JINDAL POWER LIMITED, TAMNAR

25th CII National Award for Excellence in Energy Management 2024

Presenting By:
Bagesh Datt Mishra (AGM – C&I)
Sandeep Patel (Manager – Operation)
Shubham Sahu (AM – O&E)

JPL Tamnar At A Glance..

Building Nations, Empowering Communities

An ever-flourishing company focused on nation building, value creation and sustainable development

Extreme Ownership

Better Than Before

Respect For People

Sustainability

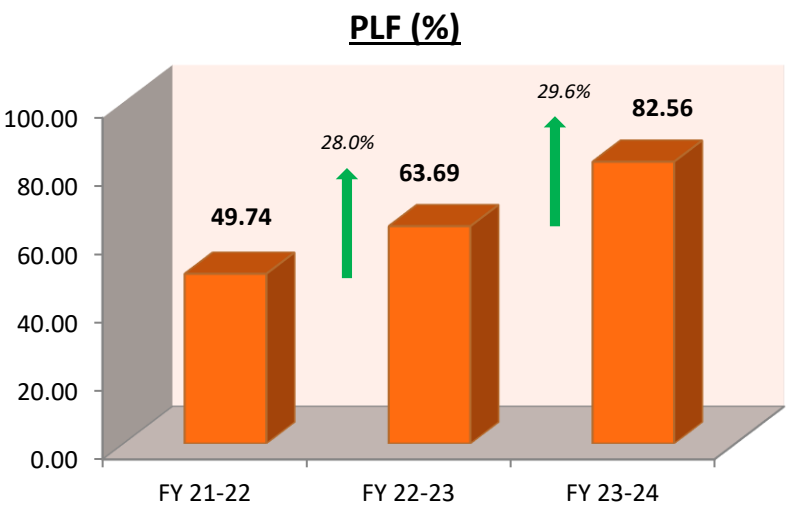
JPL Tamnar At A Glance..

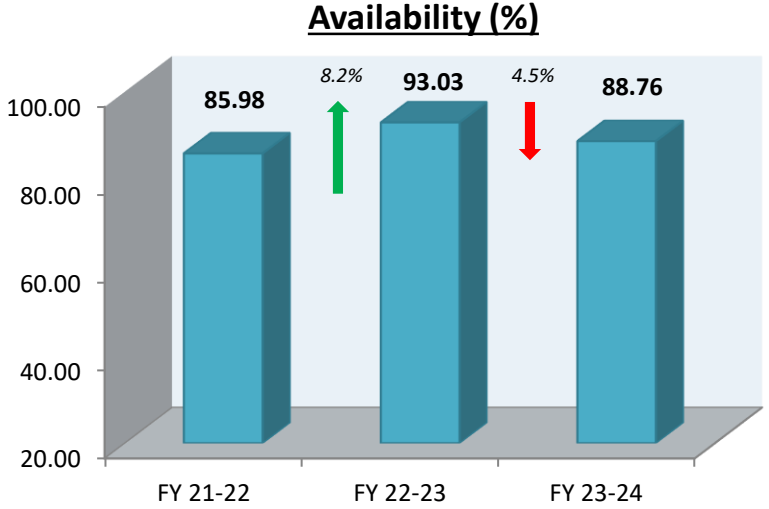
- Jindal Power Limited
- Location : Tamnar, Raigarh, Chhattisgarh
- Capacity : 3400 MW (4X250 MW + 4X600 MW)
- Pulverised-Fuel (PF) Boiler
- Water from Rabo Dam (35 KM) & Kalma Pump house (60 KM)
- Coal Mine having Clean coal technology-based Coal Washery
- Coal transportation via 7 KM long CCPC
- 258 KM long 400 KV double circuit line
- ISO – 9001, ISO – 14001, ISO 50001 Certified

Plant Performance FY 23-24

Parameters	UOM	Stage-I (4X250 MW)	Stage-II (4X600 MW)	Station (3400 MW)
Generation	MU	7517.44	17140.56	***24658.00***
PLF	%	85.58	81.31	***82.56***
Availability	%	93.21	86.91	***88.76***
Gross Heat Rate	kcal/kwh	2299	2295	***2296***
Auxiliary Power	%	9.61	5.25	***6.58***
Boiler Efficiency	%	86.47	86.52	***86.50***
Turbine Heat Rate	kcal/kwh	1988	1986	***1987***
DM Water Consumption	%	0.76	0.76	***0.76***
Raw Water Consumption	m3/MW	-		***2.44***
Specific Oil Consumption	ml/kwh	0.090	0.181	***0.153***
Specific Coal Consumption	kg/kwh	0.748	0.748	***0.748***

Sp. Energy Consumption Trend (Station 3400 MW)



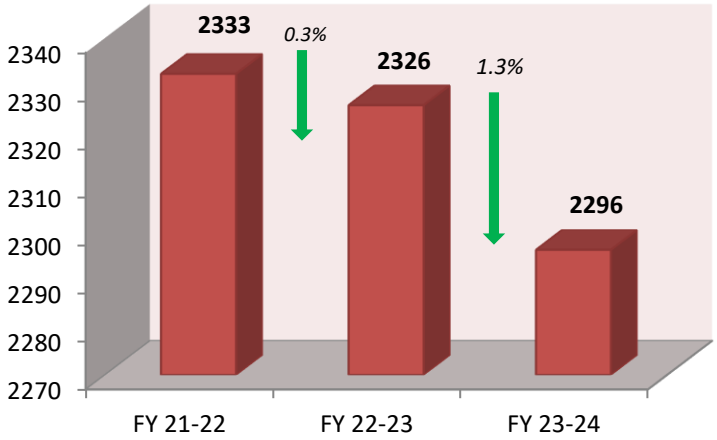


- ❑ Increasing PLF Trend
  - ✓ Coal Availability & Mines Allocation
  - ✓ Higher Sales due to Schedule & IEX Price

