



**CSR  
SUSTAINABILITY  
REPORT 2008**

**CSR**

# CSR SUSTAINABILITY REPORT 2008

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## CSR is committed to sustainability.

We strive to operate in a sustainable manner across all our businesses by reducing our operational footprint and by acting in a socially responsible way.

We provide an expanded range of products and systems that contribute to sustainability through energy efficient solutions for the built environment and renewable energy and fuels.

CSR's energy efficient building products and systems have the potential to reduce heating and cooling requirements of homes and buildings to reduce energy demand with the consequential reduction of greenhouse gas emissions.

Increasingly, CSR produces these products from recycled materials which reduces the demand for raw materials and lowers emissions and pollution during manufacturing.

Through its Sugar business, CSR is contributing to sustainability by developing renewable energy (electricity and fuel) from waste sugar cane and producing fertilisers which are re-applied to cane fields.

CSR is the second largest producer of renewable fuel ethanol in Australia which is made from molasses, a by-product of sugar production which is not a food staple. CSR now supplies over 250 petrol stations in Australia and has commenced a project to almost double our production of fuel ethanol to 60 million litres per year.

CSR is Australia's largest renewable energy producer from biomass. We currently generate enough renewable electricity, which, together with a small amount of external fuel, is sufficient to operate each of our seven sugar mills in North Queensland. We have two mills where a significant surplus is produced.

That surplus, which is approximately 300 Gigawatt hours (GWh) per annum is exported into the National electricity grid and is enough to power approximately 80,000 homes.

### Key Sustainability Highlights

For the year ended 31 March 2008, CSR:

- further developed our portfolio of energy efficient building products, with the major acquisition of two glass businesses to improve energy efficiency in the built environment
- committed to a new programme in our Sugar business to almost double our production of renewable fuel ethanol
- invested further capital across our manufacturing sites to reduce their operational footprint and achieve greater energy efficiencies
- established a group-wide function, Strategy and Sustainability to better co-ordinate CSR's response to sustainability issues
- completed a comprehensive inventory of greenhouse gas emissions across our businesses and joined the Australian Government's Greenhouse Challenge Plus Programme



**Safety, Health & Environment**

Safety, Health & Environment (SH&E) is paramount at CSR. Our goal is zero injuries, as is minimising the impact of our activities on the environment and the communities in which we operate. During the past year we:

- upgraded the charter of our SH&E Committee of the CSR Board to ensure the environment is integral to our sustainability policies and co-ordinate response to climate change issues
- standardised CSR’s SH&E responsibilities and accountabilities across the company for all job positions to ensure a consistent standard of SH&E across the company
- continued to roll out our SH&E Accreditation System across CSR, with all manufacturing sites achieving bronze accreditation
- Recorded a total recordable injury frequency rate (TRIFR) of 19.8 recordable injuries per one million hours worked
- Recorded 52.9 days lost per million work hours. CSR’s severity rate of injuries has decreased by 61.9% since 2004

- For the period 1 July 2007 to 30 June 2008, greenhouse gas emissions from CSR’s majority owned businesses were 1,389,819 tonnes of CO<sub>2</sub>-e. The scope 1 (direct) tonnes of CO<sub>2</sub>-e in Australia was 713,378 tonnes; the scope 1 (direct) outside Australia was 148,740 tonnes
- The scope 2 (indirect) tonnes of CO<sub>2</sub>-e emitted in Australia was 467,454 tonnes. The scope 2 (indirect) outside Australia was 60,247 tonnes
- CSR Sugar generated sufficient renewable electricity for the creation of 281,214 Renewable Energy Credits (RECs), or 5% of Australia’s Mandatory Renewable Energy Target. This is equivalent to taking 60,000 cars off the road, or enough renewable electricity to supply approximately 24,000 homes with power for a year

**Water, Waste and Energy Use**

Each of CSR’s businesses has specific environmental performance measures for water and energy consumption and waste production. Each business also has plans in place for continuous improvement on these measures. During the year:

- CSR’s Building Products\* division consumed 1,041,197 kilolitres of potable water; the Sugar division consumed 6,095,761 kilolitres of potable water and extracted surface or ground water
- A total of 59,062 tonnes of solid waste was produced within Building Products\* division and 18,299 tonnes of solid waste was produced by the Sugar division

**Our People**

CSR provides a safe, rewarding and challenging environment for our employees to help them reach their potential.

- CSR continues to align employees’ interests with those of shareholders – during the year 2,560 employees took part in the CSR employee share ownership plan – with over 54% of CSR employees currently owning CSR shares
- We continued to develop our people – 4,649 employees completed 99,567 hours of training in both in-house and CSR sponsored external programs, equivalent to 18 hours of training a year per employee

**Our Community**

CSR continued to contribute to the community through its Workplace Giving program, under which CSR matches employee contributions dollar for dollar. During the year \$208,584 was donated through Workplace Giving and over the past four and a half years of operating, over \$1 million has been donated to community organisations.

\*excludes Viridian glass business acquired during the year.

CSR is committed to sustainability. We believe we can contribute to a more sustainable society through our operations and through the application of our energy efficient products and systems.

Our approach to sustainability is based around two key principles.

1. We strive to operate in a sustainable manner across all our businesses by reducing our operational footprint and by acting in a socially responsible way; and
2. We will provide an expanded range of products and systems that contribute to sustainability through energy efficient solutions for the built environment and renewable energy and fuels.

Quite simply, we believe acting in a sustainable manner makes good business sense.

This report details how CSR is meeting these two principles and the benefits these provide our stakeholders.

Across our manufacturing sites, CSR is implementing initiatives to reduce our water and energy use and also reduce the amount of waste produced. The report includes data on energy, water and waste and case studies in relation to CSR's commitment to reducing these components in our manufacturing and sugar production processes.

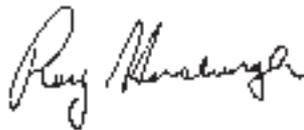
CSR also continues to be a leading provider of sustainable products to help our customers reduce their energy use, lower costs and improve their environmental impact.

Through product innovation in glass, insulation, plasterboard and a range of other products, CSR provides energy efficient solutions for the built environment in residential, commercial and industrial markets.

Meanwhile, CSR continues to be a major provider of renewable energy, including renewable fuel ethanol and renewable electricity as a by-product from our sugar production.

Sustainability therefore provides significant opportunities for CSR and for our stakeholders which is why we incorporate sustainability thinking into our governance, strategic planning and policy development.

As Chairman of CSR's Safety, Health & Environment Committee of the board, I am particularly focused on ensuring CSR continues to progress in a sustainable manner to the benefit of all our stakeholders.



Ray Horsburgh  
Chairman

AS CHAIRMAN OF CSR'S SAFETY, HEALTH & ENVIRONMENT COMMITTEE OF THE BOARD, I AM PARTICULARLY FOCUSED ON ENSURING CSR CONTINUES TO PROGRESS IN A SUSTAINABLE MANNER TO THE BENEFIT OF ALL OUR STAKEHOLDERS.



While this is CSR's first stand-alone sustainability report, CSR has been actively integrating sustainability into our business practices for many years. We recognise both the implications and opportunities sustainability creates across our businesses and we continue to develop our response accordingly.

Over the past year, we have undertaken further specific initiatives as part of our commitment to sustainable operations. During the year CSR:

- further developed our portfolio of energy efficient building products, by bringing new products to market and acquiring two glass businesses to provide additional scope for improved energy efficiency in the built environment
- committed to a new programme in our Sugar business to almost double our production of renewable fuel ethanol
- invested further capital across our manufacturing sites to reduce their operational footprint and achieve greater energy efficiencies
- formed an internal, cross-division sustainability steering committee which I personally chair
- established a group-wide function, Strategy and Sustainability to better co-ordinate CSR's response to sustainability issues
- completed a comprehensive inventory of greenhouse gas emissions across our businesses and joined the Australian Government's Greenhouse Challenge Plus Programme
- The CSR board upgraded the charter of its Safety, Health & Environment (SH&E) Committee. The amendments ensure that the committee provides advice to the full board on CSR's approach to sustainability, with specific regard to climate change

This report provides greater detail on these initiatives which I hope you find valuable.

Sustainability, of course, is not limited to climate issues. At CSR we view the safety and health of our people and issues relating to the communities in which we operate as being integral to our overall approach to sustainability.

The very nature of our business operations means that safety is paramount and over the past year we have launched initiatives to further integrate safety into our business operations with a continued focus on our goal of zero injuries.

Meanwhile, we continue to partner with many community-based organisations in recognition of our obligation to the communities in which we operate.

Details of our Safety, Health & Environment and Community activities are contained within the report.

CSR has a strong sustainability agenda, which I trust is reflected within this report. We are keen for our stakeholders to appreciate the progress we have made in meeting our sustainability agenda and look forward to providing additional detail in subsequent sustainability reports.



Jerry Maycock  
*Managing Director*

**THE VERY NATURE  
OF OUR BUSINESS  
OPERATIONS  
MEANS THAT  
SAFETY IS  
PARAMOUNT  
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PAST YEAR WE  
HAVE LAUNCHED  
INITIATIVES  
TO FURTHER  
INTEGRATE  
SAFETY INTO  
OUR BUSINESS  
OPERATIONS.**



This is CSR's first stand-alone sustainability report. Previously, data and commentary on issues relating to sustainability were included in CSR's Annual Report and Shareholder Review.

This new format provides more detailed information on CSR's sustainability record and the new opportunities and challenges we face. We will continue to expand on the content of the report as our agenda widens and as our strategies develop.

#### To create this report we:

- Reviewed CSR's activities and operations to collect data on energy use and prepared an inventory of greenhouse gas emissions
- Referenced the Global Reporting Initiative (GRI) G3 Sustainability Reporting Guidelines, United Nations Global Compact and Federal Government policy towards sustainability reporting in Australia
- Reviewed sustainability reports of industry peers to identify which sustainability issues and GRI indicators are of importance industry wide
- Reviewed best practice sustainability reports both in Australia and globally

#### Scope of the Sustainability Report

This report covers CSR's activities (including waste and water usage) for the year ended 31 March 2008 (YEM08). Emissions and energy data covers the financial year from 1 July 2007 to 30 June 2008 (consistent with the National Greenhouse and Energy Reporting – (NGER) – scheme).

During these periods, CSR acquired two glass businesses, Pilkington Australasia and DMS Glass. These businesses have since been re-branded as Viridian™. Full year data was not available for the water consumed or waste produced by Viridian and data for this business will be included in subsequent reports.

Data for water usage and waste produced for the Building Products division has been categorised into the three operating business units of the division.

*Performance Systems'* major brands include Viridian glass (data not included per reasons above), Bradford insulation, Hebel panels, Edmonds Ventilation.

*Lightweight Systems'* major brands include Gyprock plasterboard, Cemintel fibre cement, Fricker ceiling systems and MiTex coating systems.

*Bricks and Roofing's* major brands include PGH bricks and pavers, Monier and Wunderlich rooftiles.

