De-Carbonized

Initiative by Raymond Luxury Cottons Limited Kolhapur

About Raymond Kolhapur :

- In 2006 Set up of greenfield shirting unit at Kolhapur producing high value cotton shirting. This facility is set up as part of the company's JV with Group Zambaiti with initial capacity of 10 million meters and grew to 26 Million Meters.

- The total area of this plant is 54 acres out of which the buildup area is approx. 36 %.

- RLCL manufactures some of the finest shirting fabrics in India, marked by innovative designs and aligned to latest fashion trends. A B2B business, Raymond Luxury Cottons, produces the world's finest 340s count cotton and 150 lea pure linen fabrics.

- With 26 million metres of capacity at its state-of-the–art manufacturing facility in Kolhapur (Maharashtra), the unit produces high value cotton and linen shirting and bottom weight fabrics for leading domestic and international brands.

We are committed to Environment, and we are Certified with

9001:2015

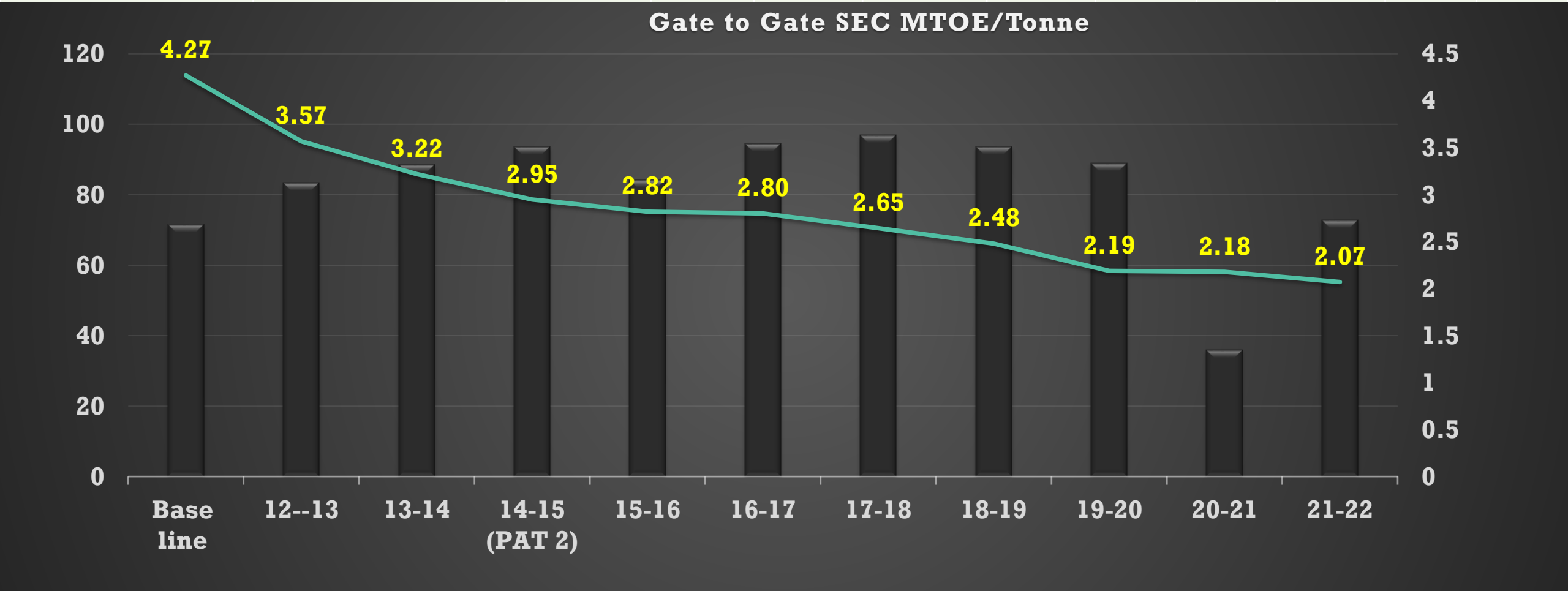
14001:2015

45001

50001

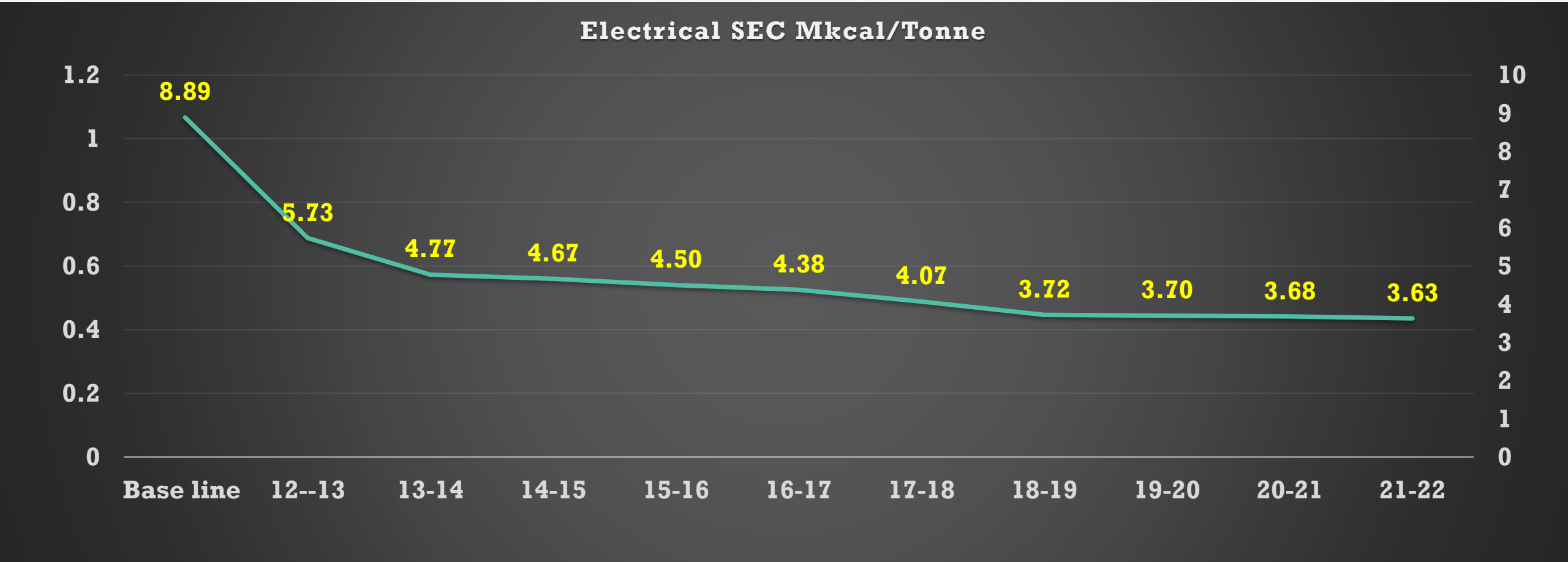
Gate To Gate SEC

Year	Base line	12--13	13-14	14-15 (PAT 2)	15-16	16-17	17-18	18-19	19-20	20-21	21-22
Plant Utilisation %	71.53	83.34	88.59	93.59	84.37	94.56	96.98	93.65	89.01	36	72.85
Gate To Gate SEC MTOE/Tonne	4.27	3.57	3.22	2.95	2.82	2.80	2.65	2.48	2.19	2.18	2.07



