

# Energy Efficiency Opportunities Report 2010

Continuing our sustainability journey



**Determined** to be different

# Contents

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<b>Our sustainability journey</b>	<b>2</b>
Commonwealth Bank Place	2
Extending solar photovoltaic expertise to our customers	4
Our carbon reduction journey	4
Our commitment to renewable energy	5
Leadership in environmental reporting	5
<b>Our energy efficiency opportunity program</b>	<b>6</b>
Our 2009–10 assessment program	6
Total energy use assessed by the Group	7
Energy efficiency opportunities that have been identified and evaluated	8
Significant business opportunities	8
<b>Conclusion</b>	<b>9</b>
Declaration	9

# Our sustainability journey

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At the Commonwealth Bank Group (the Group), we aim to be part of the solution to the environmental, economic and social impact of climate change. For many years we have been striving towards a more sustainable business – and our journey continues.

In this report, we have described our energy efficiency program and opportunities and illustrated a number of our recent environmental activities.

As the largest Australian bank and the second largest Australian company, we recognise that we have a key role to play in reducing our direct environmental impact.

Over the past year we have continued our journey to understand what makes a more sustainable business, while implementing a number of energy efficient initiatives.

Some of these achievements are outlined in this report.

## Commonwealth Bank Place

In 2008, we embarked on a journey to construct an environmentally responsible commercial office space of world-class standards. This journey has continued through 2010, and the excitement among our people has grown as the building nears completion.

Commonwealth Bank Place is an integrated commercial office space in Sydney's Darling Walk precinct. It embraces two commercial A-grade office spaces, each consisting of eight levels, with retail areas on the ground floor and four levels of shared underground car-parking.

Together, the buildings have a net lettable area (NLA) of 54,000 square metres, housing 5,500 employees. Our people are expected to start occupying the building in mid 2011.

## Star ratings

We are targeting some impressive environmental star ratings for this project:

Element	Rating system	Rating	Leadership level
Base building office design	Green Star	Six stars	World Leadership
Office interiors	Green Star	Five stars	Australian Excellence
Energy use	NABERS	Five stars	Australian Excellence

## Energy performance

A number of innovative features will reduce carbon emissions as well as being designed to achieve a 50% reduction in energy consumption:

- › **Tri-generation plant.** This state-of-the-art energy plant reduces our electricity consumption by generating energy on-site for power, heating and cooling.
- › **Chilled beam air-conditioning system.** Installed throughout the building, this system results in lower energy consumption while providing improved indoor air quality for occupants.
- › **Solar protection façade.** Highly efficient, this building material has been designed to minimise building cooling and heating loads.
- › **Enhanced lighting levels.** Our selected lighting control systems will result in a 20% improvement over the Building Code of Australia (BCA) requirements, while the installation of more efficient lighting will provide an additional 36% energy saving.
- › **Electrical sub-metering.** We will be closely monitoring our energy consumption through ongoing sub-metering.
- › **Lighting controls.** The lighting controls have been designed to help occupants reduce energy consumption.

## Our sustainability journey

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Commonwealth Bank Place under construction

### Water conservation

We envisage that the finished building will consume at least 90% less water than similar buildings, thanks to these water saving initiatives:

- › **Blackwater recycling** will be used for toilet flushing, irrigation and cooling tower supply.
- › **Efficient landscape irrigation** will include the use of stormwater collected from the building roof.
- › **Recovery and reuse** of the water consumed in regular fire service testing for non-potable purposes.
- › **Water minimisation and reuse** through the use of four to five star-rated fittings and dual flush toilets.

### The internal environment

The building includes a range of design features that will enhance the internal environment while saving resources.

- › **Materials.** The design specifies the use of materials low in Volatile Organic Compounds (VOC), since research has found that human health can be affected by excessive exposures to VOC.
- › **Natural light.** The atrium's glass roof allows natural light into the building, reducing the need for artificial light and providing a thermal buffer for office spaces. The atrium also

provides a visual connection to the outdoors, enhancing wellbeing and productivity.

- › **Acoustics.** Building acoustics have been designed to enhance the liveability of the space.
- › **Staff wellbeing.** Activity Based Working will be introduced throughout the building, encouraging a paper-free working space, along with recycling and energy savings. Activity Based Working enables individuals to choose where they sit on a daily basis giving them the option of utilising different technology to suit their day-to-day objectives.

The premises will also include bicycle storage for 10% of occupants, as well as showers and changing facilities.

Indoor plants are incorporated into the design fit-out increasing oxygen levels, cleaning the air and improving indoor humidity.

High levels of fresh air will be provided, balanced with the thermal requirements of the building, improving indoor environment quality.

- › **Waste management.** Comprehensive environmental and waste management plans are developed for the project, with a target of 80% of waste to be recycled or diverted from landfill.



