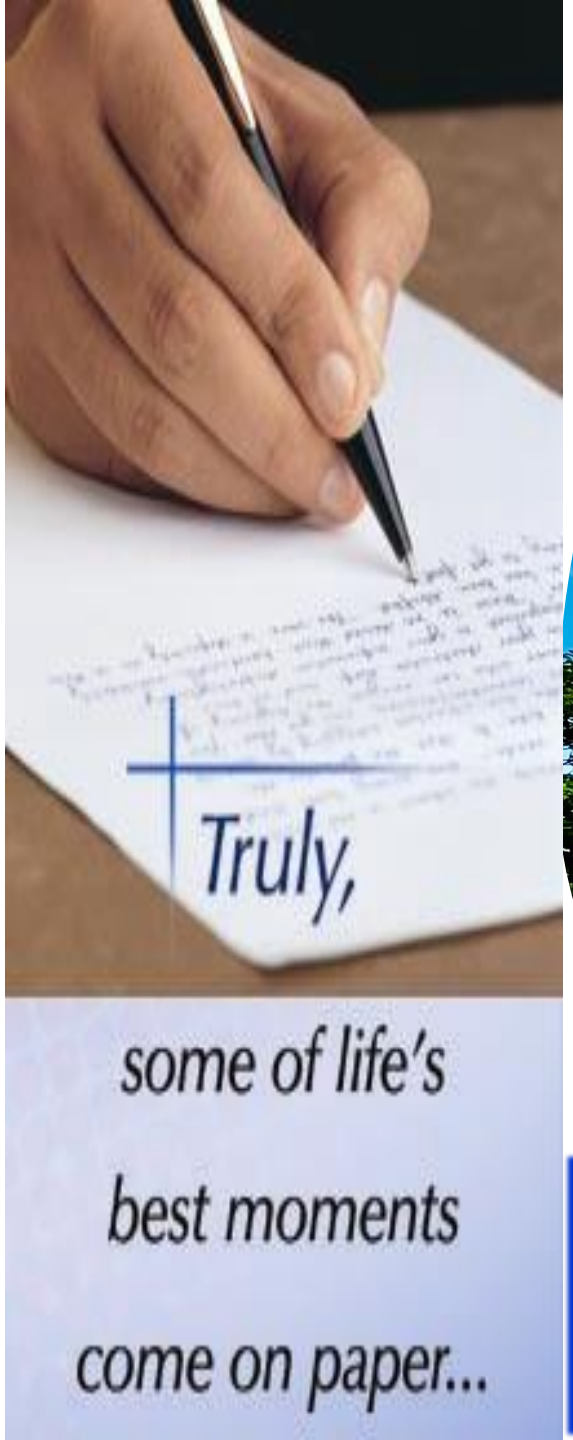


JK PAPER LTD. UNIT: CPM

Creating lasting impressions…

CII National award for excellence in Energy management-2023

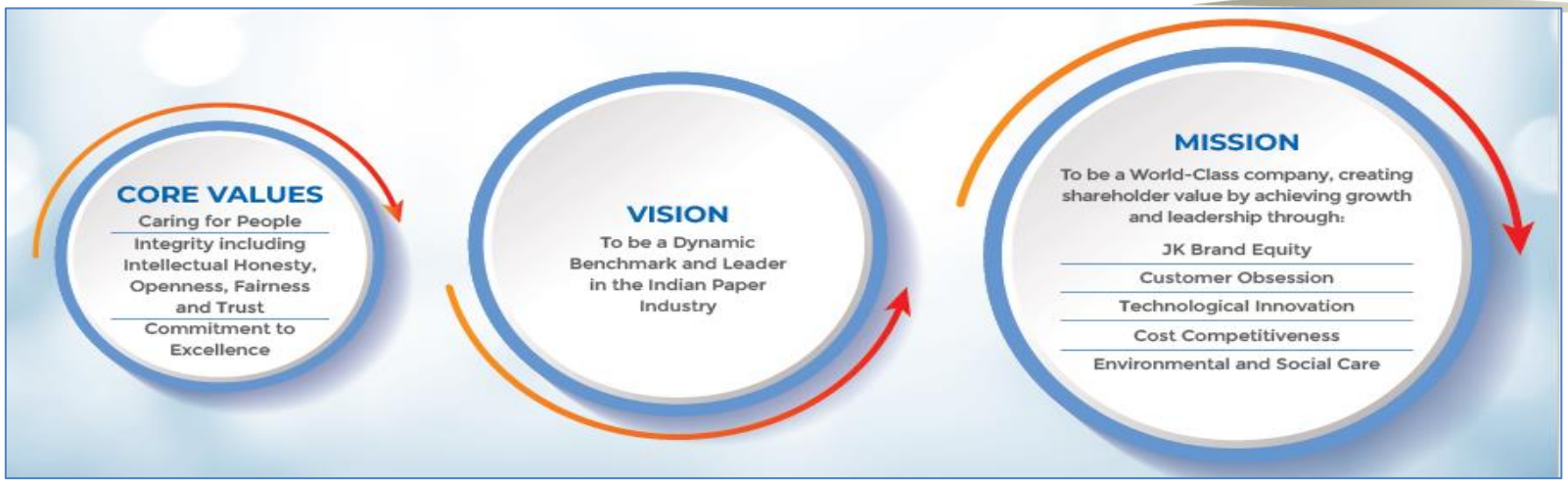
Presented by

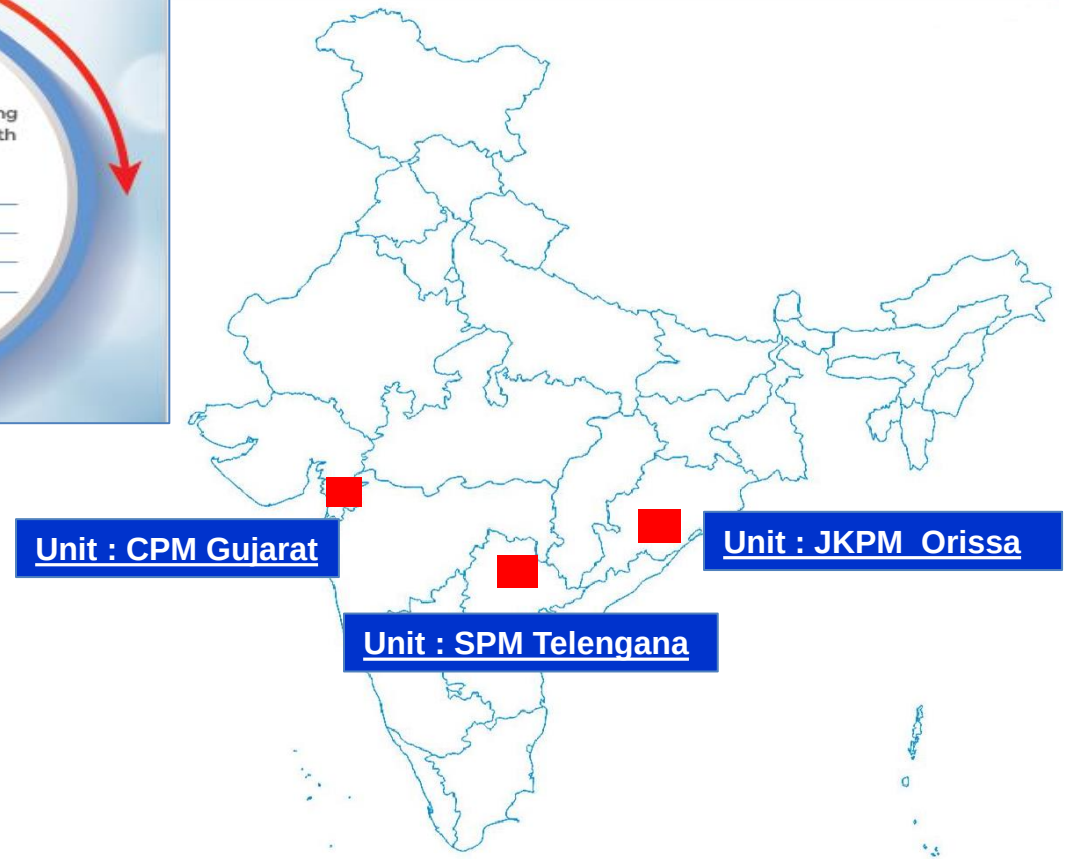
Mr. Shijith K N	Chief Manager OE-P&D
Mr. S Naidu	Sr. Manager Pulp
Mr. Bageesh Kumar	Dy. Manager Elect.

1.1 About JK Paper

JK Organization: A reputed & diversified group in business for over 125 years with a turnover of $4.0 billion.

JK Paper Ltd. is the leading player in manufacturing of office paper, coated paper and packaging board segments with total installed capacity of 7.87 Lac TPA.





Production Capacity (3 Units).

Saleable Product	: 7,87,000 (TPA)
Pulp	: 4,75,000 (TPA BD)

Product Mix

Uncoated Paper	: 4,31,000 MT
Coated Paper	: 55,000 MT
Packaging Board	: 3,01,000 MT

Unit: CPM One of the three integrated pulp and paper manufacturing units of JK Paper Ltd. located at Fort Songadh (Gujarat).

1.2 Our Journey – JK Paper Ltd. Unit: CPM

Mill Established
1968

JK Acquired CPM
1992

1995
Stabilisation of operations

BM-4 (Board)
2007

2022
BM-5 (Board)
Pulp & Recovery Plant
Power plant

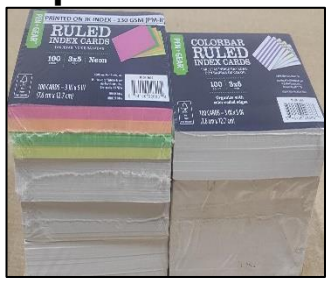
Machine	Capacity TPA	Speed MPM	GSM	Product
PM 1	26000	360	68-180	W&P Paper
PM 2	40000	380	68-210	W&P Paper
BM 4	100000	420	190-430	Packaging Board
BM 5	170000	600	140-440	Packaging Board

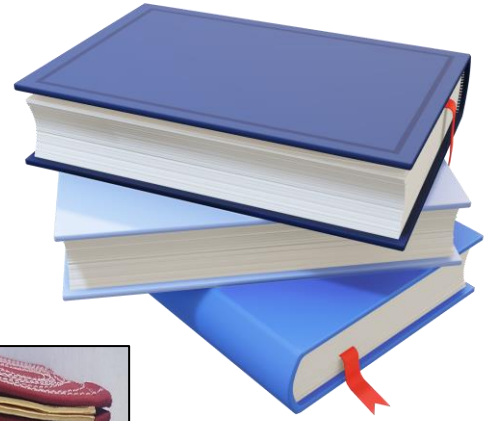
Plant	Capacity
Pulp Mill	150000 BDMT/Annum
LFB	950 BLDS/day.
CFB	150 TPH (Running) ,70TPH (S/B), 50TPH (S/B)
TG sets	28MW,18MW (Running), 12 MW x 2 (S/B)

