CASE STUDY OF A SUCCESSFUL AUSTRALIAN NATIONAL INDUSTRIAL DEVELOPMENT PROGRAMME/STRATEGY

DATONG CLEANER ENVIRONMENT PROJECT

1. The problem or issue addressed:

Improve the operations of a coal gasification plant, environmentally and economically.

2. Name of the programme:

Datong Cleaner Environment Project (DCEP)

3. Timeframe: 3 years Year started: 2001

4. Status: ✓ Completed in year 2004

5. Main objectives:

- To increase the capacity of Environmental Protection Bureau (EPB) and Water Resources Management Office (WRMO) in managing the economic and environmental impact of coal gasification operations; and
- To demonstrate the economic and environmental impact of cleaner production at the Datong Coal Gasification Corporation plant

6. Lead institution:

Datong Coal Gasification Corporation (DCGC)

7. Other implementation arrangements and stakeholders involved

AusAID (Canberra and Beijing), Ministry of Commerce, GOPROC, Datong Municipal Government (DMG), Environmental Protection Bureau (EPB) and Water Resources Management Office (WRMO)

8. The results achieved:

- The capacity of the EPB and WRMO of DMG in managing the economic and environmental impact of coal gasification operations was increased.
- The EPB and WRMO significantly improved their skill and confidence to implement improved management practices to improve the environment and water resources in Datong. The two agencies have policies, strategies and procedures in place to continue to improve on activities commenced during DCEP.
- Improved communication and working partnerships between government/industry/ and communities in Datong were established.

- Economic and environmental benefits of cleaner production at DCGC were demonstrated.
- The basis for a viable coal gasification operation at DCGC was established.
- The sustainability of the coal gasification process was established, having important implications for the Central Government in strategic planning for energy supply throughout China.
- The operations at DCGC were in the process of being transformed into a model to be replicated by other coal gasification in China.
- Capacity building of many agencies and organisations in Datong and the region on best practice environment and water resource management.

Following completion of the project at the end of June 2004, the Chinese counterpart agency, the Datong Coal Gasification Corporation (DCGC) was planning to patent the innovative water treatment technology generated by the project that could support the replication of the technology to other Chinese coal gasification plants. The technology has the potential to vastly influence the sustainability of the coal gasification industry nationwide, while achieving sustainable water resource management and increasing energy resources.

The project exceeded expectations in its outcomes, having achieved its broader objectives of developing improved environmental and water resource management strategies, and also produced a breakthrough technology in water treatment. The technology has enabled the design of a wastewater treatment plant to meet China's most stringent wastewater discharge limits. It is believed that this technology could be patentable.

Key achievements included:
- reduced pollution and recycled products – pollutants in the wastewater such as tar are captured and recycled while other organic pollutants are converted to methane (200,000 cubic metres a year) and recovered for use as fuel for domestic cooking
- water savings of 30 per cent per day – water usage will be reduced by 80 per cent when all new measures are in place
- water treatment – remaining wastewater will be treated at an upgraded treatment plant to meet Chinese National Grade 1 water quality standard
- reduced air pollution from coal and coke dust when all relevant production techniques are in place, the reduction will be an estimated 80 per cent.

The project now provides a model for replication throughout China of the practical application of cleaner production techniques and water saving initiatives. This has the potential to vastly influence the viability and sustainability of the coal gasification industry in Datong and nationwide, while achieving sustainable water resource management, improving environmental protection and increasing energy resources.
Agreement was reached with China to allow the transfer of the project’s intellectual property from the Ministry of Commerce and AusAID to DCGC. The conditions include a requirement for DCGC to replicate the new technology and provision for Australian companies to obtain a free licence to use the technology in China.

The patent could provide a future means of income to support replication of the new technology at other coal gasification plants throughout China. According to the Australian inventor, it also has potential application to other industries.
If the patent application by DCGC is successful, it will represent the first time intellectual property created by an AusAID project has been used to enhance the means for sustainable outcomes and project replication.

9. The relationship of the programme to internationally agreed goals and targets:

This case study supports several aspects of the Johannesburg Plan of Implementation, particularly:

- Paragraph 39(a), strengthening capacities of developing countries and countries with economies in transition to measure, reduce and assess the impacts of air pollution, including health impacts, and provide financial and technical support for these activities;
- Paragraph 10(c), promoting the development of micro, small and medium-sized enterprises, including by means of training, education and skill enhancement; and
- Paragraph 9, improving access to reliable and affordable energy services for sustainable development.