

ENVIRONMENT

In response to community demands, governments have initiated policy measures to reduce greenhouse gas emissions. Greater regulation and mass emission limits will alter the landscape in which electricity businesses operate.

17



FOCAL POINT: **SUSTAINABILITY**

Our approach to sustainable operations is to diversify plant type and fuel supplies consistent with our core business of electricity generation. This involves less carbon intensive fuels and renewable energy projects.

JOHN HURT

Project Manager – Development

ENVIRONMENT

Management of Operations

Delta's environmental initiatives and actions are guided by corporate environmental objectives and targets that are reviewed annually. Delta's commitment to ongoing improvements is achieved by a dedicated Board Environment Committee and management structure with specific environmental responsibilities.

This year Delta achieved certification for all four power stations to ISO14001, the internationally recognised Standard for Environmental Management Systems. We are the first NSW based generator to achieve this certification, a culmination of Delta's work on environmental management since we were formed in 1996.

Protecting the environment

Delta was the first electricity generator to sign the Commonwealth Government's Generator Efficiency Standard (GES) in 2000. This Standard commits Delta to move towards best practice in the efficiency of its power generators.

A major achievement this year was a reduction in Delta's greenhouse emission rate from last year by meeting all targets under this scheme. All stations are operating at near best practice efficiency, with Mt Piper at near world's best for sub-critical pressure plant. Further improvements are proposed as part of the GES program.

The capacity of Wallerawang Power Station to store wet ash has been reduced as the ash dam is reaching its

capacity. Consequently, a dry ash system was installed at the station which uses a different ash disposal area. The transformation of the ash disposal system has identified new uses for the dry ash, further minimising environmental impacts.

Environmental flow releases from Lyell Dam into the Coxs River continue to be governed by a water licence issued in 2000. Delta was required to invoke the drought trigger in the licence as the Dam's level fell due to low rainfall. The resultant water releases, are designed to maintain the health of the River while providing security to Delta's production requirements from the two western power stations.

Emissions

As part of Delta's production from the combustion of black coal, flue gases containing oxides of nitrogen (NO_x) and oxides of sulphur (SO_x) are released through the chimney stacks into the atmosphere. Included with these flue gases is a small amount of particulate matter (dust).

Particle emissions were significantly reduced at Wallerawang as a result of flue gas conditioning. A similar plant is being installed at Vales Point to reduce this station's particle emissions.

Vales Point unit 6 NO_x emissions were reduced significantly as a result of re-tuning following boiler refurbishment. Unit 5 boiler refurbishment will be completed by the end of 2002 and Delta is confident of a similar reduction in NO_x emissions. A boiler NO_x re-tuning program has also commenced at Mt Piper.



Delta commissioned studies by CSIRO on the transport of NO_x and SO_x emissions from power stations. These studies show that on days when ambient air pollution levels in Sydney are highest, Delta's power stations make a negligible contribution.

Considering the interests of the community

All power stations maintain a system to record and respond to public concerns. Every effort is made by station environment officers to make personal contact and ensure satisfactory action has been taken. Thirty nine inquiries were made to stations in the year. The majority related to stack emissions and noise from Vales Point. While the emission levels remained well within licence conditions, Vales Point managed load to minimise the visual impact in response to these community concerns.

In developing a renewable energy co-generation plant at Broadwater with the NSW Sugar Milling Co-operative, Delta responded to concerns expressed by local residents. As a result of community consultation, project parameters were modified and an Environmental Impact Statement was prepared.

Complying with environmental regulations

For the second successive year there were no reportable environmental incidents or licence breaches at any station. This is a pleasing result and is a testament to Delta's significant investment in environmental training and sound environmental protection systems and procedures. Management systems are in place to ensure that even minor incidents are thoroughly investigated, thus ensuring that more serious incidents and licence breaches do not occur.

As part of our biomass generation program, a health risk assessment of co-firing construction and demolition material was completed. These studies showed that emissions are well below the applicable Regulation limits and that there are no health risks associated with co-firing this material at the levels proposed.

This year, reporting of National Pollutant Inventory data became compulsory in NSW. To ensure that this data is as accurate as possible, Delta assisted the Electricity Supply Association of Australia (ESAA) in reviewing standards for the industry reporting handbook. In addition, we assisted in the production of a number of brochures that will give the public accurate information about power station emissions and their context.

The ESAA has entered into an agreement with the Commonwealth to promote eco-efficiency throughout the electricity supply industry. The objectives of eco-efficiency are to reduce the consumption of resources, to reduce the impact on nature and to increase the product or service value. Delta is participating in a program that aims to develop eco-efficiency measures for the generation sector.

Portfolio Diversification

Delta is continuing to implement a strategy of diversifying its plant type and fuel supplies, without changing its core business of electricity generation. The strategy targets development of the lower-cost renewable activities

INNOVATION

An increase in the visibility of particulate emissions from Vales Point has resulted from changes to coal supplies and variability on coal quality. Delta has begun investigations to increase the efficiency of the precipitators to minimise both plume visibility and total emissions.

Precipitators are more efficient at collecting larger dust particles than smaller dust particles. Smaller particles, because of their greater numbers and larger total surface area, are more visible than an equivalent mass of larger particles.

In a first for an Australian power station, dust particles are being charged and electrostatically agglomerated before being collected in a precipitator. The smaller and harder to collect particles are attracted to and adhere to the larger particles which are more easily removed from the gas stream. This 'pre-agglomeration' is estimated to achieve a significant reduction in particulate emissions while using only very small quantities of energy.

This innovative technological development is being conducted by an Australian company, Indigo Technologies, with the support and co-operation of Delta. Two full scale trial units have been installed at Vales Point for performance measurement and further development.



ENVIRONMENT

including co-firing biomass, co-generation using bagasse, small-scale run of river hydro and wind generation. Delta is also investigating the feasibility of suitable sites for natural gas combined cycle power plants. The objective of this strategy is for Delta to be a major contributor to greenhouse gas emission reductions and legislated renewable energy targets.

The attainment of this objective took a significant step closer with the formal establishment of the Sunshine Electricity Joint Venture between the NSW Sugar Milling Co-operative and Delta Electricity. The Joint Venture is developing co-generation projects at Condong and Broadwater sugar mills.

The projects will utilise renewable sugar cane by-products as a fuel and will introduce green harvesting of cane eliminating the need for the pre-harvest burning currently undertaken. The material that was previously burnt in the field will be used to enable the plant to generate electricity all year round. When completed, this stage of the project will produce 420 GWh of renewable energy annually.

Production scale co-firing of renewable biomass fuels with coal is under way at Wallerawang. The plant is producing Renewable Energy Certificates accredited by the Office of the Renewable Energy Regulator from fuels such as plantation sawmill residue and construction and demolition waste timber, preventing its disposal in landfill. Trials conducted at Vales Point and Mt Piper also indicated that these plants are suitable for co-firing biomass as a supplementary fuel.

Delta continued to operate its mini hydro generators at Mt Piper and Chichester Dam, and construction commenced on a third hydro at Dungog Water Treatment Plant. When completed this facility will be the first “in pipe line” mini hydro developed in Australia. Agreement was also reached with State Water in NSW to construct mini hydro facilities at Brogo, Glennies Creek, Lostock and Windamere Dams.

Delta also completed a feasibility assessment of a number of potential wind farm sites in NSW.