Data for water usage and waste produced for the Sugar division has been categorised into Mills, Ethanol and Refining.

This report covers only activities in which CSR has a majority equity interest. For these activities CSR has reported 100% of emissions.

The report does *not* include activities where CSR is not the majority shareholder. For example, the activities of Tomago Aluminium Company, in which CSR has an effective 25.24% interest, are not included in this report. Data from these activities is reported directly by other entities.

All physical measurements in this report are in the metric system. All financial figures are in Australian dollars, unless stated otherwise.

**7,282**

EMPLOYEES ACROSS  
6 COUNTRIES

**\$3.2b**

TRADING REVENUE

**\$386.3m**

EARNINGS BEFORE  
INTEREST AND TAX

**\$192.8m**

NET PROFIT AFTER TAX

**20.9c**

EARNINGS PER SHARE

CSR is one of Australia's leading diversified companies, with operations in building products, sugar, aluminium and property.

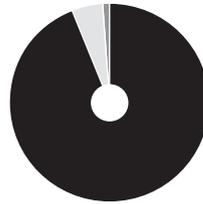
Originally founded in 1855 as a sugar company, CSR is one of Australia's oldest companies, with a proven record of consistent returns and strong cash flow.

Within Building Products, CSR is a leading supplier to the residential and commercial construction industry – supported by a nationwide distribution network. CSR manufactures and supplies a wide range of building products, with a particular focus on energy efficiency in the built environment.

As Australia's largest sugar producer, CSR has seven mills located in some of Australia's most productive sugarcane regions. CSR also owns 75% of joint venture interests in sugar refining in Australia and New Zealand and is a major producer of renewable fuel ethanol and renewable electricity.

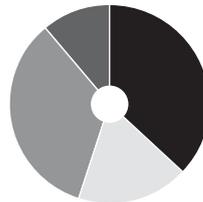
CSR also holds an effective 25% interest in the Tomago aluminium smelter, located in NSW.

*EBIT by region (year ended 31 March 2008)*



Australia	94%
New Zealand	5%
Asia	1%

*EBIT by business (year ended 31 March 2008)*



Building products	37%
Sugar	18%
Aluminium	34%
Property	11%

*Revenue by business (year ended 31 March 2008)*



Building products	43%
Sugar	39%
Aluminium	17%
Property	1%

**CSR's Operations**

- Building products <sup>(a)</sup>
- Sugar
- Aluminium

(a) includes sales outlets in Asia



### Improving Our Operating Performance

Across CSR's operating sites, we are investing to reduce our environmental footprint.

Each of CSR's businesses has plans in place for continuous improvement on water use, energy consumption and to reduce waste and resource use. CSR has invested significantly in a number of major site upgrade projects in order to improve their sustainability performance. These include:

- Upgrade of the Melbourne Gyprock plasterboard factory to a larger capacity, more environmentally sustainable plant which will be the lowest cost in the industry
- Construction of a rockwool technical insulation plant in Guangzhou, China to service technical insulation requirements across the region
- Construction of a Bradford Gold glasswool insulation plant in South East Queensland to increase our capacity of insulation products for homes and buildings
- A rebuild of the Viridian Dandenong float glass plant, to provide 37% increase in plant capacity, while delivering 15 per cent more energy efficiency. The investment will also include a coating mechanism to produce energy efficient (low e) glass
- An upgrade of the Yarraville sugar refinery in Melbourne to improve efficiency and sustainability performance
- An upgrade to the Sarina Ethanol distillery unit to convert all of its ethanol production to renewable fuel grade ethanol

CSR's investment in sustainability is not limited to its manufacturing sites. In 2010 CSR's head office will move from Chatswood to Triniti Business Campus, North Ryde. CSR has secured a purpose-built site designed specifically for our business needs. The Triniti III Building will be built using many CSR products, enabling the building to achieve a high energy efficiency rating.

### Investing in the Development of Sustainable Products

CSR continues to expand its range of environmentally sustainable solutions, including the production of renewable fuel ethanol and electricity as well as products and systems for improved energy efficiency of residential, commercial and industrial buildings.

CSR's sustainability agenda is established at Board level, underlining our commitment to ensuring our businesses operate in a sustainable manner.

Our stakeholders expect CSR to be managed according to our sustainability principles which include our commitment to corporate governance.

CSR's Corporate Governance framework has been developed using:

- CSR's long established values and behaviour
- Corporate Governance Principles and Recommendations published by the ASX Corporate Governance Council (ASX CGC)

Full details of CSR's Corporate Governance framework, including remuneration details, can be found in the CSR 2008 Annual Report, commencing on page 4. This report can be found on the CSR website <http://www.csr.com.au/investorcentre/reports.asp>.

#### **CSR's Board of Directors**

CSR's Board of Directors is accountable to shareholders for the operations, profit performance and growth of the company. The board strives to create shareholder value, while ensuring the company operates in a sustainable manner.

The board is currently comprised of seven non-executive directors and one executive director – the managing director. The Chairman is appointed by the board and provides leadership to ensure that a high standard of values, processes and constructive interaction are maintained.

#### **Board Independence**

Each of the non-executive directors on the CSR board is independent of the CSR and its management, having no business or other relationships that could compromise his or her autonomy as a director.

#### **Board Committees**

To increase its effectiveness, the CSR board has three committees, each with a charter approved by the board:

1. The Audit Committee
2. The Safety, Health & Environment (SH&E) Committee
3. The Remuneration and Nominations Committee

The CSR board upgraded the charter of its Safety, Health & Environment (SH&E) Committee. The amendments ensure that the Committee provides advice to the full board on CSR's approach to sustainability, with specific regard to climate change.

#### **Communicating with stakeholders**

CSR's commitment to high standards of corporate governance includes reporting on the company's activities to its stakeholders.

Information is provided to shareholders and other stakeholders through:

- releases to the ASX in accordance with continuous disclosures obligations
- CSR's website
- CSR's annual and half-yearly reports
- the annual general meeting

The annual general meeting provides an important opportunity for shareholders to express their views to the CSR board including issues relating to sustainability and to vote on board proposals. CSR provides a live webcast of its meeting to shareholders who are unable to attend the AGM.



# MEETING THE CHALLENGE

## ENERGY EFFICIENT BUILDING PRODUCTS AND RENEWABLE ENERGY TO HELP OUR CUSTOMERS MEET THE CHALLENGE OF CLIMATE CHANGE.

### OPPORTUNITIES

With an extensive portfolio of energy efficient building products and systems and the ongoing capacity to provide energy from renewable sources, CSR is ideally placed to help our customers meet the challenges of climate change.

CSR is also aware of the impacts of Governments' policy responses to climate change poses to our own businesses.

We have integrated climate change into our business planning processes, including scenario analysis modelling relating to the impact and opportunities of climate change on our underlying businesses.

#### Sustainable products that target improved energy efficiency the built environment

CSR produces a range of energy efficient building products and systems, which have the potential to reduce heating and cooling requirements of homes and buildings, thereby reducing energy demand with the consequential reduction of greenhouse gas emissions. Increasingly CSR produces these products from recycled materials which:

- reduce the demand for raw materials; and
- lower emissions and pollution during manufacturing.

Examples across CSR's Building Products' portfolio include:

#### Bradford™ insulation

Household insulation can significantly reduce heating and cooling energy use. Bradford Gold glasswool insulation is produced from at least 50% and up to 80% recycled glass, while rockwool is manufactured from up to 20% blast furnace slag, a by-product of the iron and steel industry.

#### Edmonds™ ventilation systems

Energy efficient ventilation products improve air circulation and regulate thermal conditions in residential and commercial applications. Combined with insulation, ventilation systems further reduce energy costs by regulating temperatures in the roof space to allow cooling and heating systems to work more effectively.

#### Monier™ concrete and Wunderlich™ terracotta rooftiles

CSR rooftiles are strong, hard wearing and durable, delivering effective thermal and noise insulation relative to other materials. When combined with Bradford insulation products such as EnviroSeal roof sarking, a significant component of radiant heat is reflected.

**Hebel® aerated concrete products**

Hebel, which uses one quarter of the raw materials required for conventional masonry products, has received the Good Environmental Choice Australia (GECA) label. GECA is Australia's only independently assessed environmental labeling program for consumers who want to purchase products with lower environmental impact.

**PGH™ and Monier™ Bricks**

Bricks build in thermal mass which can reduce the need for heating and cooling, and lower electricity loads and costs. According to a CSIRO report clay bricks have less embodied energy (energy consumed in manufacture) than other building materials such as aluminium, steel, glass and timber particleboard.

**Gyprock™ plasterboard**

Gyprock is made with 100% recycled paper. Gyprock also offers a successful recycling service that collects and reprocesses waste plasterboard from residential building sites in New South Wales and Victoria. The manufacture and installation of Gyprock lining systems involves lower environmental impacts than can be achieved with alternative systems.

**Cemintel™ fibre cement**

Cemintel fibre cement is produced from renewable plantation timber fibre, sand and cement and is used to provide lightweight cladding solutions which can be engineered to achieve improved heating and cooling energy performance.

**Fricker™ ceiling systems**

Fricker™ ceiling systems are produced from recycled materials obtained from the steel production process and provide insulation benefits. The specialised paint finish is highly light reflective, reducing lighting and energy requirements. Fricker is the only Australian commercial ceilings supplier to have its products certified by the Good Environmental Choice Australia (GECA) label.

**Viridian™ Glass**

Viridian produces a range of enhanced energy efficient glass which assists in reducing heat loss in winter and heat gain in summer, saving significant greenhouse gas emissions from reduced energy consumption.

Viridian uses significant recycled glass content in its manufacturing process, with DecorPattern using over 95% recycled glass content.

Viridian was the first manufacturer in Australia to sign a sustainability covenant with the Victorian Environmental Protection Authority (EPA), the Victorian State Government and The Australian Industry Group to reduce environmental impacts and also further develop energy efficient products for the built environment.

VIRIDIAN PRODUCES A RANGE OF ENHANCED ENERGY EFFICIENT GLASS WHICH ASSISTS IN REDUCING HEAT LOSS IN WINTER AND HEAT GAIN IN SUMMER, SAVING SIGNIFICANT GREENHOUSE GAS EMISSIONS FROM REDUCED ENERGY CONSUMPTION.



**Renewable Fuel Ethanol**

CSR Ethanol is the second largest producer of fuel ethanol in Australia. We produce ethanol from molasses, a by-product of sugar production which is not a food staple.

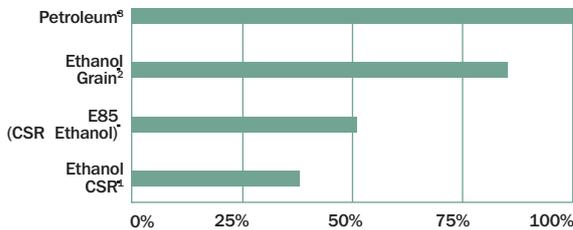
**EVERY LITRE OF CSR E85 ETHANOL PRODUCES ABOUT HALF THE CO<sub>2</sub>-e EMISSIONS OF PETROL.**

Sugar based ethanol has significantly lower CO<sub>2</sub> emissions than grain based ethanol. According to CSR's independently reviewed Life Cycle analysis<sup>1</sup> every litre of CSR E85 Ethanol produces about half the CO<sub>2</sub>-e emissions of petrol.