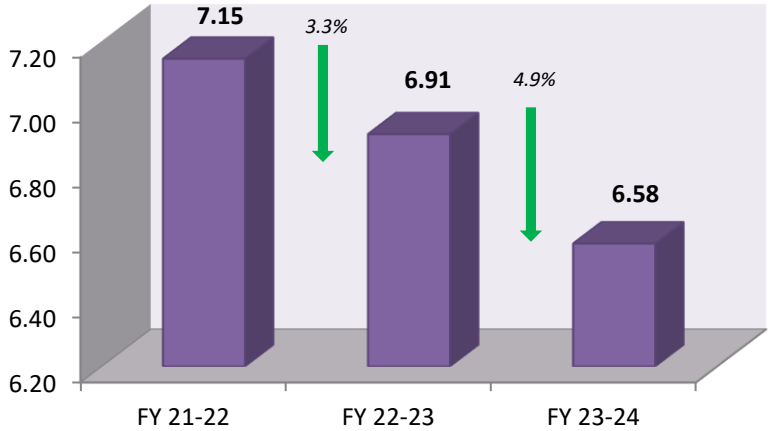
- ❑ Availability
  - ✓ Decrease in Availability in FY'24 due to Increase in PO for 5 unit OH

Sp. Energy Consumption Trend (Station 3400 MW)

Gross Heat Rate (kcal/kwh)



Auxiliary Power (%)

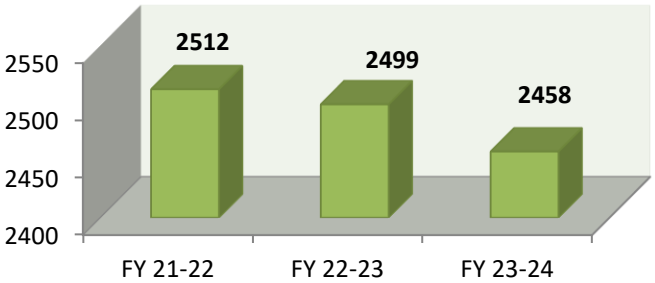


❑ Decreasing GHR Trend
- ✓ Comprehensive OH of Units
- ✓ Improved Coal Quality (Imported Coal Blending)
- ✓ Higher PLF & LF

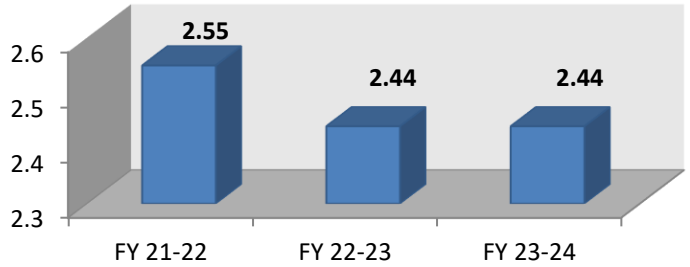
❑ Decreasing APC Trend
- ✓ Increase in Solar Capacity
- ✓ Comprehensive OH of Units
- ✓ Reduced SCC
- ✓ Higher PLF & LF

Sp. Energy Consumption Trend (Station 3400 MW)

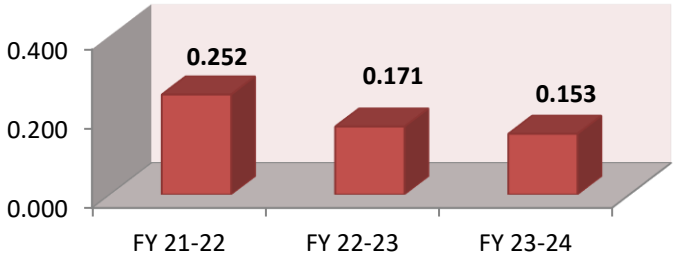
Net Heat Rate (kcal/kwh)



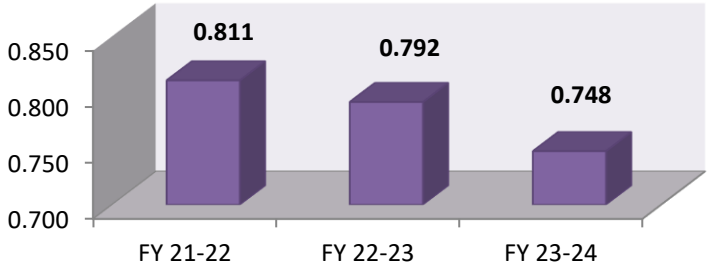
Raw Water Consumption (m3/MW)



Specific Oil Consumption (ml/kwh)



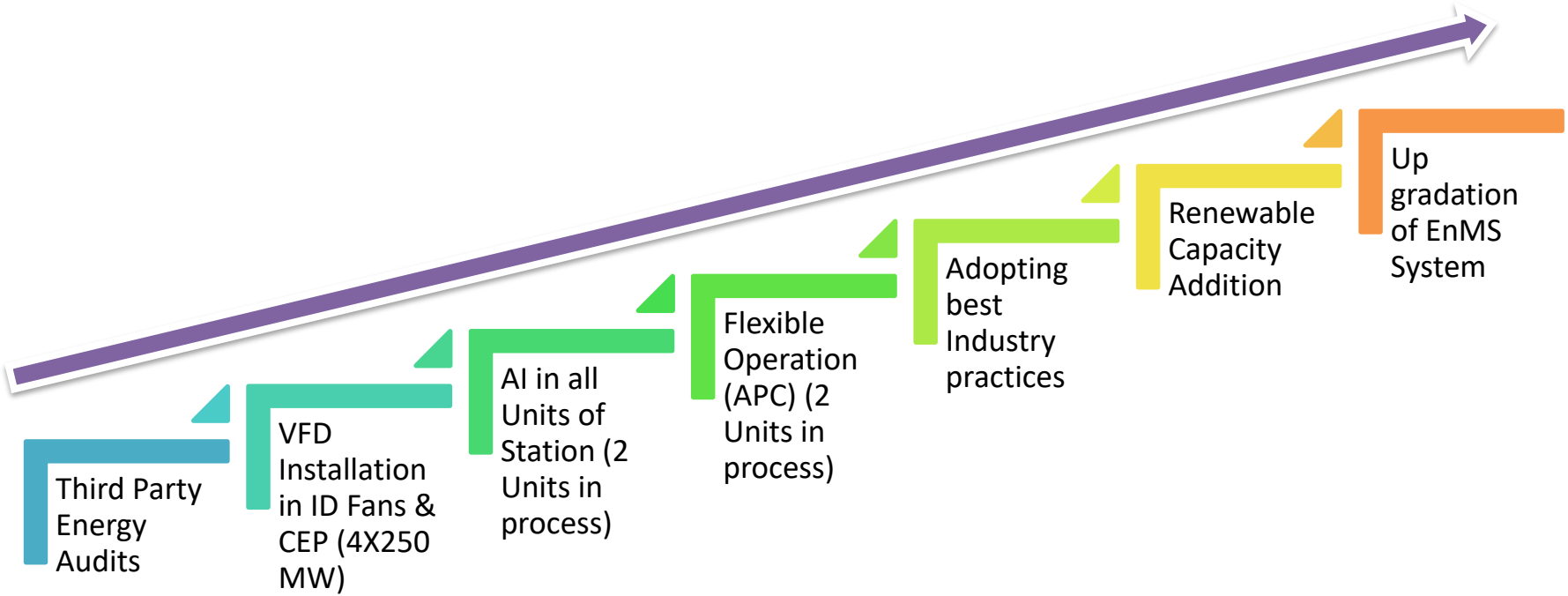
Specific Coal Consumption (kg/kwh)



