

FREIGHT COST OPTIMIZATION



FREIGHT COST OPTIMIZATION ANALYSIS

CURRENT SITUATION

- 1045 MT of castables which were to be dispatched from KRW Plant, dispatched from the **WRW Plant in Wankaner, Gujarat** due to capacity constraints and were delivered to **Karakhendra Steel Plant in Barbil, Odisha**.
- This delivery has been done using the **Roadways Mode of Transport**.

TASK AT HAND

- Analyze and compare the costs of current and potential alternative transport modes.
- Identify opportunities for cost optimization in the logistics process.
- Create a comparative between the modes of transport and recommend preferable mode at respective situations.

ACTION TAKEN

- Investigated various transport modes, focusing on their cost, efficiency, and feasibility.
- Obtained cost quotations for multimodal transport to compare with the existing road transport costs.
- Considered factors such as total cost per ton, transit time, and logistical complexity.

EXPECTED RESULT

Roadways Freight Cost (Current): **Rs. 4800 per ton**

- **Advantages:** Direct delivery, predictable transit times.
- **Disadvantages:** Potential for road congestion, higher emissions.

Waterways Freight Cost: **Rs. 5680 per ton**

- **Advantages:** Potentially lower environmental impact, less road congestion.
- **Disadvantages:** Higher cost per ton, additional handling at ports, longer transit time.

01 ROADWAYS

ROADWAYS: EXECUTIVE SUMMARY

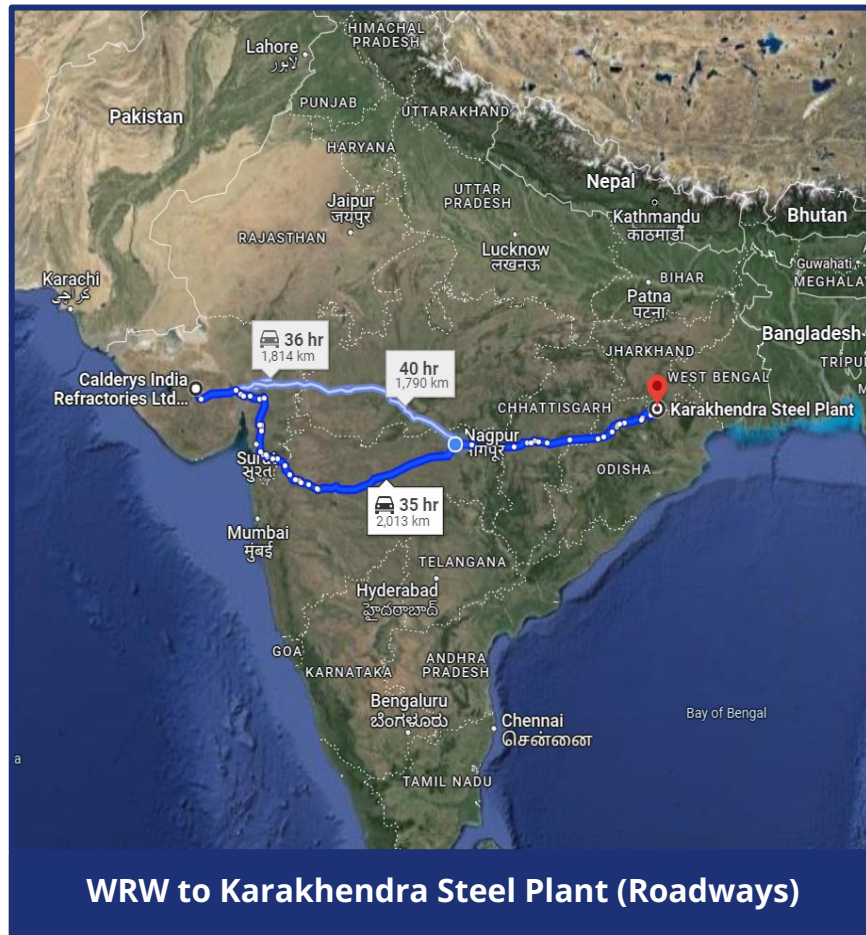
Calderys Wankaner Refractories Works
Wankaner, Gujarat

