
Chandgana 600MW Power Plant Project

Executive Summary

Prophecy Coal Corp.

March, 2013

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1 Project Summary

The Chandgana Coal-Fired Power Plant Project includes the building of a 600 MW (4X150 MW) coal fired mine-mouth power plant in combination with the construction of power transmission lines (Chandgana Transmission Project) and development of the Chandgana Coal Mine. The power plant will be located close to the coal resources found in the Chandgana Tal coal deposit in Tsaidam Nuur Valley, Murun Soum, Khentii Province. The power plant and coal mine will be 100% owned by Prophecy Coal through its subsidiaries in Mongolia, while the transmission line will be transferred to Mongolia government.

1.1 Project Location

The plant will be located close to the coal resources found in the Chandgana Tal coal deposit in Tsaidam Nuur Valley, Murun Soum, Khentii Province. The location is at an average elevation of 1,250m and about 55km west of Undurkhaan city and 300km east of Ulaanbaatar.



A paved road suitable for the access to the power plant and mining area is about 2km north of the mining area. This is the road no. A0501, connecting Ulaanbaatar and Undurkhaan. The nearest railway station is Baganuur, located at a distance of 180km west.

The power plant will be located about 1 km north of the mining area. Access roads to all new plants shall be included. The living area for the power plant and supply mine employees will be in the Muron soum centre which is 20 km to the east aligning the existing paved road.

A railway link is not required as coal supply is direct from the coal mine. Coal will be transported with belt conveyors.



Location stated above is only for illustration purpose.

1.2 Project Status

Prophecy Coal initiated the licensing process required for the construction of a planned 600 MW mine mouth power plant in 2010. In November 2010, the company received the approval of its Detailed Environmental Impact Assessment (DEIA) pertaining to the Changdana power plant project.

Prophecy submitted feasibility study in early 2011 and In November 2011, Prophecy Coal received the first 600 MW power plant construction license in Mongolian history. The mine-mouth power plant will be supplied with coal from our Chandgana Tal coal deposit, for which the company secured a mining license in February 2011.

In June 2012, Prophecy Coal shortlisted Three Chinese Engineering, Procurement and Construction (EPC) management firms for the power plant construction. The company issued technical specification requirement in July 2012 and received 3 final bids in September 2012. Preliminary evaluation of the submitted bids indicates that the power plant project construction costs are within the estimated capital budget of the project. Prophecy Coal has prepared EPC contract and anticipates selecting the final bidder of the construction contract in early 2013.

In May 2012, A Cooperation Covenant with the Mongolian Energy Authority (EA) was signed and in August 2012, a power purchase agreement (PPA) was submitted to National Electricity Transmission Grid Company, the only authorised power purchasing company in Mongolia and under the auspices of the Ministry of Energy of Mongolia. Prophecy Coal submitted a separate Power Generation Tariff Application



in September 2012 to the Energy Regulatory Commission. The company is currently working with National Transmission Grid Company and the Energy Regulatory Commission on finalizing PPA and Power Generation Tariff Application. Prophecy is in active discussion to date on tariff and PPA.

In February 2013, Prophecy secured 532.4 hectares of land to be used for Prophecy's proposed Chandgana Power Plant from local Murum soum.

The proposed PPA details the terms under which Chandgana power plant would be prepared to supply power to National Electricity Transmission Grid Company. The Power Purchase Agreement stipulates a 25 year long term power off-take contract with the power plant construction commencement date in April 2013 and 1st phase operational date of April 2016. The tariff in the PPA is lower than price of imported electricity from Russia and Mongolia's wind farm tariff. The PPA incorporates capacity and energy charges to cover fixed and variable costs with foreign exchange protection and indexation based on the US CPI, Mongolia Wage Index and Diesel Price Index. Fuel supply agreement is also being finalized. The development of the coal mine is progressing in parallel to supply coal to the power plant from commissioning of Unit 1.

The preliminary plan of plant construction and installation proposes the construction of the first unit to achieve Commercial Operation Date in 36 months. Construction work is expected to commence in April 2013. Each unit is expected to come into operation as follows:

- a. Unit 1 (150 MW): April 2016
- b. Unit 2 (150 MW): August 2016
- c. Unit 3 (150 MW): December 2016
- d. Unit 4 (150 MW): April 2017

Prophecy Coal aims to start preliminary mobilization work to ensure start of construction in April 2013.

1.3 Project Capacity

The Coal Fired Power Plant has a total capacity of 600 MW split into 4 block units to ensure stability of existing networks and to have the capability of staggered integration.

Steam will be generated with Circulated Fluidized Bed fired steam generator (CFB type). The generator unit will be a drum boiler equipped with all necessary heating surfaces and connecting lines, single reheating, CFB combustion, as well as a heavy fuel oil (Mazoud) or diesel firing system for start-up and backup.

The plant will make use of one single flow high pressure turbine, one single flow intermediate pressure turbine and one double-flow low pressure turbine and one generator.

The plant will employ a closed-cooling system with air cooled condensers due to its low water consumption. The system uses the direct dry cooling mechanism and doesn't need any cooling water supply.

1.3 Coal Supply and Quality

Approximately 3.5 million tonnes per year will be required to meet the power plant demand.

Prophecy's Chandgana resource consists of two properties-Chandgana Tal and Chandgana Khavtgai. The company's existing Chandgana licenses host a measured resource of 650 million tonnes and an indicated resource of 540 million tonnes of thermal coal.

The main fuel of the power plant will be the coal supplied from the adjacent Chandgana Tal deposit, which contains 143 million tonnes of measured coal resource and is sufficient for approximately 40-50 years of power plant operation.

