

## 2 PROJECT NEED AND ALTERNATIVES

### 2.1 INTRODUCTION

Information in the EIS, Volume 1, Chapter 2 Project Need and Alternatives, included mine development alternatives and descriptions of a number of projects which are separate to, but associated with, the Wandoan Coal Project. In response to submissions on the EIS, this chapter provides further information on the development alternatives and associated projects. The information presented builds on the EIS, Volume 1, Chapter 2 Project Need and Alternatives and should be read in conjunction with the EIS chapter.

### 2.2 PROJECT NEED

### 2.3 PROJECT DESCRIPTION

Refinements and modifications to the project and the scheduling are described in Chapter 6 Project Operations.

### 2.4 PROJECT ALTERNATIVES

### 2.5 MINING METHODOLOGY

### 2.6 ALTERNATIVES CONSIDERED FOR COAL PREPARATION PLANT

### 2.7 ROM COAL HANDLING ALTERNATIVES

### 2.8 PRODUCT COAL HANDLING AND TRAIN LOAD OUT OPTIONS

### 2.9 PRODUCT COAL TRANSPORTATION

### 2.10 OPTIONS FOR REJECTS, TAILINGS AND GENERAL WASTE DISPOSAL

#### 2.10.1 REJECTS AND TAILINGS

The Supplementary EIS Chapter 6 Project Operations, section 6.4.4 describes the revised strategies for coarse rejects and fine rejects (tailings) disposal, based on an increased understanding of the rejects characteristics of the Project.

#### 2.10.2 GENERAL MUNICIPAL WASTE

To clarify, as stated in Chapter 6 Project Operations, section 6.7.1, for the development of any new municipal waste disposal facility, Western Downs Regional Council will be the Proponent of the development.

## 2.11 ROADS

## 2.12 WATER SUPPLY

### 2.12.2 RAW WATER SUPPLY

To clarify, operational raw water will be required for the CHPP process water, fire fighting services, site dust control, and light vehicle and heavy vehicle washdown. Demand will grow rapidly over the first three years of operation, peaking at 10,560 ML/a in Year 4, of which 1,072ML/a is for haul road dust suppression. Water captured in the site water management system will be used to satisfy on site demands. By Year 5 of the Project, there is a high probability that haul road dust suppression demands will be met from on-site sources.

Operational raw water supply from coal seam methane (CSM) by-product water from Spring Gully/Fairview, as described in Volume 3 of the EIS, is no longer a raw water supply option being pursued by the WJV. Raw water supply options to meet the Project's raw water supply for coal washing and other requirements still include the options of the southern CSM by-product water supply pipeline and the Glebe Weir raising and pipeline.

## 2.13 POWER SUPPLY AND TELECOMMUNICATIONS

## 2.14 ACCOMMODATION

## 2.15 OPERATIONS WORKFORCE TRANSPORT

## 2.16 PROJECT JUSTIFICATION

## 2.17 RELATIONSHIP TO OTHER PROJECTS

### 2.17.1 SURAT BASIN RAIL

The Surat Basin Railway (SBR) EIS was released on 21 February 2009 for public and advisory agency comment until 23 March 2009. A total of 36 submissions on the EIS were received by the Coordinator-General, consisting of 13 from the public, four from local organisations and 19 from advisory agencies. The SBR is being developed by the Surat Basin Rail Joint Venture.

### 2.17.2 PORT ALMA COAL TERMINAL PROJECT

Further to the details provided in the EIS Volume 1, section 2.17.2, the following developments have occurred in relation to the Port Alma Coal Terminal Project since the publication of the EIS.

In collaboration with Gladstone Ports Corporation, XCQ is continuing a feasibility study of a potential new coal export terminal on Balaclava Island at Port Alma. The WJV is not involved in these investigations and will not be involved in any development of the new coal terminal should it be constructed.