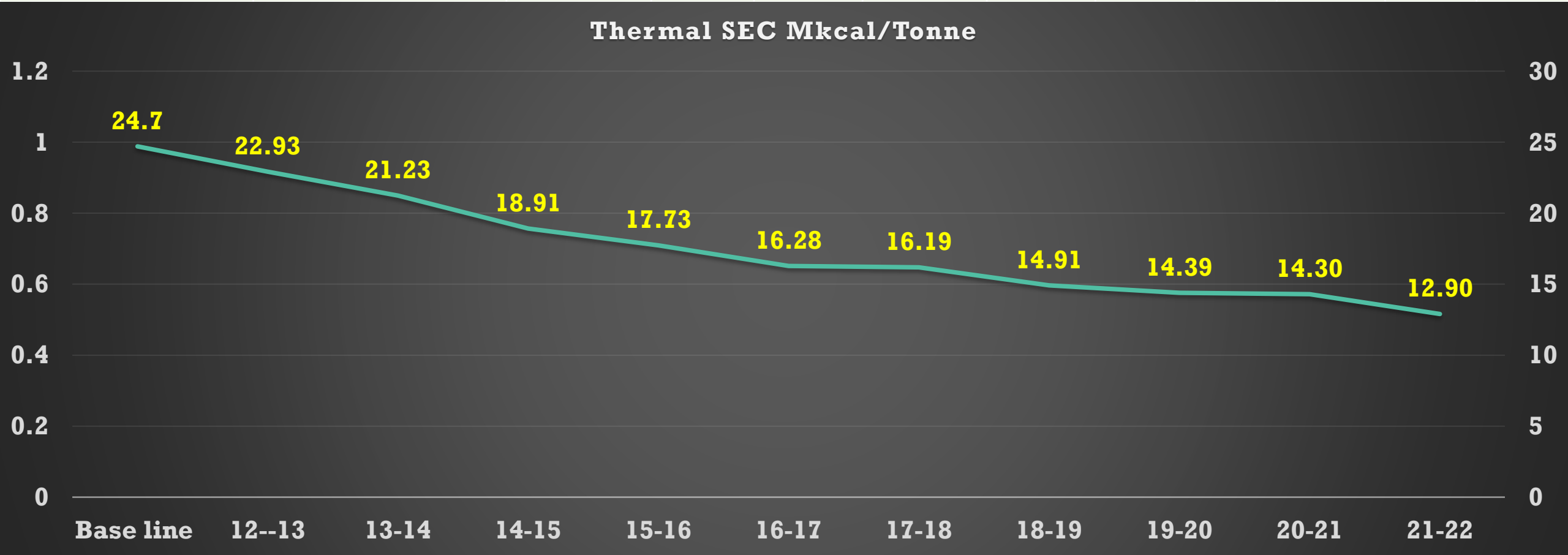
Electrical SEC

Year	Base line	12--13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22
Electrical SEC Mkcal/Tonne	8.89	5.73	4.77	4.67	4.50	4.38	4.07	3.72	3.70	3.68	3.63
% Reduction compared to previous year		35.52	16.73	2.22	3.55	2.71	7.06	8.60	0.54	0.54	1.36



Thermal SEC

Year	Base line	12--13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22
Thermal SEC Mkcal/Tonne	24.7	22.93	21.23	18.91	17.73	16.28	16.19	14.91	14.39	14.30	12.90
% Reduction compared to previous year		7.18	7.38	10.94	6.24	8.20	0.55	7.90	3.49	0.63	9.79



Absolute Energy saving

Base line	PAT 2 – 14-15 SEC	19-20 SEC as finalized by BEE	PAT 2 Cycle % Reduction	New Target PAT 7	2022 SEC
4.27	2.9479	2.18	28%	1.99	2.07

ESCerts awarded by BEE in Pat 1 and Pat 2 cycle	
PAT 1	PAT 2
1131	1057

Best Practices on Energy Efficiency

Renewable energy: Solar roof top of 1000 kW capacity

Idea Behind initiative

Installation of 1 MW solar, contribution of renewable energy is around 5.5 % of the total Electricity consumption

Outcome

Till now 19.57 Lac KWH unit generated @ Cost of 3.72 Rs./Unit

Conversion from VAT to Avitera dyes

Idea Behind initiative

Introduction of Avitera Dyes & converting 10 % of the Current shade to avitera dyeing reduced the consumption of water, electricity and steam

Outcome

With this initiative a total saving 1.30 Cr/ Year is achieved

	Vat Dyes	Avitera SE
Water(KL)	14,800 KL	10,800 KL
Steam(Kg)	1506 Tons	785 Tons
Power(Units)	216,296 Units	151,975 Units
Time(Days)	300.41	211.08

Considering Total 200 Tons/Month Production Below will be the Monthly Savings in Utility Consumptions.

