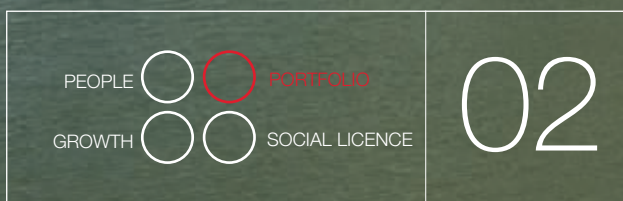


## our portfolio



Our business strength is our diverse portfolio of operating plant, spread across four locations. Using a mix of coal, natural gas, coal seam methane and landfill gas, we have 18 generating units supplying electricity making us competitive and flexible.

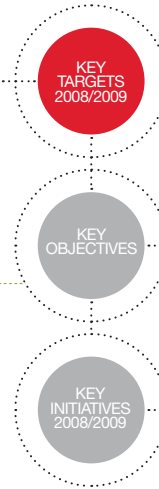


# 02

## portfolio

### Portfolio Performance

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|---|
| 1. Plant availability and financial targets met |
| 2. Zero reportable environmental incidents      |
| 3. Implement carbon strategy                    |



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| 1. Maintain market-driven plant performance      |
| 2. Continually improve environmental performance |
| 3. Meet the carbon challenge                     |



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|--|
| Implement Value + initiative   |
| Develop consistent engineering and operations systems across portfolio |
| Whole-of-life asset planning and optimisation                          |
| Progress Callide B mid-life refit project                              |
| Develop carbon trading capability                                      |

#### Progress 2007/2008

Opened the \$1.2 billion, 750 megawatt Kogan Creek A Power Station.

Spent more than \$47 million on overhauls across the portfolio.

Started using recycled water at Swanbank Power Station.

Conducted the first stage of a mid-life refurbishment of Callide B Power Station.

Achieved one year without a lost time injury at Mica Creek Power Station.

Our portfolio recorded a reliability of 91.8 per cent and sent out 15,426 gigawatt hours in 2007/2008. Our reliability has decreased 3.7 per cent from last year due to ongoing technical issues with both Callide C boilers, water restrictions at Swanbank B and the early replacement of some gas turbine blades at Swanbank E.

The introduction of the new supercritical, dry-cooled Kogan Creek A Power Station in December 2007 boosted our capacity by a further 750 megawatts and improved our ability to provide electricity to Queensland during the peak summer demand period.

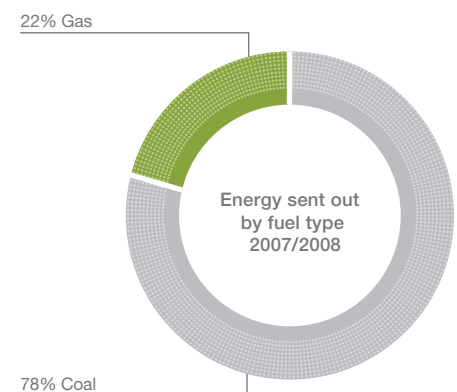
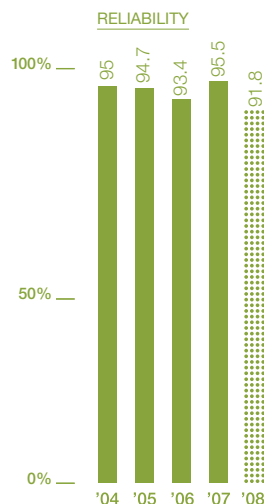
Although water restrictions affected Swanbank Power Station's operation, the diversity of CS Energy plant enabled our Market Operations team to take advantage of stronger spot and contract prices during the drought affected period.

The Portfolio Services team coordinates the long-term asset management of CS Energy's portfolio. Based in Brisbane,

the team has expertise in engineering, environment, chemistry and asset and overhaul management and works in partnership with technical staff at sites. This year the team continued the rollout of a new overhaul process, to achieve consistency and efficiency across sites, and coordinated the first stages of refurbishment at Callide B.