2. Products

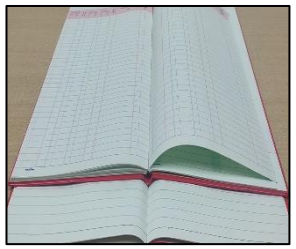
Paper

Copier Solutions





Writing & Printing



Industrial Grade

Packaging Board

FBB products

Disposable Food Tray

Takeaway Box

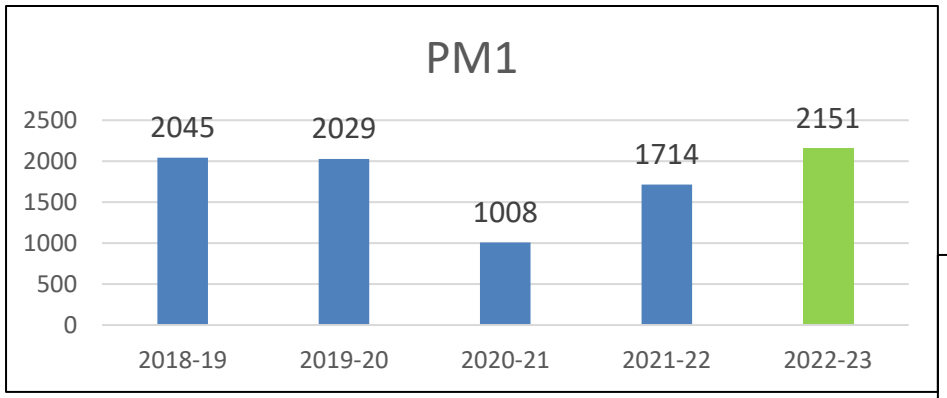
Anti-Fungal Board

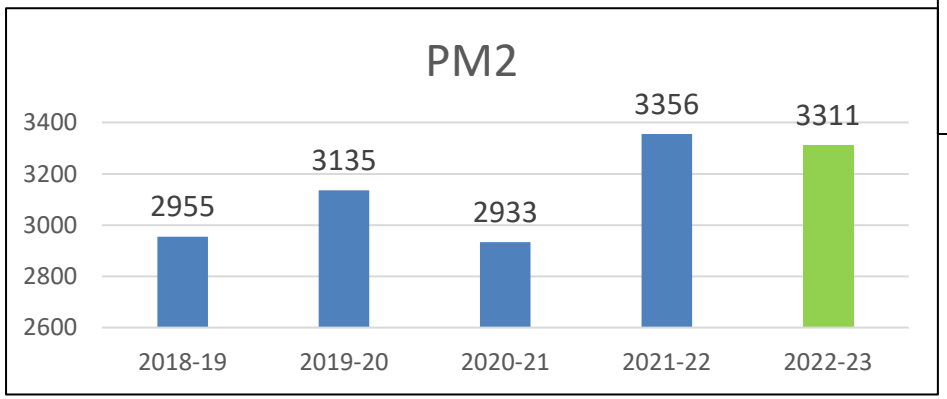
Aqueous heat sealable with OGR coating Cup

JK Pure fill

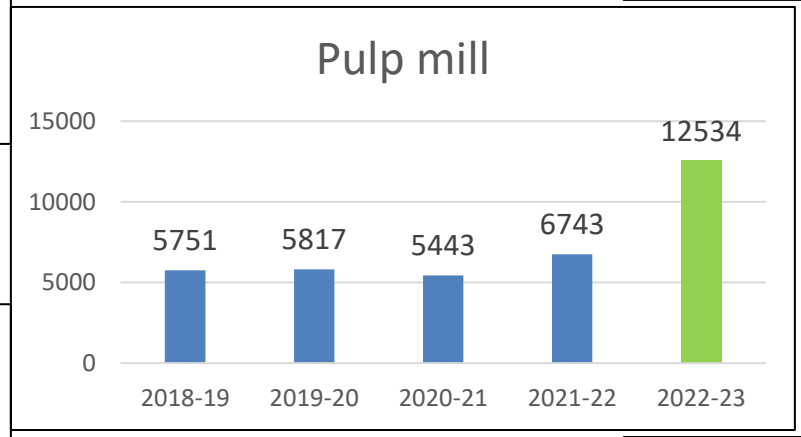
Barrier Coating Cup

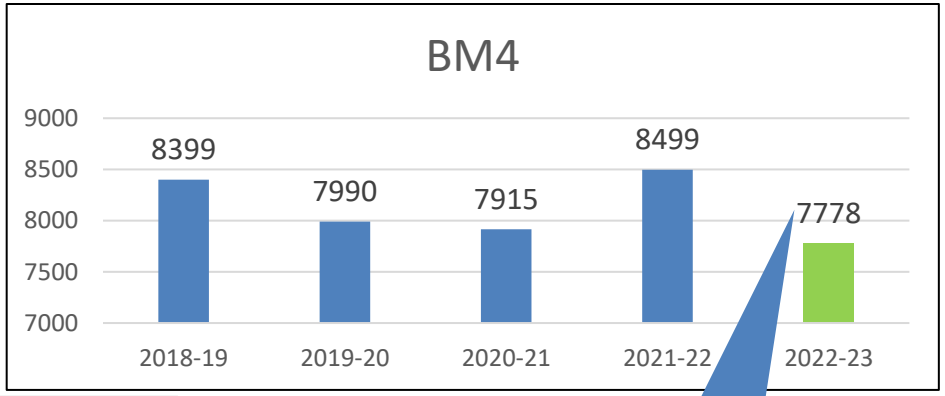
3. Production trends MT/Month





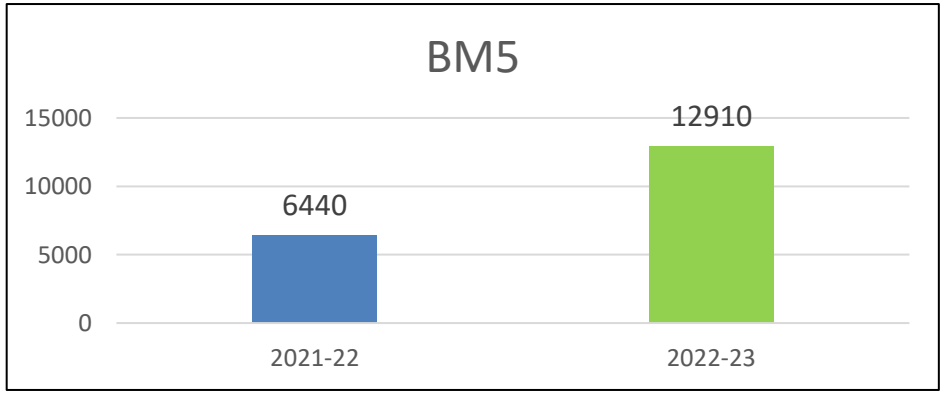
New Pulp mill started from Dec-2021





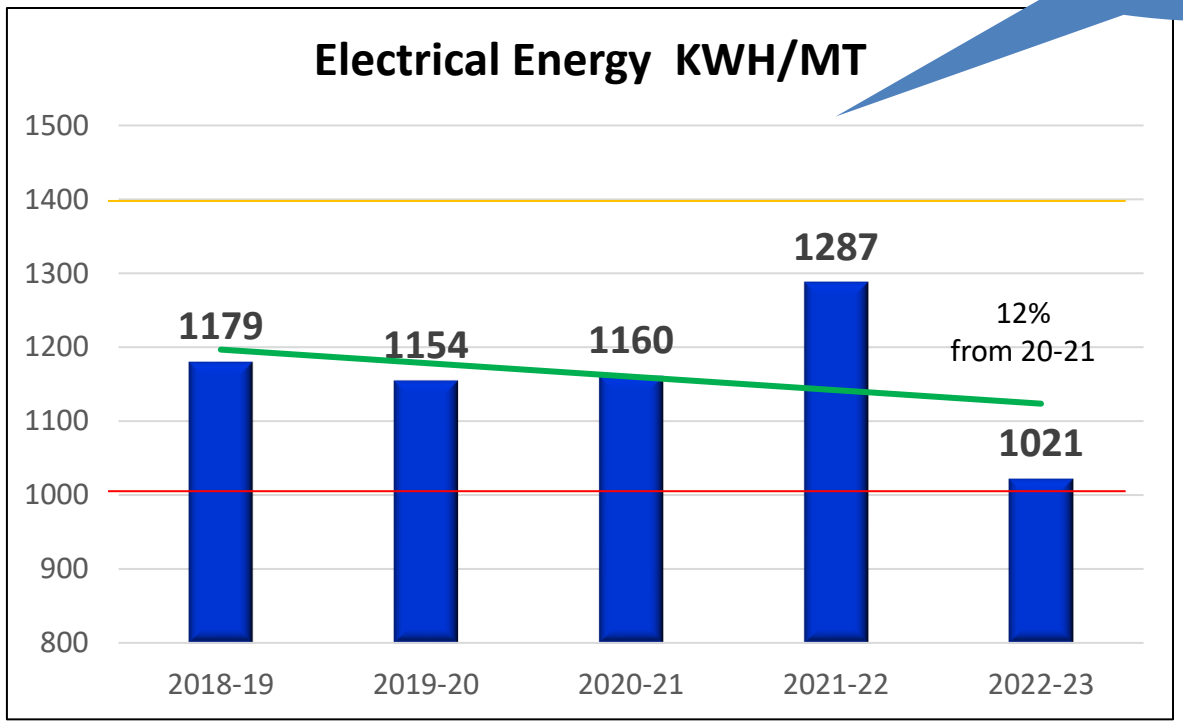
Market Scenario

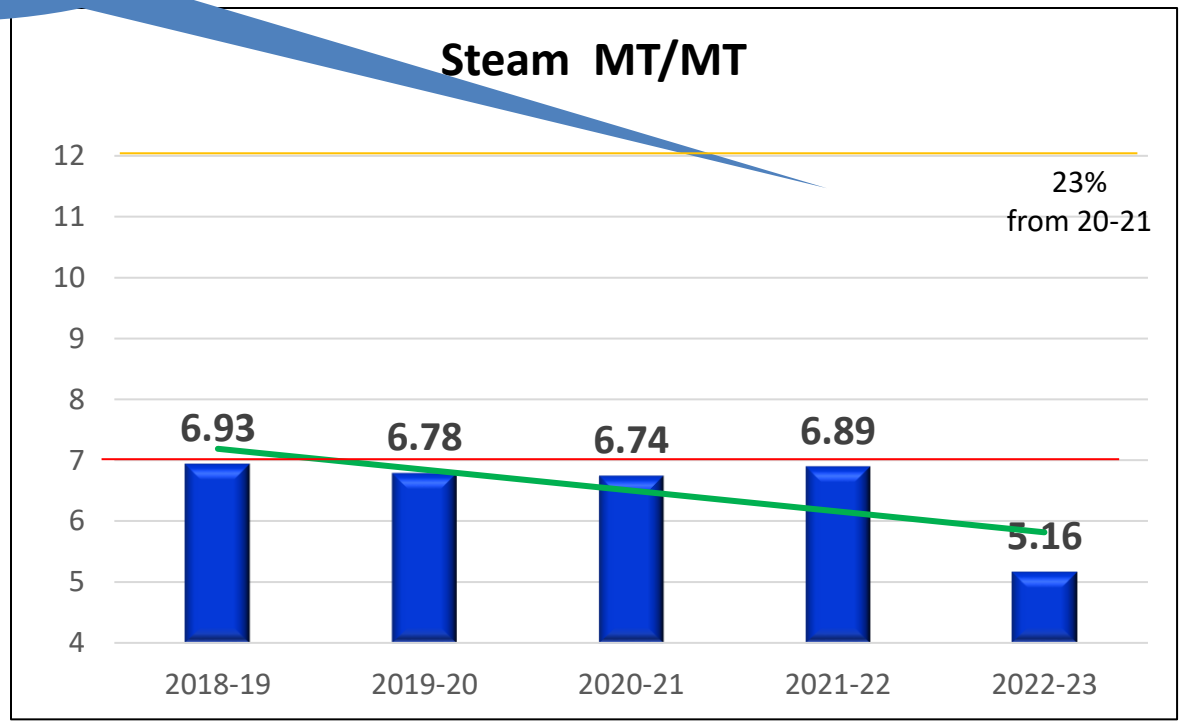
BM-5 started from Sep-2021



4. SEC trends

New Plant start up and stabilisation.

