The Singareni Collieries Company Limited
(A Government Company)
Registered Office: Kothagudem Collieries – 507 101

Conducting Global Vendor Meet for extraction of coal on Cost per tonne basis by outsourcing agency through Shortwall Mining Technology at Shantikhani Extension Mine, Mandamarri Area of SCCL, Telangana State

The Singareni Collieries Company Limited (SCCL) is a public sector company of state of Telangana in Southern India engaged in Coal Mining activity since 1889. It has 24 underground mines and 18 opencast mines operating with an annual production of 65.02 Mt and gross sales of Rs. 26,585.75 Cr. during 2021-22.

It intends to introduce Shortwall Mining Technology at Shantikhani Extension Underground Mine situated in Mandamarri area of Mancherial district in the state of Telangana on cost per tonne basis. In this connection SCCL is proposing to conduct a 'Global Vendor Meet' for introduction of this technology.

SCCL invites EOI from financially strong companies with requisite technical know-how and experience in the said field of activities from Indian and International Companies registered under Indian Laws. Interested firms may furnish their EOI along with documents supporting their financial and technical strengths.

The documents shall reach the following addresses on or before 15th March, 2023.
For further technical details, date, time and venue for vendor meet please visit: **www.scclmines.com**.

For Further Information/Queries, please contact the following address:

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Global Vendor Meet Proposal for extraction of coal on cost per tonne basis by outsourcing agency through Shortwall Mining at Shanthikhani Extension Mine, Mandamarri Area of SCCL, Telangana State

1. Preamble:

Energy efficiency is crucial in dealing with demand outstripping supply. The energy mix by 2050 will mainly be fossil based. Coal is an abundant, reliable, safe and cost effective fossil fuel having about 344 Bt of resources globally with a share of 27.20% in electricity generation. Coal accounts for 50% of power generation in India. India's energy consumption growth rate (CAGR of ~3%) will be one of the largest globally. India is the second largest producer of coal after China. The demand for coal may increase to 1500 Mt by 2030 and 2000 Mt by 2042 @ CAGR 2.5%.

The Singareni Collieries Company Limited is the oldest Public sector company of India with 133 years of history**.** The production of Singareni in 2021-22 is 65.02 MT, which accounts for over 8% of national coal production**.** Further, with increased population and for sustainable energy growth, the country would have to enhance its power generation considerably from the existing level and the demand for coal will be doubled in near future. With this, the demand for coal requirement from Singareni would always be much more than its present projected levels.

2. The need for Shortwall Mining:

SCCL is well known for its technology absorption capacity and it has been a forerunner in the Indian coal mining scenario to introduce Longwalls, BG technology and continuous miner technology in many of its underground mines. All these technologies are planned up to a depth of 350m and working satisfactorily.

Shanthikhani Mine is one of such deep mines of SCCL where Bolter Miner is operating successfully for the drivage of Trunk and Gate roadways and it is being planned to introduce Shortwall Mining for the better conservation of reserves with safety.

3. The Present Proposal:

SCCL is planning to introduce Shortwall Mining technology through outsourcing on cost per tonne model in the Shanthikhani Extension Mine in Mandamarri area of SCCL with Powered Roof Supports (PRS) of 10000 cycles. The Shortwall mining technology is being proposed in Salarjung Seam only. The extractable reserves identified for Shortwall Mining in Salarjung seam are about 2.56 Mt. (Relevant Plans enclosed). The tentative Production from Shortwall Mining Technology is given in Table 1.