In line with our business strategy, we initiated a new project this year, Value +. Established to examine cost efficiencies, methodologies and processes across the portfolio, Value + will help secure our future by maximizing value across the portfolio to maintain our competitiveness.

The Value + project team will work closely with teams across the whole business to develop a clear perspective on how we currently do business and what improvements can be made. This year we started reviewing our business processes, and in the coming year we plan to identify and scope the key projects arising from this review.



## Kogan Creek Power Station



On 27 November 2007 the new \$1.2 billion Kogan Creek A Power Station and mine was officially opened by the Queensland Premier, the Honourable Anna Bligh MP and the Minister for Mines and Energy, the Honourable Geoff Wilson MP. The station achieved commercial handover on 7 December 2007.

The 750 megawatt baseload power station sets a new benchmark for environmental performance and innovative design among coal-fired plants in Australia. Kogan Creek is dry-cooled, which means it uses one-tenth of the water of a similar wet-cooled power station. The station's single boiler, turbine and generator unit is the largest in Australia, and took just over three years to construct.

We set up a transitional team to support our Kogan Creek staff through their busy start-up period and to share operational knowledge and skills. The team comprises ten employees relocated from Swanbank and Callide power stations.

Since commissioning, Kogan Creek has achieved a reliability of 87.6 per cent, which is slightly better than we expected for the station's first year of operation. Exceptionally heavy rainfall in early February 2008 temporarily shut down operations at the mine, as the wet conditions made it too dangerous to operate trucks in the mine pit. The mine and power station were offline for one day as a result. While the main plant was taken over in December 2007, operation and maintenance of the coal and ash plant remained the responsibility of construction contractor, Siemens Hitachi. Handover of these activities will occur once rectification of outstanding defects has been satisfactorily completed in early 2008/2009.

The Kogan Creek mine increased production in 2007/2008 to meet the power station's coal demand during commissioning and operation. Black coal from three mine seams is blended and supplied to the station at an average rate of 8,000 tonnes of black coal a day across a four-kilometre conveyor. In the seven months of operation to 30 June 2008, the mine produced 2.1 million tonnes of coal, and removed 4.7 million cubic metres of overburden. At this rate of production, we estimate the open-cut Kogan Creek mine has about 100 years of coal reserves.

Rehabilitation of our mine operations is a priority and, this year, we started earthworks on a section of the overburden dump, in preparation for planting with native trees and grasses.

### Looking forward 2008/2009

Hand over coal handling system in early 2008/2009.

Prepare for the first 8,000 hours overhaul in October 2008.

Start mine rehabilitation program, planting native trees and grasses.

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## Callide Power Station

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Callide B celebrated the 20th anniversary of operation in October 2007, and, around the same time, started a mid-life refit strategy to extend its operational life until at least 2028. This \$200 million, five-year overhaul program started with a major overhaul of Unit 1 in October 2007, which saw an extra 300 contractors on site.

Callide B recorded 89.6 per cent reliability for 2007/2008, reflecting its age and the need for the mid-life works. A two month outage of Unit 2 has been moved to early calendar 2009, to facilitate a dual outage to overhaul shared plant such as the cooling tower.

Callide C recorded a reliability of 81.9 per cent, with unresolved technical issues with the boilers continuing to be a major challenge for our team.

Since commissioning in 2001, Callide C's boiler manufacturer, IHI, has maintained responsibility for some boiler issues. This year, negotiations between IHI and the CS Energy InterGen Joint Venture were completed, with the responsibility of the boilers handed back to CS Energy, as asset manager. A strategy to improve the reliability of the Callide C boilers is being developed, and will be progressively implemented during 2008/2009.

We have engaged an external facilities management contractor at Callide for areas such as cleaning, airconditioning, fire protection, grounds maintenance and security. This means that the Callide team can concentrate on its core business.

The process will be further evaluated and a similar model is planned for other sites.

To help us improve our understanding of the composition of coal going into the boiler, and improve plant performance, we installed a new coal analyser at Callide. This analyser is the first of its type in Australia, and it will be fully commissioned by July 2008. We are also starting to see results from the first stage of the dense phase ashing system, designed to improve water efficiency and extend the ash storage capacity of the station until the end of its operational life.