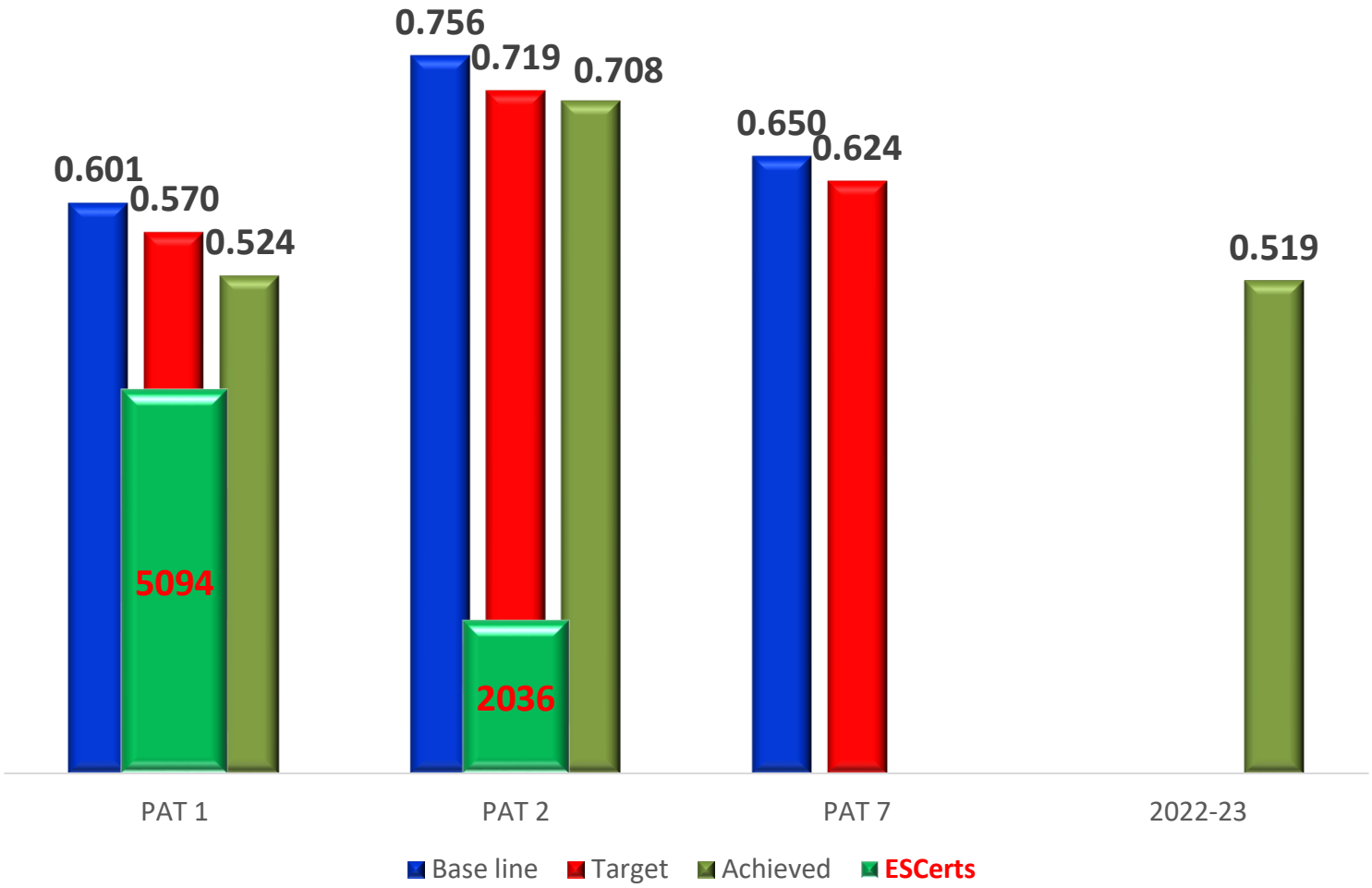




Benchmark	KWH/MT	Reference
Global Avg.	1000-1100	CPPRI Study
National Avg.	1400-1500	CPPRI Study
Competitor 1	1053	CII Energy award

Benchmark	MT/MT	Reference
Global Avg.	7.0-9.0	CPPRI Study
National Avg.	12-13	CPPRI Study
Competitor 1	4.91	CII Energy award

SEC Trends in MTOE/MT of Normalised production



6. Energy saving projects planned 2023-24

Sl. No.	Description of energy efficiency improvement measure	Investment (Rupees Rs Million) estimated	Savings (Rupees Rs Million) estimated	Savings estimated /annum	Units	Fuel
1	Energy efficient Vacuum pump for PM1&2	15.80	14.2	2090400	KWH	
2	Energy efficient Vacuum pump for BM 4	5.00	2.7	402000	KWH	
3	VFD for Identified Equipments	8.00	27.4	4020000	KWH	
4	Compressed air power optimisation	5.00	6.0	876000	KWH	
5	Canal Pump power optimisation	0.20	1.8	262800	KWH	
6	Energy efficient Correct capacity pumps for Pulp mill	3.50	3.0	438000	KWH	
7	Retrofit of PM 1 steam and condensate system	32.00	9.9	6011	Million kCal	Coal
8	Increase Biomass firing in CFB#5	5.00	26.5	23158	Million kCal	Coal
9	Inefficient motor replacement	2.00	1.4	201000	KWH	
10	Methanol firing in RLK	60.00	8.8	1731	Million kCal	FO
	Total	**136.50**	**91.52**			

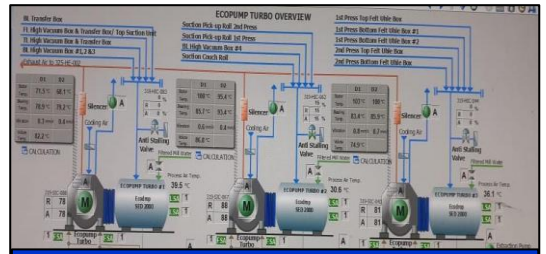
Summary	Unit	Value	Remarks
Electrical Energy	KWH	8290200	0.95 MW
Thermal Energy	M KCal	30899	8350 MT Coal/annum

Summary for Projects implemented in last Four years

S.N.	Year of implementation	Annual Electrical Saving (kWh)	Annual Electrical Cost Saving (Rs million)	Annual Thermal Saving		Annual Thermal Cost Saving (Rs million)	Total Annual Savings (Rs million)	Investment Made (Rs million)
				Quantity	UOM			
1	2022-23	5852280	35.9	10764	M kCal	48.0	83.8	19.2
2	2021-22	10729366	24.2	0	M kCal	0.0	24.2	3.6
3	2020-21	965500	4.5	0	M kCal	0.0	4.5	1.8
4	2019-20	1910180	8.6	7131	M kCal	11.6	20.2	9.9
	Total	**19457326**	**73.1**	**17895**	**M kCal**	**59.6**	**132.7**	**34.5**

Advance technology adopted in Major Expansion Project

High Pressure –Cogen PP



Turbo Vacuum Blowers

DDS technology digester

Centrifugal Compressors

IE 3 Motors

Centralised HVAC

HT VFD for feed Pump

8.1 Energy Saving Projects - Details

S.N.	Title of Project FY 22-23	Annual Electrical Saving (kWh)	Annual Electrical Cost Saving (Rs million)	Annual Thermal Saving		Annual Thermal Cost Saving (Rs million)	Total Annual Savings (Rs million)	Investment Made (Rs million)	Payback (Months)
				Quantity	UOM				
1	Energy saving from condensate line insulation.			2277	M kCal	3.795	3.80	1.77	5.6
2	HP steam saving at 28MW and 18MW Aux. PRDS			3098	M kCal	7.5	7.50	0.45	0.7
3	Replacement of old motors with energy efficient motors in PM1&2.	332000	2.04				2.04	4.00	23.6
4	Installed VFD in Mill water pump and reduced header Pressure.	554000	3.40				3.40	1.50	5.3
5	Installed VFD in WLP Process cooling tower pump for auto Pressure control.	673000	4.13				4.13	1.50	4.4
6	Installed VFD in WLP LMCD filter vacuum pump.	475000	2.91				2.91	0.50	2.1
7	Installed VFD in BCTMP pulper pump in BM5	363000	2.23				2.23	0.50	2.7
8	Power factor improved by adding capacitor banks in WLP& BM5 MCC.	356400	2.18				2.18	0.65	3.6
9	Replacement of Conventional Lights with LED lights in BM#4.	128000	0.78				0.78	0.15	2.3
10	Installed energy efficient Vacuum pump in PM1 .	712000	4.36				4.36	1.95	5.4
11	High efficient screen dilution pump in digester	198720	1.22				1.22	1.50	14.8
12	DC 8 Stock pump replaced with high efficient pump in pulp mill	281520	1.73				1.73	1.00	7.0
13	Energy saved by stopping of Mill water pump to PM 1 & 2 after interconnection	876000	5.37				5.37	0.05	0.1
14	Energy saved by stopping of DM Water pump by using gravity flow	175200	1.07				1.07	0.01	0.1
15	Energy saved by stopping of Water recovery pump by using gravity flow	175200	1.07				1.07	0.01	0.1
16	Energy saved by running efficient refiner of PM#2 for PM#1 by inter connection	403200	2.47				2.47	0.05	0.2
17	Screw press in place of tail screen in Pulp mill	149040	0.91				0.91	0.60	7.9
18	Lime kiln Fuel optimisation through digitalisation			4410	M kCal	35.20	35.20	2.46	0.8
19	Evaporator steam economy improvement through digitalisation			962.65	M kCal	1.3	1.30	0.09	0.8
20	E Auto for internal transportation			15.77	M kCal	0.2	0.17	0.42	29.6
	Total	**5852280**	**36**	**10764**	**0**	**48**	**84**	**19**	

8.2 Energy Saving Projects- - Details

S.N.	Title of Project FY 21-22	Annual Electrical Saving (kWh)	Annual Electrical Cost Saving (Rs million)	Annual Thermal Saving		Annual Thermal Cost Saving (Rs million)	Total Annual Savings (Rs million)	Investment Made (Rs million)	Payback (Months)
				Quantity	UOM				
1	Installation of Online EMS	188889	0.85				0.85	0.94	13.2
2	Installation of VFD Pump PM/C	81664	0.37				0.37	0.25	8.2
3	Installation of High Efficient Motor	67849	0.31				0.31	0.20	7.9
4	Replacement of Vacuum Pump Motors 200 KW	63072	0.28				0.28	0.06	2.5
5	Replacement of Vacuum Pump Motors 55 KW	19710	0.09				0.09	0.05	6.8
6	Replacement of Refiner Motor at PM1	551880	2.48				2.48	2.00	9.7
7	Stopping CFB#4 & TG#4 after Plant load optimisation and taking partial load on GRID	9648000	19.3				19.30	0.00	0.0
8	Stopping of condensate transfer pump (Old plant to new) by gravity flow	62100	0.28				0.28	0.15	6.4
9	PM#2 fan pump RPM & discharge pressure control based on machine draw through VFD	46202	0.21				0.21	0.00	0.0
	Total	**10729366**	**24**	**0**	**0**	**0**	**24**	**4**	

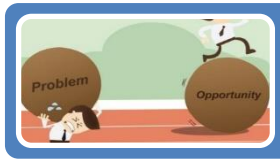
S.N.	Title of Project FY 20-21	Annual Electrical Saving (kWh)	Annual Electrical Cost Saving (Rs million)	Annual Thermal Saving		Annual Thermal Cost Saving (Rs million)	Total Annual Savings (Rs million)	Investment Made (Rs million)	Payback (Months)
				Quantity	UOM				
1	VFD for head box level control at PMC2 :	55000	0.25				0.254	0.6	28.4
2	Reducing frequency of TG3 and TG4	441000	2.03				2.033	0.00	0.0
3	Operation of UTM Pulper with sheet break at PMC1-2	36500	0.17				0.168	0.00	0.0
4	Putting interlocks in four nos of stock chest agitators at PMC2	241000	1.11				1.111	0.20	2.2
5	Reducing machine crawl speed from 60MPM to 15MPM at PM2	87000	0.40				0.401	0	0.0
6	Replacement of 1000 RPM Refiners with 750RPM refiners / 3 nos	105000	0.48				0.484	1	24.8
	Total	**965500**	**4**	**0**	**0**	**0**	**4**	**2**	

8.3 Energy Saving Projects- - Details

S.N.	Title of Project FY 19-20	Annual Electrical Saving (kWh)	Annual Electrical Cost Saving (Rs million)	Annual Thermal Saving		Annual Thermal Cost Saving (Rs million)	Total Annual Savings (Rs million)	Investment Made (Rs million)	Payback (Months)
				Quantity	UOM				
1	Usage of existing CT as dedicated CT for Evaporator condenser -Steam saving due to increased vacuum.			1434.5	MkCal	2.04	2.04	4.00	23.5
2	VFD for Evaporator liquor transfer pump	220500	0.99				0.99	0.90	10.9
3	Use of CFB#3 CBD water for DM water heating			903.9	MkCal	1.52	1.52	0.05	0.4
4	VFD for Mill water supply pump	306600	1.38				1.38	0.60	5.2
5	TG#3 bleed steam for CFB#4 DM make up water heating			3389.6	MkCal	5.7	5.7	0.78	1.6
6	Process optimisation by using High capacity Pre-heater in Evaporator.			1403.3	MkCal	2.36	2.36	0.52	2.6
7	Replacement of lights with LED	47838.3	0.215				0.215	0.50	27.9
8	Energy efficient motors	71257.2	0.32				0.32	0.67	25.1
9	Refiner tackle replacement in Board Machine	396000	1.78				1.78	0.45	3.0
10	In Board machine New designed deflaker installed in broke line and refiner bypassed for power saving.	713424	3.21				3.21	1.40	5.2
11	Chest Pump and Agitator interlock with level	154560	0.7				0.7	0.05	0.9
	Total	**1910180**	**9**	**7131**	**0**	**12**	**20**	**10**	

9. Innovative Project

Bypassed tail screen for increasing rate of pulp production.



