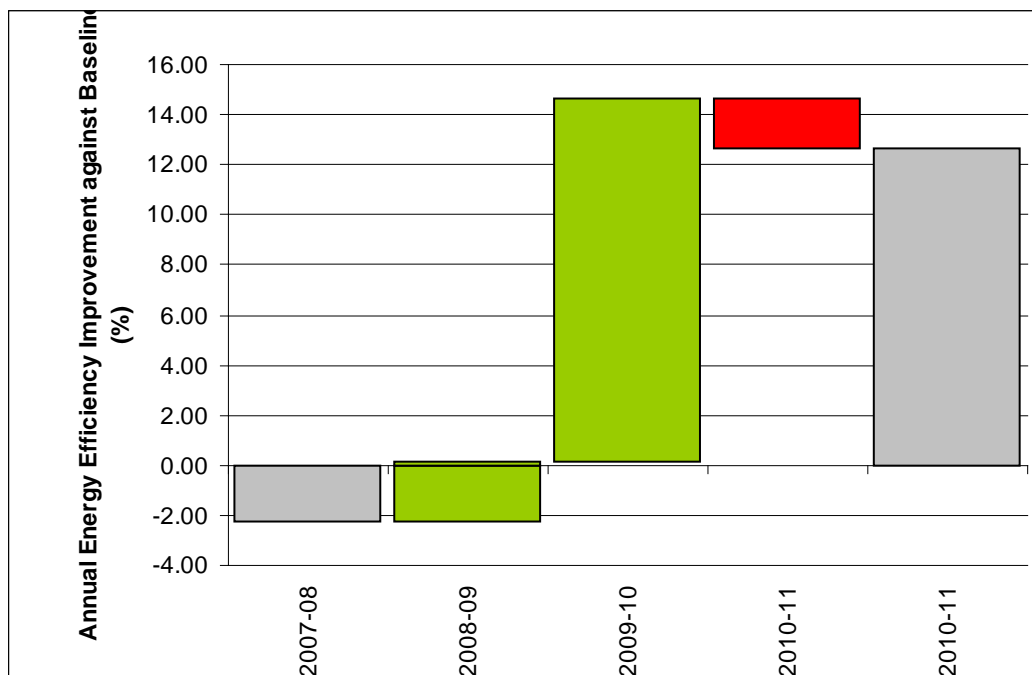
Proposed New Initiatives in 2011-12 and Beyond

DTF is planning the following major initiatives:

- Engage DTEI (now DPTI) as building owner/manager and Spotless Property and Facilities to consider lighting options for the State Administration Centre.
- Continue delamping of floors within the State Administration Centre while maintaining correct lighting levels.
- Continue trialling the energy efficiency product that improves the efficiency of refrigerated air-conditioning systems.
- Continue installation of more efficient hot water systems and fixed timers on boiling water units throughout DTF.

4.11 Department of Planning and Local Government (DPLG)

Figure 4.11: DPLG Building Energy Efficiency Trend 2007-08 to 2010-11



Overview of Performance to 2010-11

The DPLG energy efficiency from 2000-01 to 2010-11 was 12.6 per cent. This is a 2.0 per cent decrease since last year due to an increase in energy use for the same business measure (Area m²). The DPLG is a small consumer of the overall government building energy and its estimated contribution to the target was 0.01 per cent.

Changes in Baseline and/or Subsequent Years' Energy Use

Nil

Significant Energy Management Achievements

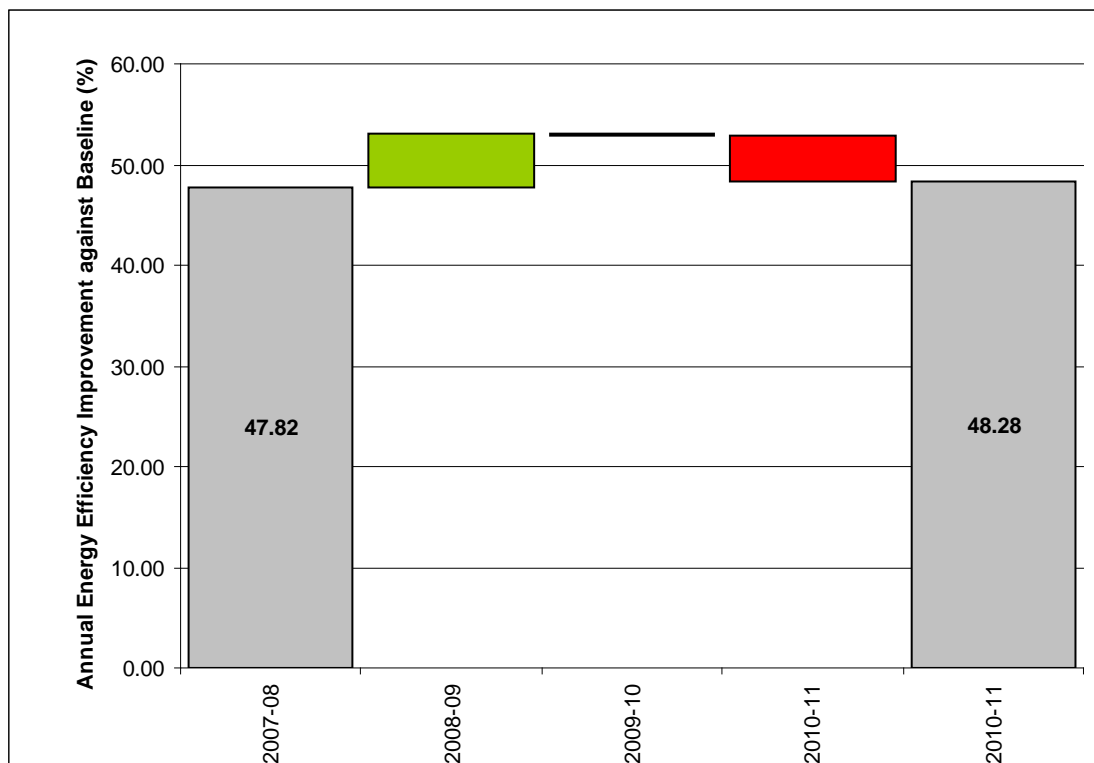
DPLG has worked on an awareness campaign alerting staff to the importance of modifying electricity use. It has also investigated potential engagement with the Big City Switch program and is exploring other energy efficiency options for its current primary accommodation in Roma Mitchell House.