Water continues to be a challenge for the region and we are investigating retrofitting dry-cooling technology at Callide, with a proposal to be submitted to the Gladstone Area Water Board in 2008/2009. The Callide Dam, which supplies the township of Biloela with drinking water, has received little rain this year. However, the Awoonga Dam rose to 58 per cent, up 20 per cent on the previous year. Awoonga Dam is the power station's main water supply, with the water piped to the Callide Dam for use by the station and the town. This increase represents about three years of water for the station and the town.

In early 2008, Callide's Site Manager left to take up the position of General Manager Operations in the Brisbane Corporate Office, and the recruitment of a new site manager was finalised in August 2008.

### Looking forward 2008/2009

Conduct dual overhaul as part of the Callide B mid-life refit program.

Recruit a new site manager.

Develop an operations and maintenance agreement between Callide Power Station and the Callide Oxyfuel Project Joint Venture Partners.

## Mica Creek Power Station



Mica Creek Power Station recorded a system reliability figure of 99.67 per cent and continues to perform strongly for the CS Energy portfolio. The station continued its excellent safety performance, recording one year without a lost time injury (LTI) in March 2008. The injury in March 2007 ended a record four year injury-free period, but the station boasts just one LTI in five years.

A bushfire caused a fault in Xstrata's high voltage transmission line in November 2007, resulting in six units tripping at Mica Creek and loadshedding and loss of supply to customers. It took crews two days to restore full generation at the station. Since then, we have worked with the parties involved in power distribution in the Mount Isa region to establish the North West Off-takers Working Committee, with the aim of improving system protection and reviewing the equity of load shedding protocols for system emergencies.

Significant performance gains have been achieved from the combined cycle C station, following a major overhaul and upgrade in April and May 2008. The unit has performed well since its return to service with a capacity gain of about seven megawatts.

A major overhaul on Unit A3 was also successfully completed, and other plant improvements during the year included the addition of a large raw water tank and the upgrade of facilities in the chemistry laboratory.

We have identified some structural concrete degradation in A station, and have engaged an engineering consultant to test and analyse concrete samples. We received their final report in July 2008, which provided repair strategies and actions.

A proposal from IsaLink to connect north west Queensland to the national grid gained media attention in January 2008. While CS Energy was not involved in this proposal, we welcome any project that increases the energy options available in remote north west Queensland. We are continuing to progress potential expansion plans for the Mica Creek Power Station. For more information on the Mica Creek Renewal Project, see page 46 of this report.

The media also reported elevated lead levels in residents around Mount Isa. Although this is not linked to our operations, we offered free testing for our staff and several individuals took up this offer.

### Looking forward 2008/2009

Finalise investigation of A station concrete issues.

Introduce a comprehensive training program for operations and maintenance personnel.

Focus on succession planning and attraction and retention strategies.

## Swanbank Power Station



In 2007/2008, Swanbank operated consistently and reliably, despite continued water restrictions imposed in the face of drought conditions. In September 2007, the station took delivery of recycled water from the Queensland Government's Western Corridor Recycled Water Project, which meant the station stopped taking water from the Wivenhoe Dam, alleviating pressure on the region's main water supply.

Since September 2007, 70 per cent of the raw water used at the station has been recycled water, with the remainder taken from stormwater runoff from the Warrill Scheme. The station currently receives 22 megalitres of recycled water a day.

As a major user of Ipswich town water, the station submitted a Water Efficiency Management Plan to Ipswich Water last year, and reduced its overall town water consumption by 45 per cent. In 2007/2008, the site continued to meet this commitment, maintaining reductions well below the 25 per cent target required under Level 6 Water Restrictions.

During 2007/2008, the Environment Protection Agency finalised amendments to Swanbank's development approvals to support operation under drought conditions and on recycled water.

The delivery of recycled water and a focus on preventative maintenance saw Swanbank B achieve 94.7 per cent reliability for the year. This figure was well above budget, and the station has recorded reliability figures above 95 per cent for the past five years, which is commendable given the age of the plant. Maintenance of the station is targeted at running Swanbank B units until at least 2011.