Demand for ethanol blended fuel has increased by 500 per cent in the last 3 years, with CSR Ethanol now supplying over 250 petrol stations in Australia. With this demand continuing to increase, CSR announced in August 2008 that it will upgrade its distillery unit at Sarina, North QLD to convert all of its ethanol production to produce up to 60 million litres of fuel grade ethanol per year.

**Embodied Emissions Adjusted for Fuel Energy Content**

% CO<sub>2</sub> e/kL vs Petrol (Energy Adj.)



Data notes:

- 1 Energetics LCA (2007) peer reviewed by CSIRO (2008)
- 2 AgriEnergy LCA 2007
- 3 AGO Workbook Feb 2008

There is significant further potential for fuel ethanol in Australia, with car manufacturers increasingly looking to develop vehicles which run on E85, a blend of 85% ethanol and 15% petrol.

**Renewable Fertiliser**

Using the end product of molasses fermentation for ethanol production, CSR Ethanol has developed a range of liquid fertilisers. The two main products are BioDunder™ and Liquid One Shot™.

BioDunder, which is comprised of vegetable matter containing potassium and traces of sodium, nitrogen, calcium, magnesium and phosphorus, is highly valued as a liquid fertiliser. It has also been certified as organic and has been granted "Beneficial Use" status by the Queensland Environmental Protection Agency. In addition to recycling nutrients, liquid fertilisers such as BioDunder can reduce nitrogen volatilisation.

Liquid One Shot is comprised of the same vegetable matter as BioDunder, but with added amounts of sulphuric acid and urea to increase the sulphur and nitrogen content in final products.

Liquid fertilisers currently have a 17% market share of the local fertiliser market. The current farmer demographic and labour shortages make CSR's complete service offering more attractive and will enable it to capitalise on significant growth opportunities in the market.

**Renewable Electricity**

CSR is Australia's largest renewable energy producer from biomass. We currently generate enough renewable electricity, which, together with a small amount of external fuel, is sufficient to operate each of our seven sugar mills in North Queensland. We have two mills, Invicta and Pioneer, where a significant surplus is produced.

That surplus, which is approximately 300 Gigawatt hours (GWh) per annum is exported into the National electricity grid and is enough to power approximately 80,000 homes.

The availability of large amounts of bagasse (waste sugar cane fibre) and cane trash provides CSR with the potential for producing significant additional generation capacity. An additional 1100 GWh of renewable electricity (enough to support ~170,000 households) could be produced from identified bagasse fuelled projects, while a further 800 GWh of renewable electricity (enough to support ~120,000 households) could be produced from cane trash fuelled projects.

**CSR IS AUSTRALIA'S LARGEST RENEWABLE ENERGY PRODUCER FROM BIOMASS.**

**DEMAND FOR ETHANOL BLENDED FUEL HAS INCREASED BY 500 PER CENT IN THE LAST 3 YEARS, WITH CSR ETHANOL NOW SUPPLYING OVER 250 PETROL STATIONS IN AUSTRALIA.**



CSR HAS UNDERTAKEN EXTENSIVE MODELLING OF THE POTENTIAL EFFECTS OF THE PROPOSED SCHEME ACROSS ITS BUSINESSES AND HAS EXAMINED VARIOUS SCENARIOS IN RELATION TO THE COST IMPACT AND OPPORTUNITY OF CARBON EMISSIONS ON CSR.

### CARBON POLLUTION REDUCTION SCHEME

Given the breadth of its manufacturing and processing operations, the mix of its individual businesses, CSR will be impacted both positively and negatively by the Federal Government's proposed Carbon Pollution Reduction Scheme.

CSR has undertaken extensive modelling of the potential effects of the proposed scheme across its businesses and has examined various scenarios in relation to the cost impact and opportunity of carbon emissions on CSR.

CSR supports a broad based scheme which places Australian industry at no disadvantage to a credible equitable global scheme. We support a well designed, broad based scheme that provides for emissions reductions, without compromising Australia's economic growth and the international competitiveness of our energy intensive trade exposed sector.

To work effectively, Australia's emissions trading scheme trading must be embraced by all major global emitters and, in particular, by Australia's trading partners. Without other countries' involvement, Australia will simply export its emissions with no net benefit to the world and in doing so sacrifice Australian economic growth and loss of international competitiveness for our trade exposed sector with consequent lack of new investment and reduction in employment.

CSR believes the Scheme must hold trade exposed industry whole during transition to an international agreement and that transitional assistance should be based on trade exposure measures with an allocation of permits commensurate with financial impact.

CSR also supports maximum coverage and recognises the difficulties associated with the agriculture sector. Government needs to set out a pathway for resolving the issues and future status of agriculture.



# SAFETY, HEALTH & ENVIRONMENT

## SAFETY, HEALTH & ENVIRONMENT – ONE OF CSR'S CORE VALUES – ENSURING A SAFE WORKPLACE AND PROTECTION OF THE ENVIRONMENT.

Safety, Health & Environment (SH&E) is paramount at CSR. Our goal is zero injuries, as is minimising the impact of our activities on the environment and the communities in which we operate.

SH&E is one of CSR's five core values. We aim to live this value at CSR by taking individual responsibility for the safety and health of ourselves, our co-workers and our environment.

### SAFETY, HEALTH & ENVIRONMENT MANAGEMENT SYSTEM

Since the mid 1990s CSR has implemented a Safety, Health & Environment Management System, known as SHEMS. SHEMS has been established to ensure that all activities which may have an impact on the safety and health of people associated with CSR's operations or products and the environment are carried out in a manner that will not result in harm. It ensures compliance with:

- all relevant statutory Acts, Regulations and codes or Practice
- Australian standards referenced in legislation
- statutory licences and industry codes

- CSR SH&E policies, standards and other mandatory requirements
- responsible care
- Managed System standards (ISO 9000, ISO 14001 and AS/NZS 4801)

To achieve this we have operational policies covering all SH&E functions and related hazards and environmental aspects. These operational policies are designed to be applied to all CSR businesses and sites.

**OUR GOAL IS ZERO INJURIES. WE TAKE INDIVIDUAL RESPONSIBILITY FOR THE SAFETY AND HEALTH OF OURSELVES, OUR CO-WORKERS AND OUR ENVIRONMENT.**

#### SH&E Leadership Program

In 2006 CSR introduced a new SH&E Leadership program to facilitate the development of effective leaders to ensure safe workplaces and that the environment is protected.

The program incorporates key aspects of CSR's SH&E Management System, problem solving techniques, risk assessment methods and our leadership skills program.

Key to the success of the program is the practical application of the skills learnt in the program through a workplace improvement project. Teams are required to identify a risk on site, develop a means to mitigate this risk and implement the new procedure or process.

During YEM08 a number of SH&E initiatives were undertaken including:

- CSR's SH&E policy was revised to incorporate CSR's updated values
- SH&E responsibilities and accountabilities were standardised across the company for all job positions. This is to ensure a consistent standard of SH&E across the company
- We began updating the SH&E Management System manual to reflect changes in the SH&E policy. This manual is a guide for assisting managers to know and better understand the expectations of the SH&E Management System
- We continued to roll out our SH&E Accreditation System across CSR, with all manufacturing sites (other than the acquired Viridian™ operations which will be included from next year) achieving bronze accreditation
- We will continue to assess our activities each year to ensure that each site maintains their accreditation level at a minimum and are encouraged to improve
- We continued to deliver the SH&E Leadership program across CSR
- We continued with our internal and external safety and environment audit program

### SH&E Accreditation System

Established in December 2006, the purpose of the SH&E Accreditation System is to develop uniform SH&E standards across all of CSR's sites and to provide benchmarks against which the performance of each operational site may be assessed and progress tracked.

The aim of the accreditation is to recognise those sites with excellent performance and commitment and highlight those areas requiring improvement.

The system includes an independent assessment of each site's plant and equipment, management and other systems and of the site's culture (the way people think and act), in particular the commitment of CSR's employees to effective SH&E practices.

The accreditation process covers the entire spectrum of SH&E issues, from injury severity and environmental incidents through to water and energy use, emissions and waste production.

The assessment criteria and measures for the SH&E Accreditation System are consistent across all CSR sites. They are shared and clearly understood, which enables employees to compare their performance against that of other CSR sites and to learn from the best. The criteria provide targets for continuously improving processes, systems and site culture to achieve best possible practice.

THE ACCREDITATION PROCESS COVERS THE ENTIRE SPECTRUM OF SH&E ISSUES.



**CSR'S RATE OF RECORDABLE INJURIES: 19.8 INJURIES PER MILLION HOURS WORKED**

**SEVERITY RATE OF INJURIES: 52.9 DAYS LOST PER ONE MILLION HOURS WORKED**

**BUILDING PRODUCT'S RATE OF RECORDABLE INJURIES: 18.6 INJURIES PER MILLION HOURS WORKED**

**SAFETY & HEALTH**

At CSR our goal is zero injuries. We want everyone to return home from work safely everyday and as such safety is embedded into everything we do. As well as caring for the welfare of our employees, contractors and customers, a good safety record increases our efficiency, decreases costs and improves our ability to increase profits.

The CSR SH&E Management System helps site and SH&E managers ensure there are appropriate safety procedures on site. Regular safety workshops and tool box talks are also conducted to ensure all employees at each site are aware of and understand their site specific safety procedures.

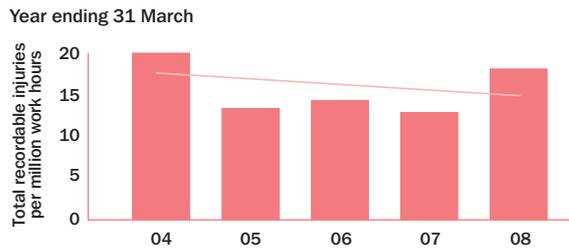
Between 2004 and 2007 CSR's total recordable injury frequency rate (TRIFR) decreased by 33.3%. In YEM08 CSR acquired two glass businesses, since rebranded as Viridian, whose safety practices and awareness of workplace safety were significantly below that of CSR. This resulted in TRIFR increasing by 5.2 from YEM07 levels to 19.8 recordable injuries per one million hours worked.

CSR is actively working with Viridian to implement our rigorous safety policies and reporting procedures and to improve awareness of workplace safety amongst employees, with the aim to decrease our TRIFR during the next year. Our end goal still remains a TRIFR of 0.