Opportunity
The pulp mill becoming bottle neck as it could not meet demand from machines.

Cause
The screening section ROP is the bottle neck in production ramp up.

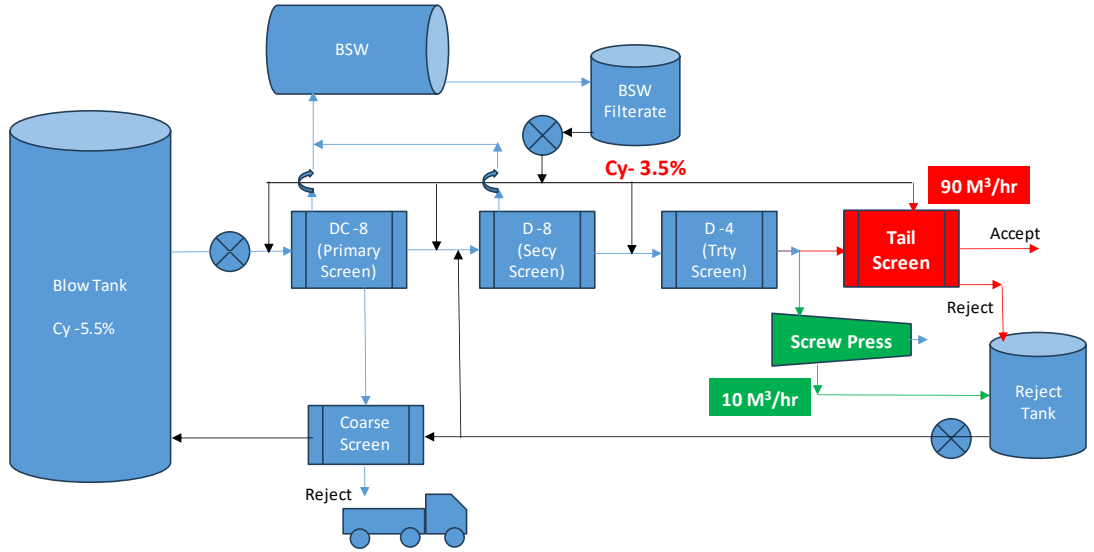
Ideas
Increase the pump capacity by increasing RPM.
Replace the pump with higher capacity.
DC-8 design modification
LC tank installation

Break through finding
The consistency of the Pulp in screening section is lower than design 3.5% due to dilution in tail screen.
The dilution also results in consistency variation

Innovative Idea
Bypass tail screen and install screw press to reduce dilution

Pros
Increased Production rate & reduction in Power cons.

Cons.
Increase in fibre loss

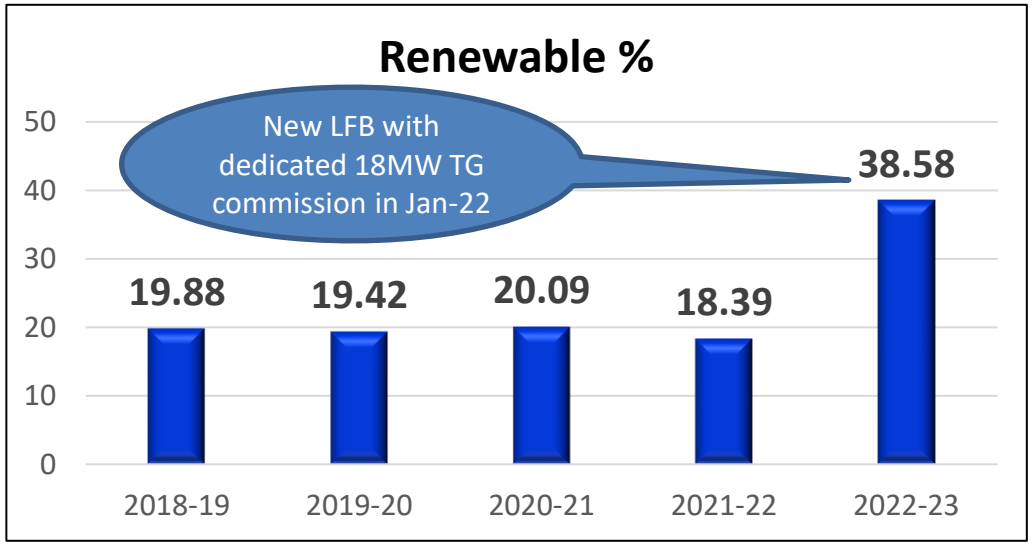


Results
Rate of production increased by 0.5TPH.
No significant impact in fibre loss.
Power saving of 18 KW from stopping of tail screen.
Financial Impact Rs 837 lacs/annum

Horizontal deployment
Plant specific innovation
Our learning – Walk through process can eliminate such non-value adding processes. Stop such equipments for savings (Eg. RAV after DCF in CFBC boiler Coal feeding system)

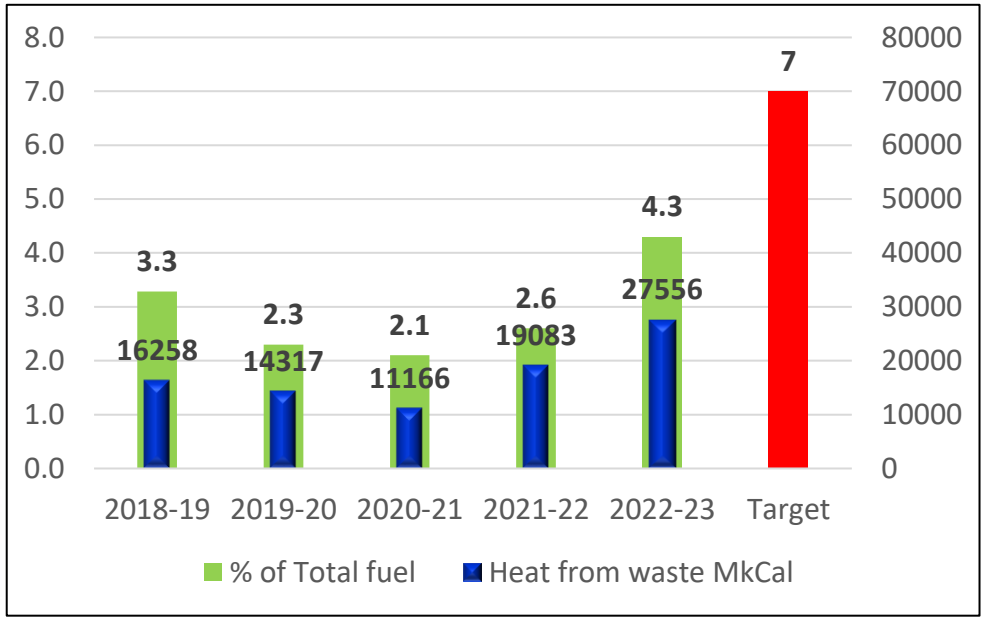
10. Renewable & Energy from Waste

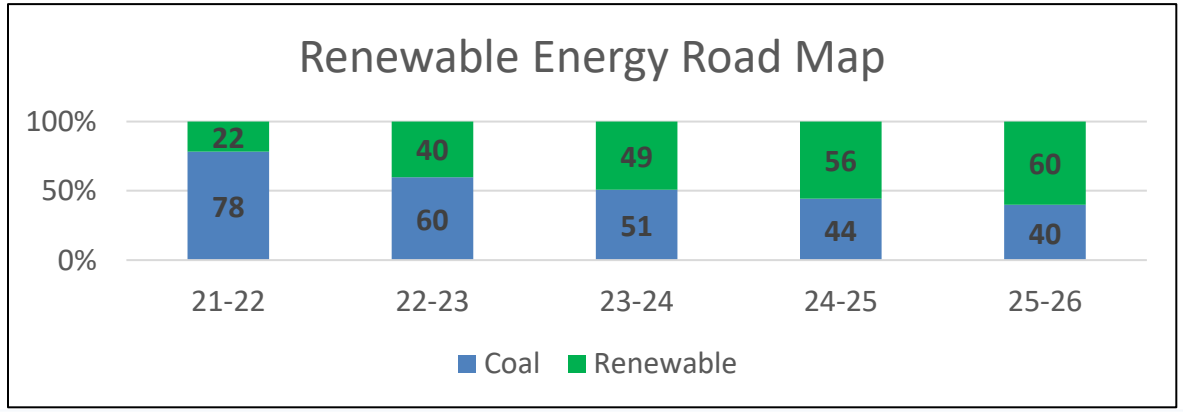
Recovery Boiler(Biomass- Onsite)



% of Power generated using Steam from LFB

Co-firing in CFB (Wood dust & Rice husk)



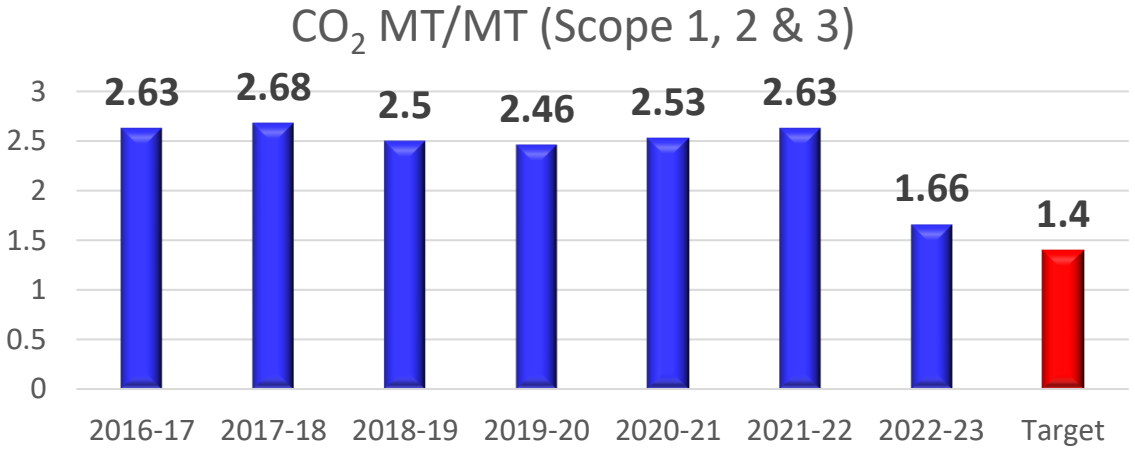


Year	Wood dust		Rice Husk	
	Qty	GCV	Qty	GCV
2018-19	6286	2545	87.4	2971
2019-20	4806	2769	340	2962
2020-21	4056	2609	198	2951
2021-22	7119	2544	326	2981
2022-23	10952	2420	337	3118

1. MW solar roof top plant - Discussion in progress.
2. Boiler OEM (IJT) engaged for feasibility study for firing biomass above 30% in CFBC.

100% Wood dust generated from chipper and rice husk from nearby rice mills used in boiler for steam generation.