Proposed New Initiatives in 2011-12 and Beyond

DPLG is hoping to securing participation in the Big City Switch program which will see us account for our energy consumption more closely and work to improve our energy efficiency rating in Roma Mitchell House.

4.12 Department for Water (DFW)

Figure 4.12: DFW Building Energy Efficiency Trend, 2007-08 to 2010-11



Overview of Performance to 2010-11

Department for Water (DFW) has achieved an overall building energy efficiency improvement of 48.3 per cent between 2000-01 and 2010-11. DFW has continued to maintain an efficiency beyond the SASP T61 target. DFW is a small consumer of Government energy and contributed 0.04 per cent to the Government's overall energy efficiency improvement.

Changes in Baseline and/or Subsequent Years' Energy Use

There has been a decrease in consumption on last year (2009-10) due to the consolidation of some of DFW's CBD and Metro office tenancies. There will also be significant changes to our base line due to Government restructuring of agencies.

Significant changes to DFW

Cabinet endorsed a number of changes to the structure of State Government agencies effective 1 July 2010.

Changes to our portfolio included: The establishment of the Department for Water (DFW). Transfer of staff and sites to Department of Environment and Natural Resources and Primary Industries and Resources SA. Reduction in the FTE numbers due to consolidation of Metro and CBD sites.

Significant Energy Management Achievements

DFW undertook the following energy efficiency measure in the 2010-11 year:

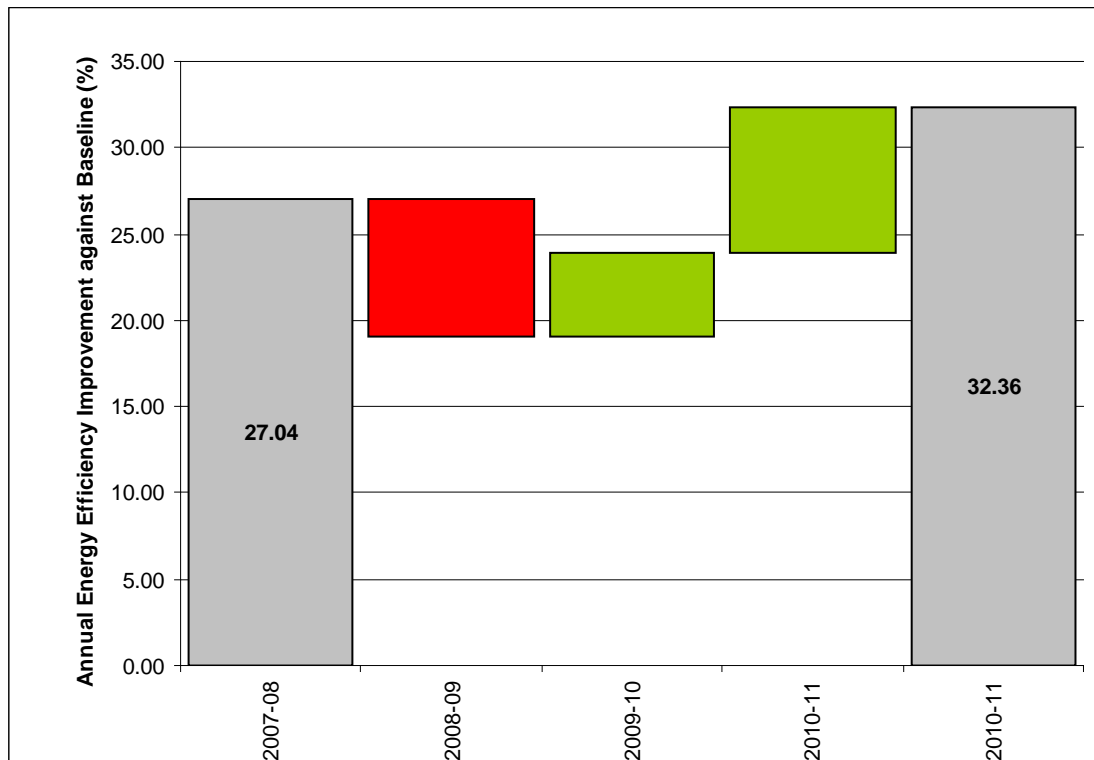
- Energy efficient preventative maintenance upgrades were implemented where applicable; Reset of Hot water timers to operate in business hours only.
- Consolidation of business units within Metro and CBD, closure of three offices.