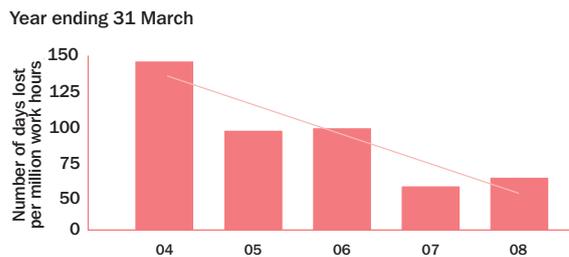
For the same reasons, CSR's severity rate of injuries also increased from YEM07 levels by 16.7 to 52.9 days lost per million work hours. Despite this increase, CSR's severity rate of injuries has decreased by 61.9% since 2004.

**REGULAR SAFETY WORKSHOPS AND TOOL BOX TALKS ARE ALSO CONDUCTED TO ENSURE ALL EMPLOYEES AT EACH SITE ARE AWARE OF AND UNDERSTAND THEIR SITE SPECIFIC SAFETY PROCEDURES.**

**CSR safety performance (rate of recordable injuries)**



**CSR severity rate of injuries**



## ENVIRONMENT

At CSR, it is our firm policy to act responsibly, ensuring that our people follow appropriate procedures to minimise the company's impact on the environment, and where possible contribute to its improvement.

CSR has an active program to reduce its impact on the environment, overseen by the board and the Safety, Health & Environment (SH&E) Committee. Each business has an environmental protection plan which commits local managers to:

- Comply with government environmental regulations
- Identify and address key environmental risks
- Improve environmental awareness of employees and contactors
- Reduce our use of resources

Each business is also required to have environmental performance measures, such as energy usage, air emissions, water consumption and waste generation and to have plans in place for continuous improvement on these measures.

CSR is committed to providing transparent and accurate reporting on our environmental impact. CSR provides environmental information on its operations in a number of ways:

- Annual reporting as part of site licensing activities
- Emissions data to the National Pollutant Inventory
- Progress reports to various state Government departments' programs on energy and water savings
- Member of Greenhouse Challenge Plus

During YEM08 CSR:

- Completed its first comprehensive inventory of greenhouse gas emissions
- Upgraded our data monitoring and collections systems to improve our ability to report against indicators
- Committed to producing a stand-alone sustainability report referencing the GRI guidelines
- Registered with the Environment Protection Authority Victoria in the Environment and Resource Efficiency Plan Program



### Environmental Incidents

CSR reports environmental incidents based on five levels of breaches of compliance with regulatory and CSR requirements. These are 1 minor, 2 significant, 3 serious, 4 severe and 5 extreme/catastrophic.

There were 170 environmental incidents recorded during YEM08, 53 higher than the previous year. 168 were level 1 and level 2 incidents and two were level 3 incidents. There were no level 4 or level 5 incidents.

The increase in environmental incidents during YEM08 can be attributed to:

- Enhanced employee training and awareness of environmental policy and reporting procedures
- Improved data monitoring and collection systems

CSR encourages site employees to report all incidents, including those which are controlled on site (level 1 incidents). This allows improvements to be made to processes and procedures on site to prevent similar occurrences.

### Level 3 incident

#### Roof tile factory, Rosehill, Sydney

In July 2006, CSR incurred a spill of a small amount of a substance used in the coating of roof tiles. At the same time a similar resin-like hydrocarbon/polymer substance was spilled into the Parramatta River. The spilled material was cleaned up and there appears to be no long term damage to the river or any marine life.

At that time, CSR believed all of its spill was contained on site, however, as a prudent measure, the company reported the spill to the NSW Department of Environment and Climate Change.

Following the incident, CSR conducted an extensive review into the events surrounding the incident. Although this review could not identify the cause of the spill for certain, CSR Building Products Limited pleaded guilty in the NSW Land & Environment Court to a charge of polluting waters, recognising that the company may have been responsible for the spill.

In August 2008, CSR was ordered to pay a penalty and costs totalling more than \$430,000.

As a consequence of this event, CSR has reinforced its standard operating procedures to ensure all chemicals used on site are stored and handled in accordance with those procedures. We have also reinforced training in the event of a spill for all factory floor employees. CSR is also changing the roof tile coating used at Rosehill and other sites to a water base coating.

### Level 3 incident

#### Lucinda bulk sugar terminal, North Queensland

On the 30 September 2007, 25 sugar boxes were derailed from a locomotive travelling to the Lucinda bulk sugar terminal in North Queensland. Sixteen sugar boxes were damaged in the incident and approximately 40 tonnes of sugar were spilled in an area adjacent to a mangrove habitat.

The Queensland Environmental Protection Agency (EPA) was notified immediately and attended the incident site the following morning (1 October 2007). At the site,

the EPA took water samples for possible analysis, but later decided not to analyse these as they concluded there would be no effect on the local waterways.

The clean-up of the site by CSR was completed by 3 October 2007 and resulted in the removal of an estimated 100 tonnes of material including vegetation. The spilled sugar was recovered from the site.

CSR Sugar undertook an investigation into the incident. The exact cause of the incident was not determined, although a large number of possible causes were ruled out.

In response, CSR continues to review its operating procedures in relation to cane transport.



# REDUCING OUR OPERATIONAL FOOTPRINT

STRICT ENVIRONMENTAL MEASURES AND CONTINUOUS IMPROVEMENT PROCESSES ON WATER, WASTE AND ENERGY.

## WATER

Each of CSR's businesses has specific environmental performance measures for water consumption and has plans in place for continuous improvement on water use.

### Building Products

A total of 1,041,197 kilolitres of potable water was consumed by the Building Products division (excluding Viridian) in YEM08. This consisted of 46% from Performance Systems and 43% and 11% from Lightweight Systems and Bricks and Roofing respectively.

Throughout its Building Products businesses, CSR has implemented a range of activities to reduce reliance on potable water and extractable water where possible.

**Total Water Consumed (Kilolitres) Building Products**



Lightweight Systems	453,090
Performance Systems	475,928
Bricks & Roofing	112,179

\* Only metered water data is included



**Case Study****SAVING WATER IN CSR BRICKS AND ROOFING**

In late 2006 CSR's Bricks and Roofing division made a commitment to reduce water use to 20% of its then potable water usage across all sites.

The initiatives undertaken to achieve this goal are specific to each site. The effectiveness of each initiative will be evaluated and the knowledge gained will be shared amongst all CSR sites.

As at 31 March 2008, CSR Bricks and Roofing has been able to significantly reduce water use across all sites. The initial 20% target remains and CSR Bricks and Roofing hopes to achieve this during the year ending 31 March 2009.

**Case Study****SAVING WATER IN CSR PERFORMANCE SYSTEMS**

Recognising the need to reduce water consumption, the CSR Viridian site at Ingleburn, NSW set about identifying and quantifying water consumption patterns across the site. The site has since been able to identify projects that have delivered a 55% reduction in water usage from 2002.

Some of the projects that have contributed to this reduction include

- Recycling rinse water on the glass laminating line
- Eliminating water overflow in the cooling tower on the glass laminating line
- Installing low flow flush toilets, low flow showerheads and flow control taps

The reduction in water consumption at Viridian has been facilitated by their participation since late 2003 in the *Every Drop Counts* program run by Sydney Water.

**PLANT**

**Oxley brick plant, QLD**

**INITIATIVE**

A 600,000L tank has been installed, which along with water saving techniques has enabled the site to decrease its town water supply usage by 80–90%.

**PLANT**

**Cecil Park brick plant, NSW**

**INITIATIVE**

Cecil Park has been trialling different water saving techniques on site to determine which is most effective. This has included a water probing system and the trial of different water levels in the manufacturing process to determine the optimum level. These different techniques have enabled Cecil Park to reduce water usage by 60%.

**PLANT**

**Cooroy brick plant, QLD**

**INITIATIVE**

This site is currently trialling the reuse of septic water as process water in the manufacturing process. Initial results show significant water savings. The next steps are to expand the septic water tanks.

**PLANT**

**Darra roof tile plant, QLD**

**INITIATIVE**

A water retention facility has been built to capture all storm water on site. This has enabled the site to obtain 80% of all water required for operations from its own source, decreasing its dependence on town water supply.

**PLANT**

**Horsley Park brick plant, NSW**

**INITIATIVE**

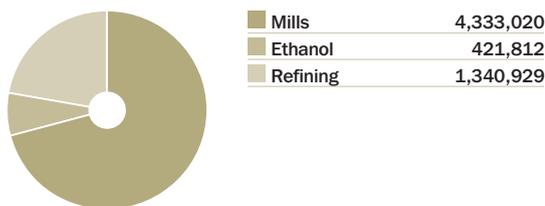
Horsley Park has reduced its town water usage by 100%. It has done this by reclaiming water from the septic system to use in the manufacturing process and on site.

**Sugar**

A total of 6,095,761 kilolitres of potable water and extracted surface or ground water was consumed by the Sugar division in YEM08. The predominant use of water was in the seven sugar milling factories, where 71% of water was consumed.

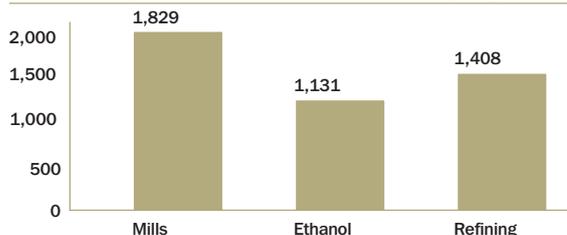
Over 90 per cent of water consumed in the sugar mills is raw bore (extracted ground) water. In Ethanol, the bulk of water consumed is recycled through Biodunder, a fertiliser product which is used on local crops.

**Total Water Consumed (Kilolitres) Sugar**



\* 100% of Sugar Australia and New Zealand Sugar included  
 \* Metered water and extracted surface water or ground water only included

**Water Used (Litre/Tonne of Saleable Product) Sugar**



**Case Study**

**RECYCLING CARBON WASTE WATER AT SUGAR AUSTRALIA**

The operations team at Sugar Australia, Yarraville, undertook a project to reduce fresh water consumption and trade waste discharge by recovering carbon waste water and reusing this water in the site's carbon plant.

The project, which was 50% funded by the Victorian Department of Sustainability and Environment's Stormwater and Urban Water Conservation Fund, has 3 components:

1. Utilising an auto-flush filter to remove carbon fine build up in the carbon plant.

2. Eliminating the use of potable water to maintain a water seal and remove waste from the cyclone component of the carbon plant.
3. Amend the carbon column flushing procedure to reduce the amount of potable water used in the plant.

The second and third components have been completed, currently saving Sugar Australia approximately 10,000–15,000 kilolitres of water per annum. For the first component, two filter technologies are currently being trialled. When this component is complete, an additional 15,000–20,000 kilolitres of water per annum is expected to be saved.

**Case Study**

**WATER REDUCTION AT VICTORIA MILL**

The operations team at Victoria Mill set a goal to reduce water consumption on site by 50% in YEM08.

Sugar cane, which is comprised mostly of water and sucrose, is a large source of water entering Victoria Mill. Through the milling process, cane stalk is crushed and washed the cane juice from cane stalks in order to separate as much sucrose as possible from the water, impurities, fibre and dirt that comprise the rest of the cane juice.