National Benchmarking

FY 22-23					FY 23-24
Vindhyachal	NTPC Farakka	Sipat	Parameters	JPL Tamnar	JPL Tamnar
4760	2100	2980	Capacity (MW)	**3400**	3400
37337.13	12402.33	21167.99	Generation (MU)	**18967.99**	24658
89.54	67.42	81.09	Plant Load Factor (%)	**63.69**	82.6
92.85	85.83	87.28	Availability (%)	**93.03**	88.8
0.18	0.75	0.26	SOC (ml/kwh)	**0.171**	0.2
6.58	7.74	5.73	Aux Consumption (%)	**6.91**	6.6
2368	2450	2298	Gross Heat Rate (Kcal/Kwh)	**2326**	2296

Roadmap to Achieve National Benchmark



Major ENCON Projects FY 24-25

Project Description	Expected Savings (MU)	Energy Savings (TOE)	Expected Savings (INR Million)
Implementation of Artificial intelligence tool for efficiency improvement in 600 MW U#2 & 250 MW U#2	34.69	7907	99.78
Installation of VFD to ID Fans 250 MW U#1	2.07	472	6.82
ID Fan Current Reduction after OH Work : 250 MW U# 1 & 4, 600 MW U#1	11.16	2546	33.52
APH Baskets Replacement in OH : 250 MW U# 1 & 4, 600 MW U#1	19.43	4430	56.85
Condenser Vacuum Improvement : 250 MW U# 1 & 4, 600 MW U#1	14.68	3349	44.09

Total Expected Savings of 82 MU, INR 241 Million in FY 24-25

Energy Saving Projects Implemented

Year	No. of Energy Saving Projects	Investment (INR Million)	Electrical Savings (Million kWh)	Thermal Savings (Million Kcal)	Total Savings (INR Million)
FY 2021-22	7	119.0	5.59	42200	71.0
FY 2022-23	13	97.4	14.54	122182	166.3
FY 2023-24	9	145.1	18.69	69799	144.2

ENCON Projects

FY: 21-22

- *CW Pump Operation Optimization*
  - ✓ 5 CW Pumps for 1 Phase (2 Units) in Summers for Stage-II (4X600 MW)
  - ✓ Savings of 3.55 MU & 8.88 INR Million

Energy Saving Projects Implemented

ENCON Projects

FY: 22-23

- ❑ O2 Grid Arrangement at APH Inlet
  - ✓ Optimization of Oxygen % and hence draft power savings (230 KW Savings in 1 Unit)
  - ✓ Savings of 1.16 MU & 3.47 INR Million

- ❑ CW Pump Operation Optimization
  - ✓ 3 CW Pumps for 1 Phase (2 Units) at part loads for Stage-II (4X600 MW)
  - ✓ Savings of 5.45 MU & 16.34 INR Million

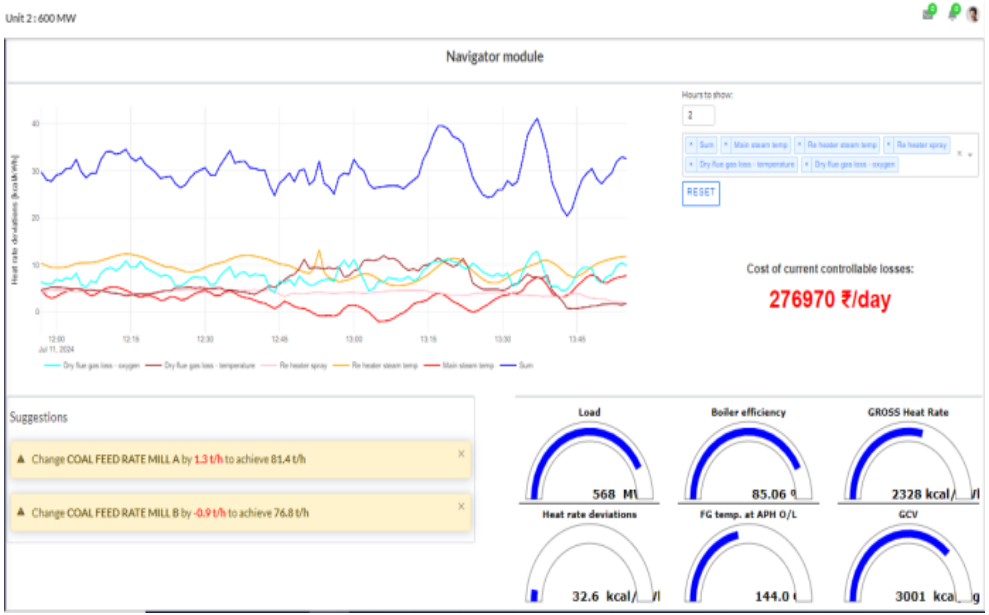
FY: 23-24

- ❑ VFD Installation in CEP U#1 Stage-I (4X250 MW)
  - ✓ 10 KW Savings in each CEP
  - ✓ Savings of 0.11 MU & 0.37 INR Million