11.1 GHG- Emission intensity & reduction initiatives



Year	CO2 emission kg/MT			
	Scope 1	Scope 2	Scope 3	Total
2022-23	1383	33.58	240	**1657**
2021-22	2469	18.9	146	**2634**
2020-21	2314	48.18	168	**2530**
2019-20	2250	28.28	184	**2462**
2018-19	2329	11.92	173	**2514**

Projects

1. ASRS for FH storage.
2. Methanol firing in Rotary lime kiln.
3. Roof top solar plant 1MW- Under discussion.

Other initiatives – Small drops make an ocean

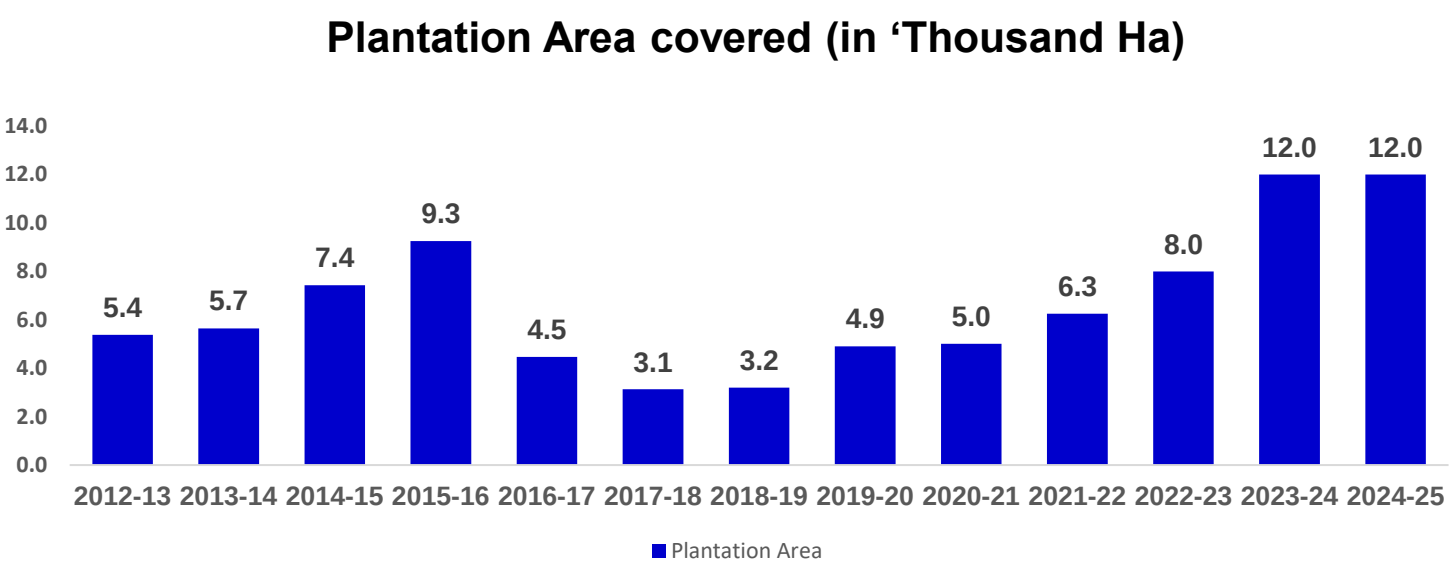
1. Promoted cycle for commute inside plant and from colony/nearby places to plant.
2. E Auto for plant internal commute.
3. Electric Forklifts for finished goods handling.

E AUTO

METHANOL PLANT

ASRS

11.2 GHG- Carbon sequestration

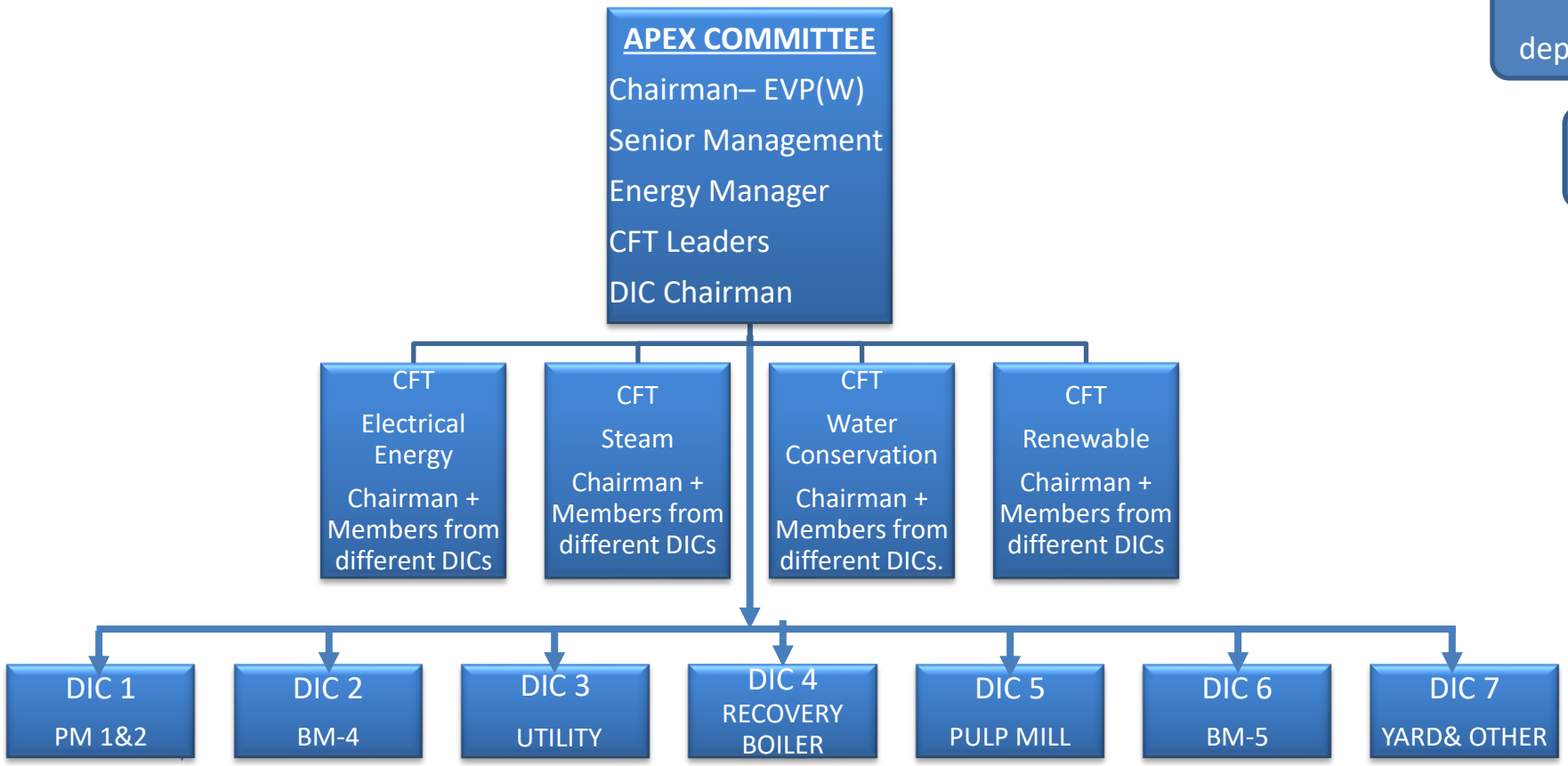


Key Highlights:

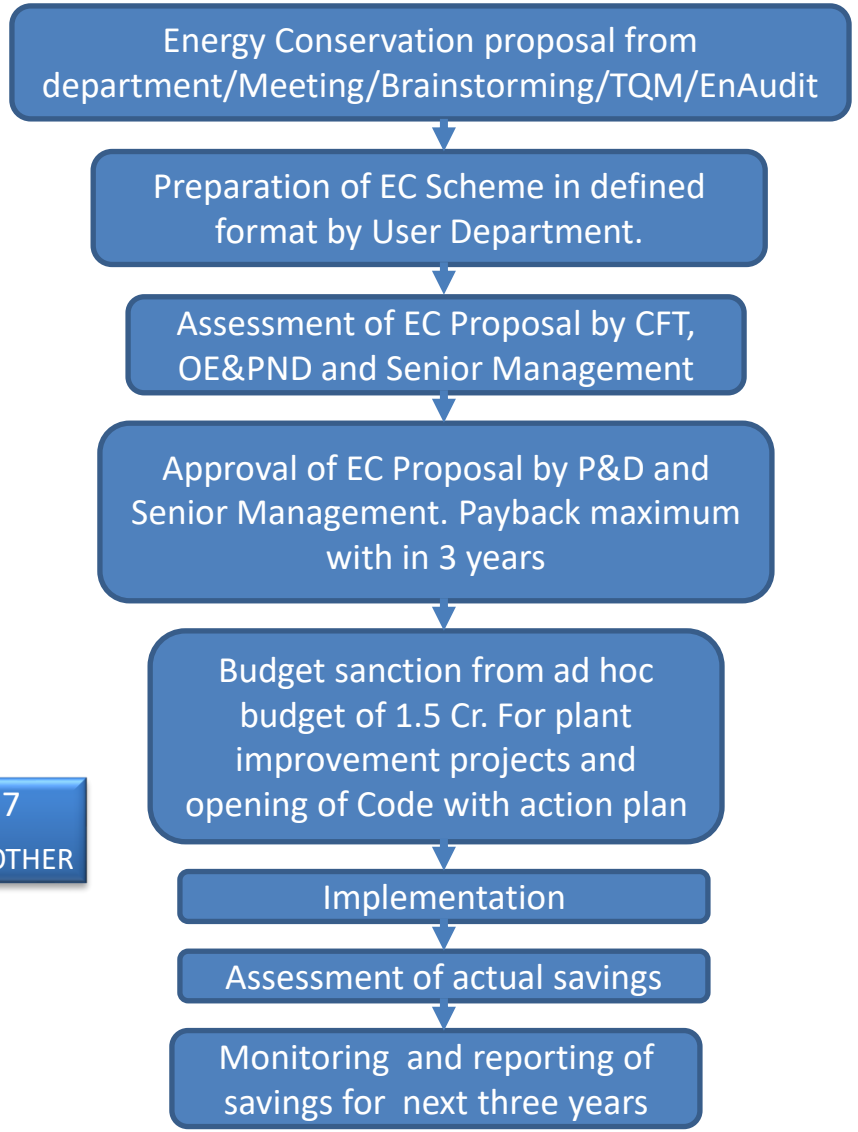
- 62,800 Ha plantation from 2012 to 2023.
- 12000 Ha/yr Plantation is 5000 Ha higher than harvesting area required for own use.
- World class R&D in plantation.
  - Developed High yield & Short rotation (18 Months) plants.
- 33 Cr plants distributed.
- Increase in income/ha for farmers

12. Energy Conservation Methodology

Energy Cell - Structure



Steps -EnCon Idea Implementation



- **APEX and CFT review meetings are held monthly.**
- **Projects are reviewed weekly with OE team.**

13. Energy Monitoring & Reports

Power, Steam & Water report 10/20/Monthly/yearly

Sr. No.	Section	Unit	SECTIONWISE POWER CONSUMPTION (in KWH)							SECTIONWISE POWER CONSUMPTION (in KWH/T)							
			Total Power consumption			New Packaging Board	Packaging Board	Pulp transferred to Pkg.Board BM 4 & 5 + Mkt Pulp	Paper	New Packaging Board (BM -5)		Packaging Board (BM -4)		Pulp transferred to Pkg.Board BM 4 & 5 + Mkt Pulp +Screw Press Pulp		Paper	
			Old	New	Total	BM 5	BM 4			Norms	Actual	Norms	Actual	Norms	Actual	Norms	Actual
A	POWER CONSUMPTION FOR PROCESS																
1.1	Paper Machine No.I	KWH	1258668		1258668				1258668							471	531.54
1.2	Paper Machine No.2	KWH	1257446		1257446				1257446							363	406.94
1.3	**Combined PM 1 & 2**	**KWH**	**2516114**		**2516114**				**2516114**							**406**	**461.00**
2.1	Stock Preparation No.1	KWH	373608		373608				373608							119	157.78
2.2	Stock Preparation No.2	KWH	429526		429526				429526							169	139.01
2.3	**Combined SP-1 & SP-2**	**KWH**	**803135**		**803135**				**803135**							**149**	**147.15**
3.0	**Board Plant (BM 4)**	**KWH**	**3818286**		**3818286**		**3818286**					**440**	**440.98**				
4.0	**New Board Machine (BM 5)**	**KWH**		**7635393**	**7635393**	**7635393**				**497**	**510.26**						
5.1	Chipper House	KWH	0	355069	355069			254131	100938					**23**	26.40	**18**	18.49
5.2	Pulp Mill/ New Fiber line	KWH	77993	4256177	4334171			3102070	1232101					**278**	322.23	**216**	225.74
5.3	ODL	KWH	0		0			0	0					**0**	0.00	**0**	0.00
5.4	ClO2	KWH	0	1589671	1589671			1137766	451905					**123**	118.19	**96**	82.80
5.5	**Sub Total Pulp Mill**	**KWH**	**77993**	**6200917**	**6278911**			**4493967**	**1784944**					**424**	**466.82**	**330**	**327.03**