The water required for the crushing process has traditionally been sourced from creeks and underground reservoirs, while the water that is separated from the sucrose in the crushing process ends up being:

- recycled for use in steam generation
- used for irrigation of crops after treatment as waste water.

Identifying an opportunity to reduce the amount of water taken from the creeks and underground reservoirs, the operations team at Victoria Mill installed pumps and pipes to enable the treated waste water to be used instead.

Since recycling was installed, the amount of water taken from the creeks and underground reservoirs has been reduced from 27,000 kilolitres per month to 10,000 kilolitres per month. In addition, the amount of waste water requiring disposal has been reduced from 130 kilolitres per hour (kL/h) to an average of 65 kL/h, at times reaching a low of 35 kL/h.

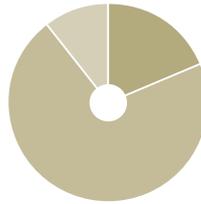
**WASTE**

Each of CSR’s businesses has specific environmental performance measures for waste and has plans in place to reduce waste and resource use.

**Building Products**

A total of 59,062 tonnes of solid waste was produced within Building Products in YEM08 (excluding Viridian). This comprised 71% by Performance Systems and 19% and 10% by Lightweight Systems and Bricks and Roofing respectively.

**Total Solid Waste Produced (Tonnes) Building Products**



Lightweight Systems	11,116
Performance Systems	41,833
Bricks & Roofing	6,113

\* Solid waste does not include waste taken off-site for recycling

THE OPERATIONS TEAM AT THE BRADFORD INSULATION PLANT IN CLAYTON, VICTORIA HAVE UNDERTAKEN A PROJECT TO RECYCLE MORE THAN 80% OF THE WASTE GENERATED DURING THE MANUFACTURE OF ROCKWOOL INSULATION.

**Case Study**

**RECYCLING WASTE FROM THE MANUFACTURE OF ROCKWOOL AT CLAYTON, VICTORIA**

The operations team at the Bradford Insulation plant in Clayton, Victoria have undertaken a project to recycle more than 80% of the waste generated during the manufacture of Rockwool Insulation. The operations team developed a process where waste from the manufacturing process is processed into a briquette and reused in the manufacturing process.

The benefits from the waste recycling project are significant and include:

- Landfill waste is reduced by 80%
- Raw material requirements are reduced by 1,500 tonnes per annum. As this raw material is purchased interstate, energy and greenhouse gas emissions from transport are also reduced
- The rock melting process efficiency is improved, reducing energy requirements

The first phase of the briquetting project has been successfully commissioned. During YEM08 the most technically difficult waste stream was converted to briquettes, melted and processed into insulation. This reduced the waste transported to landfill by almost 1,000 tonnes during the year.

Converting the remainder of the waste from the manufacturing process into briquettes has been successfully trialled. When this process is optimised and successfully commissioned, land fill waste will be reduced by more than 2000 tonnes each year.

Once the waste recycling project is fully commissioned, the technology will be transferred to other CSR Rockwool Insulation plants, enabling further reductions in landfill waste to be achieved. The project team have also begun exploring the potential of recycling other waste streams to reuse in the rockwool Insulation manufacturing process.

**Sugar**

A total of 18,299 tonnes of solid waste was produced by the Sugar division during YEM08, the bulk of which, over 90%, was produced by the Sugar mills.

For the Sugar division, the breakdown by kilogram per tonne of saleable product is highlighted below.

CSR is reducing waste across its Sugar division.

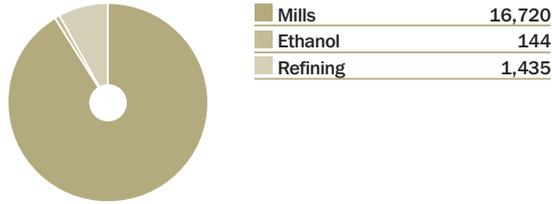
For example, in 2005, Sugar Australia signed the National Packaging Covenant, demonstrating its commitment to reducing the environmental impact of its retail branded packaging by reducing the overall weight of packaging material used and the proportion of packaging material that is recyclable.

As part of the covenant, Sugar Australia has a 5 year action plan detailing measures that it will take to meet the objectives and commitments of the National Packaging Covenant.

The weight of packaging for industrial bags of sugar has been reduced by 30% (double the target of 15%), by changing suppliers and packaging materials. Industrial bags of sugar contribute 47% of Sugar Australia's non-recyclable packaging material. This non-recyclable component cannot be changed, so reducing the weight of the bag reduces the amount of packaging going to landfill.

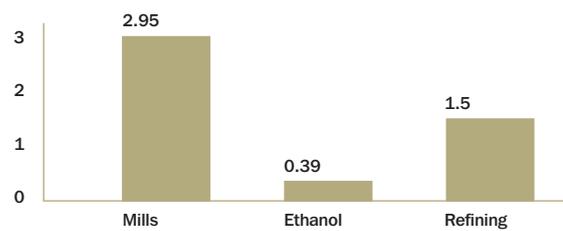
Overall, the proportion of Sugar Australia's packaging material that is recyclable has increased from 64.8% to 66.9%, since the Covenant was signed.

**Total Solid Waste Produced (Tonnes) Sugar**



- \* 100% of Sugar Australia and New Zealand Sugar included
- \* Solid waste does not include waste taken off-site for recycling
- \* Mills data includes a one off disposal of 9,720 tonnes of bagasse

**Waste (Kg/Tonne of Saleable Product) Sugar**



- \* The one-off disposal of 9,720 tonnes of bagasse has been excluded from the mills data

**THE WEIGHT OF PACKAGING FOR INDUSTRIAL BAGS OF SUGAR HAS BEEN REDUCED BY 30% (DOUBLE THE TARGET OF 15%), BY CHANGING SUPPLIERS AND PACKAGING MATERIALS. INDUSTRIAL BAGS OF SUGAR CONTRIBUTE 47% OF SUGAR AUSTRALIA'S NON-RECYCLABLE PACKAGING MATERIAL.**

**OVERALL, THE PROPORTION OF SUGAR AUSTRALIA'S PACKAGING MATERIAL THAT IS RECYCLABLE HAS INCREASED FROM 64.8% TO 66.9%, SINCE THE COVENANT WAS SIGNED.**



**ENERGY**

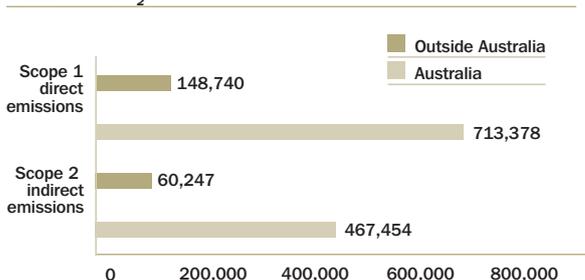
**Greenhouse Gas Emissions**

CSR's operations, in common with the industries in which we operate, are energy intensive.

For the period 1 July 2007 to 30 June 2008, greenhouse gas emissions from CSR's majority owned businesses were 1,389,819 tonnes of CO<sub>2</sub>-e. The scope 1 (direct) tonnes of CO<sub>2</sub>-e in Australia was 713,378 tonnes. While for the same period, the scope 1 (direct) greenhouse gas emissions of CSR's majority-owned businesses operating outside Australia was 148,740 tonnes. Direct or scope 1 emissions are derived from sources within the plant of factory boundary.

The scope 2 (indirect) tonnes of CO<sub>2</sub>-e emitted in Australia was 467,454 tonnes. For the same period, the scope 2 (indirect) greenhouse gas emissions of CSR's majority-owned businesses operating outside Australia was 60,247 tonnes. Indirect or scope 2 emissions are associated with the consumption of imported electricity, heat or steam.

Tonnes of CO<sub>2</sub>-e



CSR asked Ernst and Young to provide limited assurance that its greenhouse gas data was fairly presented in all material aspects. Ernst & Young's limited assurance statement on CSR's total Scope 1 and 2 greenhouse gas emissions is provided in the Limited Assurance section of the report.

CSR will report its 2008/9 greenhouse gas inventory under the Federal Government's National Greenhouse and Energy Reporting framework.

For the same period CSR's total energy use was 7,577,012 gigajoules, with natural gas and electricity, together with bagasse (renewable fuel) being the major energy sources.

To reduce its energy and greenhouse footprint, CSR is actively identifying greenhouse gas abatement opportunities throughout its business operations.

**Energy Efficiency Opportunities**

CSR is a participant in the Federal Government's Energy Efficiency Opportunities Program and is required to report on assessments undertaken under the program. In CSR's case, all assessments were undertaken on sites which have energy use greater than 500,000 gigajoules. CSR's report is attached.

**Mandatory Renewable Energy Target (MRET)**

This is a federal scheme that places a legal liability on wholesale purchasers of electricity to contribute towards an additional 9,500 GWh of renewable energy per year by 2010.

MRET uses Renewable Energy Certificates (RECs) to provide incentives for the development of renewable energy sources.

During YEM08, CSR Sugar generated sufficient renewable electricity for the creation of 281,214 RECs, or 5% of Australia's Mandatory Renewable Energy Target. This is equivalent to taking 60,000 cars off the road, or enough renewable electricity to supply approximately 24,000 homes with power for a year.

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**CSR IS ACTIVELY IDENTIFYING GREENHOUSE GAS ABATEMENT OPPORTUNITIES THROUGHOUT ITS BUSINESS OPERATIONS.**

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**Case Study****REDUCING ENERGY USE AND INCREASING ENERGY AWARENESS AT VIRIDIAN, WETHERILL PARK, NSW**

The Viridian site at Wetherill Park, NSW has shown that simple measures and education can go a long way in reducing energy use.

A program to inform team leaders about the importance of energy reduction on site began in early 2008. Team leaders are in the best position to pass this information onto the majority of employees on site and to create an attitude towards saving energy,

though team briefing sessions, known as “tool box talks”, that are held at the beginning of each shift.

At the same time, an operator checklist was developed for turning off all machines, lights & all other electrical equipment at the end of each shift to conserve energy. Since this checklist was implemented average monthly electricity consumption has decreased by 19% compared to the previous year. Overall, specific energy efficiency has improved by 6%, from 5.4 kWh/m<sup>2</sup> for production to 5.0 kWh/m<sup>2</sup>.

**Case Study****ENERGY REDUCTION AT BRADFORD INSULATION, INGLEBURN, NSW**

During YEM08, Bradford Insulation undertook a project to increase the percentage of recycled glass used in the manufacture of Bradford Gold and other glasswool insulation products to 80%.

Recycled glass requires less energy to melt than sand, which is an alternative raw material for glasswool insulation. At commencement of the project, Bradford Insulation was using 60% recycled glass in the manufacturing process, constrained by a shortage in the particular type of glass used.

In order to increase the use of recycled glass to 80%, another source of recycled glass would have to be found. Bradford Insulation began working with new suppliers to establish a container glass recycling process which would meet its requirements. In order to be able to use recycled container glass, storage facilities had to be built on site at Ingleburn. At the same time, energy metering equipment was also upgraded.