This coal is classified as sub-bituminous/lignite. Expected daily consumption will be about 10,200 tonnes. The power plant is designed for the following coal:

Power Plant Coal Quality Requirements (As received basis):

Coal Parameter (arb)	Unit	Design
Gross calorific value	kcal/kg	3,190
Net calorific value	kcal/kg	3,070
Total moisture	wt-%	41.6
Volatile Matter	wt-%	25.9
Ash	wt-%	10.6
Total sulphur	wt-%	0.6

Chandgana Tal Mine Coal Quality (Air-dried basis)

Moisture Base	Total Moisture (wt %)	Inherent Moisture (wt %)	Ash (wt %)	Volatile Matter (wt %)	Fixed Carbon (wt %)	Total Sulphur (wt %)	Gross Calorific Value (kcal/kg)	Relative Density (g/cc)
Air Dried	41.94	25.00	13.3	30.90	30.80	0.74	4,175	1.45

The plant will have a Coal Handling Facility, the crushing and screening plant. A conveyor belt with three belt scales will deliver the crushed product to the automatic coal sampling plant. There will be two coal stock yards sufficient for 14 days of coal consumption at full load operations.

1.4 Limestone

Limestone supply will be from a supplier with whom a supply agreement has been concluded. The quality of this supply has been analysed and it is suitable for the power plant. In addition three limestone deposits were found within 50km from the power plant and are considered potential sources. Exploration and mining rights are currently being pursued by the company for the Khavtgai deposit as it is the most attractive option.

1.5 Electrical Energy

Electrical energy will be provided from the 6kV line that will be established next to the coal mine supplying the Chandgana TPP. The maximum capacity required by the construction site will be approximate 3 – 4 MW in peak times.

1.6 Water Supply

The raw water supply will be from various sources. Current indications are that sufficient water is available from ground water of the site and a study will be conducted to prove this as it will be the first choice supply. The water quality for the Morun and Kherlen rivers was analysed and the Kherlen river is used as the potential source of water.

A water treatment plant needs to be constructed at the beginning of the construction period to supply potable water for the power plant construction site and for the coal mine. This will also be the long term potable water supply for the power plant and the mine.

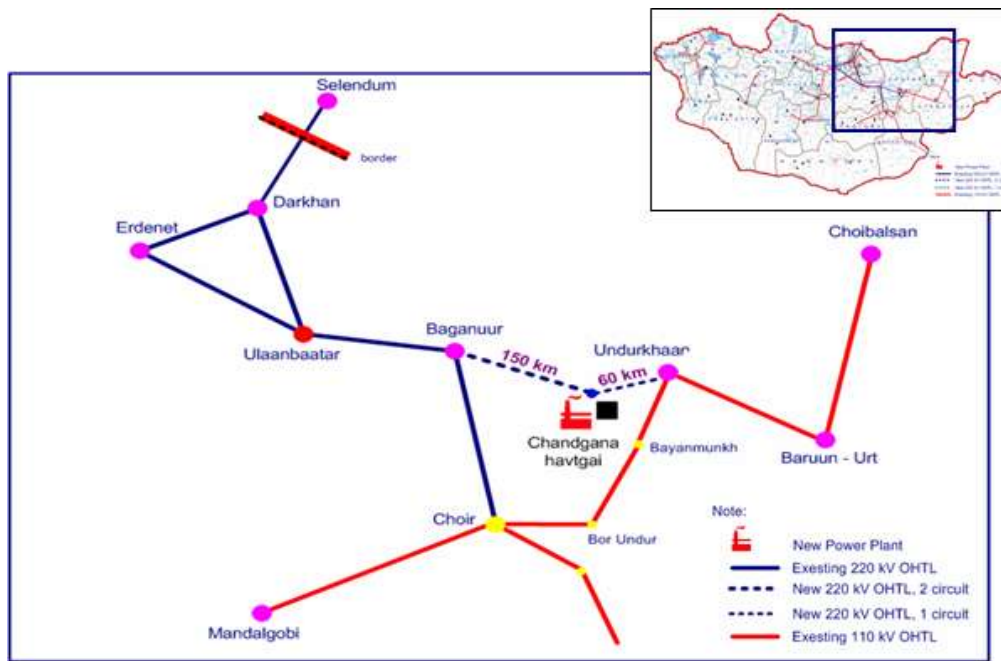
The power plant will be equipped with an air cooled closed circuit cooling system rather than cooling towers. This will limit the raw water demand of the plant to a minimum.

1.7 Transmission Lines

The plant is located between the Central Electricity System (CES) connection at Baganuur and the East Electricity System (EES) connection at Undurkhaan. Two transmission lines to be built by Prophecy and then transferred to government.

CES is the biggest power generation and transmission system in Mongolia. It has a basic transmission grid of 220kV and 110 kV Over Head Transmission Lines (OHTL). A 220kV ring system connects the principal generation and load centers of Ulaanbaatar, Darkhan and Erdenet and additional 220kV connections with load centers of Baganuur and Choir. During peak load periods, electricity is imported from Russian Federation in order to meet and regulate electricity demand of the system. The Chandgana power plant will be connected by 200kV, 2 circuits, OHTL to the CES system 150km away at Baganuur.

EES is dependent on the Choibalsan thermal power plant that provides electricity to province centers and 12 soums of Dornod and Sukhbaatar provinces. The Choibalsan plant has an installed capacity of 36MW. The Chandgana power plant will be connected by 200kV, 1 circuit, OHTL to the EES system 60km away at Undurkhaan.



1.8 Environmental

The Environmental Impact Assessment for the project has been approved by the Mongolian Ministry of Nature and Environment and supported by the Mongolian Scientific and Technical Council. The power plant will be designed following the Mongolia standards and World Bank Standards applicable for new power plant projects.