First Solar photovoltaic solar panels

### Extending solar photovoltaic expertise to our customers

Our recently formed alliance with Lend Lease Solar (LLS) has enabled us to offer customers the opportunity to install a premium solar photovoltaic (PV) solution in their homes.

We believe this is a significant opportunity because:

- Electricity prices have increased substantially since 2002 and are forecast to increase further.
- Many consumers are unaware of what they can do to curb electricity price increases and how they can benefit from existing government incentive schemes.
- This solar solution brings together leading market participants and provides a simple and straightforward solution for our customers.

LLS offer a best-of-breed solution to our customers. Over the past two years, LLS conducted a due diligence process across 16 European, Asian and North American solar PV firms. This led LLS to choose First Solar as their strategic partner.

Through this strategic partnership, LLS is now First Solar's exclusive partner in the Australian market.

We support the sustainable manufacturing principles that LLS follows. For example, LLS has the lowest carbon footprint in solar panel manufacturing. LLS has also implemented the only pre-funded collection and recycling program, recycling between 90% and 95% of their product.

We believe LLS offers the best solar energy opportunity in the market, providing a superior quality product with an industry leading energy output and cradle-to-cradle solution, delivered at a competitive price.

### Our carbon reduction journey

In July 2009, we embarked on our 20% carbon reduction journey. Our target is measured against 2008–09 emissions from our Australian operations, and we will reach our goal by end June 2013. We aim to achieve this goal by improving the energy efficiency of our retail and commercial properties, tool-of-trade fleet and IT equipment and by educating our people to reduce energy consumption.

We have made significant progress in improving the energy efficiency of our retail properties. For example, we successfully trialled a suite of energy efficiency initiatives at 12 of our retail branches during 2009. The strategy is to now implement these technologies throughout our retail network during 2010–11 wherever possible. This will significantly reduce the Group's total carbon emissions.

In addition, our tool-of-trade vehicle initiatives have made a significant reduction in emissions – 10% by the end of December 2010 – surpassing our initial expectations. With these initiatives, we are well on track to achieve our initial target and we will continue to search for opportunities to further reduce our impact on the environment.

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## Our commitment to renewable energy

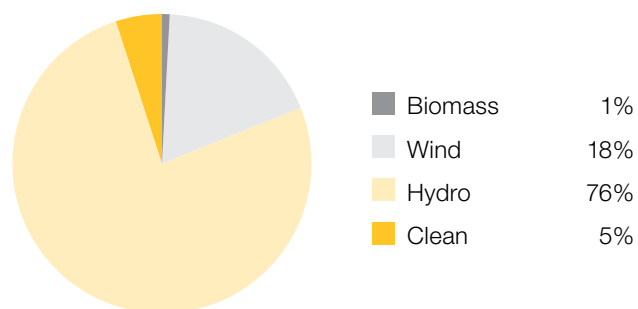
The Group is a senior investor in a significant portfolio of renewable and clean energy projects, including wind farms, biomass, landfill gas, waste mine gas and hydro-power generation. Together, these projects generate more than 12,000 megawatts (MW) in Australia and New Zealand alone.

We are a long-term supporter of renewable energy, having invested in this sector since 2004. We strongly believe that our participation in this industry is a long-term commitment that requires a significant investment in resources, knowledge and skills.

In 2010 we have provided approximately \$100 million in funding to wind farm projects, and we are currently working with companies seeking grants under the Solar Flagships Program.

On the domestic front, the Group's loan facilities to renewable and clean energy represent approximately 55% of total exposures to power generation companies (measured by installed MW capacity), while in New Zealand this figure is approximately 72%. Together, this represents a 61% exposure to renewable and clean energy.

### CBA exposure to renewable and clean energy companies by installed MW capacity (Aust & NZ only)



## Leadership in environmental reporting

Accurate reporting is essential to long-term sustainability planning, and we have a long-standing commitment to provide accurate emissions and energy data. Our current environmental reporting activities include:

- › **National Greenhouse and Energy Reporting Scheme (NGERS).** While this scheme is mandatory, our long history of voluntary reporting means we are well placed to meet its requirements. Since the new legislation was introduced, we have revised our data capture and reporting systems to ensure they comply.

- › **Carbon Disclosure Project (CDP).** In 2010, the Group achieved an excellent result in the CDP Global 500 Report, which comprises the largest 500 companies in the world by market capitalisation. The Group scored 92 out of 100, and was named one of the top three banks in the world for carbon disclosure within the Carbon Disclosure Leadership Index. The report identified the Group as a sector leader, and we were commended for our commitment to implementing environmental sustainability initiatives, corporate governance for climate change disclosure, and carbon emission reduction measures.