Proposed New Initiatives in 2011-12 and Beyond

- A trial on printer consolidation has been implemented.
- A cost-benefit analysis for the installation of solar panels on owned site.
- Light switch labelling to remind staff to switch off when not in use.

4.13 Department of Trade and Economic Development (DTED)

Figure 4.13: DTED Building Energy Efficiency Trend 2007-08 to 2010-11



Overview of Performance to 2010-11

This year DTED has surpassed the SASP T61, gaining an improvement from 2000-01 to 2010-11 of 32.4 per cent. This is an 8.5 per increase from 2009-10. DTED is a small consumer of the total government building energy and contributed 0.01 to the overall target.

Changes in Baseline and/or Subsequent Years' Energy Use

Nil.

Significant Energy Management Achievements

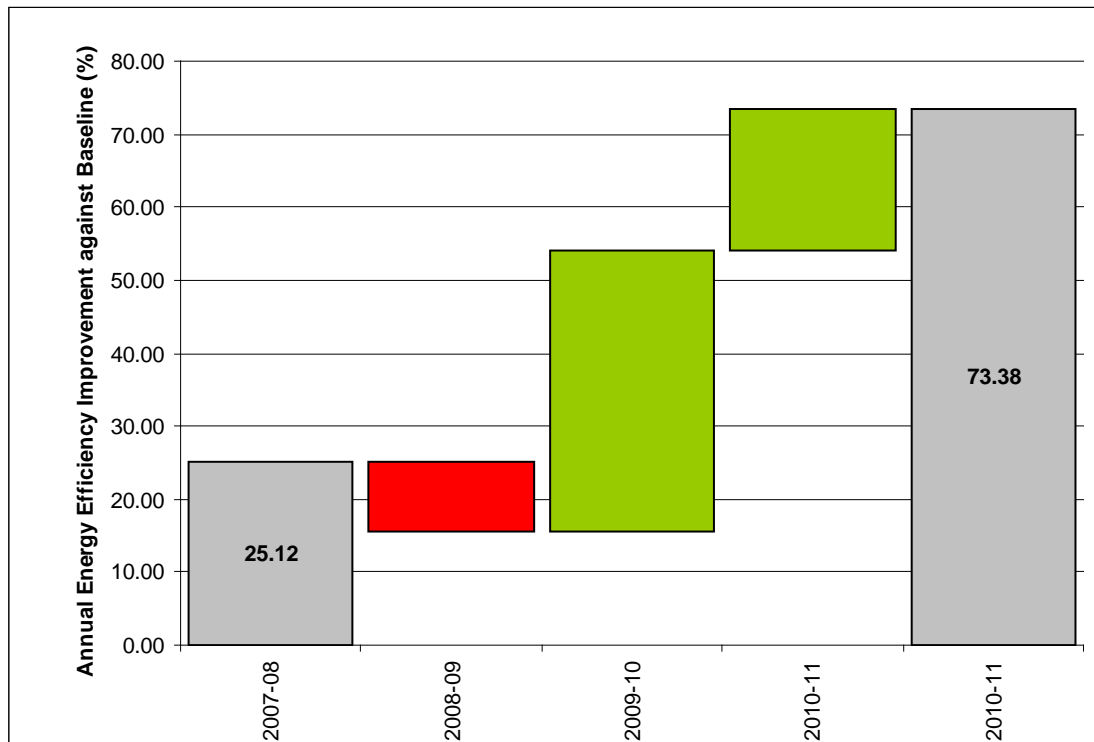
- Maintained energy efficient occupancy of tenancy levels in The Conservatory, Hindmarsh Square – a 4.5 star NABERS rated building

Proposed New Initiatives in 2011-12 and Beyond

- DTED, now Department for Manufacturing, Innovation, Trade, Resources and Energy (DMITRE) will continue to inform its staff about energy saving measures through a saving energy behavioural change program within the expanded portfolio.

4.14 Environment Protection Authority (EPA)

Figure 4.14: EPA Building Energy Efficiency Trend 2007-08 to 2010-11



Overview of Performance to 2010-11

The EPA has gained a further increase in its energy efficiency over the 2000-01 baseline, achieving a 73.4 per cent improvement in 2010-11. This is a 19.2 per cent gain since 2009-10 (from adjusted data, as described below). EPA has succeeded in achieving and going beyond the SASP T61 of 30 per cent by 2020 well ahead of the target timeframe.

Overall EPA contributed 0.01 to the government target, as a small consumer of the total building energy usage in government.

Changes in Baseline and/or Subsequent Years' Energy Use

Slight adjustment to data, to correct the area for the labs, applied to 2008-09 and 2009-10. Also a data error in the calculation formula in 2009-10 was found and corrected. These changes have resulted in an overall improvement in energy efficiency of 53.7 per cent in 2009-10.