Rungta Mines, Karakhendra Steel Plant
Barbil, Odisha

FACTORS	ROADWAYS
Risks	<ul style="list-style-type: none">Severe weather such as heavy rain, snow, or fog can impact visibility and road conditions, causing delays or accidents.Non-compliance with regulations can lead to fines, delays, or vehicle impoundment.Poor road conditions can damage vehicles and goods.Traffic jams and roadworks can cause significant delays.
Notables	<ul style="list-style-type: none">Ensure proper documentation and permits.Verify the condition and secure packaging of goods.Schedule transport to avoid peak traffic times.Regularly inspect and maintain vehicles to prevent breakdowns.Maintain clear and constant communication between drivers, dispatchers, and customers.

ROADWAYS:

ROUTE DETAILS & COSTS INVOLVED



Calderys Wankaner Refractories Works
Wankaner, Gujarat



Rungta Mines, Karakhendra Steel Plant
Barbil, Odisha

Distance : 1880 km
Time : ~ 40 hrs
Shipment Time : ~ 120 hrs (5 days)

Costs Involved :

- Loading from the WRW plant into the Trucks & Unloading at the Karakhendra Steel Plant from the Trucks.
- Man power to do the loading and unloading.

ROADWAYS: PACKAGING DETAILS



CASTABLES PUT INTO 25 KG / 1 MT JUMBO BAGS

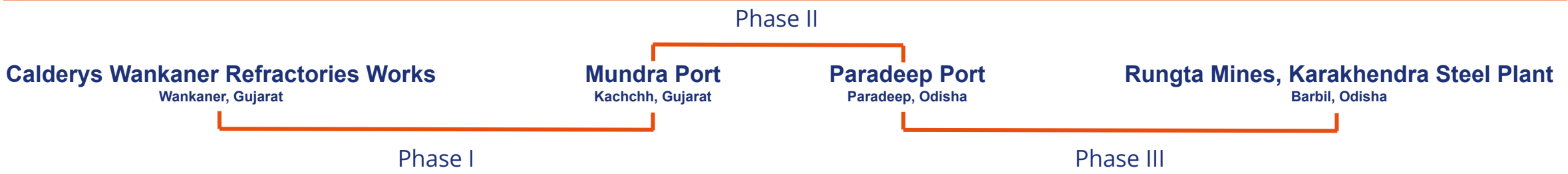


JUMBO BAGS LOADED ONTO TRUCKS

- Castables are packed into 25 kg/1 ton Jumbo Bags depending upon the size of the order.
- These bags are then loaded onto the trucks with the help of Forklifts.
- These Jumbo Bags are then loaded onto the Trucks and are ready to dispatch.

02 MULTIMODAL

MULTIMODAL VIA WATERWAYS: EXECUTIVE SUMMARY



FACTORS	PHASE I & III		PHASE II
Mode	Roadways		Waterways
Risks	<ul style="list-style-type: none">• Traffic congestion and delays.• Vehicle breakdowns or accidents.• Weather conditions impacting road transport.		<ul style="list-style-type: none">• Adverse weather conditions.• Navigational hazards.• Port congestion or delays at the destination.
Notables	<ul style="list-style-type: none">• Ensure proper documentation and permits.• Verify the condition and secure packaging of goods.• Schedule transport to avoid peak traffic times.		<ul style="list-style-type: none">• Ensure cargo is properly secured and protected.• Monitor weather forecasts and navigational warnings.• Arrange for port services at the destination in advance.

MULTIMODAL VIA WATERWAYS

ROUTE DETAILS & COSTS INVOLVED

Phase I: ROADWAYS

Calderys Wankaner Refractories Works
Wankaner, Gujarat



Mundra Port
Kachchh, Gujarat

Distance : 214 km
Time : ~ 5 hrs
Shipment Time : ~ 48 hrs

Costs Involved :

- Loading from the WRW plant into the Trucks & Unloading at the Mundra port from the Trucks.
- Man power to do the loading and unloading.