- › **Energy Efficiency Opportunities Act (EEO Act).** We are subject to the Federal Government's EEO Act, since our operations exceed the minimum energy consumption threshold. The purpose of the EEO Act is to establish mandatory energy efficiency opportunity assessments for corporations which are large consumers of energy.

# Our energy efficiency opportunity program

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Since the EEO Act was introduced, we have assessed a large proportion of the Group's energy consumption and successfully implemented a series of specific energy-saving initiatives.

The Australian Government's Energy Efficiency Opportunities program encourages large energy-using businesses to improve their energy efficiency. The program requires businesses to identify, evaluate and report publicly on cost-effective energy savings opportunities. This report describes our progress in 2009–10 and our plans for the future.

During 2009–10 we significantly increased the proportion of our total portfolio that has been assessed. At the time of releasing our Energy Efficiency Opportunities Report 2009, we had assessed 45% of our portfolio. This year that figure has increased to 75%.

We are certain that we will achieve the required 80% assessment rate by December 2011.

As a result of the energy efficiency initiatives put in place, the Group's direct carbon emissions have reduced by a total of 10,562 tonnes CO<sub>2</sub>-e during the 2009–10 financial year.

## **Our 2009–10 assessment program**

Our assessment program covers all energy use associated with properties owned and leased by the Group, including Colonial First State Global Asset Management and the Bank of Western Australia as well as the energy used by the Group's vehicle fleet.

### **The Commonwealth Bank Group (the Group)**

The Group remains committed to the Energy Efficiency Opportunities program as part of a broader commitment to investing and embedding energy efficiency and environmentally sustainable practices across our business.

### **Commonwealth Bank of Australia (the Bank)**

We measure the fuel used by the Bank's tool-of-trade vehicle fleet each month. During 2009–10 there was a significant reduction in fuel use and an improvement in fuel efficiency over the previous reporting period, largely due to the move from six-cylinder to four-cylinder vehicles.

Preparations are well advanced for a nationwide roll-out of energy efficiency improvements to lighting and appliance energy use across the Bank's branch network. The roll-out was trialled in Sydney and will be followed by full-scale implementation starting in December 2010 and finishing by the end of 2012.

### **Colonial First State Global Asset Management (CFSGAM)**

During the 2009–10 reporting period, 38 assessments were undertaken on behalf of the Group's asset management business, CFSGAM. These assessments covered 56.9% of CFSGAM's portfolio (616,772 gigajoules (GJ)), with the result that 81.6% of the CFSGAM portfolio has been assessed so far.

The Group is proud to report that 242 opportunities identified during this reporting period have been implemented or are being actively progressed, with an annual energy saving potential of 79,136 GJ.

### **Bank of Western Australia (Bankwest)**

During the reporting period, three commercial and ten retail assessments were conducted at Bankwest locations. This represents 24.4% of the Bankwest portfolio (30,865 GJ out of 126,255 GJ).

The assessments resulted in 63 opportunities being identified, with an annual energy saving potential of 6,841 GJ.

The Group has used these branch reviews to develop a representative Assessment and Reporting Schedule (ARS) to manage the whole of the Bankwest retail Energy Efficiency Opportunities program.

## Our energy efficiency opportunity program

### Total energy use assessed by the Group

Table 1 sets out the energy use of all entities assessed since the Energy Efficiency Opportunities program began, up until 30 June 2010. It also details our total assessed energy use as a percentage of the Group's total energy use.

**Table 1 – Energy use assessed by the Group**

Business unit or activity assessed	Assessment period	Energy use in the current reporting year (GJ pa)
Commonwealth Bank of Australia (selected sites, 2007–08)	1 July 2007 to 30 June 2008	16,663
Commonwealth Bank of Australia Commercial Portfolio (selected sites, 2008–09)	1 July 2008 to 30 June 2009	36,775
Commonwealth Bank of Australia Commercial Portfolio (selected sites, 2009–10)	1 July 2009 to 30 June 2010	24,008
Commonwealth Bank of Australia Retail Portfolio (representative assessment)	1 July 2008 to 30 June 2009	307,701
Commonwealth Bank of Australia Fleet Portfolio	1 July 2008 to 30 June 2009	114,989
Commonwealth Bank of Australia ATM Portfolio (representative assessment)	1 July 2009 to 30 June 2010	15,034
Colonial First State Global Asset Management (selected sites, 2007–08)	1 July 2007 to 30 June 2008	74,988
Colonial First State Global Asset Management (selected sites, 2008–09)	1 July 2008 to 30 June 2009	180,503
Colonial First State Global Asset Management (selected sites, 2009–10)	1 July 2009 to 30 June 2010	616,772
Bankwest Commercial Portfolio (selected sites, 2009–10)	1 July 2009 to 30 June 2010	28,094
Bankwest Retail Portfolio (selected sites, 2009–10)	1 July 2009 to 30 June 2010	2,771
<b>Total energy assessed</b>		<b>1,418,298</b>
<b>Total energy use of the group in the current reporting year</b>		<b>1,898,168</b>
<b>Total energy assessed expressed as a percentage of total current energy use</b>		<b>75%</b>

## Energy efficiency opportunities that have been identified and evaluated

Table 2 sets out the Group-wide opportunities we have identified, together with their estimated payback period and the combined energy savings per annum in gigajoules (GJ).

