

Portfolio performance

PROGRESS 2009/2010

- Closed two Swanbank B Power Station generation units at the end of their economic life following detailed economic analysis.
- Progressed plans for the Mica Creek Power Station upgrade with load forecasts received from customers and gas supply and generation plant tenders issued.
- Completed refurbishment of Unit B2 and overhaul of Unit C3 at Callide Power Station.
- Successfully completed a minor overhaul and chemical clean at Kogan Creek A Power Station.

LOOKING FORWARD 2010/2011

- Continue the progressive closure of Swanbank B Power Station and transition to a new site structure.
- Complete overhauls at Callide Power Station and Mica Creek Power Station.
- Continue the implementation of asset and overhaul management projects.

CS Energy has a diverse portfolio, across four locations, using natural gas, black coal, coal seam methane and landfill gas to generate power. The Company has 10 generating units which supply electricity to the National Electricity Market, and a further 10 generating units supplying energy to the North West Minerals Province, which is not connected to the national electricity grid.

In 2009/2010 CS Energy power stations recorded a reliability of 94.6 per cent, compared to 90.8 per cent in 2008/2009, and sent out 17,046 gigawatts of electricity from its portfolio.

In response to the challenging market conditions due to increased competition in the market, CS Energy concentrated its focus on four core performance-driven projects across its portfolio – safety, cost management, asset management and overhaul management. Further information on safety and cost management can be found on pages 25 and 12 respectively.

The Company's business strategy and planning targeted the following key improvements:

- An unplanned outage factor below four per cent in the medium term and two per cent in the longer term;
- A 20 per cent reduction in the time and cost of overhauls; and
- A reduction in the unit cost of production.

The asset management and overhaul management programs lead the Company towards these targets.



Inspection of the Mica Creek Power Station Unit A6 turbine during this year's planned overhaul

Portfolio performance snapshot

Plant	Fuel source	Unit design capacity (MW)	Energy sent out (GWh)	Reliability (%)
Callide A ¹	Coal-fired	120	-	-
Callide B	Coal-fired	700	4,374	96.8
Callide C ²	Coal-fired	900	2,738	93.1
Kogan Creek	Coal-fired	750	4,324	96.0
Mica Creek	Gas-fired	325	1,553	97.5
Swanbank B ³	Coal-fired	480	1,689	90.3
Swanbank E	Gas-fired	385	2,011	95.5

1. Two Callide A Power Station generating units are in storage for future use, and two generating units are in use for the Callide Oxyfuel Project.
2. Callide C Power Station is owned in a 50 per cent joint venture with InterGen.
3. Two Swanbank B Power Station units were placed into storage in June 2009/2010 bringing operating capacity to 240MW.

Portfolio performance (continued)

Asset management

Building on the Company's existing maintenance program, the three year asset management project aims to improve the availability and reliability of CS Energy's portfolio and reduce maintenance costs. In 2009/2010, the first year of the project, the Company worked on the foundations for best practice asset management, including Company-wide engineering and maintenance standards, improvements in data integrity and risk control and reduction. Key outcomes of this project centre on:

- Whole-of-life Asset Plans;
- Optimised preventative maintenance routines;
- Specific plant area and equipment strategies;
- Leading practice engineering and maintenance standards; and
- Up-skilled plant maintenance capability.

This year, CS Energy developed enhanced maintenance system master data standards, an asset management policy, drawing management standards, strategy development procedures, and lubrication standards. The Company also assigned equipment criticality, performed master data mapping and cleansing, and entered statutory and overhaul routines in its maintenance system.

Cost savings were not targeted in the first year of the project's implementation. However, the Company has a target of \$11.2 million in cost savings and a five per cent increase in portfolio reliability by 2012/2013.

Overhaul management

The In Full on Time to A1 (IFOT-A1) specification process is the cornerstone of the overhaul management project.

CS Energy's adoption of the process draws on the experience of the petrochemical industry, to improve overhaul scoping, costs and duration, and reduce safety and environmental incidents. This process has been adapted to CS Energy's business processes to deliver tangible outcomes in overhaul management.

In 2009/2010, the Company applied an accelerated version of IFOT-A1 to overhauls planned for delivery within the next two years. A full IFOT-A1 process will be rolled out at the completion of this initial phase.