Table 1. Tentative Production from Shortwall Mining Technology

Table : North Side Shortwall Panels				
Panel No.	**Length (m)**	**Width(m)**	**Height(m)**	**Reserves (Mt)**
SWP-1	542	94.8	3.7	0.29
SWP-2	656	84.8	3.7	0.31
SWP-3	754	84.8	3.7	0.35
SWP-4	833	84.8	3.7	0.39
Total (Mt)				1.34
Table: South Side Shortwall Panels				
Panel No.	**Length (m)**	**Width(m)**	**Height(m)**	**Reserves (Mt)**
SWP-5	511	84.8	2.5	0.16
SWP-6	644	84.8	2.5	0.21
SWP-7	700	84.8	2.5	0.22
SWP-8	600	84.8	2.5	0.19
SWP-9	699	84.8	2.5	0.22
SWP-10	700	84.8	2.5	0.22
Total (Mt)				**1.22**
			Grand Total	**2.56**

4. Tentative Scope of work of SCCL

i. Obtaining approvals like Mining Plan, Environment Clearance and Forest Clearance etc.
ii. Development of trunk roads, gate roads, establishment of trunk belts and other infrastructure required outside the Shortwall districts.
iii. Deployment of statutory supervision.
iv. Pumping of water from the nearest intermediate sump up to the surface.
v. Provision of required electric power at the entrance of the Shortwall panel.
vi. Water supply (Raw/drinking) at designated point near the Shortwall district at free of cost.
vii. Provision of explosives at pit magazine on chargeable basis.
viii. Monitoring and management of subsidence.

5. Tentative Scope of work of the Bidder

i. Investing in and providing Shortwall machinery for mining coal and coal conveyance through gate belt conveyors from Shortwall face up to the trunk belt conveyors.
ii. Deployment of two (2) legged Shield Powered Roof Supports of sufficient number and capacity at Shortwall face.
iii. Strata monitoring activities.
iv. Ventilation of the Shortwall face from the trunk roadways.
v. Deployment of sufficient and required manpower for Shortwall operations and gate belt conveyors.
vi. Drainage and de-watering arrangements in Shortwall face up to the nearest intermediate sump.
vii. Providing vocational training and IME/PME for their employees.
viii. Establishment of suitable communication system from Shortwall face in consultation with SCCL authorities.

ix. Environment monitoring in Shortwall faces as per statute.
x. Sealing of goaved out Shortwall panels and their drainage.
xi. Obtaining required statutory approvals/permissions from DGMS for machinery and extraction of coal from Shortwall panels.
xii. Compliance of all regulatory and statutory requirements in Shortwall district on behalf of the owner.
xiii. Transportation of Shortwall machinery from surface to working place. SCCL will provide the infrastructure available for transportation of the machinery up to trunk roadway.

6. Technical details:

i. General Geology of Dorli-Bellampalli coal belt :

Dorli-Bellampalli coal belt of about 80 km. In strike length forms an integral part of the Godavari Valley Coalfield on its western margin. The development of coal seams and the general trend of the Gondwana sediments are in broad conformity with the regional setup of the Godavari Valley Coalfield.

Seams present : IA, I, II, LB1, IIIB, IIIA, Salarjung (Top and Bottom sections) and Ross Seams.

ii. Geology and structure of Shanthikhani Extension Mine:

Geology:

Shanthikhani Extension Mine is located in the south eastern part of the Dorli-Bellampalli coal belt. The area is mostly covered by sandy soil. The stratigraphic succession established in this block is mainly based on the interpretation of sub surface data.

Seams present:

Eight co-relatable coal seams are present in the block viz., IA, I, II, LB1, IIIB, IIIA, Salarjung (Top & Bot Sections) and Ross seams.

Seams assessed: IA,I,II,LB1,IIIB,IIIA, Salarjung (Top & Bot. Sections) Ross seams.

Faults: A total of 10 faults with throw varying from 0-30 m have been deciphered from subsurface data.

Description of Coal seams:

The particulars of Salarjung seam such as depth range, thickness range, parting thickness range and quality are furnished in the following table:

iii. Summary of Salarjung seam:

Details		SEAMS	
		SJ (TOP)	SJ (BOT)
No. of bore holes Seam		119	126
Depth range (m)	Min	26	28
	Max	605	610
In band thickness range (m)	Min	0.51	1.22
	Max	3.87	8.69
Moisture % (In band)	Min	3.11	3.2
	Max	5.42	7.4
Ash % (In band)	Min	25.24	20.23
	Max	45.62	34.15
GCV (Kcal/Kg)	Min	3488	4630
	Max	5332	5815
Parting with underlying seam	Min	0.0	21.03
	Max	2.65	39.45

iv. Cavability:

The assessment of cavability is done by determining the caving index number(I) using the CMRS, Dhanbad method for estimating the caving index number of overlying roof rocks, involving compressive strength, average length of core, and thickness of bed.