Sr. No	Particulars	Unit	SECTIONWISE STEAM CONSUMPTION (in MT)							SECTIONWISE STEAM CONSUMPTION (in T/ T)							
			Total Steam consumption			New Packaging Board	Packaging Board	Pulp transferred to Pkg.Board BM 4 & 5 + Mkt Pulp +Screw Press	Paper	New Packaging Board (BM 5)		Packaging Board (BM 4)		Pulp transferred to Pkg.Board BM 4 & 5 + Mkt Pulp +Screw Press Pulp Stock		Paper	
			Old	New	Total	BM 5	BM 4			Norms	Actual	Norms	Actual	Norms	Actual	Norms	Actual
A	STEAM CONSUMPTION FOR PROCESS																
1.0	Paper Machine No.1	MT	8354		8354				8354							3.42	3.53
2.0	Paper Machine No.2	MT	8253		8253				8253							2.72	2.67
3.0	Combined PM 1 + 2	MT	16607		16607				16607							3.00	3.04
4.0	**Board Machine BM 4**	**MT**	19336		19336		19336					**2.15**	2.23				
5.0	**New Board Machine BM 5**	**MT**		**25817**	25817	25817				1.70	1.73						
6.1	Digester	MT		8143	8143			5828	2315						0.61	0.53	0.42
6.2	New Fiber line	MT		7062	7062			5055	2007						0.53	0.48	0.37
6.3	ClO2 Plant	MT		1447	1447			1035	412						0.11	0.11	0.08
6.5	Pulp/RB HVAC Chiller	MT		1522	1522			1089	433						0.11		0.08
6.0	Sub Total Pulp Mill	MT	0	18174	18174			13007	5167					1.36	1.35	1.11	0.95
7.1	Recovery Boiler	MT		7426	7426			5322	2114						0.55	1.05	0.39

Sr. No	Particulars	Unit	SECTIONWISE WATER CONSUMPTION (in M3)							SECTIONWISE WATER CONSUMPTION (in M3/T)							
			Total Water consumption			New Packaging Board	Packaging Board	Pulp transferred to Pkg.Board BM 4 & 5 + Mkt Pulp	Paper	New Packaging Board (BM 5)		Packaging Board (BM 4)		Pulp transferred to Pkg.Board BM 4 & 5 + Mkt Pulp +Screw Press		Paper	
			Old	New	Total	BM 5	BM 4			Norms	Actual	Norms	Actual	Norms	Actual	Norms	Actual
1.0	Stock Preparation & Paper M/c 1	M3	48717		48717				48717	--	--	--	--	--	--	**25.00**	20.57
2.0	Stock Preparation & Paper M/c 2	M3	31934		31934				31934	--	--	--	--	--	--	**13.00**	10.33
3.0	**Combined Stock Prepn & PM-1 &2**	**M3**	80651	0	80651				80651	**--**	**--**	**--**	**--**	**--**	**--**	**17.76**	**14.78**
4.0	**Board Machine BM- 4**	**M3**	50089		50089		50089					4.80	5.78	--	--	--	--
5.0	**New Board Machine BM-5**	**M3**		101283	101283	101283				8.00	6.77						
6.0	Pulp Mill	M3	31875	163815	195690	--	--	140060	55630	--	--	--	--	**20.0**	14.55	**18.00**	10.19
7.0	Recovery	M3	1277	120551	121828	--	--	87195	34633	--	--	--	--	**4.0**	9.06	**3.75**	6.35
8.0	Power House (DM water)	M3		81958	81958	15105	7470	33893	25490	0.80	1.01	0.50	0.86	**3.0**	3.52	**3.00**	4.67
9.0	CFBs,TGs and Cooling Tower	M3		20871	20871	3847	1902	8631	6491	0.35	0.26	0.20	0.22	**3.0**	0.90	**3.00**	1.19
10.0	Colony	M3		70383	70383	12972	6415	29106	21890	0.85	0.87	0.50	0.74	**2.0**	3.02	**3.00**	4.01
11.0	**TOTAL Incl. Colony**	**M3**	**163892**	**558861**	**722753**	**133207**	**65877**	**298885**	**224785**	**10.00**	**8.90**	**6.00**	**7.61**	**32.0**	**31.05**	**48.51**	**41.18**

EMS Report Daily/Monthly/Yearly

JK Paper Ltd. Unit: CPM

Energy Generation and Consumption Report

From Date: 18/08/2023 **To Date:** 19/08/2023
From Time: 06:00 AM **To Time:** 06:00 AM

Sr. No.	Description	Generation kwh	Generation kw/Hr	Production	Tons
1	GEB import	11616.00	484	PM-I	89.6
2	TG-3	0.00	0	PM-II	110.2
3	TG-4	0.00	0	BM-IV	244
4	TG-5	480672.00	20028	BM-V	438
5	TG-6	419744.00	17489	Pulp	430
6	**Total Generation**	912032.00	38001	**Plant**	**kwh/MT**
7	**Total Consumption**	890802.62	37117	PM-I	366
8	**Difference**	**21229.38**	885	PM-II	432
9	**% Error**	2.327700808		BM-IV	541
10	**MF Error**	1.02383174		BM-V	490

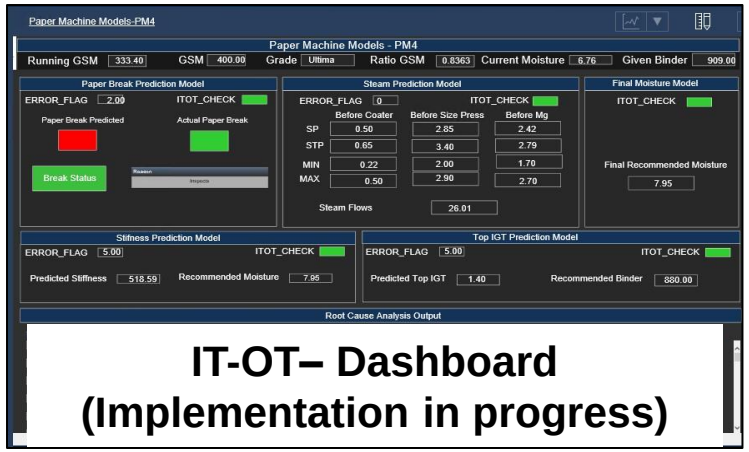
Sr. No.	Plant Name	Norms in KW	Actual in KW	Consmption (kWh) after error adjustment	Plant Consmption in kWh
1	CHIPPER (EXISTING)	14.00	0.00	0.00	0.00
2	PULP MILL (EXISTING)	229.00	95.90	2301.57	2248.00
3	ODL (EXISTING)	0.00	0.00	0.00	0.00
4	EVAPORATOR (EXISTING)	0.00	33.77	810.55	791.69
5	RECOVERY BOILER (EXISTING)	0.00	0.32	7.68	7.50
6	CAUSTICIZING (EXISTING)	80.00	8.96	215.00	210.00
7	PAPER M/C NO-1	1696.00	1364.87	32757.00	31994.51
8	PAPER M/C NO-2	1992.00	1984.23	47621.43	46512.95
9	STOCK-1	623.00	276.84	6644.09	6489.44
10	STOCK-2	969.00	949.45	22786.91	22256.50
11	CFB-1	0.00	0.00	0.00	0.00
12	CFB-2	3.00	0.00	0.00	0.00
13	CFB-3	700.00	37.84	908.14	887.00
14	COAL PLANT (CFB-3)	50.00	0.00	0.00	0.00
15	TG-DM (CFB-3)	50.00	0.00	0.00	0.00
16	CFB-4 AUXILIARY	1100.00	41.21	989.14	966.12
17	CFB-4 COAL PLANT	100.00	1.13	27.06	26.43
18	TG-4 DM PLANT	50.00	15.72	377.23	368.45
19	TG-4 AUXILIARY	300.00	7.76	186.29	181.95
20	MILL WATER (EXISTING)	125.00	85.44	2050.58	2002.84
21	ETP (EXISTING)	368.00	0.00	0.00	0.00
22	CANAL	194.00	194.53	4668.67	4560.00
23	COLONY	250.00	206.21	4948.95	4833.75
24	TG-3 AUX	250.00	2.64	63.48	62.00
25	BM-4	5200.00	5503.42	132082.06	129007.58
26	LIME KILN (EXISTING)	200	0.00	0.00	0.00
27	PG PLANT	30	0.00	0.00	0.00
28	SPCC	250	299.77	7194.47	7027.00
29	BM-5	9439	8946.31	214711.50	209713.66
30	CFB-5	2524	2450.22	58805.29	57436.48
31	TG (5 & 6) AUXILIARY	1171	796.93	19126.20	18681.00
32	RECOVERY BOILER	1623.00	1630.33	39128.03	38217.24
33	EVPORATOR & LIME KILN+CASUTICSIZ	3084.00	2815.46	67571.13	65998.28
34	FIBER LINE	5821.00	5585.20	134044.84	130924.68
35	ETP	723.00	646.00	15503.88	15143.00
36	CHIPPER	511.00	499.18	11980.43	11701.56
37	CLO2	2715.00	3108.78	74610.71	72874.00
38	WTP	245.00	213.72	5129.40	5010.00
39	CFB-5 COAL PLANT	76.00	67.40	1617.65	1580.00
40	DM PLANT	113.00	131.78	3162.62	3089.00
41	TOTAL COMPRESSOR	1300.00	1184.33	28423.87	27762.25
	TOTAL (1 TO 40)	**40000.00**	**38001.33**	**912032.00**	**890802.62**

14.1 Digital transformation

LEAP 200

LEAD, EMPOWER, ACCLERATE PERFORMANCE (LEAP) we are driving digital transformations across our business processes.

S.N.	LEAP Projects - Implemented	Project Champion	Potential Annual Savings (INR Cr.)	Target Accruals 22-23	Actual As on Mar-23
1	CPM |2| Advance Planning & Scheduling optimisation	Mr Govindraj	2.92	1.58	0.34
2	CPM |3| Bleaching Chemical Optimization	Mr S Naidu	3.03	1.60	1.78
3	CPM |6| Process Optimization at BM4	Mr Peeyush Mittal	2.54	1.78	0.74
5	CPM |16| Advance GSM Control BM4	Mr Peeyush Mittal	3.54	1.62	2.20
6	CPM |19| LIME KILN Fuel Optimisation	Mr Kartik patel	1.83	0.65	3.52
7	CPM |20| Evaporator Steam Economy Improvement	Mr Kartik patel	0.50	0.02	
	Total				8.58



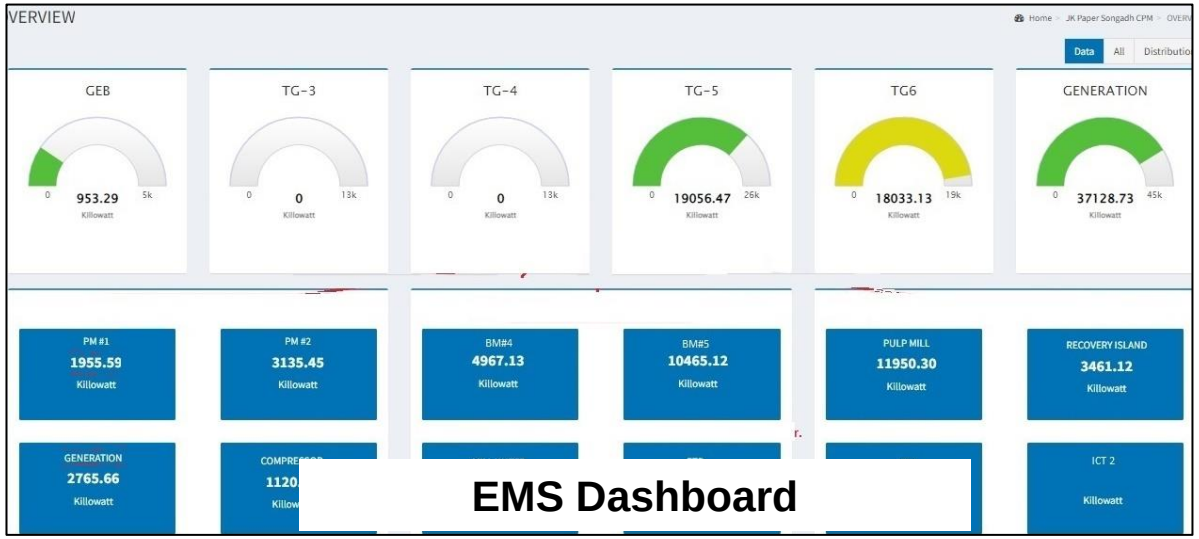
IT-OT– Dashboard (Implementation in progress)

S.N.	LEAP Initiatives in progress	Project Champion
1	ODL chemical optimisation	Mr S Naidu
2	White liquor optimisation	Mr S Naidu
3	Analytical Interventions for reducing quality rejections and for process optimization at BM5	Mr. Muthaiyan
5	IT-OT	Mr Muthaiyan
6	TMS (Transport management system)	Mr. Satyajit Singh

Online Energy Management System.

