.Copy note containing details of the linked end-use Project

INTRODUCTION

1.1 Odisha Coal and Power Limited (OCPL) is a company incorporated under the Companies Act 2013, India. OCPL is a Government company as defined by Section 2(45) of the Companies Act, 2013, which was formed as a joint venture Company of Odisha Power Generation Corporation Limited (OPGC) and Odisha Hydro Power Corporation Limited (OHPC), with a shareholding pattern of 51% and 49% respectively. OCPL is created with an objective to develop and operate coal mine to cater the fuel requirement of OPGC Power Projects.

1.2 Currently OCPL has been allocated with two coal blocks, namely Manoharpur and Dip-side of Manoharpur by Ministry of Coal, Government of India. The coal blocks are located in IB Valley coalfield in Sundargarh District, Odisha.

1.3 **The Broad Objectives of OCPL are: -**

1. To carry on the business of mining of coal, fire clay and other minerals and engaging in allied activities including establishing coal washeries, further processing for value addition and trading and transportation of coal, fire clay, any other minerals and coal, fireclay & other mineral based products including Coal Bed Methane (CBM), Coal Mine Methane (CMM) and Underground Coal Gasification (UCG).
2. To carry on any business of generation, distribution and trading of electricity from all sources including thermal, solar, hydro, wind, tidal, geothermal, biological and any other sources, conventional or non-conventional.

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1.4 EXPANSION PLAN

OPGC is in the process of capacity addition of 2 x 660 MW- Power Plant in Phase II and another 2X660 MW-Net Power Plant in Phase III at the same location at Banharpali, Jharsuguda. Requisite land is already in physical possession, water linkage & required infrastructure are in place, and other internal resources are also available.

1.5 BRIEF HISTORY OF THE BLOCK

To meet the requirement of thermal coal for the OPGC's phase II and phase III expansion Ministry of Coal, Government of India earlier allotted two coal blocks namely (i) Manoharpur with proved geological reserves of 188.1 MT and (ii) Dip side of Manoharpur with indicated geological reserves of 350 MT to the OPGC.

Manoharpur and Dip side of Manoharpur block are contiguous blocks having common boundary. Manoharpur block is fully explored and Dip side of Manoharpur block is regionally explored. The first mining Plan was approved for Manoharpur block only in August 2008. The Revised Mining Plan-I along with Mine Closure Plan was prepared covering the latest resource data, information available and various updated concerns and issued subsequently in July 2013 to MoC and the same was approved in 11 December 2013 (Enclosure-2).

The Supreme Court of India through its judgment dated August 25, 2014 read with its order dated September 24, 2014 (collectively the "Supreme Court judgment") had cancelled allotment of 204 coal blocks including the Manoharpur and Dip side coal blocks allotted to OPGC. Subsequent to the Supreme Court judgment, the Coal Mines (Special provisions) Ordinance 2014 and Coal Mines (Special provisions) Second Ordinance, 2014 (collectively the "Ordinance") were promulgated and the Coal Mines (Special Provisions) Rules, 2014 (the "Rules") were framed for auction and allotment of all blocks which were subject to cancellation pursuant to the Supreme Court judgment. Further, the Coal Mines (Special Provisions) Act, 2015 (the "Act") was enacted which replaced the ordinance.

OCPL applied for allotment of Manoharpur and Dip-Side Manoharpur Coal Blocks through Government dispensation route on 27th February, 2015 under the section 5(1) of the Coal Mines (Special Provisions) Act, 2015 and was declared as a successful allottee on 24th March, 2015. Thereafter, OCPL signed Allotment Agreement with the Nominated Authority, Ministry of Coal, Government of India on 30th March, 2015. OCPL paid the bank guarantee (BG) of 153.92 crore on 27/04/2015 and the first installment of upfront fee of the 31.05 crore on 13/07/2015. Amended Allotment Agreement was executed with Nominated Authority, Ministry of Coal, Government of India on 31st August 2015 (103/ 25/ 2015/ NA) followed by the issuance of the Allotment Order on same date, which is being treated as the zero date of allotment This is for the phase II and phase III expansion of power plant of Odisha Power Generation Corporation Ltd i.e. for the units 3,4,5,6 each of 660MW each (Enclosure-1).

1.5 COAL REQUIREMENT & LINKAGE

Requirement of coal has been assessed as 7.6-8 MTPA for the phase II expansion of OPGC i.e. for the units 3 and 4 each of 660MW each considering the minimum GCV of 3000 Kcal /kg and 90% PLF. Earlier mining plan was approved for a capacity of 8 Mty. So mine capacity has been kept as 8 Mty as per Guidelines of Nominated Authority.