The proposed coal export terminal will be located at Balaclava Island, in proximity to Port Alma, approximately 40 km north of Gladstone. Balaclava Island is owned by Gladstone Ports Corporation (GPC) and is designated Strategic Port Land. The proposed terminal will be designed to initially export up to nominally 30 Mtpa of coal from the Bowen and Surat Basins to global markets. Notwithstanding any development of the Wiggins Island Coal Terminal, development of the Balaclava Island coal terminal could alleviate congestion at existing coal terminals located at Gladstone, Dalrymple Bay and Abbot Point.

Finalisation of an Initial Advice Statement and EPBC Act referral is currently underway in respect of the Balaclava Island Coal terminal.

Whilst related, any development of the terminal will be a separate project and not undertaken by the WJV.

### 2.17.3 WIGGINS ISLAND COAL TERMINAL PROJECT

Further to the details provided in the EIS Volume 1, section 2.17.3, the following developments have occurred in relation to the Wiggins Island Coal Terminal Project since the publication of the EIS.

XCQ is one of 17 coal producers which formed a Consortium (Wiggins Island Coal Export Terminal (WICET)) to propose an industry backed development of GPC's proposed Wiggins Island Coal Terminal at the Port of Gladstone. Under the proposed arrangements WICET would own, finance and develop the terminal and under a long term lease and appoint GPC as the terminal operator. Access to capacity at the terminal will be governed by an Access Policy with terminal services available to any coal producer that meets the requirements under that policy.

The terminal would be constructed in stages in response to industry demand, to an ultimate capacity of around 70 Mtpa. The initial stage expected to provide around 25 Mtpa of capacity. In parallel QR proposes to develop rail infrastructure to connect the new terminal with the existing rail infrastructure.

As discussed in the EIS Volume 1, section 2.17.3, the WICET has already been subject of a separate EPBC Act referral and EIS. The Coordinator-General's Report assessing the EIS and Supplementary Report was approved on 7 January 2008. The Coordinator-General decided that the project can proceed subject to certain conditions as outlined in the report. In April 2008 the WICET Project received approval under the EPBC Act with certain conditions.

### 2.17.6 COCKATOO COAL — GULUGUBA PROJECT

In the EIS Volume 1, Chapter 2 Project Need and Alternatives, section 2.17.6, the Woori Coal Mine proposal was previously described as Cockatoo Coal, Guluguba Project. The proponent, Surat Coal Pty Ltd (SCPL), which is a wholly owned subsidiary of Cockatoo Coal Limited (CCL) has in accordance with section 41 of the *Environmental Protection Act 1994* (EP Act), prepared and submitted to the Chief Executive of DERM a draft Terms of Reference (TOR) for carrying out an EIS for the proposal.

The draft TOR for the EIS was available for public review and comment from Monday, 23 March 2009, until Wednesday, 6 May 2009.

As described on the DERM website (DERM 2009):

*'The Woori project is situated in the Surat Basin immediately west of the township of Guluguba, approximately 300 km northwest of Brisbane and 15km south of Wandoan on Mineral Development Lease 187.*

*'The proposed open cut coal mine would be mined at an initial rated of 3 million tonnes a year (Mt/y) run of mine (ROM) thermal coal to export markets including Korea. The project would ramp up to 6 Mt/y within one year of the start. Coal would be crushed, sized and washed on site by a coal handling and processing plant, and transported by rail to the Port of Gladstone. The mine life would be approximately 15 years.*

*'The water supply may be sourced from a number of options including the proposed Nathan Dam, the proposed raising of the Glebe Weir or associated water from Coal Seam Gas extraction. The power supply would be from a 33 kV line from Chinchilla and an additional 132 kV line from Miles.*

*'Options for accommodation could include an on-site relocatable village or facilities closer to communities at either Miles or Wandoan. Additionally, consideration will be given to upgrading the existing airstrip to service the fly-in fly-out option.'*

### 2.17.7 POWER STATION

Volume 1, section 2.17.7 of the EIS identified that interest had been received from potential proponents for a coal fired power station at Wandoan, and highlighted that any power station would be the subject of a separated environmental impact assessment and approval process. Subsequent to publication of the EIS, the following press statement was released on Monday 27 July 2009, in relation to a potential power station near Wandoan.