Swanbank E recorded 92.7 per cent reliability for the year, down slightly against the budget of 96 per cent due to the early replacement of selected gas turbine blades in August 2007.

The storage of ash from the coal-fired B station continues to be a challenge. This year, the Swanbank ash dam ash Management Plan was revised after upgrading of the spillway, as part of an ongoing storage capacity assessment and review with the EPA. We also submitted a certified engineering design plan to the EPA for approval to construct low-height internal bunds in the Swanbank ash dam, to further increase storage capacity. In response, the EPA has requested a third party review of the proposed design, which is under way.

The successful demolition of the old coal-fired Swanbank A has made the site available for a new, highly-efficient gas-fired Swanbank F station, if it proves feasible. The project team started community engagement for the project, which will be built on the old Swanbank A site. For more information on the Swanbank F Power Project, please see page 46 of this report.

### Looking forward 2008/2009

Prepare for major overhaul of Swanbank E gas turbine to check internal hot gas path components.

Evaluate the impact of increased water and carbon costs on Swanbank B.

Progress plans for the new gas-fired Swanbank F Power Project.



## Recycled water to Swanbank

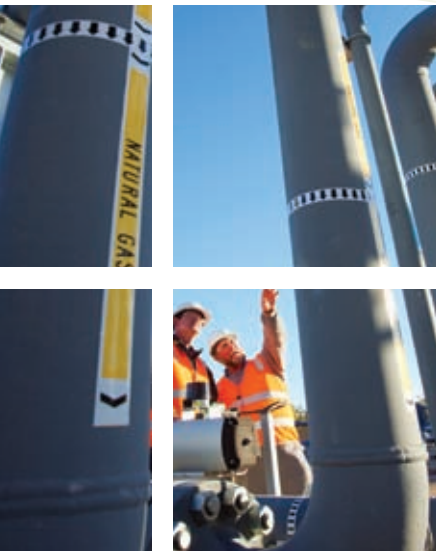
### Using recycled water to conserve drinking supplies

“Swanbank started taking recycled water from the Western Corridor Recycled Water Pipeline in August 2007. Since then, we’ve used almost 5,000 megalitres of recycled water in our operations, instead of taking this water from the Wivenhoe Dam.

The Western Corridor Recycled Water Scheme is the first of its kind in Australia, and Swanbank was the first power station to start operating on recycled water. Getting ready for this project gave us technical challenges, but we’ve now secured a reliable source of water for the station’s future.”

DARREN KENDRICK – SWANBANK POWER STATION

## Resources



Our power stations are fuelled by black coal, natural gas, coal seam methane (CSM) and landfill gas.

In the last ten years, we have increased the proportion of gas-fired generation in our portfolio and invested in the latest technology for both coal and gas-fired plant.

Water is also an essential resource for generating electricity, and we use recycled water, raw water and town water in our operations. Each site has water management strategies to maximise the efficient use of this precious resource.

A by-product of coal-fired generation is fly ash, which can be recycled for use in concrete manufacturing, soil enhancement or as fill.

### Coal

We have a coal supply agreement for each of our three coal-fired power stations, and are currently investing in low-emission coal technology. For more information on our clean coal demonstration project, the Callide Oxyfuel Project, please see page 44 of this report and the CS Energy website [🔗](#).

At Swanbank, coal is supplied under a supply agreement with New Hope Coal Australia.

The black coal is transported by either truck or rail from New Hope's mines at Acland, on the Darling Downs, and Oakleigh and Jeebropilly in the Amberley/Rosewood region near Ipswich. Callide is supplied by conveyor belt from the adjacent Callide coalfields under a contract with a subsidiary of Anglo Coal Australia. We own the coal mine that supplies our newest station at Kogan Creek, and the coal is transported from the mine to the power station via a four-kilometre conveyor belt.

### Fly ash

Fly ash is a by-product of coal combustion, comprising primarily alumina and silica in a fine powder. It can be used as a cement replacement in concrete, as a soil improver, an adsorbent for oil waste removal, or as fill in large civil engineering projects such as highway embankments. We are a member of the Ash Development Association of Australia, which promotes the beneficial use of power station fly ash.