MULTIMODAL VIA WATERWAYS

ROUTE DETAILS & COSTS INVOLVED

Phase II: WATERWAYS



Mundra Port
Kachchh, Gujarat



Paradeep Port
Paradeep, Odisha

Distance : 2354 nm (~ 4400 km)
Shipment Time : ~ 624 hrs (25-26 Days)

Costs Involved :

- Loading from the Mundra Port into the containers & Unloading at the Paradip Port from the containers.
- Loading and Unloading equipments such as cranes.

MULTIMODAL VIA WATERWAYS

ROUTE DETAILS & COSTS INVOLVED

Phase III: ROADWAYS

Paradeep Port
Paradeep, Odisha

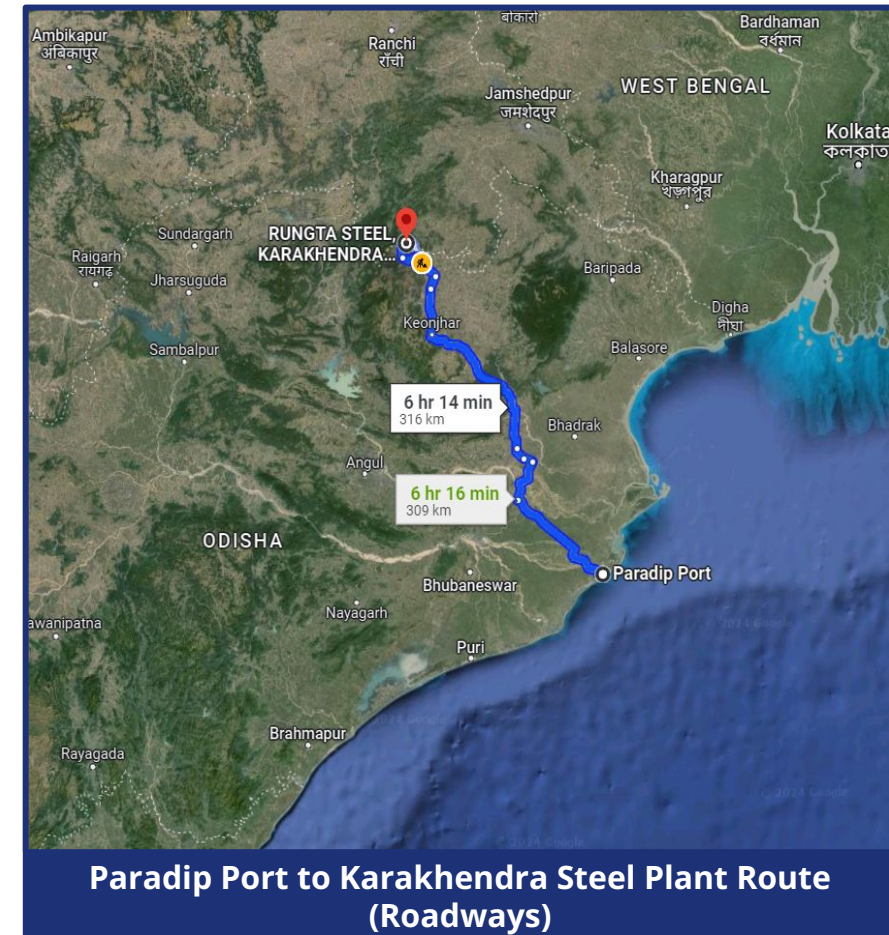


Rungta Mines, Karakhendra Steel Plant
Barbil, Odisha

Distance : 316 km
Time : ~ 7 hrs
Shipment Time : ~ 45 hrs

Costs Involved :

- Loading from the Paradip Port into the Trucks & Unloading at the Karakhendra Steel Plant from the Trucks.
- Man power to do the loading and unloading.



MULTIMODAL VIA WATERWAYS: PACKAGING DETAILS



SEAWORTHY PACKING OF CASTABLE SACKS



PALLETS PLACED INTO THE CONTAINER



AIR POCKETS FOR EXTRA CUSHIONING

- Sacks should be Palletized to keep them intact and off the ground, thus reducing the risk of damage from water, dirt, and debris.
- Proper Shrink Wrapping is required to allow zero moisture to enter the package.
- Pallets are then loaded into the container placed on the truck with the help of Forklifts.
- Air Pockets are provided in between the pallets for extra cushioning of the material to avoid delivery damages.