Significant Energy Management Achievements

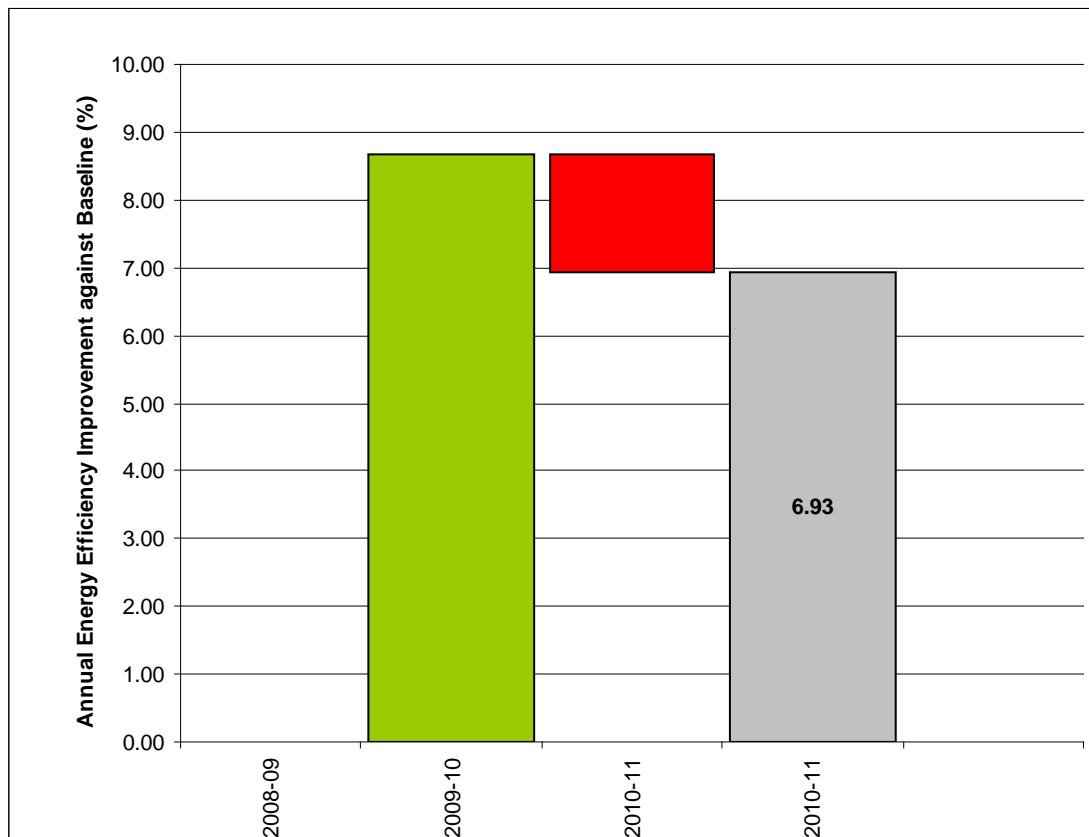
- The EPA continues to occupy the 6 star Green Star SA Water Building. EPA continued to work with the building owners to identify opportunities to make energy savings within the Base Building functions.
- Following the relocation to Green Star building energy saving practices were consolidated and further opportunities explored.
- Multi-function devices were installed and the number of print stations reduced when relocating to the new premises.
- Fluro tube, used battery, and toner cartridges collection points have been established at EPA sites to ensure appropriate recycling.
- The Sustainability at Work (S@W team) a work volunteers group established in 2010 with Executive support aim is to reduce the EPA's environmental footprint. An Action Plan was developed during 2010-11.

Proposed New Initiatives in 2011-12 and Beyond

- EPA is continuing to work with the building owners to identify opportunities to make energy savings within the Base Building functions. Changes to current air conditioning systems will enhance the overall energy performance of the base building.
- NABERS rating assessment will be completed for the EPA tenancy in SA Water Building.
- Work is to be implemented for the new multi-function devices, to ensure black and white printings is the default, and to explore processes to reduce waste including: paper, toner and unwanted printing, and to reduce power consumption.
- Procurement practices and suppliers of office supplies and consumables procurement continues to be considered with a view to ensuring energy efficient and green products are purchased where appropriate.
- Work continues to address the Sustainability at Work Action Plan and also to identify and address work habits and processes which may have a negative effect on the environment.

4.15 Defence SA

Figure 4.15: Defence SA Building Energy Efficiency Trend 2009-10 to 2010-11



* Defence SA reported their energy efficiency data for the first time in 2008-09, from which the baseline was established. Defence SA was established in September 2007 and Tech Park acquired in October 2009.

Overview of Performance to 2010-11

Defence SA achieved an improvement of 6.9 per cent over the baseline, in 2010-11. This is significantly lower than what was reported last year, due to the baseline adjustments that were required, as detailed below. Overall Defence SA contributed 0.001 to the government target and is a small consumer of the total building energy usage in government.

Changes in Baseline and/or Subsequent Years' Energy Use

Defence SA is a relatively new portfolio and a number of adjustments to the baseline of the department were required. A baseline for Innovation House was added. The baseline for Techport was adjusted to reflect building use, removing the construction energy use from 2009. The baseline was also adjusted to reflect a full year of energy use for other sites where the invoices on which the baselines were originally calculated did not cover the full year. The pro-rata calculation, as per the Energy Reporting Guidelines developed by the EERG, was used for these calculations. These changes, particularly the removal of the construction energy, has significantly reduced the baseline.

Significant Energy Management Achievements

Technology Park Adelaide:

- Replacement of Car Park lighting at Innovation House with low energy metal halide tubes.
- Installation of automated lighting control systems.
- Addition of de-scaler to the cooling water at Innovation House and thereby reducing the electrical consumption.
- Motion detectors installed in all toilets, utility rooms and secondary corridors within Innovation House to conserve energy.
- Common area light fittings at Endeavour House upgraded to T5 fluorescent lighting reducing energy consumption.