Innovative Project : AI Project (Real time Performance Monitoring)

Project Title	Heat Rate and Coal Consumption Reduction by AI Implementation
Analyzes Complex Data Beyond Human Capabilities	Navigator's advanced AI transcends human limitations by processing and analyzing vast, complex data in real-time, offering precise, actionable insights. This intelligent system expertly navigates the intricate web of variables in energy production, ensuring optimal decisions and mitigating human errors caused by fatigue or distraction, thus significantly enhancing operational efficiency and reliability.
Heat Rate Online monitoring	Observation of HR trend, losses and remedial action to be taken based on Navigator's suggestion.
Sensor Validation System To Increase Plant Reliability	Sensor malfunction alerts, Detection of technological issues, Simulation of broken or missing sensors (sensor digital twin).
Early Detection of Anomalies and Sensor Failures	Early Warning System, Reducing Unplanned Downtime & Maintenance Costs, Sensor Malfunction Alerts, Preventing Operational Errors, Leveraging Advanced Simulations.
Expected Annual Savings	Minimum INR 1.5 Crore for 250 MW Unit & INR 6.2 Crore for 600 MW Unit.
Status	In Process in 600 MW U#2 & 250 MW U#2 (To be implemented in entire Station by FY'25).

Innovative Project : AI Project (Real time Performance Monitoring)



Why Innovative..?

- ✓Optimized Combustion Efficiency
- ✓Enhanced Predictive Maintenance
- ✓Process Optimization through Real-Time Performance Monitoring & Dynamic Load Management
- ✓Energy Efficiency Improvements
- ✓Data-Driven Insights and Continuous Improvement

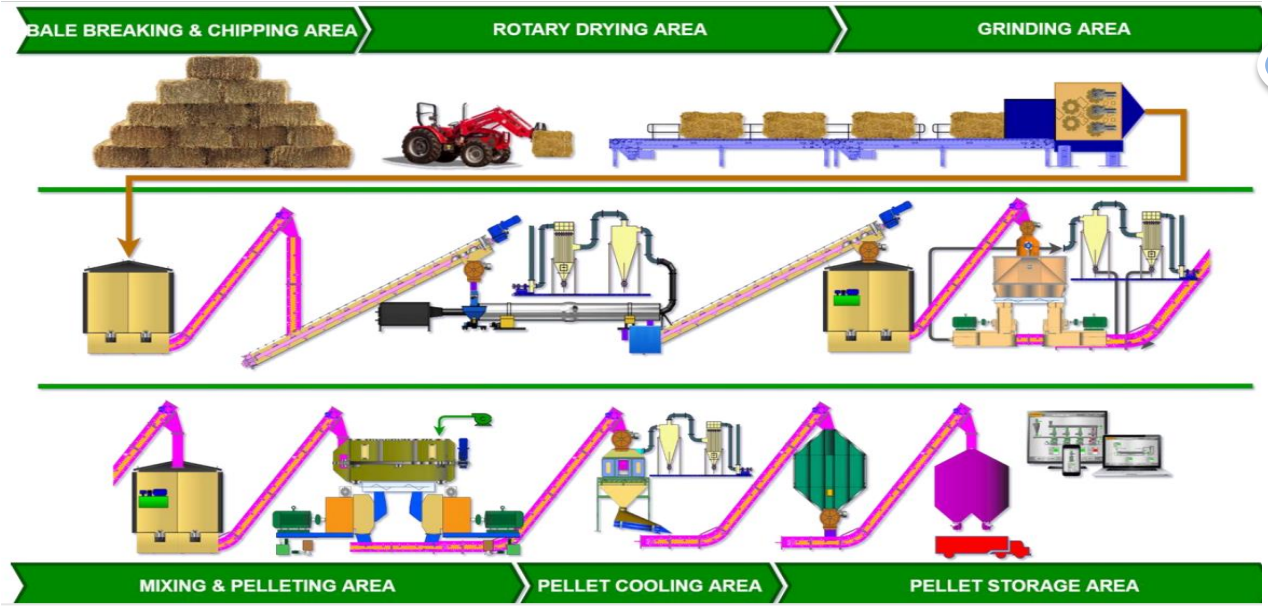
❑ Replication Potential

✓Reduced fuel consumption, Operational & maintenance costs.

Innovative Project : Biomass Pellet Plant – 2 X 4 TPH Capacity

Project Title	2x4 TPH Biomass Pellet Plant
Plant Capacity	160 TPD, 48000 TPA
Feedstock	Paddy Straw, Forest waste, Firewood, Bamboo, Subabool, Rice husk, Horticulture waste etc.
Pellet Plant Equipment's	Shredder, Chipper, Rotary Dryer, Hammer Mill, Pellet Machine (Ring Die type), Cooler and material handling equipment's
Biomass Pelleting Process	Raw material selection - Shredding/Chipping - Drying with the help of rotary dryer - Grinding with Hammer mill - Pelleting with Pellet machine - Cooling with the help of discharge belt conveyors and coolers – Bagging/Packing
Air Pollution Control Equipment	Bag filters are provided to control dust and this dust free air will be sent to atmosphere through 15 meter height chimney
Water Requirement	Water Requirement is only 1000 to 1500 Litres per week (Only periodic make up water required as it is recirculated).
Pellet Plant Area	12000 M2

Innovative Project : Biomass Pellet Plant – 2 X 4 TPH Capacity



Why Innovative..?

- ✓Reduction of GHG emissions
- ✓Utilization of waste and by-products
- ✓Enhanced energy security
- ✓Potential for rural development

❑ Replication Potential

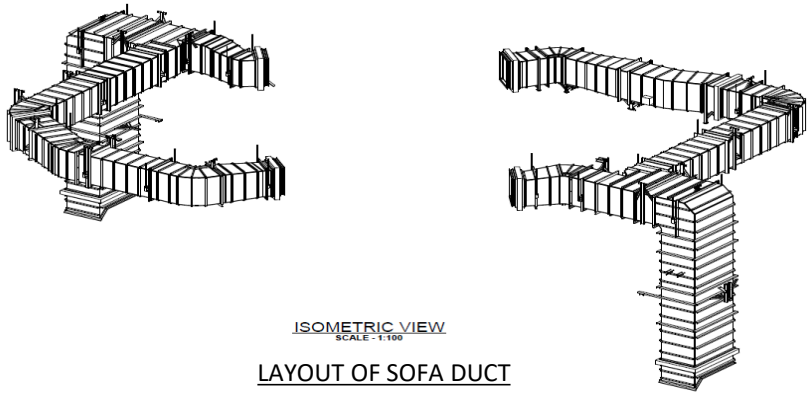
Significant potential due to the growing demand for renewable energy sources and the global shift towards sustainability.