Implemented online cloud based electrical energy monitoring, reporting, analytics system for total plant as phase 1

Phase 2 for steam, water, air, condensate and other utilities initiated



EMS Dashboard

Brief on a model implemented – Lime Kiln fuel optimisation

Big data collection, analysis, cleansing,

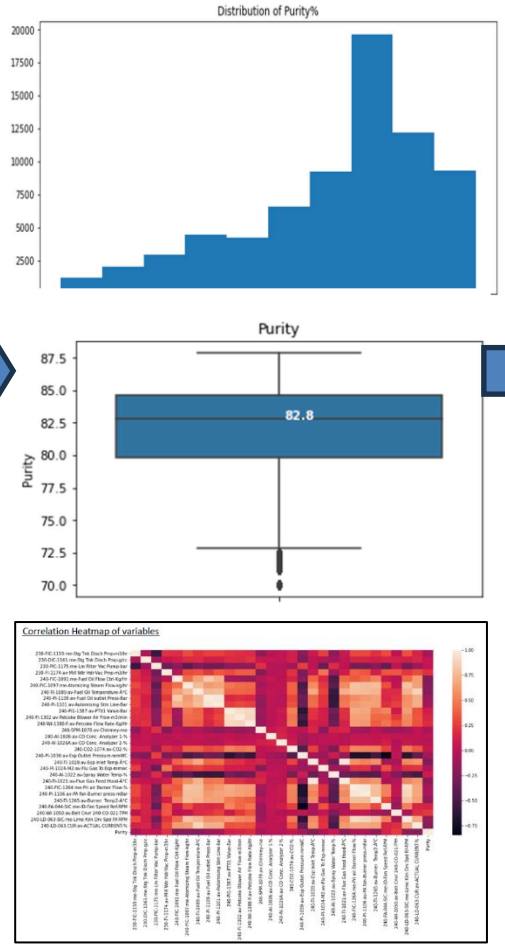
Significant Input variables

Model Building

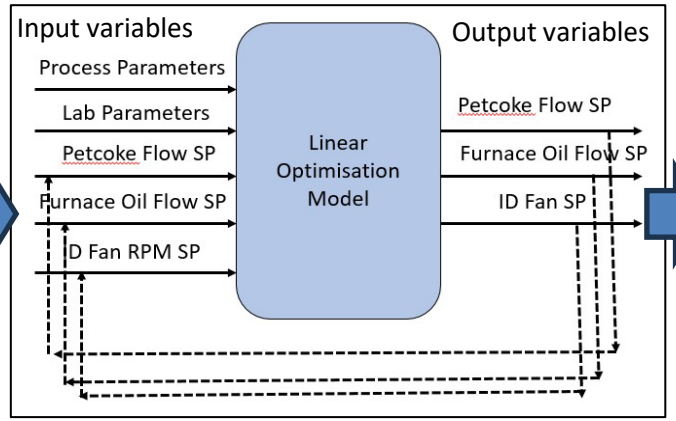
The model considered initial list of variables as follows:

Tag	Description	UOM
230-FIC-1159:me	Stg Tnk Disch Pmp	m3/hr
230-DIC-1161:me	Stg Tnk Disch Pmp	g/cc
230-PIC-1175:me	Lm Filter Vac Pump	bar
230-FI-1174:av	Mill Wtr Hdr-Vac Pmp	m3/hr
240-FIC-1091:me	Fuel Oil Flow Ctrl	Kg/Hr
240-FIC-1097:me	Atomizing Steam Flow	kg/hr
240-TI-1089:av	Fuel Oil Temperature	Â°C
240-PI-1109:av	Fuel Oil outlet Press	Bar
240-PI-1101:av	Automising Stm Line	Bar
240-PI1-1387:av	PT01 Value	Bar
240-FI-1302:av	Petcoke Blower Air Flow	m3/min
240-WI-1388-F:av	Petcoke Flow Rate	Kg/Hr
240-SPM-1078:av	Chimney	rna
240-AI-1026:av	CO Conc. Analyzer 1	%
240-AI-1026A:av	CO Conc. Analyzer 2	%
240-CO2-1074:av	CO2	%
240-PI-1030:av	Esp Outlet Pressure	mmWC
240-TI-1028:av	Esp Inlet Temp	Â°C
240-PI-1024-M2:av	Flu Gas To Esp	mmwc
240-AI-1022:av	Spray Water Temp	%
240-TI-1021:av	Flue Gas Feed Hood	Â°C
240-FIC-1264:me	Pri air Burner Flow	%
240-PI-1106:av	PA fan-Burner press	mBar

Model Building



Model deployment and fine tuning



Optimised Pet coke & FO Ratio

Base line

Specific Oil Consumption	kg/MT of Lime	85
Specific Petcoke Consumption	kg/MT of Lime	71

Achieved June 23

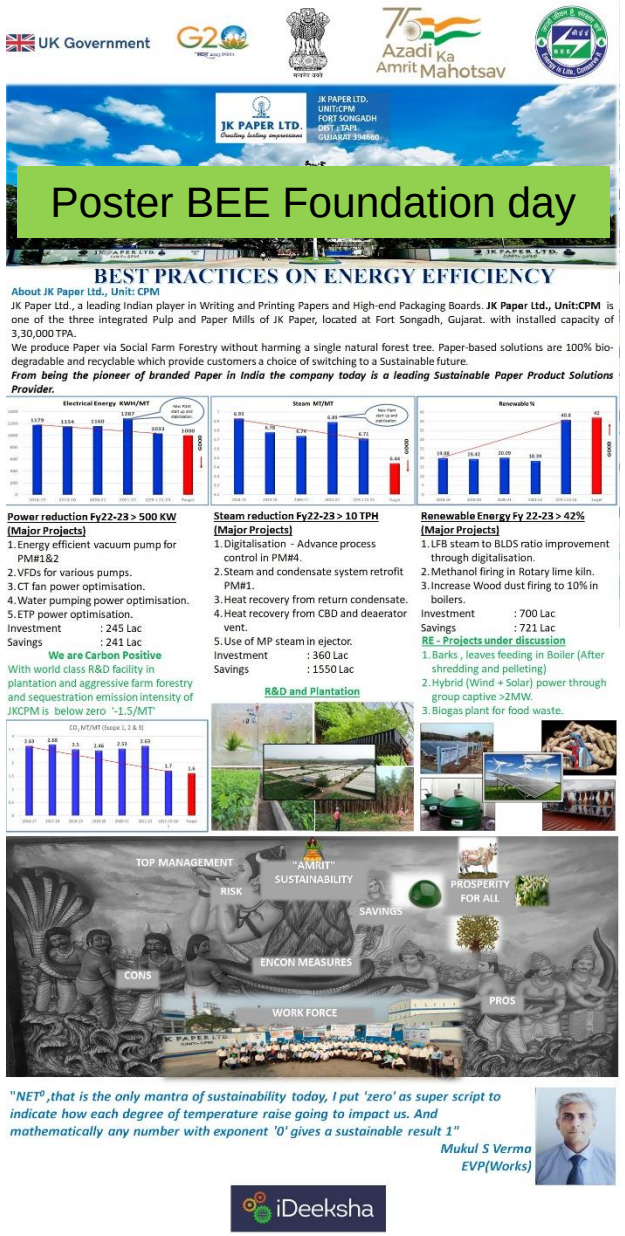
Specific Oil Consumption	kg/MT of Lime	42
Specific Petcoke Consumption	kg/MT of Lime	79

15. Energy conservation – Initiatives, inclusion and involvement.

- ✓ Energy conservation week observed with various Competitions - poster , speech, quiz ,cross word puzzle etc. for employees, their family and students.
- ✓ Conducted Energy conservation awareness sessions in nearby villages, plant & colony.
- ✓ Designed and displayed poster during BEE foundation day event.

Encon day - Society

Encon day – Next Gen



16. TQM – Initiatives, inclusion and involvement..

Kaizen

Total Kaizen status	Restorative	Renovative	Innovative	Total
2020-21	188	72	7	267
2021-22	129	68	16	213
2022-23	251	67	13	331

QIP

QIP	Taken	Completed
QIP Phase 1	6	6
QIP Phase 2	15	In progress

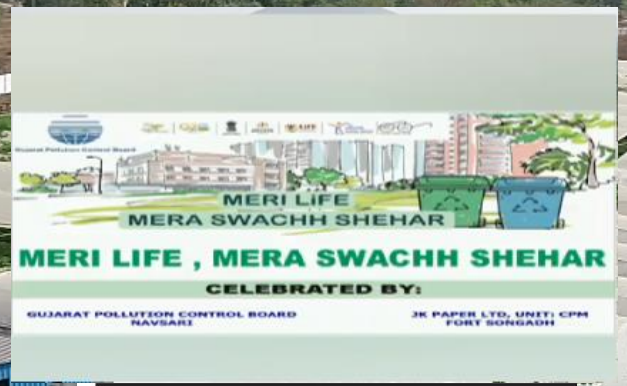
Rewards & Recognition

- 5S Awards
- Quarterly OPL and Kaizen Awards
- QIP Awards
- TQM Slogan, quiz and Poster competition.

17. Environment – Initiatives, Inclusion and involvement

Environment day - Plant

1100 trees planted in 11 minutes on Environment Day



Environment day - Society

Environment day - Colony


તાપી જિલ્લામા વિશ્વ પર્યાવરણ દિવસની ભવ્ય ઉજવણી

સોનગઢ ઉકાઈ વ્યારા સહિત સમગ્ર તાપી જિલ્લામાં વિશ્વ પર્યાવરણ દિવસની ભવ્ય ઉજવણી કરવામાં આવી હતી.જેમાં જે કે પેપર

In Local news

Awareness – next gen

Fly ash

100% utilised by cement factory – Sister concern JK Lakshmi Cement.

Bed Ash

100% utilised for landfills, pathways and other area development activities.

ETP Sludge

100 % utilised by board (Carton Box) manufacturers.

Treated effluent

More than 50% of treated effluent is used by farmers for cultivation. HDPE irrigation lines laid in the area for treated water utilisation. Further extension initiated.

All Plant premises and colony provided with treated effluent lines for cleaning and gardening.