Proposed New Initiatives in 2011-12 and Beyond

- Installation of automated lighting control systems to Endeavour House, Technology Park Adelaide.
- Investigation of additional photovoltaic cells at Innovation House, Technology Park Adelaide.

Appendix A: Glossary

BMS: a Building Management System. Building Management Systems are used in buildings for automatic monitoring and control of services such as lighting, plumbing, fire services, heating and air conditioning systems. The term refers to a system that uses sensors, controls and activators.

Business Measures: are measures of, or proxies for, an agency's output. For example, subject to data availability, a hospital might record its activity in terms of occupied patient bed days or a school might count FTE students. In some cases a proxy might be used, such as the area occupied by an agency or staff numbers. This is on the basis that there is a correlation between the number of people employed in an agency or the area it occupies and its output. For further information see Section 2.2.

GJ: Giga Joules– unit of energy consumption. See Appendix B for other units of energy and conversion factors.

OSCAR – is the Online System from Comprehensive Activity Reporting, which agencies use to report energy and business measure data. The system is administered by the Commonwealth Department for Climate Change and Energy Efficiency (DCCEE). See Section 2.3 for further details.

SASP: The South Australian Strategic Plan. An updated plan was released by the Premier in 2011. See also T61.

T5 Lighting: an energy efficient fluorescent alternative to conventional fluorescent lighting. T5 is simply a collective term for a narrow-diameter fluorescent light tube.

T61: Target 61 under the South Australian Strategic Plan (SASP), *“Improve the energy efficiency of government buildings by 30 per cent by 2020 (baseline 2000-01). Milestone of 25 per cent by 2014.”*

Appendix B: Conversion Factors

Table B.1: Measurement Units

Unit	Abbreviation	Measures	Equals
Mega-Joule	MJ	energy	10 ⁶ joules
Giga-Joule	GJ	energy	10 ⁹ joules
Peta-Joule	PJ	energy	10 ¹⁵ joules
Metre	m	length	-
Kilogram	kg	mass	10 ³ grams
Tonne	t	mass	10 ⁶ grams
Litre	L	volume	0.001m ³
Kilo-litre	kL	volume	10 ³ Litres

Table B.2: Energy Conversion Factors

Energy Type	Typical Measured Units	Abbreviation	To convert to Giga-Joules, multiply by
Electricity	kilowatt hour	kWh	0.0036
Natural Gas	Mega-Joule	MJ	0.001
LPG	Kilo-litre	kL	25.7
Heating Oil	Kilo-litre	kL	37.3
Fuel Oil	Kilo-litre	kL	39.7
Automotive Diesel	Kilo-litre	kL	38.6
Petrol	Kilo-litre	kL	34.2
AVGAS	Kilo-litre	kL	33.1
GreenPower	kilowatt hour	kWh	0.0036

Source: National Greenhouse Accounts (NGA) Factors, released by the Department of Climate Change, July 2011.

Appendix C: Calculation of Energy Efficiency

C.1 – Energy Efficiency Measurements

The 2007 update of South Australia's Strategic Plan (SASP) established a target to improve the energy efficiency of Government buildings. Progress is calculated using an energy efficiency index. The 2010 update of the SASP target retained energy efficiency as its measure, see Section 1 for further information on the SASP.

Defining an index to measure changes in energy efficiency is a complex task. To begin with, energy efficiency can be defined in a number of ways. For example, many people would consider energy efficiency to be the total increase or decrease in energy usage across an organisation, however, this does not allow for organisational growth and increasing service levels.

As a consequence, organisations often use energy intensity measures to monitor their energy efficiency targets. Energy intensity is defined as the ratio of energy consumption to some measure of demand for energy services.

This document uses energy intensity measures to account for changes in the Government's energy usage while taking into consideration changes in service levels (e.g. expanding health and education services). Energy usage is reported as a proportion against 'business measures' such as area and number of employees. These measures are taken as indicators of output.

A number of methodologies exist for the creation of an index to track and analyse changes in energy efficiency, which accommodate the different business measures used by sub-groups of an organisation.

This report uses 'aggregate energy intensity' for those sub-groups which use the same business measure. This involves dividing the total energy use of all sub-groups by the total business measure (e.g. area). Section C.2 provides more details on this calculation. Aggregated intensities, however, still require weighting to accommodate different business measures, and they do not allow for analysis of different sub-groups (such as agencies) within an organisation (portfolio).

An alternative approach may be to examine the 'component based energy intensity' calculation whereby the energy efficiency contribution of each sub-group in government is weighted against the proportion of energy the sub-group consumed. These weighted figures are added to obtain departmental or whole of government figures. Section C.3 provides a stepped example for these calculations. It is worth noting that component based calculations are influenced by adjustments to the data reporting structure.

The Energy Division (now Energy Markets and Programs Division, DMITRE) is continuing to investigate methodologies and indices that are used to collate energy efficiency measures.

C.2 - Calculating the Aggregate Energy Efficiency Improvement

Currently, agencies within Government are reporting against only three different business measures, these being area, number of buildings, and number of employees. Table C.2 provides aggregated whole of Government data against these three business measures.

The aggregate energy efficiency figures below are calculated by summing all energy consumption within Government organisations and dividing by the sum of the common business measure.

A whole of government figure is derived by weighting the efficiency improvements by 2010-11 energy consumption and adding the proportions together.