The storage facilities were in place by June 2007 and recycled glass usage was progressively increased to 80% over the next 12 months. During the same period, specific energy usage dropped by 10%. As the new source of glass raw materials has been secured, Bradford Insulation will be able to sustain this level of energy savings indefinitely.

**Case Study****REDUCING CARBON EMISSIONS IN THE BURDEKIN REGION SUGAR MILLS**

In YEM07, CSR Sugar began a program in the Burdekin Region in North Queensland to replace cane locomotive engines with new high efficiency engines.

The program started modestly in YEM07, with two engines being replaced, stepping up to six in YEM08. The six cane locomotive engines that were replaced have saved CSR Sugar approximately 150,000 litres of fuel during the crushing season.

This is a reduction in carbon dioxide emissions of more than 400 tonnes per year.

This program is ongoing with five engines already replaced during the current year. The program is also being run in CSR Sugar's other milling regions.



# ENGAGING AND RETAINING OUR PEOPLE

PROVIDING A SAFE, REWARDING AND CHALLENGING ENVIRONMENT FOR OUR EMPLOYEES TO HELP THEM REACH THEIR POTENTIAL.

## OUR WORK ENVIRONMENT

### Reward And Recognition

People are central to the success of CSR. We are committed to providing a safe, rewarding and challenging environment for our employees to help them reach their potential, which in turn facilitates the company in reaching its goals.

We have a number of policies and initiatives aimed at engaging and retaining our employees, ranging from flexible working arrangements through to market competitive salaries and an employee share plan.

### Employee Share Plan

Our employee share plan encourages our people to own a stake in the company, aligning employees' interests with those of shareholders. During YEM08, 2,560 employees took part in the plan, 62.5% of those eligible. Over 54% of CSR employees currently own CSR shares.

### Equal Employment

CSR offers equal opportunity in employment to all people who meet the requirements of a job. We are committed to providing a work environment that ensures fairness for all employees, respects diversity, encourages trust and openness and is free from discrimination, harassment, vilification, bullying and victimisation.

Employees who discriminate against other CSR people, or harass, bully or victimise them are not wanted in CSR. Offending employees and their managers will be managed in accordance with CSR's Discipline Policy, which includes the option of dismissal.

### Flexible Working Arrangements

CSR recognises that there are a number of situations and times of life where employees would benefit from having a flexible approach to work arrangements. Full time employees at CSR have the ability to:

- Purchase an additional 8 weeks leave
- Work from home (approved on a case by case basis)
- Work part time while taking annual and/or long service leave
- Transfer to part time from full time work

### Diversity in the Workplace

CSR's policy on Fairness, Respect and Diversity of Employment in CSR guides our people on the importance of maintaining a work environment that is inclusive and offers opportunities to all people based on merit. We take our commitment seriously and each year, every CSR employee is encouraged to participate in a Code of Business Conduct Certification process to support good governance of our Fairness, Respect and Diversity policy (among other important policies).



We currently employ a diverse workforce across CSR's more than 150 sites and are in the process of reviewing our diversity strategy so we can target our investment in diversity initiatives for the benefit of all CSR employees.

As a manufacturing organisation, CSR has a predominately male workforce working across building products manufacturing, sugar milling and refining and sales. Of CSR's total workforce, 16% are female and 84% are male.

CSR is not satisfied with the low proportion of women employed across its businesses and is making a determined effort to attract and retain more women in the company, particularly in non-traditional roles such as engineering and building product sales. We are also making a concerted effort to foster women in leadership roles. Currently 11% of CSR's middle to senior management roles are held by women.

## COMMUNICATION AND FEEDBACK

### Communicating with our Employees

As a diverse company with over 7,000 employees spread over 150 sites across Australia, New Zealand and Asia, communicating with our employees presents CSR a unique challenge.

In order to reach all of our employees, we use a number of different communication channels ranging from the company intranet, through to staff briefings and a Managing Director site visit program.

### 'Be Sure with CSR' Brand and Values Program

Employee survey results and focus groups found that we needed to put more emphasis on the CSR brand and company values. In response, we launched the 'Be Sure with CSR' brand and values program across the company.

The program was successful, with awareness of the CSR values increasing by over 50%\*.

\* Results determined by an online employee survey.

### Quarterly Employee Opinion Surveys

Since October 2002, CSR has conducted quarterly opinion surveys with its employees. Around a third of all staff are invited to participate in the opinion survey each year, with the invitations spread over four quarters.

### Employee Turnover

CSR has an employee turnover rate of 16.2%. However, for our high performing employees (employees that receive outstanding or superior results in their annual performance review), the turnover rate is halved at 8.5%.

CSR conducts exit interviews with all employees leaving the company in order to understand their reasons for leaving and to identify areas where we can make CSR a better place for our employees.



## DEVELOPING OUR PEOPLE

Last year, CSR trained 4,649 people across 99,567 hours of training.

CSR provides all employees with on the job training and coaching. This training focuses on:

- The skills employees need to meet current job requirements and business improvement plans
- The education employees need to fulfill future job requirements and enable cultural and organisational change

Both management and team leaders pledge their involvement and commitment to individual and team development through the Performance & Development Review System.

### Study Assistance

CSR supports employees to undertake tertiary studies that add value to the business, contribute to an employee's personal development and complement skills gained on the job.

### Annual Performance & Development Reviews

All full and part time salaried employees at CSR undergo a formal performance & development review each year as part of the CSR Performance & Development Review System. The System is designed to ensure the success of our people and our business.

The CSR Performance & Development Review System provides input into an employee's salary review and assists in determining an employee's Short Term Incentive bonus (STI).

## CSR SUGAR CONTINUES COMMITMENT TO APPRENTICES

Continuing its commitment to the replenishment of North Queensland's skills base and the region's youth, CSR Sugar now has more than 100 apprentices being trained at its mills.

More than 30 new apprentices joined the ranks at CSR Sugar at the beginning of 2008. The budding electricians, diesel fitters, instrument fitters, fitter and turners and boilermakers are employed across CSR Sugar's seven North Queensland mills.

Twenty-one of the apprentices are on the job in the Burdekin, six have positions in the Herbert and four are employed at Sarina's Plane Creek mill. One apprentice is employed at CSR Sugar's Sarina Distillery.

Among the group are four cadets, who will study an associate diploma in either mechanical or electrical engineering, while also completing their corresponding trade qualifications.

The apprenticeship program has formed a critical part of CSR's annual recruitment process for many years. CSR Sugar apprentices are well supported in the workplace and given the opportunity to learn a variety of skills. A significant number of apprentices choose to stay on at CSR's mills after they complete their trade qualifications.

**MORE THAN 30 NEW APPRENTICES JOINED THE RANKS AT CSR SUGAR AT THE BEGINNING OF 2008.**

**ALL FULL AND PART TIME SALARIED EMPLOYEES AT CSR UNDERGO A FORMAL PERFORMANCE & DEVELOPMENT REVIEW EACH YEAR...**



### The CSR Way Program

In YEM07, the CSR Way program was launched to boost the gathering, retention, enhancement and dissemination of knowledge across the Building Products division of the company in critical business functions such as marketing, sales, manufacturing and supply chain logistics.

A team led by a Senior Manager has been formed for each critical business function and is responsible for devising the most efficient way of sharing information across business units. For example, the CSR Way in marketing team shares knowledge across business units by inviting experts on individual topics to present to the marketing leadership team.

The program has increased the sharing of information across CSR's businesses and has enabled us to increase our expertise in areas critical to the success of the company.

### CSR's Performance Coaching Initiative

CSR's Performance Coaching Program is the foundation for leadership development within CSR. The course is designed to:

- Provide people managers with sound principles for leadership, coaching and giving feedback
- Help managers make strong linkages between business goals and team and individual goals
- Help managers coach their team members to achieve learning and development objectives
- Build manager confidence and competence to give positive and negative feedback constructively

### High Potential Employee Development Program

For the past three years, CSR has invested money and senior management time in our high potentials program. We have built a strong pool of employees with the potential to move into more senior management roles by investing in additional training, development, coaching and on the job experiences for a targeted number of people per annum, particularly in the areas of leadership and management development.

The high potential employee development program has so far been focused at the senior and executive management levels, with the aim going forward to roll out to more junior emerging talent and those in specialised areas such as finance and IT.

CSR's high potentials program is proving to be successful. To date, 100% of the business unit employees that were identified for the program have been retained by CSR. Also, in the six months from January to July 2008, 66% of roles at the general management level that became available in CSR due to promotions, staff resignations or restructuring of the organisation, were filled internally.

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**CSR HAS BUILT A STRONG POOL OF EMPLOYEES WITH THE POTENTIAL TO MOVE INTO MORE SENIOR MANAGEMENT ROLES BY INVESTING IN ADDITIONAL TRAINING, DEVELOPMENT, COACHING AND ON THE JOB EXPERIENCES FOR A TARGETED NUMBER OF PEOPLE PER ANNUM, PARTICULARLY IN THE AREAS OF LEADERSHIP AND MANAGEMENT DEVELOPMENT.**

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# RECOGNISING OUR OBLIGATION TO THE COMMUNITIES WHERE WE OPERATE

OVER \$1m

DONATED THROUGH WORKPLACE GIVING SINCE THE PROGRAM BEGAN IN 2003

\$208,584

DONATED THROUGH WORKPLACE GIVING IN YEM08

\$30,000

OF BUILDING PRODUCTS AND INSTALLATION SERVICES TO HABITAT FOR HUMANITY

\$50,000

CONTRIBUTION TO THE QUEENSLAND PREMIER'S DISASTER RELIEF APPEAL FOR HUMANITY

CSR's policy is to act responsibly, ensuring that our people deal appropriately with the communities in which we operate, to encourage and gain their support.

Central to our charitable involvement is the CSR Workplace Giving program, under which CSR matches employee contributions dollar for dollar. During its four and a half years of operation, the program has given over \$1 million to the following 14 charities, which have been selected by our employees:

During YEM08 CSR and its employees donated a total of \$208,584 through the workplace giving program.

In addition, CSR donated over \$30,000 of building products and installation services to Habitat for Humanity, helping to build 12 homes for needy people in Australia.

We also contributed \$50,000 to the Queensland Premier's Disaster Relief Appeal for communities affected by the 2008 North Queensland floods and donated laptop computers to Youth off the Streets for their scholarship program.



**Case Study****CSR SUGAR SUPPORTS THE AUSTRALIAN SOUTH SEA ISLANDER COMMUNITY FOUNDATION SCHOLARSHIP PROGRAM**

In 2007, CSR Sugar pledged \$5000 a year for six years to help address the economic and educational disadvantage of Australian South Sea Islanders in Queensland.

Australian South Sea Islanders are the direct descendants of South Sea Islanders who were brought into Queensland between 1863 and 1904 and worked as indentured labourers in the sugar industry. The Human Rights and Equal Opportunity Commission has identified Australian South Sea Islanders as one of the most disadvantaged groups in Australia.