CS Energy expects to save \$5.5 million and there is a potential of an extra \$0.5 million of income each year through the overhaul management project from January 2011.

Callide Power Station

Callide Power Station comprises three power stations – Callide A, B and C (Callide Power Plant). The 700 megawatt Callide B Power Station was commissioned in 1988 and the 900 megawatt Callide C Power Station is owned in a 50 per cent joint venture with InterGen. Black coal for Callide Power Station is conveyed from the adjacent Callide Coalfields, owned by Anglo Coal.

Callide B Power Station and Callide C Power Station both recorded significantly improved reliability in 2009/2010. Callide B Power Station sent out 4,374 gigawatt hours of electricity and recorded 96.8 per cent reliability for 2009/2010. Callide C Power Station recorded a reliability of 93.1 per cent, sending out 2,738 gigawatt hours of electricity (CS Energy's share of power generated under the joint venture).

The Callide A Power Station is the site of a world leading clean coal project, the Callide Oxyfuel Project, which progressed to the construction stage in 2009/2010.

Construction commenced in March 2010 on the retrofitting of oxyfuel technology to the Callide A Power Station. When commissioned, the station will demonstrate near-zero emission electricity generation from coal using oxyfuel combustion and geosequestration. CS Energy is providing the operations and maintenance support for the \$200 million Callide Oxyfuel Project through the Callide Power Station. More information about the project can be found on page 40.

In 2009/2010, the \$160 million mid-life refit of Callide B Power Station continued. The five year upgrade program commenced in October 2007, and key components of the program were completed in June 2009. Planning is well underway on the final works associated with the project which are due to commence in April 2011 and will include a significant overhaul of the Unit B1 turbine, generator and economiser, as well as upgrades to the control systems.

A major overhaul of Unit C3 of the Callide C Power Station was carried out in September 2009, and included refurbishment of the furnace. During the overhaul, work was also performed on the turbines, generator and pressure parts. The unit came back online in November 2009 after a very thorough and extensive service.

The dense phase ash system at Callide B Power Station won the Environmental Project of the Year at the Australian Bulk Handling Awards in late 2009. Callide B Power Station previously used a lean phase system, where ash was transported in a watery mix to the ash dam. The commissioning of Callide C Power Station in 2001 doubled the site's ash production rate and prompted the decision in 2004 to convert Callide B Power Station to a dense phase system that could make more efficient use of available dam space.

In March 2010, the Company identified dust management and potential seepage from the ash dam. Immediate action was taken to manage the issues and a long term remediation plan is in place. For more information on dust release and seepage from the ash dam, see page 49.

Water continued to be an issue in the Central Queensland region until significant rainfall in February 2010. Prior to this, the Callide Dam level was reliant on pumping water from Awoonga Dam in Gladstone. The Callide Dam was at 22 per cent capacity on 30 June 2010. In April 2010, approximately 8,000 megalitres was released into the aquifer system to replenish ground water stocks. Callide Power Station continues to work on strategies for minimising water use and liaises regularly with local government on water management issues. For more information on water use, see page 49.



LOOKING FORWARD 2010/2011

- Undertake major work on Unit B1 to complete the five year mid-life refit program.
- Complete construction on the Callide Oxyfuel Project by December 2010.
- Commence a five year review of the Operations and Maintenance Agreement with Callide Power Management for the operation of Callide Power Plant (Callide C Station).

Kogan Creek Power Station



LOOKING FORWARD 2010/2011

- Prepare for first major overhaul towards the end of 2010/2011.
- Negotiate a new Enterprise Bargaining Agreement by October 2010.
- Complete coal plant modifications by February 2011 to improve coal handling.

Commissioned in 2007, the base load, coal-fired Kogan Creek A Power Station generates up to 750 megawatts from a single boiler, turbine and generator. It is the largest single-unit generating plant in Australia and sets the Australian benchmark for environmental performance and design innovation. The station is dry-cooled, which means it uses one-tenth of the water of a similar wet-cooled power station.

The Kogan Creek A Power Station sent out 4,324 gigawatt hours of electricity and recorded 96 per cent reliability for 2009/2010. In July 2009, work started on a major project to construct a new ash cell at the Kogan Creek Mine, and a pipeline to take ash from the power station to the mine. The ash storage cell is designed to receive ash for the next six years for permanent storage. CS Energy will line the ash cell and start storing ash in the coming year.