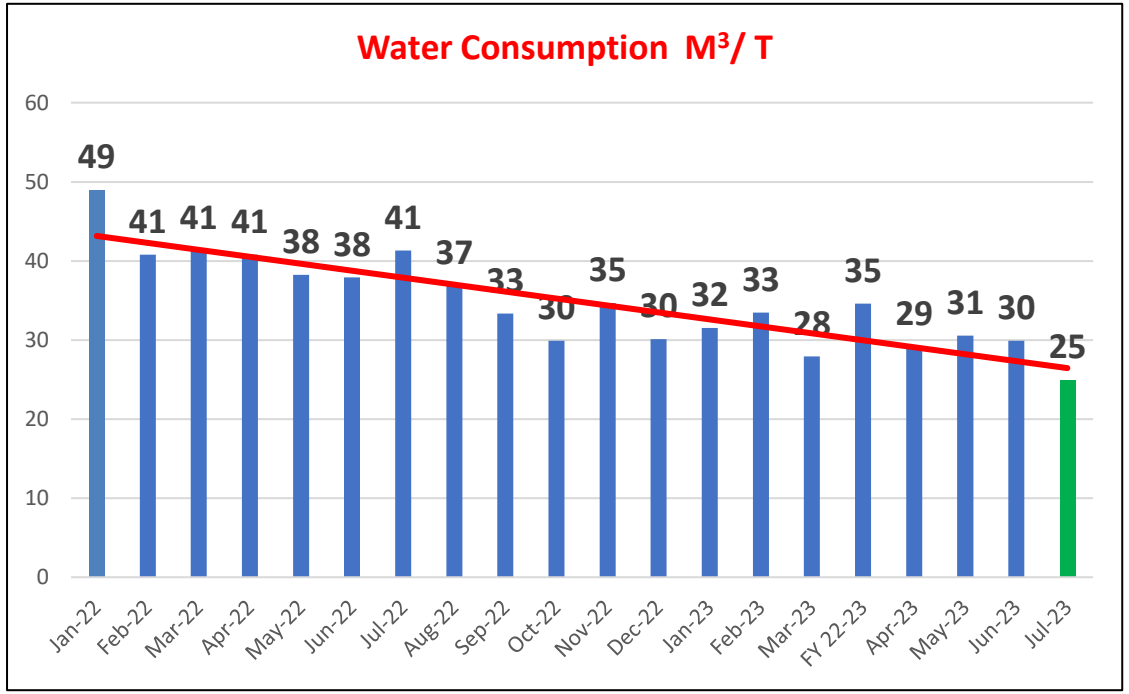
18. Water conservation

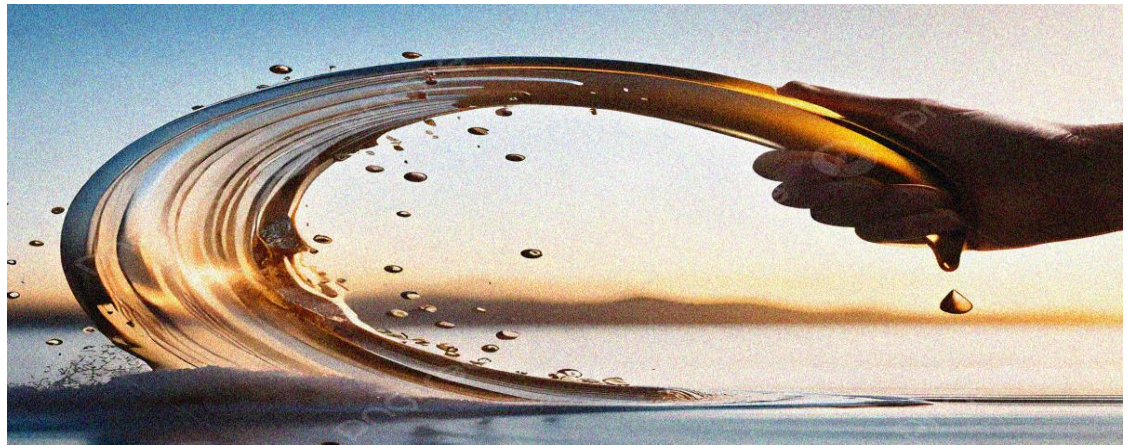
Measures implemented - 2022-23

S.N.	Description	FY	Savings m3/ day	Investment Rs Lacs	Savings Rs Lacs	Payback in Months
1	RB Sealing & Swas Cooling water diverted to TG-6 Cooling tower.	22-23	720	18.0	90.2	2.4
2	LMCD Vacuum pump sealing water replaced with Secondary Condensate	22-23	324	2.0	40.6	0.6
3	Evap Vacuum pump sealing water replaced with Secondary Condensate	22-23	144	1.0	18.0	0.7
4	Indirect heater Mill Water diverted recovery process cooling tower.	22-23	300	2.0	37.6	0.6
5	Secondary condensate water used in green liquor cooling	22-23	180	1.0	23.0	0.5
6	Saving of Fresh water in ETP	22-23	243	8.0	33.7	2.9
7	Usage of treated effluent in ETP	22-23	20	2.0	2.8	8.7
8	Propane cooling water recovery in BM-4	22-23	50	5.0	6.5	9
	Total		**1981**	**39**	**252.4**	

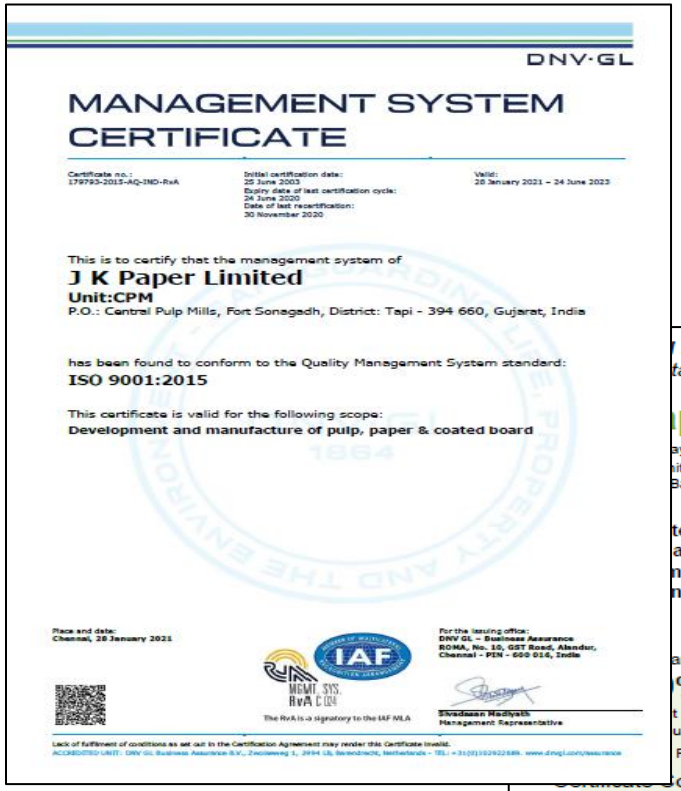
Measures in progress - 2023-24

S.N.	Description	FY	Savings m3/ day	Investment Rs Lacs	Savings Rs Lacs	Payback in Months
1	Use of clear filtrate for gland sealing in BM-5	22-23	300	33	380	1
2	Pulp mill & ClO2 sealing water recovery	22-23	144	20	19	12
	Total		**444**	**53**	**252.4**	





20. Certifications



DNV·GL

MANAGEMENT SYSTEM CERTIFICATE

Certificate no.: 179793-2015-AQ-IND-RvA
Initial certification date: 26 June 2003
Expiry date of last certification cycle: 24 June 2020
Date of last recertification: 30 November 2020
Valid: 28 January 2021 – 24 June 2023

This is to certify that the management system of
J K Paper Limited
Unit:CPM
P.O.: Central Pulp Mills, Fort Sonagadh, District: Tapi - 394 660, Gujarat, India

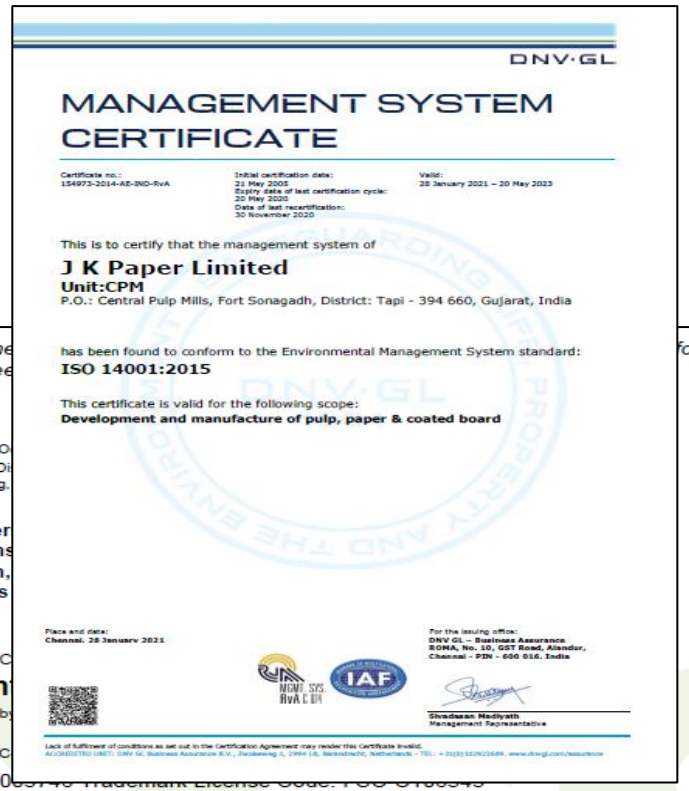
has been found to conform to the Quality Management System standard:
ISO 9001:2015

This certificate is valid for the following scope:
Development and manufacture of pulp, paper & coated board

Place and date: Chennai, 28 January 2021
For the issuing office: DNV GL – Business Assurance, ROMA, No. 10, GST Road, Alandur, Chennai - PIN - 600 016, India
Shivadasan Madiyath, Management Representative

The RvA is a signatory to the IAF MLA

Lack of fulfilment of conditions as set out in the Certification Agreement may render this Certificate invalid.



DNV·GL

MANAGEMENT SYSTEM CERTIFICATE

Certificate no.: 154973-2014-AE-IND-RvA
Initial certification date: 21 May 2005
Expiry date of last certification cycle: 20 May 2020
Date of last recertification: 30 November 2020
Valid: 28 January 2021 – 20 May 2023

This is to certify that the management system of
J K Paper Limited
Unit:CPM
P.O.: Central Pulp Mills, Fort Sonagadh, District: Tapi - 394 660, Gujarat, India

has been found to conform to the Environmental Management System standard:
ISO 14001:2015

This certificate is valid for the following scope:
Development and manufacture of pulp, paper & coated board

Place and date: Chennai, 28 January 2021
For the issuing office: DNV GL – Business Assurance, ROMA, No. 10, GST Road, Alandur, Chennai - PIN - 600 016, India
Shivadasan Madiyath, Management Representative

Lack of fulfilment of conditions as set out in the Certification Agreement may render this Certificate invalid.

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FSC-STD-40-003; FSC
ode: SCS-COC-0
CW Code: SCS-CW-003746
Valid from: 21 June 2021 Expiry date: 20 June 2026

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DNV·GL

MANAGEMENT SYSTEM CERTIFICATE

Certificate No: 10000364372-MSC-UKAS-IND
Initial certification date: 29 June 2007
Valid: 16 June 2020 - 28 June 2022

This is to certify that the management system of
J K Paper Limited Unit:CPM
P.O.: Central Pulp Mills, Fort Sonagadh,District: Tapi - 394 660, Gujarat, India

has been found to conform to the Occupational Health and Safety Management System standard:
ISO 45001:2018

This certificate is valid for the following scope:
Development & manufacture of pulp, paper & coated board.

Place and date: London, 16 June 2020
For the issuing office: DNV GL – Business Assurance, 4th Floor, Vivo Building, 30 Stamford Street, London, SE1 9LQ, United Kingdom
Erle Kook, Management Representative

UKAS MANAGEMENT SYSTEMS 0013

Lack of fulfilment of conditions as set out in the Certification Agreement may render this Certificate invalid.

Initiated ISO-50001 certification process, targeting final audit in Mar-24

21. Awards and Accolades

Supply Chain and Logistic Excellence Award (SCALE 2022) from CII

Silver Trophy from QCFI for Quality Circle presentation at Surat Chapter

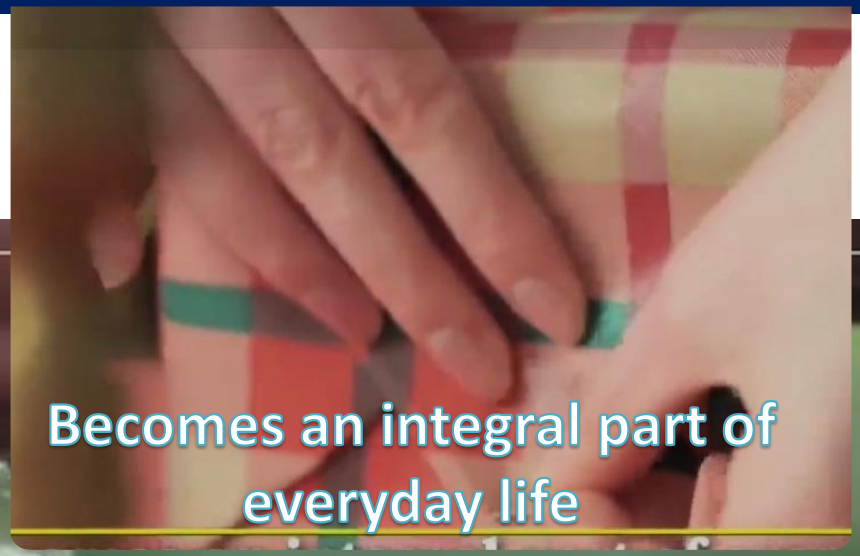
Best employer brand- Gujarat

Energy efficient Unit Award 2021-22 from CII

Gold Award in National 3M Kaizen competition from CII


The paper produced


LEDGER
Savannah
cedar
Sparkle
JK EASY COPIER
JK COPIER


Becomes an integral part of everyday life

Thank you


Finally, this paper biodegrades to become one with soil.


And so the process starts again