*'GE Energy (GE) announced that it was working with partners in Queensland to develop the world's first integrated gasification combined-cycle (IGCC) power plant incorporating 90% carbon (CO<sub>2</sub>) capture and storage (CCS).*

*IGCC technology enables the use of large amounts of coal to generate electricity with lower emissions than traditional pulverized coal technology and with the ability to capture carbon today for storage or enhanced oil recovery.*

*GE submitted a full project proposal to the Queensland and Australian federal governments as well as the Australian Coal Association earlier this year. The proposed Wandoan project would produce 400MW of power pre-carbon capture and would be capable of capturing 90% of the CO<sub>2</sub> in the fuel stream for future storage. If the development phase moves forward this year, the plant is expected to be ready for commercial operation in late 2015 or early 2016.*

*Steve Bolze, President, GE Energy Power & Water said the project would address the future demand for electricity in Queensland.*

*'The IGCC plant with carbon capture as proposed by the Wandoan Power Consortium would be a critical step in ensuring the future of cleaner coal technology for power generation, and importantly would utilise Australia's most abundant fuel resource, coal, in a cleaner way.'*

*Coal plays a pivotal role in the Australian economy. In 2009, the country's coal exports, largely to Asian nations, are expected to reach A\$56 billion. In addition, approximately 80% of Australia's electricity production today originates from coal-fired power stations. Early in 2009, the Queensland and Australian federal governments declared in legislation their interest in funding the development and deployment of coal-fuelled projects that incorporate high levels of CCS.*

*'We are pleased to work with Stanwell, a leading power generator, with the aim of proposing the development of an IGCC plant with carbon capture and storage,' Bolze said.*

*'The proposed Wandoan Power Project would be based on GE's commercially available IGCC technologies that have been operating for decades around the world and are being used at the 630MW commercial plant under construction for Duke Energy at Edwardsport, Indiana in the U.S,' he said.*

*GE is working with Stanwell and Xstrata Coal to develop the project. Coal supply and long term CO<sub>2</sub> storage solution are critical aspects of the project, and Xstrata is working co-operatively with the Consortium to identify and secure long term solutions that will serve this project.*

*'IGCC plants already have demonstrated the capability to significantly reduce emissions, compared to conventional coal-fired plants, and gasification technology has been used widely, at commercial-scale, to separate carbon. What is really exciting here is the opportunity to deploy IGCC technology with CCS and deliver low carbon coal power in Australia,' Bolze said.*

*GE's IGCC technology converts coal into a cleaner burning fuel, which then is used by a gas turbine combined-cycle system to generate electricity, providing a cleaner, economical coal-to-power option. GE Energy has been at the forefront of IGCC technology for more than two decades. GE technology was involved in several milestone projects, including the pilot IGCC plant, Coolwater, in Barstow, California, and the Polk Tampa Electric IGCC plant in Florida that helped demonstrate the commercial feasibility of IGCC. GE also is supplying IGCC technology for Duke Energy's plant in Edwardsport, Indiana that is expected to be the world's largest IGCC facility when it comes online in 2012.*

*There are 65 GE-licensed gasification facilities operating globally today; 33 of these GE-licensed gasification plants use commercial technology to separate carbon.'* (GE Energy 2009)

It should be noted that Xstrata Coal's role is not as a proponent of the proposed IGCC plant, but rather a potential proponent of the associated transport and sequestration studies.

Discussion between the parties is ongoing.

## 2.18 REFERENCES

- Department of Environment and Resource Management 2009, *Woori Coal Project*, viewed on 29 June 2009, [https://www.epa.qld.gov.au/environmental\\_management/impact\\_assessment/current\\_eis\\_processes/woori\\_coal\\_project](https://www.epa.qld.gov.au/environmental_management/impact_assessment/current_eis_processes/woori_coal_project)
- GE Energy 2009, *GE Energy proposes world-leading IGCC plant for Australia*, viewed on 14 August 2009, [http://www.ge.com/au/docs/229018\\_1248746786\\_GE-Wandoan%20Press%20Release-27July09.pdf](http://www.ge.com/au/docs/229018_1248746786_GE-Wandoan%20Press%20Release-27July09.pdf)