The Kogan Creek A Power Station was taken offline for planned maintenance from 29 August to 13 September 2009, deferring the first major overhaul of the station to mid 2011. The planned maintenance was for warranty work, pressure parts statutory tests, and a chemical clean of the boiler. On the power station's return to service, there was an operational incident which resulted in the loss of a Kogan Creek A Power Station unit transformer.

The station was offline until 5 October 2009, and operating at a reduced capacity of 500 megawatts between October 2009 and January 2010 when the damaged transformer was replaced and the power station was returned to its full operating capacity.

Kogan Creek A Power Station's coal is supplied via an overland conveyor from the adjacent Kogan Creek Mine, which is operated by Golding Contractors on behalf of CS Energy and employs 60 people. In 2009/2010, the mine supplied 2.3 million tonnes of high quality, low-sulphur black coal to the power station. The amount of coal delivered to the power station was lower than last year due to scheduled maintenance and the unplanned outage at the power station. Enhancements to coal mining and the blending process were undertaken during the year, and resulted in improvements in station performance due to reduced variability in coal quality.

An Emergency Response Team was formed in 2010 to enhance the station's response to emergency situations and proactively promote safety at the site.

Mica Creek Power Station

Mica Creek Power Station has been providing power to North West Queensland for 50 years. The region's resource-rich landscape has seen Mount Isa's economy grow with industry expansion doubling the region's power demand over the past decade. Mica Creek Power Station is fuelled by gas from Santos' South West Queensland fields, via the Carpentaria Pipeline.

The Mica Creek Power Station sent out 1,553 gigawatt hours of electricity to meet customer demands in the North West Minerals Province. In 2009/2010, the Mica Creek Power Station recorded a reliability of 97.5 per cent, slightly down from previous years largely due to Unit A3 being offline. In the 10 months prior to the unit being removed from service at the end of April, the power station had recorded a reliability of 99.1 per cent.

CS Energy is well advanced in its investigations for an upgrade of Mica Creek Power Station, which would extend the life of the station and increase its operational efficiency. For further information on the upgrade of Mica Creek Power Station, see page 42.

During the year, the power station underwent three major overhauls. The Unit A6 overhaul was completed one week ahead of schedule at the end of July 2009 and the Unit A7 overhaul was completed in mid May 2010. Work on Unit B1 was completed in the middle of October 2009 to ensure quick-start and peaking capacity was available for the summer season.

Other significant capital projects completed included the replacement of the 20 year old cement pipeline which transports wastewater to Xstrata for reuse. The new, buried poly line pipeline allows the station to provide up to one million litres of water each day for Xstrata to reuse for its on-site operations.

Additionally, the 50-year-old gantry crane was replaced at Mica Creek A Power Station. The project to install the new 60 tonne crane was completed in May 2010.

Unit A3 was removed from service on 28 April 2010 after the unit tripped as a result of a generator earth fault. The estimated repair timeframe was 34 weeks. As an expedient option, CS Energy has elected to reinforce Mica Creek Power Station's plant by investing approximately \$30 million in new relocatable generation plant. Three new relocatable gas turbine units have been purchased to replace the capacity of Unit A3. Two 5.7 megawatt relocatable units will be in place by October 2010. A further 15 megawatt unit is expected to be in place by June 2011, together with a new 220 kilovolt transformer.

Mica Creek Power Station employees responded rapidly and professionally to three system unplanned outages during 2009/2010. On 23 November 2009, protection systems operated as designed to isolate four of the power station's units from the grid following a fault on the distribution network. On 29 November 2009, a fault caused by a combination of events on the power system supplying the Mount Isa region resulted in an interruption to electricity supply. An interruption to the gas supplied to the power station via the Carpentaria Gas Pipeline on 12 March 2010 also resulted in a partial loss of supply to the region. On each occasion, Mica Creek Power Station employees responded to restore the power supply as quickly and safely as possible.



LOOKING FORWARD 2010/2011

- Progress planning and investigations into an upgrade to Mica Creek Power Station, and present an offer to customers in September 2010 for future power supply to the North West Minerals Province.
- Install new relocatable generation plant to reinforce generating capacity to meet local demand over the peak summer season, and investigate its potential as an option for the future connection of new load, including remote mines.
- Conduct major overhauls on Units A2, A5, A6, C1 and C2.