The total requirement of coal for phase II expansion will be met by developing Manoharpur and Dip side of Manoharpur block. Coal from the mine will be transported to the power plant of OPGC at Banharpali, Jharsuguda through a dedicated rail corridor.

The Mining Plan, Revision-II along with Mine Closure Plan has been prepared now covering the latest resource data, information available and various updated concerns and issues. The Mining Plan (Revision III) will be prepared after exploration of Dip side of Manoharpur block for the entire property of Manoharpur and Dip side of Manoharpur block.

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Looking into current economic scenario, OCPL Board has decided that the Manoharpur and Dip Side of Manoharpur Coal Mines should make available the coal for 30 years @8MTPA to meet the requirement of the OPGC's expansion power plant (Unit 3 & 4). As per the current mining plan, Manoharpur Coal Mine is effectively supplying the coal for 19 years considering the ramp up and ramp down period of 3 years each. Revision-III Mining Plan is planned to be prepared considering the above decision of the OCPL Board.

The requirement of Coal for the existing operating units will continue to be met with the existing Coal Supply Linkage from Mahanadi Coalfields Ltd. The Coal from Manoharpur and Dip side of Manoharpur blocks will not replace any linkage granted from Coal India and its Subsidiaries.

Washing of coal may be considered at a later stage based on the actual quality of ROM coal during initial years of operation. As the quality of coal is poor (56% G-grade), and eleven sections in two seams exist in the block, the possibility of having a washery in future appears to be a logical proposition. This will be clear when coal production starts from the mine and fed to the power plant. ROM Coal will be directly consumed in the Power Plants after crushing, during initial years of phase II expansion. So, the location of washery may be decided at a later date after commissioning of power plant.

1.6 BRIEF HISTORY OF IB-VALLEY COALFIELD (PLATE: GEN-I, GEN-II)

The Ib-valley Coalfields is one of the two important coalfields of Odisha and forms a part of the Mahanadi Valley coalfields. The Ib valley coalfield lies in between latitude 21°31' to 22°14' North and longitude 83°32'00" to 84°10'00" East and falls mainly in Sundergarh, Jharsuguda and Sambalpur districts of Odisha. Coal reserves of this coalfield are about 24.83 billion tonnes (as on 1.4.2016) of which about 15.10 billion tonnes lie within a depth range of 300m. Quality of coal varies from grade C to G (largely F), suitable for power generation.

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Coal Reserves in Ib-valley coalfield as on 1.4.2016

(Reserves in million tonnes)

Depth (in meter)	Proved reserves	Indicated reserves	Inferred reserves	Total reserves
0-300	10083.24	4880.44	141.00	15104.68
300-600	1110.44	4140.39	4168.39	9419.76
600-1200	-	303.41	2.69	306.10
Total	**11193.68**	**9324.24**	**4312.62**	**24830.54**

Source CMPDI website, as on 01.04.2016

The coalfield with an area of 1375sq km is served by the Mumbai-Howrah main-line which passes through the central part of the coalfield. Jharsuguda, falling just outside the limits of the coalfield, is the nearest major railway station. The Chandikhole - Raipur section of National Highway (NH-200) passes through the coalfield. In addition, there are several arterial roads which criss cross the coalfield. The drainage in the coalfield is controlled by the Ib River. The Hirakud Dam across Mahanadi River is situated nearby with the back waters of the reservoir touching the south-eastern tip of the coalfield.

Large scale exploration has been conducted in the coalfield since nationalization and shallower occurrences of coals have largely been explored. A long and open arc-shaped extent of coal incrop has been mapped extending from Gopalpur in the north-west to Belpahar block in the south, and Orient and Rampur mine in the south-east. Additionally, the coal seams are repeated by faulting in the south-east in Talabira. The coalfield is structuraliy simple and exhibits low westerly dips and low degree of faulting through largely E-W & NW-SE trending faults. The south-western boundary of the coalfield is marked by a major fault. The coalfield is devoid of igneous activities.

Out of 6-7 coal horizons encountered in the Barakar and Karharbari succession, two seams (Lajkura and Rampur Seams) occur in the Barakar and one seam (IB seam) in the Karharbari are of economic potential. The Barakar coals vary in thickness from 20 to 60 m. These coal seams are highly banded, contain high ash (+35%), high moisture and volatiles

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and are low in rank. The Barakar formation generally offers grade F & G coals. The only seam in the Karharbari formation, Ib Seam, is impersistent and varies in thickness from 1m to 7m and does not exist in this block. The coal seam is generally of better quality (grade C to D) but deteriorates where higher range of thickness is encountered.

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