The Queensland Government formally recognised Australian South Sea Islanders as a distinct cultural group in September 2000. Through a Recognition Statement, the Government acknowledged the Australian South Sea Islander contribution to the development of the State and the disadvantage endured by the community as a result of a long history of unjust treatment.

Through research and community consultation, it has become evident that Australian South Sea Islanders have significantly worse educational outcomes than the general community. Access to tertiary education by community members is seen as an important strategy to alleviate poverty and provide positive role models.

As part of strategy to improve education, The Australian South Sea Islander Community Foundation was established as a trust fund by the Queensland Government in September 2001. Its first patron is Mal Meninga AM, a highly regarded member of the Australian South Sea Islander community.

The scope of the Foundation is to provide university scholarships in Queensland – at nominated universities – for Australian South Sea Islander students. Scholarships provided are \$15,000 in total over a three year period, a total of \$5,000 per annum. 20 Australian South Sea Islanders have benefited from this initiative to date and the first student graduated in 2006.

In addition to providing \$5,000 a year in scholarship funds, CSR Sugar is also providing a number of laptops to scholarship recipients.

**Case Study****CSR INCREASES CREEKWATCH EFFORTS BY GREENING UP THEIR SITE**

CSR is continuing to lead the way in caring for our creeks with staff planting 300 trees and removing harmful weeds on the Gyprock site at Coopers Plains, Queensland.

Under the banner of the recently launched CreekWATCH program, to which CSR Gyprock is a major sponsor, the business has taken it upon itself to help green up its site which lies adjacent to Stable Swamp creek.

CSR Gyprock staff at Coopers Plains will also undertake regular testing of the upstream water to ensure the CreekWATCH message of preventing pollution is getting through and to see the positive impacts their efforts will have on the water quality.

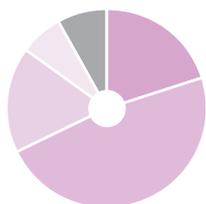
The planting provided a great opportunity to get all Coopers Plains staff supporting the CreekWATCH project and understanding the need for reporting pollution in our waterways, understanding why we need healthy creeks and streams, and how to re-create healthy creeks in industrial urban areas.

## ADDING VALUE TO THE COMMUNITY

CSR's main financial contributions to the wider community are through payments to employees, dividends to shareholders, government taxes and charges, and interest paid to lenders. During YEM08, CSR added approximately \$1 billion of value to the community. This value is in addition to the products and services we purchased from suppliers.

### Value Added to the Community

Year ended 31 March 2008



Reinvestment to maintain growth in our business	20%
Pay to employees	48%
Dividends	17%
Interest paid	7%
Government Taxes	8%



CSR HAS A LONG HISTORY OF INVOLVEMENT WITH INDUSTRY AND ADVOCACY BODIES...

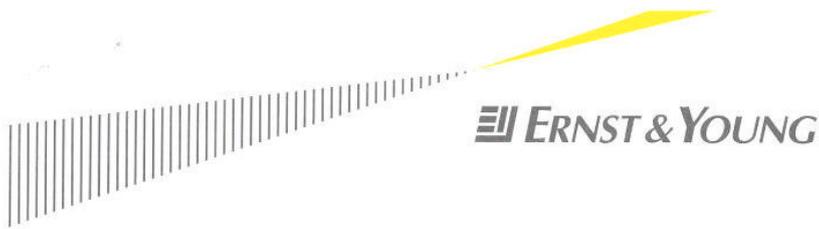
## ENGAGING WITH INDUSTRY AND OTHER STAKEHOLDERS

CSR has a long history of involvement with industry and Advocacy bodies, working with competitors, Government and Non-Government organisations to progress industries or champion certain issues, including safety and the improvement of energy efficiency of residential, commercial and industrial buildings. During YEM08, CSR was involved with the following industry and advocacy bodies:

- The Housing Industry Association (HIA)
- Think Brick
- Clean Energy Council
- Australian Industry Greenhouse Network
- Green Building Council
- Australian Sugar Milling Council
- Australian Food and Grocery Council
- Insulation Council of Australia & New Zealand
- Gypsum Board Manufacturers Association
- Australian Shipowners Association
- Australian Glass & Glazing Association
- Victorian Transport Association
- Biofuels Association of Australia
- Business Council of Australia
- Australian Industry Group

## GOVERNMENT DONATIONS

In YEM08, CSR contributed \$79,975 in direct and indirect donations to political parties in support of the democratic process. All political contributions are disclosed in accordance with our obligations to the Australian Electoral Commission.



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## Independent Limited Assurance Report in relation to CSR Limited's ('CSR') greenhouse gas emissions presented in CSR's Sustainability Report

To the Management and Directors of CSR Limited ('CSR')

### Scope

CSR's (total scope 1 and scope 2) greenhouse gas emissions for the year ending 30 June 2008 contained in its Sustainability Report have been prepared by the management of CSR. Management is responsible for the collection and presentation of greenhouse gas emissions data and for maintaining adequate records and internal controls that are designed to support the reporting process. There are currently no prescribed standards relating to the preparation, publication and verification of greenhouse gas data.

The total scope 1 and scope 2 greenhouse gas emissions data has been prepared by management on an operational control basis in accordance with the requirements of:

- ▶ World Business Council for Sustainable Development and the World Resources Institutes' *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard Revised Edition*;
- ▶ International Standard ISO14064-1: *Specification with guidance at the organizational level for quantification and reporting of greenhouse gas emissions and removals*; and
- ▶ the Department of Climate Change (DCC) *National Greenhouse and Energy Reporting (Measurement) Determination 2008* from the enacted *National Greenhouse and Energy Reporting Act 2007* and other relevant guidance.

### Our Responsibility

Our responsibility in accordance with CSR's management instructions was to carry out a limited assurance engagement in relation to total scope 1 and scope 2 greenhouse gas emissions as reported in CSR's Sustainability Report at [www.csr.com.au](http://www.csr.com.au) under the heading of 'Greenhouse Gas emissions' (identified by the symbol\*).

Our responsibility in performing our assurance activities is to the management and directors of CSR only and in accordance with the terms of reference for this engagement as agreed with them. We do not therefore accept or assume any responsibility for any other purpose or to any other person or organisation. Any reliance any such third party may place on the total greenhouse gas emissions reported is entirely at its own risk.

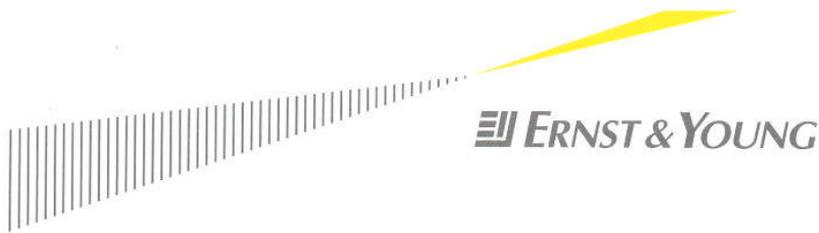
### Assurance Procedures

Our limited assurance engagement has been planned and performed in accordance with the International Standard on Assurance Engagements ISAE 3000 "Assurance Engagements other than Audits or Reviews of Historical Financial Information". Detailed procedures have been limited to sites in Australia and New Zealand only, with other locations assessed for reasonableness based on materiality.

We have conducted a limited assurance engagement in order to state whether, on the basis of the procedures conducted, anything came to our attention that would indicate that the total greenhouse gas emissions from CSR's activities, on an operational control basis, as reported on the website, are not presented fairly or calculated in accordance with the selected greenhouse gas methods determined by management. No statement is made as to whether the selected methods used are appropriate for the purposes described above.

Our assurance procedures included:

- interviewing relevant CSR personnel to understand the process for capturing, aggregating and reporting greenhouse gas emissions;



- checking the calculations performed by CSR on a sample basis through recalculation;
- identifying and testing assumptions supporting the calculations for reasonableness;
- sample testing of accuracy of recording, aggregating and transcription of key data for inputs to calculations;
- checking emissions factors used in the calculations against those reported by the DCC National Greenhouse and Energy Reporting (Measurement) Determination 2008 or against other specific emissions factor data;
- holding discussions with site personnel from a selection of sites (limited to Australia and New Zealand) to test completeness of emissions sources and to test assumptions; and
- understanding data quality controls applied by CSR, through interviews and document review.

#### Level of Assurance

Our assurance procedures have been designed to obtain a limited level of assurance over the total greenhouse gas emissions from CSR's activities, on an operational control basis, on which to base our conclusions. The assurance procedures conducted do not provide all the evidence that would be required in a reasonable assurance engagement, thus the level of assurance provided is less than that given in an audit and, accordingly we do not express an audit opinion. While we considered the effectiveness of management's internal controls when determining the nature and extent of our procedures, our limited assurance engagement was not designed to provide assurance on internal controls.

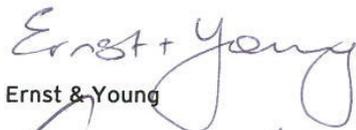
#### Independence, Competence and Experience

All professional personnel involved in this engagement have met the independence requirements of Australian professional ethical requirements. Our team has been drawn from our Climate Change and Sustainability Services practice and has the required competencies and experience to perform this engagement.

#### Our Conclusion

On the basis of our procedures for this limited assurance engagement, nothing has come to our attention that causes us to believe that CSR's total greenhouse gas emissions from its activities, on an operational control basis, as presented on the website published at [www.csr.com.au](http://www.csr.com.au) under the heading of 'Greenhouse Gas emissions' (identified by the symbol\*) for year ended 30 June 2008 are:

- a. not presented fairly in all material respects; and
- b. are not calculated in accordance with methods implemented by management.

  
Ernst & Young

  
Trent van Veen  
Partner  
Sydney  
27 November 2008

**Glossary**

**AS/NZS 4801** – Occupational health and safety management systems – specification with guidance for use

**ASX** – Australian Securities Exchange

**B&R** – Bricks and Roofing – includes CSR's building product brands – PGH bricks and pavers Monier and Wunderlich roofing, MySteel, Top Cat safety rail

**Carbon dioxide equivalent (CO<sub>2</sub>-e)** – Unit for comparing the radiative forcing of a greenhouse gas to carbon dioxide. It is calculated using the mass of a given greenhouse gas multiplied by its global warming potential

**DSE** – Victorian Department of Sustainability and Environment

**EAP** – Employee Assistance Program

**EGM** – Executive General Manager

**GAF** – Gove Aluminium Finance

**GRI** – Global Reporting Initiative – guidelines for sustainability reporting

**ISO 9000** – International Organisation for Standardisation. ISO 9000 family of standards that address quality management systems

**ISO 14001** – International Organisation for Standardisation. Standard which outlines Environment Management Systems requirements with guidance for use

**LWS** – Lightweight Systems Group – includes CSR's building product brands – Gyprock plasterboard, Cemintel Fibre Cement, Fricker Ceiling Systems and Mitex texture coating brands

**PSG** – Performance Systems Group – includes CSR's building product brands – Bradford insulation, Hebel lightweight concrete products, Edmonds ventilation systems, Viridian Glass

**SH&E** – Safety, Health and Environment

**United Nations Global Compact** – is a strategic policy initiative for businesses that are committed to aligning their operations and strategies with ten universally accepted principles in the areas of human rights, labour, environment and anti-corruption

**YEM07** – Year ending 31 March 2007

**YEM08** – Year ending 31 March 2008

**YEM09** – Year ending 31 March 2009

**Contact/Feedback Details**

We would appreciate your feedback so we can continue to improve the CSR Sustainability report. Please email your feedback to [investorrelations@csr.com.au](mailto:investorrelations@csr.com.au) or contact CSR Investor Relations on +61 2 9235 8000.