Swanbank Power Station



LOOKING FORWARD 2010/2011

- Close the third Swanbank B Power Station Unit in April 2011.
- Progress the transition to a new Swanbank E Power Station workforce structure and the successful redeployment of Swanbank B Power Station employees.
- Continue to monitor market conditions and evaluate CS Energy's long term plans to build another gas-fired power station, Swanbank F Power Station, at the site.

Swanbank B Power Station has been generating electricity since 1971 and comprises four 120 megawatt units. Fuel is supplied to the power station by a combination of truck and rail from the New Hope Corporation Limited's Acland open cut mine on the Darling Downs. Swanbank B Power Station sent out 1,689 gigawatt hours of electricity and recorded 90.3 per cent reliability for 2009/2010.

The 385 megawatt Swanbank E Power Station, commissioned in 2002, is one of Australia's most efficient gas-fired power stations, and produces 50 per cent fewer greenhouse emissions than the average coal-fired plant. Gas for Swanbank E Power Station is sourced from Santos' Scotia coal seam methane (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.

The Swanbank E Power Station produced 2,011 gigawatt hours of electricity and recorded 95.5 per cent reliability for 2009/2010.

A major overhaul of Swanbank E Power Station was completed in July 2009 ahead of schedule and budget.

In March 2010, following an extensive review, CS Energy announced the progressive closure of the Swanbank B Power Station, between 2010 and 2012. The Company concluded that the power station had reached the end of its operational life, and it was not economically viable to extend the plant's life. Units B4 and B2 were placed in storage in June 2010. Unit B1 is scheduled to close in April 2011 and Unit B3 in April 2012. Queensland has sufficient generating capacity beyond 2012, and therefore the closure of Swanbank B Power Station will not impact Queensland's electricity supply.

The Company has been working in consultation with employees and the unions that represent them to facilitate the transition process for Swanbank B Power Station employees. In line with the site's Enterprise Bargaining Agreement, CS Energy is committed to no forced redundancies and to retaining all employees who wish to remain with the Company. Voluntary redundancies are being considered on request and independent advice and support has been, and will continue to be, provided to employees to review their employment options and to ensure the best possible outcomes for each person.

Asset Management gets off to a slick start



An Open Day was held at the site with neighbouring business, Thiess Services, in August 2009. The day gave local residents an insight into 'ReOrganic Energy', a process that involves capturing methane gas from decomposing household waste and using it to create electricity. More than 300 people enjoyed a behind the scenes look at how electricity is generated and rubbish is converted into green energy. For more information on ReOrganic, see page 42.

The Company has long term plans to build another gas-fired power station at the site, the Swanbank F Power Station Project. The project has received development approval from the Ipswich City Council and CS Energy will work to secure economic gas supplies when market conditions warrant additional generation. For more information on the Company's gas activities, please see page 42 of this report. Further information about the Swanbank F Power Project is on page 43.



Ross Morrish, Utility Worker, taking oil samples for testing under the lubrication standards

CS Energy has developed a leading practice lubrication standard as part of its asset management project. Lubrication is essential to the operation of mechanical equipment in a power station. It ensures the parts move as they are meant to with less wear and tear.

Commencing in August 2009, the asset management program aims to improve the reliability of CS Energy's portfolio and reduce costs.

Project Manager, Richard Ravell, said lubrication was only one element of the asset management project, but it is an element that is crucial to the health of our stations.

"The first step was to develop a lubrication standard that was industry best practice. We then performed a gap analysis against this standard at each of our sites," Mr Ravell said.

"Excellence in lubrication is one of the essentials of maintenance to prevent defects in equipment, which in turn will extend the life of our equipment.

"This leads directly to improved reliability and reduced costs

associated with corrective maintenance," he said.

The standard covers all elements of lubrication management. Receiving and storing of lubrication is set out as well as dispensing, application, hardware requirements, metrics, competencies and waste disposal.

The actions identified in the gap analysis at each of our sites are in the process of being implemented.

"We have had some wins already which can be directly attributed to the lubrication program," said Mr Ravell.

"These include the installation of a clean environment oil dispensing and waste oil facility at Kogan Creek A Power Station.

A lubrication champion has been established at each CS Energy site.

"The site champions communicate different facets of the standard and ensure all agreed recommendations are implemented. They also help manage the lubrication program and ensure continuous improvement," Mr Ravell said.