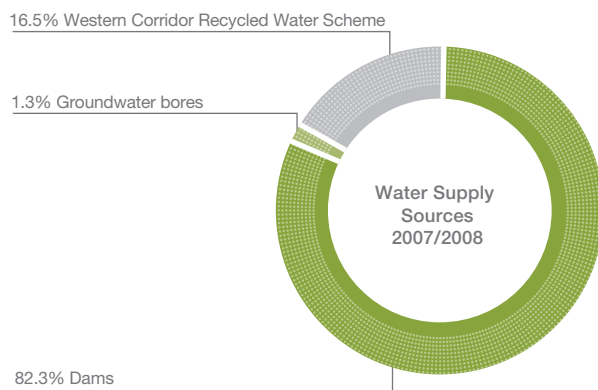
This year we continued to work with a number of major cement companies on recycling fly ash, and we recycled approximately 82,000 tonnes of fly ash from Callide and 27,000 tonnes from Swanbank. We currently supply ash to Cement Australia, Global Cement, Renewed Resources and Transpacific.

### Gas

CS Energy's gas portfolio underpins our business objective of lowering our carbon intensity through fuel diversity. We have gas purchase agreements at Mica Creek and Swanbank E power stations, but our long-term growth depends on securing additional gas for the future.

Mica Creek Power Station is fuelled by gas from Santos' south west Queensland fields, via the Carpentaria Pipeline. In south east Queensland, we source gas for Swanbank E from Santos' Scotia CSM field, Queensland Gas Company's Berwyndale South CSM field, Mosaic's conventional gas field near Wallumbilla, and the CS Energy/Arrow Energy CSM joint venture at Kogan North.

Our strategy of combining long-term gas agreements with investment positions in CSM development fields will provide a diverse mix of supply.



In 2007/2008 we advanced a number of our gas options, including:

- CS Energy/Metgasco Joint Venture at the Casino CSM field, NSW
- CS Energy/Arrow Energy Joint Venture at the Kogan North CSM field, near Chinchilla
- CS Energy/Mosaic Oil Buyer-Funded Operations in the Surat-Bowen Basin
- Queensland Gas Company's Berwyndale CSM field
- Santos' Scotia CSM field near Roma.

For more information on our gas developments, see page 47 of this report and the CS Energy website [www.csenergy.com.au](#).

**Water**

Efficient water use is a high priority for our sites. Each site has water management strategies in place to maximise its water conservation and this has resulted in improved water usage at all sites except Callide, which recorded an increase of just two per cent.

Across the portfolio this year, our water consumption was 25,324 megalitres, an 8.9 per cent decrease on the previous

year. We also measure our water use intensity, which shows how many megalitres of water we use per gigawatt hour of energy sent out (ML/GWhso). This year we recorded a water use intensity of 1.64 ML/GWhso, a 17.3 per cent decrease from 2006/2007.

Water for the Callide Power Station is supplied predominantly from the Gladstone Area Water Board's Awoonga Dam, and is piped to the Callide Dam to minimise evaporation. We also have an allocation from the Callide Dam, which provides the Banana Shire with drinking water, and we are currently investigating opportunities to dry-cool Callide to help reduce the pressure on water supplies in the region.

This year Swanbank Power Station started taking water from the Western Corridor Recycled Water Project. We also have an allocation from SunWater's Warrill Scheme, a supplementary water supply based on Moogerah Dam, and SEQWater's Wivenhoe Dam for the station. These arrangements will be replaced in July 2008 by a single arrangement with the South East Queensland Water Grid, an organisation

established during 2007/2008 to control and operate all water supplies in south east Queensland.

Kogan Creek has a dry-cooling system and our water consumption is minimal at this station. The water it does use is supplied from local bores.

Mica Creek receives water from the Leichardt supply system and Rifle Creek Dam. The station cycles its cooling water up to 12 times through the power station, and provides its effluent water for reuse by Xstrata mining operations. This year, the station supplied 381.5 megalitres of water to the mine.