C.3 - Calculating a Component Based Energy Efficiency Improvement

Portfolio energy efficiency performance in 2010-11 was calculated through the following processes.

1. Obtain the amount of energy used per business measure (i.e. area) for both 2000-01 and 2010-11:

The energy consumed per business measure (BM) was calculated automatically by OSCAR, when agencies entered the value of their business measure into their portfolio's site. These figures were then downloaded by the Energy Division (now Energy Markets and Programs Division, DMITRE) and entered into a spreadsheet. The energy used per business measure is as follows:

$$\frac{[\text{Agency A Energy Use in 2000-01 or 2010-11}]}{[\text{Agency A Business Measure in 2000-01 or 2010-11}]} = \text{Number of MJ used per BM (e.g. per } m^2 \text{) for 2000-01 or 2010-11}$$

Agency A in 2000-01:

$$\frac{1500 \text{ MJ}}{500 m^2} = 3 \text{ MJ}/m^2$$

Agency A in 2010-11:

$$\frac{1450 \text{ MJ}}{700 m^2} = 2.1 \text{ MJ}/m^2$$

2. Calculate energy efficiency improvement for each agency:

Energy efficiency improvement for each agency within each portfolio is calculated by the following formula, using the figures in the example above. For Agency A an increase in energy efficiency from 2000-01 to 2010-11 is calculated as 30 per cent:

$$\frac{(3 - 2.1) \text{ MJ}/m^2}{3 \text{ MJ}/m^2} = 0.30 = 30\%$$

3. Calculate energy efficiency improvement for each portfolio:

The energy efficiency improvement of each portfolio is calculated by adding together each agency's energy efficiency improvement in proportion to its total for the portfolio. So for example, if a portfolio has two agencies:

Agency A used 80 MJ (aa) with an efficiency improvement of 40 per cent (AA) and Agency B used 120 MJ (bb) with an improvement of 10 per cent (BB), the overall portfolio efficiency is 22 per cent (XX), as shown below:

$$\frac{aa \text{ MJ}}{(aa + bb) \text{ MJ}} \times AA\% + \frac{bb \text{ MJ}}{(aa + bb) \text{ MJ}} \times BB\% = XX\%$$

$$\frac{80 \text{ MJ}}{200 \text{ MJ}} \times 40\% + \frac{120 \text{ MJ}}{200 \text{ MJ}} \times 10\% = 16\%(A) + 6\%(B) = 22\%$$

4. Calculate portfolio's impact on whole of government energy efficiency improvement and aggregating across portfolios.

The approximate contribution each portfolio made to the whole of government energy efficiency improvement target was calculated by weighting each portfolio's efficiency improvement by its share of South Australian Government energy use.

Ensuring this is done in percentage terms will enable meaningful aggregation to occur regardless of the differing business measures used by portfolios in each end-use category. This is shown in Table C.1 for three portfolios using fictional numbers.

Table C.1: Government Energy Efficiency Improvement Measurement

	Portfolio A	Portfolio B	Portfolio C
Per cent of total SA Government energy use	50 %	15 %	10 %
Per cent individual efficiency improvement	10 %	20 %	10 %
Per cent contribution to Target	(0.50 x 0.10 = 0.05) 5 %	(0.15 x 0.20 = 0.03) 3 %	(0.10 x 0.10 = 0.01) 1 %
Target (weighted energy efficiency improvement)	5 % (A) + 3 % (B) + 1 % (C) = 9 %		

The first row of Table 1 shows the share of total energy consumption by each portfolio. The second row Individual Efficiency Improvement shows the energy use reductions in percentages.

The third row contribution to target is simply the first row of Table 1 multiplied by the second, for example, Portfolio B: 15 per cent x 20 per cent = 3 per cent.

Finally, the weighted energy efficiency improvement is the sum of the third row. This example shows a nine per cent improvement in energy efficiency is obtained across the three portfolios.

Table C.2: Aggregated Whole of Government Data

	2000-01			2009-10				2010-11			
Business Measure	Total Energy Use (GJ)	Total Business Measure	Aggregate Energy Intensity	Total Energy Use (GJ)	Total Business Measure	Aggregate Energy Intensity	Per cent Energy Efficiency Improvement	Total Energy Use (GJ)	Total Business Measure	Aggregate Energy Intensity	Per cent Energy Efficiency Improvement
Area (m²)	2343 483 GJ	4 565 238 m ²	0.51 GJ/m ²	2141 881 GJ	4 997 309 m ²	0.43 GJ/m ²	16.50 %	2182 921 GJ	5 084 418 m ²	0.43 GJ/m ²	16.36 %
Buildings (no.)	92 368 GJ	37 Buildings	2 496.4 GJ/building	83 079 GJ	38 Buildings	2 186.3 GJ/building	12.42 %	54 673 GJ	36 Buildings	1 518.7 GJ/Building	39.17 %
Occupancy (FTEs)	77 324 GJ	5 588 FTE	13.84 GJ/FTE	76 423 GJ	7 501 FTE	10.19 GJ/FTE	26.37 %	72 692 GJ	7 316 FTE	9.94 GJ/FTE	28.19 %
Total Aggregated Energy Efficiency Improvement				(weighted by 2009-10 energy consumption)			16.7 %	(weighted by 2010-11 energy consumption)			17.3 %

It is worth noting that unless each component is weighted equally, an aggregate energy intensity figure will differ from component based energy intensity, due to data structural effects.