MULTIMODAL VIA WATERWAYS: QUOTATION FOR THE DELIVERY

RATE FOR MULTIMODAL TRANSPORTATION - Calderys India Refractories								
SL NO	FROM	TO	SIZE	POL	POD	FREIGHT	GST	TOTAL
1	Wankaner	Karakhendra	20	Mundra	Paradeep	142000	17040	159040

Transit time will be about 30 days from dispatch for door-to-door delivery.

Terms & Conditions:

Type : Door to Door

Payment Terms : Payment on delivery.

Maximum loadability: 28 MT Per Container.

GRLD (Demurrage) Ground Rent & Line Detention Charges: As per the Discharge port tariff and concerned line tariff will be collected before delivery (after the free time as per our agreement), GRLD (Demurrage) only 5 days free including the date of arrival.

Other charges : Loading/Unloading, Atticoolies, Mamool etc. will be borne by You.

Insurance : to be taken by Consignor/consignee.

Shortage/damage: We will not be responsible for any shortage or damage during the transit. To seal the container after loading with one time seal and proper documents (required to transit) is the sole responsibility of the consignor.

Container and Cost Details:

Container size: 20 ft

Maximum Load: 28 MT per container

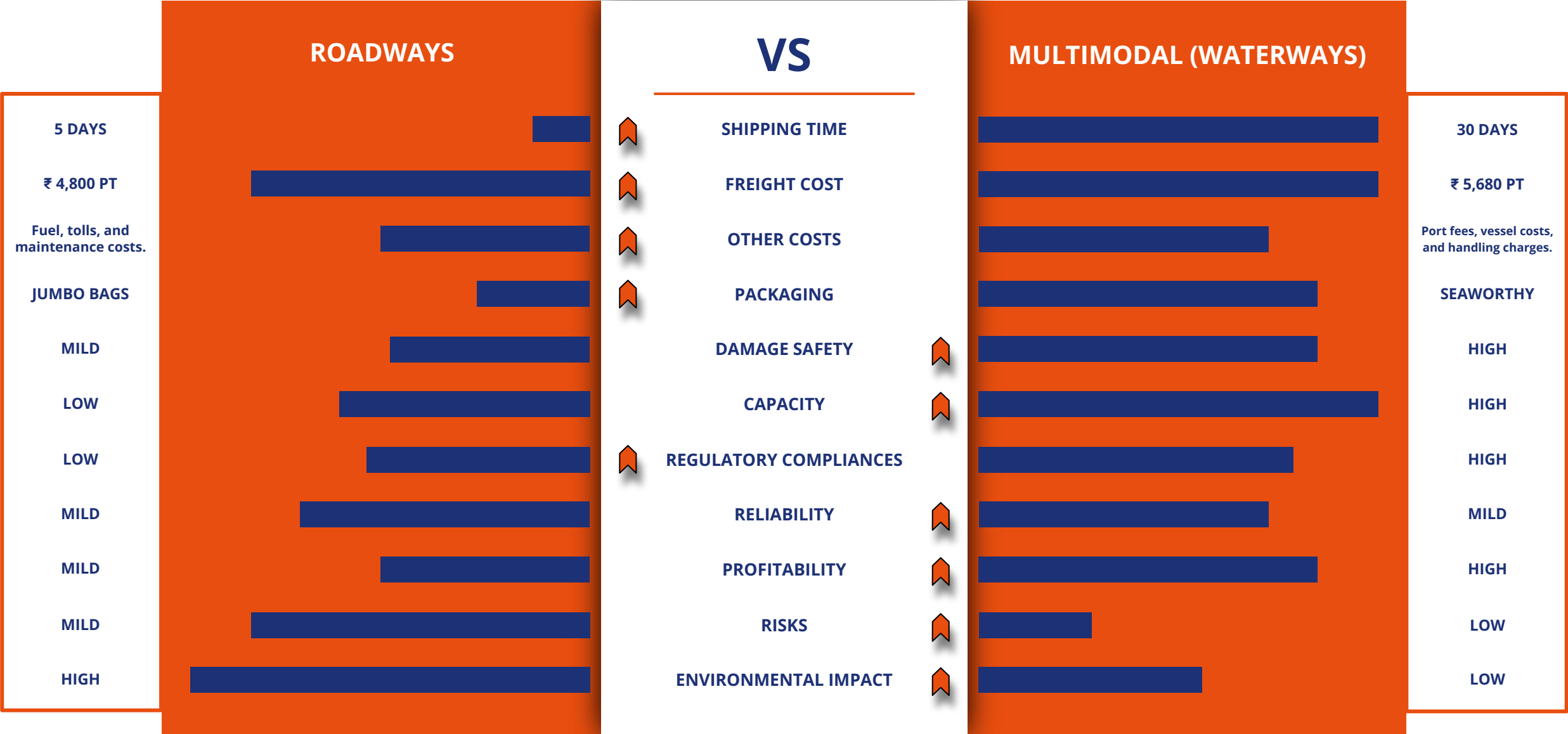
Total Freight Cost per container:

₹ 1,59,040 per container

Total Freight Cost per ton:








₹ 5,680 per ton

ROADWAYS vs WATERWAYS: A COMPARATIVE STUDY



SITUATIONAL RECOMMENDATIONS:

PREFERRED MODE ACCORDING TO DIFFERENT SITUATIONS

SITUATION	ROADWAYS	MULTIMODAL
<ul style="list-style-type: none">Transit time priorities.		
<ul style="list-style-type: none">Short-distance delivery of high-value or time-sensitive goods.		
<ul style="list-style-type: none">When the delivery destination is along the same coast as that of dispatch location.		
<ul style="list-style-type: none">Transporting small to medium-sized shipments.		
<ul style="list-style-type: none">Sustainability and lower emissions are priorities.		
<ul style="list-style-type: none">Delivering large, bulky, or heavy shipments.		
<ul style="list-style-type: none">Transporting fragile or perishable goods.		

Thank you for your attention

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www.linkedin.com/company/calderys/



www.facebook.com/calderys/

ORDER DETAILS

WANKANER REFRACTORY WORKS,, SURVEY NO.156, NH-8A,, VILL-BHAYATI JAMBUDIYA,, WANKANER, MORBI, 363621. TEL No:7043335339 E-Mail :arvind.vishwakarma@calderys.com PAN : AAFCA3610G GSTIN NO : 24AAFCA3610G1Z9 STATE NAME & CODE :				Delivery Address: Karakhendra Steel Plant Karakhendra DRI 1X600 TPD AT-Karakhendra, BARBIL, Dist. - Keonjhar, 758035. Invoicing Address: RUNGTA MINES LIMITED Karakhendra Steel Plant Karakhendra DRI 1X600 TPD AT-Karakhendra, BARBIL, Dist. - Keonjhar, 758035 Odisha. State Name & Code : Odisha, 21. GSTIN : 21AABCR6463N1Z6			
PURCHASE ORDER FOR CASTABLES (ACCMON 80 G MAX) FOR OUR 1 X 600 TPD DRI PROJECT AT KARAKHENDRA STEEL PLANT, KARAKHENDRA, AT/PO-BARBIL, DIST-KEONJHAR, ODISHA-758035.							
Sr. No.	Item Code \$ HSN Code # PR No.	Plant	Item Description	UOM	Qty	Rate	Amount
1	30152251 \$ 38160000 # 1100017877	P155	CASTABLE,RFCTY;ACCMO N 80 G#MAX. PHYSICAL/CHEMICAL PROPERTIES: AS PER YOUR SUBMITTED OFFER NO. CIRL/NRO/DRI/SM/061/2023, DT. 31.08.2023 & TECHNICAL NEGOTIATION WITH OUR RML TEAM.	MT	1,045.00	57,100.00 IGST @ 18%	59,669,500.00 10,740,510.00
Amount (IN WORDS)-Seven Crore Four Lakh Ten Thousand Ten Rupees Only						Material Value : IGST : Order Amount :	59,669,500.00 10,740,510.00 70,410,010.00