**Table 2 – New Assessments completed during the reporting period**

Status of opportunities identified		Number of opportunities	Estimated energy savings per annum by payback period (GJ)			Total estimated energy savings (GJ pa)
			0 – <2 yrs	2 – ≤4 yrs	> 4 yrs	
<b>Outcomes of assessment</b>	Total Identified	390	20,259	23,020	71,568	114,846
<b>Business Response</b>	Under Investigation	130	3,010	12,409	32,502	47,921
	To be Implemented	143	14,869	5,442	6,285	26,595
	Implementation Commenced	24	3,683	2,869	5,814	12,366
	Implemented	37	-1,304*	1,063	6,223	5,982
	Not to be Implemented	56	0	1,236	20,744	21,980

\* A project was initiated which substituted a centralised gas fired heating solution to replace electric heaters. Due to differing system efficiencies the gas fired solution uses slightly more energy than the electric system. However, due to the cost and emissions differentials between electricity and gas, the gas fired system delivers savings in both operational cost and CO<sub>2</sub> emissions. Hence the “negative savings” energy figure.

### Significant business opportunities

Significant opportunities have been identified, providing insight into our approach to energy efficiency and environmental sustainability as a whole. Here are some examples.

#### Opportunity 1: Commonwealth Bank of Australia – Commercial premises lighting upgrade

**The opportunity:** An energy efficiency assessment determined that significant savings could be obtained by making changes to the type of lighting used in our commercial premises.

**The initiative:** We retro-fitted our premises at 31 Birnie Avenue, Lidcombe and 11 Argyle Street, Newcastle. Due to the particular circumstances of the existing lighting, different technology solutions were required. At Argyle Street the existing T8 type fluorescent lamps were replaced with T5 conversion units, while at Birnie Avenue the T8 units were replaced with T8 quad phosphor lamps.

**The outcome:** The annual savings for Argyle Street were 116 Megawatt hours (MWh) and a reduction of 124 tonnes CO<sub>2</sub>-e, and for Birnie Avenue, annual savings of 191 MWh were realised with a reduction of 204 tonnes CO<sub>2</sub>-e.

#### Opportunity 2: CFSGAM – Chiller air-conditioner replacement

**The opportunity:** An air-conditioning improvement project was identified within a large commercial office building at 32 Walker Street, North Sydney.

**The initiative:** The existing Trane air-conditioning chillers were replaced with two 320 Kilowatt Refrigeration (KWR) PowerPax chillers. The PowerPax chiller was selected due to its economic operating performance, its high capacity cooling and its low energy consumption.

**The outcome:** This project has saved a total of 227 MWh in the first year of operation, which is over 21% of the total building usage. This has led to an associated reduction of 240 tonnes CO<sub>2</sub>-e.

#### Opportunity 3: Bankwest – Data Centre lighting upgrade

**The opportunity:** Frame Court is a large Bankwest Data Processing Centre located at Leederville in Perth. The main computer hall was originally fitted with approximately 1,300 T8 fluorescent lights, which could be significantly improved by the replacement of more energy efficient lamps.

**The initiative:** A project was identified to replace the existing installation with more energy-efficient T5 lamps using conversion units. At the same time, the current lighting levels were reviewed. Our analysis showed that the number of lamps could be reduced from 1,300 to 800 while maintaining the lighting levels required by the relevant Australian standard.

**The outcome:** As a result, the lighting and air-conditioning load at the facility was reduced by an average of 30 kilowatts (kW), giving an annual energy saving of 266 MWh and an associated reduction of 250 tonnes of CO<sub>2</sub>-e.

## Conclusion

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The Group recognises that its day-to-day operations have a direct impact on the environment. We are committed to continuing our ongoing sustainability journey – identifying and implementing new energy efficiency opportunities and reducing our carbon emissions and environmental footprint.

### Declaration

The information included in this report has been reviewed and noted by the Board of Directors and, to the best of my knowledge, is correct and in accordance with the Energy Efficiency Opportunities Act 2006 and Energy Efficiency Opportunities Regulations 2008.

### Ralph Norris

Chief Executive Officer  
Commonwealth Bank of Australia