Appendix D: End Use Categories

Custodial Facilities

The Custodial Facilities category includes all types of custodial facilities for adults or juveniles.

Educational Facilities

The Educational Facilities category includes all types of educational facilities from schools to TAFE Institutes.

Hospitals

This category covers the energy consumption in buildings and facilities primarily used as hospitals and in the delivery of health care services.

Laboratories

This category covers all energy use in buildings that, as their primary function, are used as laboratories and research facilities.

Law Courts

The Law Courts category includes all types of court facilities, whether a relatively small space in a larger building or a specialised building.

Office Buildings Combined Services

This category relates to the energy consumed in office buildings where tenant services and central services consumption can not be separated. This is often the case for smaller office buildings.

Office Central Services

This category covers energy used for services in office buildings common to all tenants. It includes building air conditioning, lifts, security and lobby lights, domestic hot water etc.

Office Tenant Light and Power

This category covers energy used for tenant operations in buildings where the primary function is office space. It includes tenancy lighting, office equipment, supplementary air conditioners, boiling water units etc. Additional building factors that contribute to higher energy consumption, such as computer server rooms, or localised areas of extended operating hours, are not separated from office consumption.

Other Buildings

The energy performance of buildings not reported elsewhere is included in the Other Buildings category. These include buildings associated with manned quarantine road blocks, which are included in the target. Infrastructure such as storage sheds, sports stadiums and radio transmitters may be under this category but not included in the SASP T61, as they have been deemed not to meet the government building definition. (See section 2.1 for the full definition).

Other Healthcare Facilities

This category covers the energy consumption in buildings and facilities, other than hospitals, such as community health centres.

Other Uses

This category includes the energy consumption within facilities that cannot be classified as a building, such as water pumps and air monitoring stations. These facilities are not within the scope of SASP T61.

Police, Fire and Emergency Services

This category covers the energy consumption in buildings and facilities primarily used as police, fire and emergency services facilities such as police stations, fire stations and ambulance stations.

Public Buildings

This category includes energy consumed in buildings whose primary function is to be visited by the public in significant numbers. Typical buildings in this category are public libraries, museums or art galleries. Frequently, there is a requirement to maintain close control of internal environmental conditions on a 24-hour basis in these buildings.

Appendix E: Other Sustainability Initiatives (Non Energy)

This section provides information on non-energy sustainability initiatives that have been achieved in 2010-11 and are planned by agencies for 2011-12 and beyond. As non energy initiatives, it is optional for agencies to provide this information.

E.1 Sustainability Initiatives achieved by agencies in 2010-11

Department for Premier and Cabinet (DPC)

The Sustainability and Greenhouse Gas Reduction Task Group has overseen and supported the implementation of the Sustainability and Greenhouse Gas Reduction Action Plan 2010-2012.

DPC continued to focus on improving the sustainability of its operations, business practices and facilities management. This work included:

- Provision of comprehensive waste / recycling systems for the new SafeWork SA head office and Adelaide Studios site.
- Management of the provision and use of recycling services across all sites to ensure waste to landfill was reduced.
- The DPC tenancies at the State Administration Centre and 12 Victoria Place maintained a zero waste to landfill status, and the former was featured in a case study by Zero Waste SA. An independent assessment found that “the State Administration Building (sic) has attained extremely high performance in waste and resource management and should be commended.”
- Recycling of surplus office stationery and items within the department, via the DPC Internal Recycling Trade.
- Modifications to the Government House irrigation system were completed. This was stage two of the project to provide a cost-effective, reliable and adequate alternative to mains water, using the Glenelg to Adelaide Parklands recycled water pipeline.
- An overall decrease in water use across Arts SA sites, with a significant 24 per cent reduction for the Adelaide Festival Centre. Several water efficiency measures were completed at this site during 2009-10.
- Participation in events such as Earth Hour and National Ride to Work Day, supported by promotions to staff on sustainable behaviours for work and home.

Department of Transport, Energy and Infrastructure (DTEI)

- Building Management Division of DTEI has implemented an integrated cleaning and waste removal contract at the Victoria Place Precinct covering four Government owned buildings. This has reduced waste to landfill, improved recycling and provided a more detailed waste reporting capability. The contract was expanded to include Roma Mitchell House from July 2010, improving the 100 per cent diversion to landfill by another 422 tonnes. It is also intended to extend these types of arrangements to other leased assets where opportunities arise.

- Records for the Victoria Place Precinct during 2010/11 indicate the 100 per cent diversion to landfill consisted of:
 - General waste 1 998 m³
 - Paper 2 296 m²
 - Organics 338 m³
 - Containers 272 m³
- Recycle fitout by negotiating with external tenants to take over existing fitout at lease expiry.
- Waste recycling opportunities are discussed and negotiated with building owners for new and renewed leases. Building Management Division will include as part of its considerations in developing terms and conditions of a Green Lease under NGLP policy.
- Building Management promotes recycling of building construction waste through Waste Management Plans that separate waste streams, and record quantities of waste for resource recovery to reduce waste to landfill.
- Building Management also contributes to implementation of the Department of Premier and Cabinet Sustainability and Climate Change Division Guide Note – Water Efficient Outlets in Government buildings for shower heads, basin and sink outlets.