Innovative Project : Biomass Pellet Plant – 2 X 4 TPH Capacity

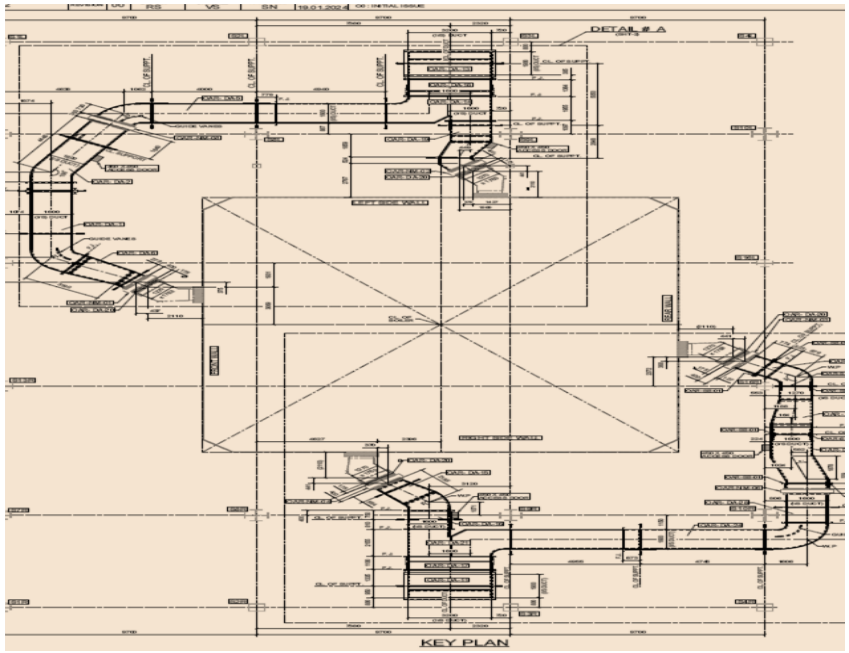
Innovative Project : Low NOx Burner

Project Title	NOx Emission Reduction by Installation of De-NOx Burner & SOFA
Requirement	To fulfill requirement of Govt. of Guidelines directed by MOEECC
Target	NOx Value less than - 450mg/Nm3
Technology Used	NOx reduction is achieved by operating the firing zone under sub-stoichiometric firing conditions by reducing Oxygen concentration in the active firing zone. This is accomplished by introducing a portion of the combustion air higher in the furnace through a separated over fire air (SOFA) Windbox. In this a significant portion of the combustion air will be introduced through the SOFA registers, and the rest of the air shall continue to be used through main Windbox as secondary air.
Main Equipment/ Component	❑ De-NOx Burner ❑ SOFA Duct ❑ SOFA registers ❑ Damper controls & Actuators
Result	✓ NOx Emission Reduction ✓ Compliance to MOEECC Guidelines ✓ Combustion Improvement.

Innovative Project : Low NOx Burner



LAYOUT OF SOFA DUCT



PLAN LAYOUT OF SOFA WITH BOILER CONNECTION

Why Innovative..?

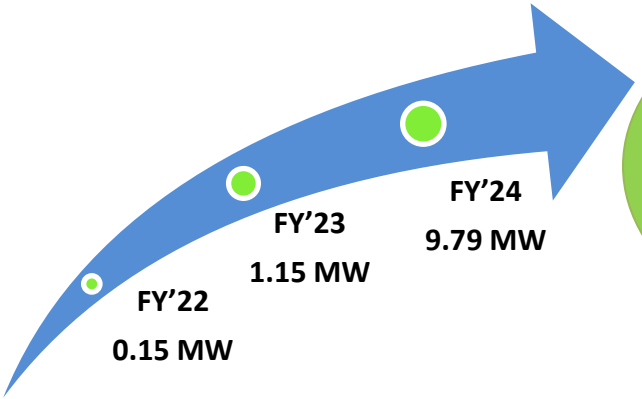
✓Combustion Improvement & NOx Reduction

❑ Replication Potential

Significant replication potential due to need of the hour to reduce GHG Emissions & Improved Combustion.

Utilization of Renewable Energy Sources (Onsite)

Year	Solar Installed Capacity (MW)	Capacity Addition (MW)	Generation (MU)	Share % w.r.t Overall Energy Consumption
FY 2021-22	0.15	-	0.183	0.02
FY 2022-23	1.15	1.0	0.944	0.07
FY 2023-24	9.79	8.64	2.645	0.16



78 MW Offsite Solar Project at Kasdol is under progress

Utilization of Renewable Energy Sources (Offsite)

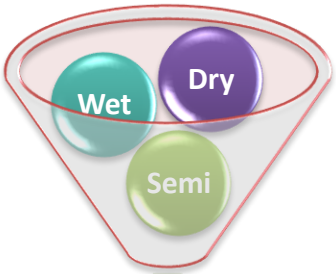
Glimpse of 78 MWp Kasdol Solar Project

Environment Management – Ash Utilization

Ash Handling Infrastructure

- Pneumatic Ash Conveying System
- Slurry Pumps
- HCSD System
- Dry Conveying through Bulkers

Description	UOM	FY 2021-22	FY 2022-23	FY 2023-24
Total Ash generated	Ton	5390404	6737000	8021000
Ash Stock in Plant (yard + pond)	Ton	16150000	0	0
Ash Utilization	%	88	99	101
Ash Utilized in manufacturing of cement/concrete	%	4.32	1.30	1.48
Ash Utilized in Fly Ash Bricks	%	0	0.50	2.08
Ash Utilized in Mine filling	%	69.88	95.03	96.33
Ash Utilization in Other Areas				
a) LLA	%	14.20	3.15	0.095
b) Gudeli Stone Mine	%	11.38	0	0