The cavability assessment for Salarjung seam Bottom has been made by utilizing the data of Borehole SK-40. It is inferred based on the caving index values of the overlying strata of the seam that the roof strata of SJ seam is **moderately cavable**.

v. Geophysical investigations:

Geophysical investigations are carried out in this mine and the results are available.

vi. Gradient and trend of Coal Seams

The trend of coal seams established through sub surface data show that the strike of coal seams vary from $N30^0W$ to $S30^0E$ and dipping 11^0 – 16^0 North easterly. The gradient of seams varies from 1 in 3.5 to 1 in 5 dipping towards North East.

vii. Gassiness

Salarjung seam proposed for extraction is considered as Degree-I gassiness based on the data available in the working underground mines on the rise side of this proposed project.

7. Present Status

i. Entries:

(a) Incline:

SL.No	Name	Length(m)	Width(m)	Height(m)	Purpose
1	Main Incline	259	5.20	3.60	Man riding, Haulage roadway and Intake
2	Man way	100	4.20	2.40	Belt & Intake

(b) Shafts:

SL.No.	No/Name of the shaft	Diameter(m)	Depth(m)	Working of different seams connected with the shaft	Fan Capacity (HP)	Purpose
1	Air Shaft-II	6.0	44	Connected to Bottom Seam	300	Return air way
2	Air Shaft-III	7.5	382	Connected to SJ Seam	Man winding & intake	

ii. Ventilation:

At present 3 Lakh cubic feet (cft) main mechanical ventilator is in operation and discharging 9000 cu.m/min of air with 82 mm of water gauge and another mechanical ventilator of 3 Lakh cubic feet (cft) is being used as stand bye.

iii. Men Transport:

Man winding engine equipment 600 KW capacity from new shaft surface to 43L/1D Dip. Depth 382m and another man riding chair lift system from 1RN/43L to North trunk dip i.e., NTD3/59L.

iv. Surface bunker:

One hundred (100) tonnes surface bunker is available for dispatching the coal by road.

v. Power supply & water supply arrangements:

33KV power is provided at man winding shaft and existing inclines from 132 KV/33KV substation of Mandamarri area of SCCL. One filter bed is provided for filtration of pumped out water from the mine. Supply of Potable water is being arranged at strategic locations in the mine as well as at surface through Pipe lines.

vi. Approach Roads:

Approach roads are available for all mine entries, shafts and office building etc.

vii. Underground Bunkers:

Six (6) numbers of underground bunkers of 300 tonnes capacity in the man way dip (belt dip) from 41 Level to 42 Level.

viii. Coal & Material Transportation from UG to surface:

- Main Trunk belt conveyors of 1500 TPH (Tonnes per hour) capacity from surface to 42 Level are commissioned and being used for coal evacuation from underground.
- It is proposed to make use of existing coal evacuation system up to surface by making suitable modifications in the circuit.

ix. Status of Clearances

a. Mining plan:

Mining Plan for Shantikhani Extension Block, Bellampally Area was approved by MoC, GoI vide Lr.No. 13016/12/97-CA dated 30-11-1999.

b. Mining Lease:

i. 2nd Renewal of Tandur Mining Lease (12611.70 Ha) granted vide G.O.Ms. No.03, dated: 12.01.2015 for a period of 20 years & valid up to 31.12.2034.

ii. Shantikhani Extension Mining Lease (401.7 Ha) granted vide G.O.Ms. No.99 dated: 12.05.2009 for a period of 30 years & valid up to 17.09.2039.

c. Environmental Clearance:

EC was obtained for 1.167 MTPA vide lr no. J-11015/97/2004-IA.II (M) Dated 24.01.2006.

d. Ground water clearance:

Clearances obtained to tap ground water from the then Govt. of Andhra Pradesh vide Lr. No 2898/Hg.III (1)/2004 dated 6.4.2005.