Department for Families and Communities (DFC)

WASTE MANAGEMENT

The waste management system which has been implemented in the Riverside Centre and in various offices and sites throughout DFC is the three Bin System this relies on separating wet waste to landfill, recycling milk cartons, bottles, plastics and cans and recycling all photocopying paper, newspapers and cardboard. Specific achievements include:

- In Riverside Centre approximately 1 641 m³ was diverted from landfill, which represents all commercial and office waste generated by Riverside staff. Those figures confirm that DFC has achieved the target and goal of 100 per cent Zero Waste to Landfill in the Riverside Centre tenancy This sets DFC Riverside apart as an industry leader in diverting waste to landfill.
- SITA Environmental Solutions has stated that Riverside diverted a total of 322 tonnes of waste from landfill. This has the added benefit of preventing 176 tonnes of CO₂ emissions from being produced. Electricity saved: 266 731 kWh. Water saved: 2 066 kL. Barrels of Oil saved: 162. Number of trees saved: 846.

DFC are continuing the recycling program with old fluorescent tubes being recycled throughout the department. Over the past five years approximately 4 000 tubes have been diverted from landfill, this program works in synergy with all other recycling programs within DFC to ensure that we will remain the “Greenest” government department in South Australia.

The Photocopying/Printer Cartridge Toner Recycling Program led to 2.3 tonnes of toner cartridges being diverted from landfill in 2010-11. This is an increase of 0.4 tonnes diverted, compared to 2008-09. It is a significant achievement given that paper use has increased only minimally. This suggests that awareness of recycling methods and implementation of toner recycling programs has increased.

5 STAR GREEN STAR BUILDING

The DFC Connected Service Centre in Mount Gambier, which became operational in November 2010, was awarded a 5 star Green Star rating this year. DFC's inaugural 5 Star Green Star facility incorporates a raft of sustainable features which include:

- Controlled day lighting
- Water filled Trombe walls
- Extra low water consumption sanitary ware
- Harvested and recycled rainwater
- Natural ventilation through automated motorised louvers

The building includes a number of innovative architectural and built elements that increase energy efficiency and reduce the building's environmental impact. The built project won an Award of Excellence from engineers Australia in 2010-11.

The DFC Greening Program has been extended to include all offices and sites with the emphasis on lowering the carbon footprint of offices and sites through the installation of energy efficiencies, waste management systems, water efficiency awareness and print consolidation and print paper usage.

The Facility Services Strategic Plan 2009-12 identifies the strategic objectives, direction and performance indicators the department's Facility Services Unit will implement to achieve its outcomes.

Section 4.5 Asset Compliance outlines the strategic directions and performance indicators to achieve a more sustainable and green department. They are as follows:

Strategic Directions

- All future works comply with relevant standards, legislation and government policies, procedures and instructions.
- Lower the carbon footprint of DFC facilities.
- Develop green building strategies, and a program of works and commence implementation.
- Develop and follow sustainability principles and standards as outlined in South Australia's Strategic Plan; 'Objective 3 – Attaining Sustainability'.

Performance Indicators

- 100 per cent compliance with legislation.
- Compliance with State Government Energy Efficiency Action Plan.
- Increase in 'greening' products implemented.

TRAVEL AND FLEET MANAGEMENT

The DFC Greening of the Fleet initiative continued in 2010-11. For the passenger fleet:

- There are 131 Hybrid vehicles,(14 per cent).
- There are 468 LPG vehicles 468 (51 per cent).
- There are 103 high efficiency diesel vehicles (12 per cent).
- There are 707 low emission fuelled vehicles (77 per cent).

DFC has exceeded the state government's Tackling Climate Change targets to reduce emissions from the government vehicle fleet by converting 50 per cent of state government cars to lower emission fuels by 2010, with 77 per cent of the total DFC fleet being low emission fuelled.

DFC is now focusing on strategies to decrease vehicle emissions by a further 10 per cent by 2014-15 in line with new whole of government targets.

DFC is one of the first government departments in South Australia to add an Electric Vehicle to its fleet. The addition is part of an Australia-wide trial looking at the viability of electric cars and the DFC electric car will be part of the trial for the next three years.

In addition to the above staff members are also encouraged to use alternative forms of travel including walking, public transport, cycling and car pooling.

To support the department's Social Responsibility in Procurement Policy, the Procurement and Contract Management Unit has worked to incorporate sustainability and greening procedures into Departmental procurement processes.

HUMAN RESOURCES

Human Resources continue to support sustainability and greening processes and principles by incorporating a greening statement in employee Job and Person Specifications.

Sustainability and greening continues to be reflected in administrative policies, procedures and guidelines.

Department for Treasury and Finance (DTF)

- Printer defaults set to double-sided printing, excluding formal documentation.
- Installed water flow restrictors in kitchen and bathroom hardware within the State Administration Centre.
- Extended the waste and recycling program to include toner cartridges and batteries.

Defence SA

Defence SA has actioned the following additional sustainability initiatives:

- Installation of flow restrictors on the water supply to common area toilets and hand basins within Technology Park Adelaide.
- Completion of the recycled Water reticulation around Technology Park Adelaide to feed all irrigation systems.
- Reduction in irrigated outdoor garden areas through selective native plantings.
- Stormwater collection from new carpark projects to include sustainable initiatives such as permeable paving and detention basins.

E.2 Proposed Initiatives for 2011-12

Department for Premier and Cabinet (DPC)

- Complete the Government House GAP connection project.
- Establish DPC's contribution to Fleet SA's emission reduction target and develop strategies to support progress.
- Investigate and improve business processes to reduce the use of office paper.