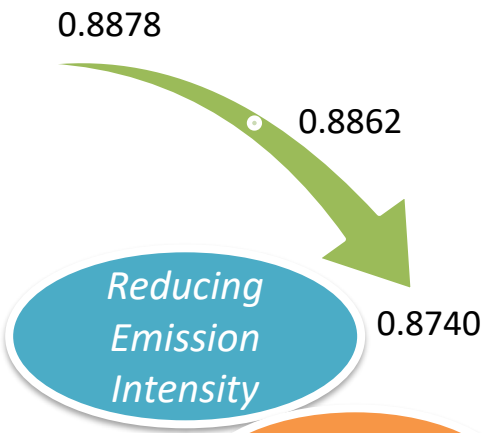


Ash Handling

Environment Management – Emission Monitoring

GHG Emissions

Scope	Description	UOM	FY 2021-22	FY 2022-23	FY 2023-24
Scope-1	Absolute Emissions	ton CO2	13118016	16767624	21518695
	Emission Intensity	Kg CO2/kWh	0.8855	0.8840	0.8727
Scope-2	Absolute Emissions	ton CO2	0	0	**0**
	Emission Intensity	Kg CO2/kWh	0	0	**0**
Scope-3	Absolute Emissions	ton CO2	33415	42580	32145
	Emission Intensity	Kg CO2/kWh	0.0023	0.0022	0.0013
Total	**Absolute Emissions**	**ton CO2**	**13151431**	**16810204**	**21550840**
	Emission Intensity	**Kg CO2/kWh**	**0.8878**	**0.8862**	**0.8740**



Description	UOM	FY 2021-22	FY 2022-23	FY 2023-24
Total CO2 Emissions Per kW of Generation	Kg CO2/kW	0.885	0.883	0.871
Current SOx Emissions at Full Load	mg/Nm3	1454	1290	955
Current NOx Emissions at Full Load	mg/Nm3	395	361	332
Particulate Matter	mg/Nm3	34.3	33.7	34.2

Reduction in SOx & NOx

Environment Management – Emission Monitoring

Best Practices adopted for Emission Control & Monitoring

- ✓ Installation of Low NOx Burner in 600 MW U#1 in Aug'24.
- ✓ Limestone blending with Coal to reduce SOx emission implemented in 250 MW U#1.
- ✓ 06 No's of Continuous Ambient Air Quality Monitoring Stations (CAAQMS)
- ✓ Continuous Emission Monitoring System (CEMS) in all stacks
- ✓ Mobile Fog cannon with water sprinkling , Rain guns & sprinklers installed for controlling fugitive emission
- ✓ 07 km long Cross- Country Closed Pipe Conveyor (CCPC) has been installed for transportation of coal .
- ✓ 06 No's of E-vehicles for Local movements for reduction of carbon emission.
- ✓ PUC center at the plant premises for regular monitoring of vehicle emission.
- ✓ Developments of green belt have been done in Plant premises, Ash dyke, Mines, Rabo dam & Catchment area and Colony area. Approximately 27.95 Lakh No's of Saplings has been planted since 2005 to 2024.

Environment Management – Emission Monitoring

GHG Emission Reduction Plan

❑ Short Term Plan

- ✓ Implementation of AI-ET Navigator to reduce Coal consumption and consequently GHG emissions. Under progress in 2 Units and to completed in all Units by FY'25.
- ✓ Use of sustainable fuel sources such as biomass: Biomass Pellet Plant of 160 TPD is in progress.
- ✓ Investing in renewable energy sources like solar: 78 MW Solar Project at Kasdol is in progress.
- ✓ Optimizing thermal plant processes to minimize emissions and improve overall efficiency.

❑ Long Term Plan

- ✓ Transition to low-carbon technologies: Investing in research and development of low-carbon or carbon-neutral technologies for power generation.
- ✓ Carbon capture and storage (CCS): Implementing CCS technology to capture and store CO2 emissions from power plants, reducing their impact on the atmosphere.
- ✓ Advocating for supportive policies and regulations at the national and international levels to incentivize GHG emission reductions and create a level playing field for sustainable practices.

Environment Management – Water

Description	UOM	FY 2021-22	FY 2022-23	FY 2023-24
DM Water Consumption	%	0.60	0.47	0.76
Raw Water Consumption	m3/MW	2.55	2.44	2.44

Best Practices in Water Management

- **Water Conservation and Efficiency**
  - ✓ Closed Loop Cooling Systems: To minimize freshwater intake and reduce thermal pollution.
  - ✓ Cooling Tower Optimization: Advanced cooling tower technologies are employed to enhance efficiency and reduce water loss due to evaporation and drift. Regular maintenance and optimization of cooling towers ensure they operate at maximum efficiency, conserving water resources.
  - ✓ Water Reuse and Recycling: Treated effluent is repurposed for cooling, ash handling, and other non-potable uses, thereby reducing the dependency on external water sources.

Environment Management – Water

❑ Water Quality Management

- ✓ Continuous Monitoring: Real-time data collection through installed continuous water quality monitoring system allows for prompt corrective actions to maintain water quality.
- ✓ Advanced Water Treatment Technologies: Reverse osmosis, ultrafiltration, and ion exchange help achieve high levels of water purity, making the treated water suitable for various plant operations.
- ✓ Corrosion and Scale Control: Chemical treatment programs are in place to control corrosion and scaling in boilers and cooling systems. These treatments protect equipment, enhance system efficiency, and reduce water consumption.

❑ Effluent Management

- ✓ Zero Liquid Discharge (ZLD)
- ✓ Efficient Effluent Treatment Plants (ETPs)
- ✓ Sludge Management

❑ Rainwater Harvesting

- ✓ Rainwater harvesting systems to capture and store rainwater hence reducing reliance on external water sources.
- ✓ Systems are in place to recharge groundwater aquifers, ensuring sustainable water use. Excess rainwater is directed into the ground, replenishing local water tables and securing long-term water availability.