**CSR Limited**

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## FIRST PUBLIC REPORT TEMPLATE

Controlling Corporation

CSR Limited

Period to which this report relates

Start  End

### Part 1 - Summary of assessments conducted thus far

**Table 1.1 - Description of the way in which the corporation has carried out its assessments and over what period was each assessment taken. A statement saying that the intent and key requirements of the Energy Efficiency Opportunities legislation have been met must be made.**

The assessments were carried out in line with the approved Assessment and Reporting Schedule, the assessment framework and relevant regulations. The sites assessed were all sites greater than 0.5 petajoules. The period of energy use to which the assessments relate is 1<sup>st</sup> July 2007 to 30<sup>th</sup> June 2008 with the total energy use of 7,577,012 GJ of energy, or 12.5% of CSR's total energy use.

The assessment periods were:

- Building Products, Cecil Park, October 2007 – June 2008.
- Sugar, Kalamia Mill, September 2007 – March 2008. This assessment process was conducted with the Department of Resources, Energy and Tourism (previously Industry, Tourism and Resources) as part of a trial for the sugar milling industry.
- Sugar Australia, Yarraville Refinery and Mackay Racecourse Refineries. Project plans outlining how the regulations would be met were completed in consultation with the executive senior leadership and relevant site personnel in November 2007 and January 2008 respectively. An independent consultant was employed to conduct the energy assessment at both refineries. Draft assessment reports were received in May 2008, with the final energy assessment reports received from the consultants in early September, although opportunities were identified and agreed with senior management within Sugar Australia in July/August 2008.

Activities at the sites vary. Cecil Park manufactures clay bricks and pavers. Kalamia Mill manufactures raw sugar with by products of mill mud and ash, used as a soil conditioner on neighbouring farms. Yarraville and Mackay Racecourse Refineries refine raw sugar, producing food grade refined sugar.

CSR believe the intent and key requirements of the Energy Efficiency Opportunities Legislation have been met.

<b>Table 1.2 - Group member/business unit/key activity/site that have been assessed</b>	<b>Energy use per annum in the year the assessment is completed</b>	<b>Energy data accuracy (if not within ±5%)</b>	<b>Reasons for not achieving data accuracy to within ±5%</b>
Building Products – Cecil Park	548,483 GJ	±5%	
Sugar – Kalamia Mill	4,654,441 GJ*	±20%	In the Sugar Mills the accuracy of data reflects two aspects. The first is that the heating value per tonne of cane varies due to the natural variation in the cane. The second related to the percentage of fibre in the cane. It is not possible to sample every tonne of cane, therefore a representative sample is taken, which leads to a representative analysis of the % of fibre in the cane. Both of these aspects increase the error in data accuracy.
Sugar Australia – Yarraville	1,114,569 GJ	±5%	
Sugar Australia – Mackay Racecourse	1,259,519 GJ		
<b>Total</b>	7,577,012 GJ		
<b>Total as a percentage of total energy use of the group covered by this report</b>	12.5% (rounded)		

\*Includes the consumption of bagasse, a renewable fuel.

## Part 2 - Outcomes of and business response to opportunities that have been identified and evaluated for each group member, business unit, key activity or site assessed

Group member/business unit/key activity/site >0.5 PJ name: Building Products – Cecil Park

Table 1.3 Status of Opportunities	Number of Opportunities	Estimated energy savings per annum by payback period (GJ)		Total estimated energy savings per annum (GJ)	Accuracy range (%)	
		0 – < 2 years	2 – ≤ 4 years			
Outcomes of assessment	Identified (accuracy ≤ ±30%)	46	113,017	16,789	129,806	10-30%
	Identified (accuracy > ±30%)	0	0	0	0	N/A
	Total Identified	46	113,017	16,789	129,806	10-30%
Business Response	Under Investigation	13	0	6,840	6,840	10-30%
	To be Implemented*	10	108,961	6,600	115,561	10-20%
	Implementation Commenced	4	0	0	0	0
	Implemented	8	4,056	3,349	7,405	10-15%
	Not to be Implemented	11**	0	0	4,134	10-30%

\* Subject to the CSR capital expenditure approval process. In some cases initiatives have commenced implementation which were implemented for operational reasons and may have energy savings, however these savings have not yet been quantified.

\*\* Greater than 4 year payback and therefore GJ not included in overall total.

Group member/business unit/key activity/site >0.5 PJ name: Sugar – Kalamia Mill

Table 1.3 Status of Opportunities	Number of Opportunities	Estimated energy savings per annum by payback period (GJ)		Total estimated energy savings per annum (GJ)	Accuracy range (%)	
		0 – < 2 years	2 – ≤ 4 years			
Outcomes of assessment	Identified (accuracy ≤ ±30%)	4	61,000	4,304	65,304	20-30%
	Identified (accuracy > ±30%)	30	0	0	0	0
	Total Identified	34	61,000	4,304	65,304	20-30%
Business Response	Under Investigation	3	61,000	2,984	63,984	±30
	To be Implemented*	0	0	0	0	0
	Implementation Commenced	0	0	0	0	0
	Implemented	1	0	1,320 (5 year payback)	1,320	20%
	Not to be Implemented**	30	0	0	0	0

\*Subject to the CSR capital expenditure process.

\*\* Opportunities to be further developed.

## Part 2 - Outcomes of and business response to opportunities that have been identified and evaluated for each group member, business unit, key activity or site assessed

Group member/business unit/key activity/site >0.5 PJ name: Sugar Australia – Yarraville Sugar Refinery

Table 1.3 Status of Opportunities	Number of Opportunities	Estimated energy savings per annum by payback period (GJ)		Total estimated energy savings per annum (GJ)	Accuracy range (%)	
		0 – < 2 years	2 – ≤ 4 years			
Outcomes of assessment	Identified (accuracy ≤ ±30%)	67	39,063	46,843	85,906	0-30%
	Identified (accuracy > ±30%)	21	0	0	0	>30%
	Total Identified	88	39,063	46,843	85,906	0-30%
Business Response	Under Investigation	48	30	23,980	24,010	<30%
	To be Implemented*	21	1,761	927	2,688	<30%
	Implementation Commenced	5	23,872	0	23,872	<30%
	Implemented	1	0	933	933	<30%
	Not to be Implemented**	13	13,400	21,003	34,403	<30%

\*Subject to the CSR capital expenditure process.

\*\*Opportunities are not implemented for a number of reasons including, payback is greater than 4 years; product quality and process issues would need to be first addressed; and the opportunities identified may have already been addressed through other projects.

## Part 2 - Outcomes of and business response to opportunities that have been identified and evaluated for each group member, business unit, key activity or site assessed

Group member/business unit/key activity/site >0.5 PJ name: Sugar Australia – Mackay Sugar Refinery

Table 1.3 Status of Opportunities	Number of Opportunities	Estimated energy savings per annum by payback period (GJ)		Total estimated energy savings per annum (GJ)	Accuracy range (%)	
		0 – < 2 years	2 – ≤ 4 years			
Outcomes of assessment	Identified (accuracy ≤ ±30%)	34	69,107	4,646	73,753	0-30%
	Identified (accuracy > ±30%)	30	0	151,062	151,062	>30%
	Total Identified	64	69,107	155,708	224,814	0 - >30%
Business Response	Under Investigation	37	396	155,632	156,028	<30%
	To be Implemented*	22	47,795	76	47,871	<30%
	Implementation Commenced	1	20,172	0	20,172	<30%
	Implemented	0	0	0	0	<30%
	Not to be Implemented**	4	744	0	744	<30%

\* Subject to the CSR capital expenditure process.

\*\* Opportunities are not to be implemented as the payback is greater than 4 years or opportunities cannot be implemented due to operational licensing requirements.

## Details of at least three significant opportunities found through EEO assessments

Details must include a brief description of the opportunity and may optionally include details of the costs of implementation, energy/dollar savings and any other benefits (such as greenhouse reductions).

**Table 1.4**

### Opportunity 1

**Kalamia Sugar Mill:** The significant opportunity identified involves the change in operation of the batch crystallization pans. Batch pans are large vessels (containing up to 220 tonnes of product) in which the sugar crystals grow in solution. Steam is used to boil off the water, leaving behind the sugar crystals in a thick sugar syrup. These vessels use a large proportion of the available factory steam supply. This project looks at evening out the start and stop sequencing of the vessels. This in turn will mean a more even steam use by the collective pans. When more than one of these large pans stops using steam simultaneously, steam may be vented to control the pressure in the steam supply. Evening out the steam flow to the pans, will potentially reduce the steam that is vented to atmosphere. As a result, less bagasse will be consumed at Kalamia Mill. The excess will be transferred to Pioneer Mill for the generation of an increased amount of the renewable electricity. If the change in timing mentioned above is possible, savings of up to 61,000 GJ per year of steam may be achieved. Trials are to be undertaken to determine if this rescheduling can be accommodated in a sustainable manner.

### Opportunity 2

**Mackay Sugar Refinery:** A significant opportunity was identified in optimizing the use of the crystallisation pans. Sugar boiling is the highest energy use process in the refinery. Boiling the sugar is necessary to remove water thereby achieving the optimal sugar concentration in the pans for crystallization. Efficient pan operation depends on a number of factors including density of feed supply; available steam; maximum heat transfer; and particular operator skill. This project requires staff training and the improvement of standard operating procedures and control systems. If successful it may save some 20,172 GJ of energy per annum.

### Opportunity 3

**Cecil Park Brick Factory:** A significant opportunity was identified to preheat the combustion air that is supplied to the burners within the kiln, with waste heat drawn from the kiln. This is essentially a waste heat recovery process. By preheating the combustion air, the waste heat from the kiln will be utilized, instead of going to atmosphere, and the gas consumption will be reduced as the burner air is hotter. If successful, an estimated saving of 9,900 GJ of energy per annum may be achieved.

Note: All opportunities identified are subject to the CSR capital expenditure approval process.

### Part 3 - Voluntary Contextual Information

Reporting corporations may supply additional information that provides more context to the public report. Such information may include:

CSR has reported additional information in its Sustainability report which is available at [www.csr.com.au](http://www.csr.com.au)

### Part 4 - Declaration

(See paragraph 8 of Schedule 4 of the Regulations and paragraph 22(4)(c) of the Act)

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



Managing Director