Best Practices in the Plant (Non-Energy Efficiency)

❑ Flexibilization

- ✓ Flexible operation demonstrated with 3% ramp-up and 40% technical minimum in 600 MW Unit-2 & in 250 MW Unit-3 will be completed by 25th Aug'24. In other Units will be completed by Mar'25.

❑ Technology Advancement

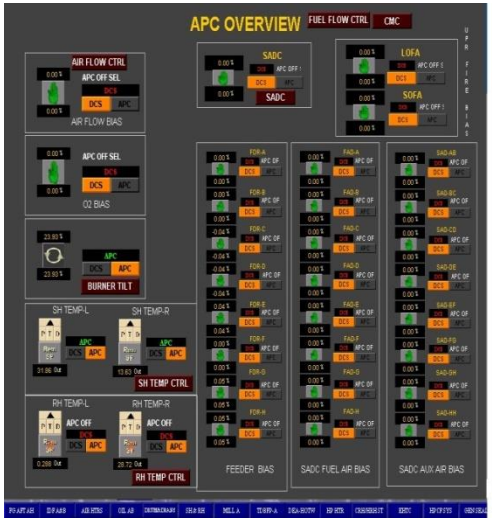
- ✓ Flame Scanner Up gradation for more accurate Intensity and frequency at low loads.

❑ Maintenance and Reliability

- ✓ Comprehensive overhauling of units on schedule.
- ✓ Replacement of critical components with RLA of ECO coil, CT, PT, CVT.
- ✓ CCPC Capacity enhancement to 40 KT/day.

❑ Digitization

- ✓ GPS based vehicle mapping and tracking from Plant to Mines for improved reliability.
- ✓ Implementation of ISO 27001 Information Security Management System.
- ✓ SAP S/4 HANA on RISE Implementation for better reporting capabilities, enhanced user experience & increased productivity.



❑ Asset Management

- ✓ JPL manages its working capital in very efficient manner, the process starts with maintaining the cash flow statement daily and prepare the projected cash inflow and outflow. Surplus funds invested in various investment options.

Best Practices in the Plant (Non-Energy Efficiency)

❑ CSR, Biodiversity & Afforestation

- ✓ **JPL CSR Coverage:** 70 villages / 80000 people.
- ✓ **Health Projects:** Chiranjivi Project (Curbing malnutrition), Vatsalya Project (Mother & Child health), Shubhangi project (Menstrual health & hygiene), PM TB free India Campaign, Sickle cell Anemia project, Mobile health camp.
- ✓ **Community Education & Skill Development:** Project Yashashvi & Sankalp (Skill training & scholarship to 300 rural girls.
- ✓ **Sustainable Livelihood & Women Empowerment:** Project Akrti (Garment making & stitching), Swashakti (200 SHG) impacting lives of 5000 rural women.
- ✓ **Environment & Agriculture**
  - 500 tribal farmers developed wadi orchard of mango, cashew & lemon in 500 acre of land with NABARD.
  - Rejuvenated around 100 water bodies & planted one lakh tree plantation.
  - One watershed project in 900 hq.
  - Supported 500 marginal farmers for SRI project, vegetable cultivation.

❑ New Initiatives

- ✓ Ash slurry pipeline from Plant to Coal mines – 9340 mtr (In Progress).

Energy Management System

- ***Jindal Power Limited, Tamnar is certified with EN 50001 (Energy Management System)***
- The inherent energy efficiencies in our plants enable us to achieve higher level of performance.
- Power consumption is correlated with process or equipment output and energy consumption is used for calculating individual equipment specific power consumption.
- Better decision making to operator to merit order running of the redundant auxiliaries,

TÜV NORD

CERTIFICATE

Management System as per
ISO 50001 : 2018

The Certification Body TÜV NORD CERT GmbH hereby confirms as a result of the audit, assessment and certification decision according to ISO/IEC 17021-1:2015, that the organization

JINDAL POWER LIMITED
Tamnar, District: Raigarh - 496 107, Chhattisgarh, India

operates a management system in accordance with the requirements of ISO 50001 : 2018 and will be assessed for conformity within the 3 year term of validity of the certificate.

Scope -

Generation of Electricity by Operating Coal Based Thermal Power Plant (3400 MW) and Transmission of Power to Grid.

Certificate Registration No. **44 764 19392542**
Audit Report No. **2.5-6121/2013**

Valid from **27.07.2022**
Valid until **28.07.2025**
Initial certification **2013**

Certification Body
at TÜV NORD CERT GmbH

Mumbai, **23.07.2022**

TÜV NORD CERT GmbH Am TÜV 1 45307 Essen www.tuev-nord-cert.com
TUV India Pvt. Ltd., 801, Raheja Plaza – 1, L.B.S. Marg, Ghatkopar (W), Mumbai - 400 086, India www.tuv-nord.com/in

Energy Management System

Glimpse of EnMS System of Stage-I (4X250 MW) & Stage-II (4X600 MW)

Home | Administration | Configuration | Reports | Tag Analysis | Help | Log Off

AREVA | e-terra*reports* SUBSTATION AUTOMATION SYSTEM REPORT | 6.6 KV UNIT SWGR (U4LSR01)-HT | AREVA

Report Type :- Daily | Active Energy Report | Date - 19-Feb-23

Previous Day | Export To Excel | Next Day

SL No.	Name of Feeder	Running Hours	MWH Reading						Avg. PF	Avg. Current	Avg. KW	Avg. Voltage	Aux. Consm. %
			Import		Export		Difference						
			Previous	Present	Previous	Present	Import	Export					
1	4LSR01 FROM UAT-4A	00:00	30169.87	30169.87	14553.83	14781.57	0.00	227.74	-	2088.96	-	0.86	-
2	TIE I/C- 02	00:00	1630.46	1630.46	1.26	1.26	0.00	0.00	-1.00	0.00	0.00	-	-
3	UNIT AUX TRF-01	00:00	27486.23	27492.21	0.00	0.00	5.98	0.00	0.69	32.68	247.94	-	2.62
4	ESP AUX TRF-01	00:00	20088.78	20094.23	0.00	0.00	5.45	0.00	0.97	21.17	226.08	-	2.39
5	CT AUX TRF- 01	00:00	-	-	-	-	-	-	-	-	-	-	-
6	BFP 4A	00:00	56064.55	56064.55	0.00	0.00	0.00	0.00	0.00	0.00	-3.73	-	0.00
7	BFP 4C (SA)	00:00	61115.89	61195.28	0.00	0.00	79.39	0.00	0.88	327.47	3310.99	-	34.86
8	ID FAN 4A	00:00	20493.90	20530.02	0.00	0.00	36.13	0.00	0.80	165.73	1507.28	-	15.86
9	PA FAN 4A	00:00	73708.33	73727.29	0.00	0.00	18.96	0.00	0.82	84.07	789.74	-	8.33
10	FD FAN 4A	00:00	18389.49	18395.09	0.00	0.00	5.60	0.00	0.67	30.49	233.79	-	2.46
11	MILL 4A	00:00	8399.74	8410.06	0.00	0.00	10.32	0.00	0.75	7.98	23.60	-	4.53
12	MILL 4C	00:00	13090.33	13099.42	0.00	0.00	9.10	0.00	0.73	45.15	379.69	-	3.99
13	MILL 4E	00:00	-	-	-	-	-	-	-	-	-	-	-
14	CE PUMP 4A	00:00	4982.86	4988.46	0.00	0.00	5.60	0.00	0.84	24.41	232.92	-	2.46
15	CE PUMP 4C	00:00	5913.87	5920.35	0.00	0.00	6.48	0.00	0.85	27.66	269.56	-	2.84
16	CW PUMP 4A	00:00	18899.20	18928.38	0.00	0.00	29.18	0.00	0.70	151.66	1216.13	-	12.81
17	ACW PUMP 4A	00:00	6638.24	6646.84	0.00	0.00	8.59	0.00	0.82	57.03	357.56	-	3.77
Total							220.78	227.74					

PREVIOUS | JINDAL POWER LTD,4X600MW | 08/19/24 09:57:33

Home | U1-1 U1-2 | U1-3 U1-4 | U1-5 | U3-1 U3-2 | U3-3 U3-4 | U4-1 U4-2 | U4-3 U4-4 | U4-5 | U2-1 U2-2 | U2-3 U2-4 | CHP-1 CHP-2 | AHP-1 AHP-2 | 230

U#1 11KV Station Board(0KSR3) ETG-1(10.10.45.100)

FEEDERS	A	KW	KWH
1 U#1Tie to OKSR1	0	0.0	29531423
2 U#1 Station Serv 0KDT2	13	212.0	20792355
3 U#1 Bottom & ESP Serv Transf 1KDT14	15	235	11463148
4 U#1 Geho Pump 1	6	123.0	2969558
5 U#1 Spare Traformer	000	000	0000
6 U#1 Station Aux Trafo	46	647.0	42608098
7 U#1 Tie to 11 KV stn SWGR	0	0.0	4472560
8 U#1 Bunker Serv Trf 1KBFDT2	2	21.0	3383942
9 U#1 Spare Trafo	18	205	5322921
10 U#1 INC LV 1	122	1783	52066841
11 U#1Ash WTR Serv Trf 0KAWDT1	24	346.0	16768827
12 U#1 Spare GT1	000	000	0000
13 U#1 Tie to 11 KV UNIT Swgr 2KSR1	0	0.0	45283797

U#1 11KV Unit Board(2KSR1)

FEEDERS	A	KW	KWH
14 U#1 TIE FRM Stn Swgr 0KSR3	0	0.0	45293044
15 U#1Serv Trf 2KDT1 with BPT	33	499.0	24040512
16 U#1 Unit Serv Trf 2KDT3	19	225.0	8711659
17 U#1 ESP AUX trafo 2KDT5	10	152.0	3932361
18 U#1 ESP AUX trafo 2KDT7	7	116.0	3141162
19 U#1 ESP AUX trafo 2KDT9	10	118	1983998
20 U#1 ESP AUX trafo 2KDT11	11	193.0	3921448
21 U#1 Unit Aux trafo 2A 16 MVA (2Kuat1)	286	3913.0	94595340
22 U#1 Spare Motor (4200 KW)	000	000	0000
23 U#1 ID Fan 2A VFD Ch 1 (5000KVA)	80	1118.0	40485428
24 U#1 ID Fan 2B VFD Ch 1 (5000KVA)	73	1007.0	39990021
25 U#1 PA FAN 2A 4200KW	90	1362	52914125
26 U#1 CW Pump 2A (2250 KW)	148	2192	24690138
17 U#1 ESP AUX trafo 2KDT5	153	2275.0	81769243
28 U#1 Spare trafo	000	000	0000
29 U#1 INC FRM Unit transf(31.5MVA)	897	12926.0	17197865

Stage-I (4X250 MW) EnMS is from AREVA

Stage-II (4X600 MW) EnMS is In-house developed system.

Learning

Industry Best Practices

Cost Saving Energy Efficiency Measures

Sustainable Energy Practices

Cutting Edge Technologies

Industry Collaboration

NET ZERO Commitment

Few steps taken by JPL to curb Emissions

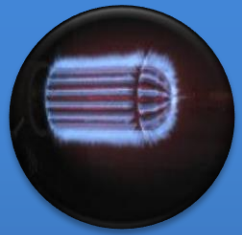
Biomass Pellet Plant

Limestone Blending with Coal

78 MWp Solar Plant

Ash Slurry Pipeline

CCPC Capacity Enhancement



Low NOx Burner

Awards and Achievements

10th FICCI Award for Excellence in Safety System 2023

CEE National Energy Efficiency Award 2023

CBIP Award 2022- Best Performing Thermal Power Station

Grow Care India Occupational Health and Safety Award 2023

Power-Gen ESG and Sustainability Awards 2023

Apex India Green Leaf Energy Efficiency Award 2023

Safety Fortnight Awards 2023

IEX Excellence
Most Active Generator in Electricity

THANK YOU
WE ARE LISTENING….

There must be a better way to make the things we want, a way that doesn't spoil the sky, or the rain or the land." - Paul McCartney

Email: amitpandey@jindalpower.com
Mobile: 7898905225