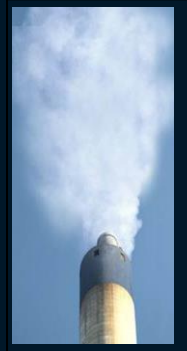
27.03% Savings in Water Consumption

47.9 % Savings in Steam Consumption

29.74 % Savings in Power Consumption

29.7 % Faster Order Processing*

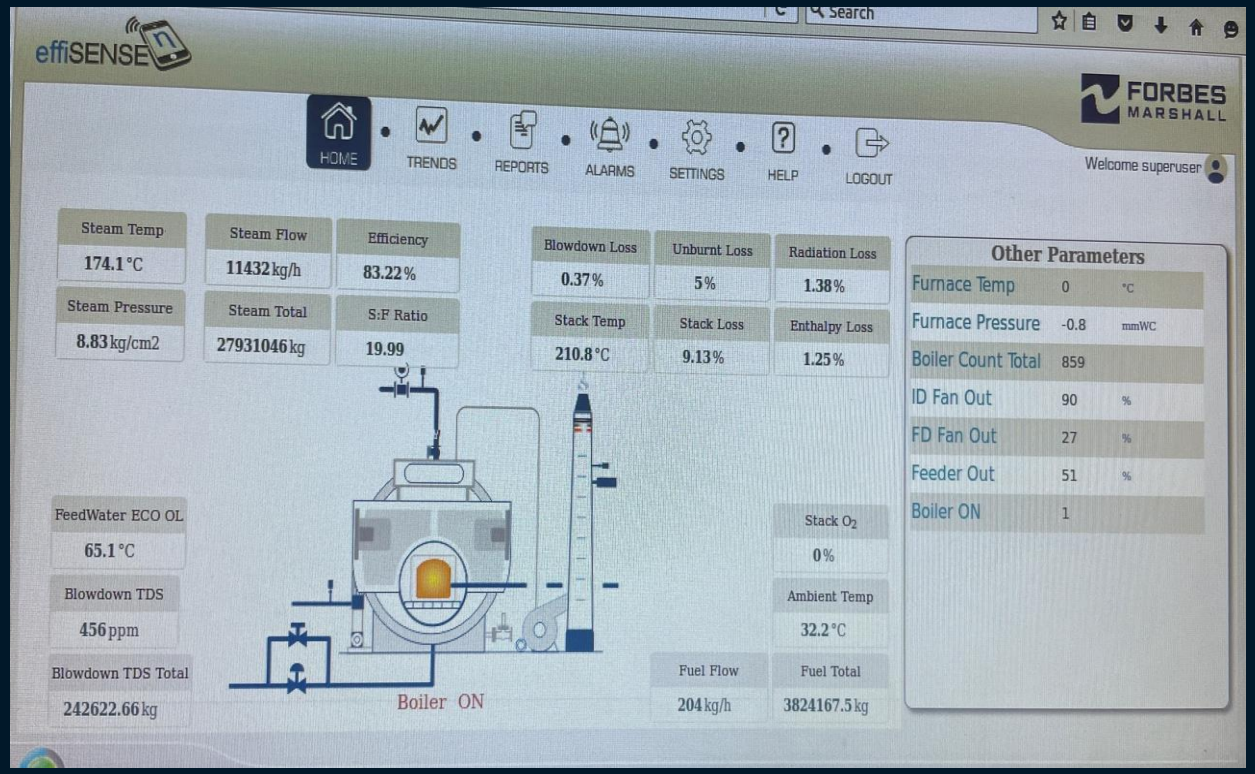
Environmental Results



Total CO_2 Emission in Vat Dyeing: 800 Kg

Total CO_2 Emission in Avitera Process : 450 Kg

Installation of effimax in Boiler



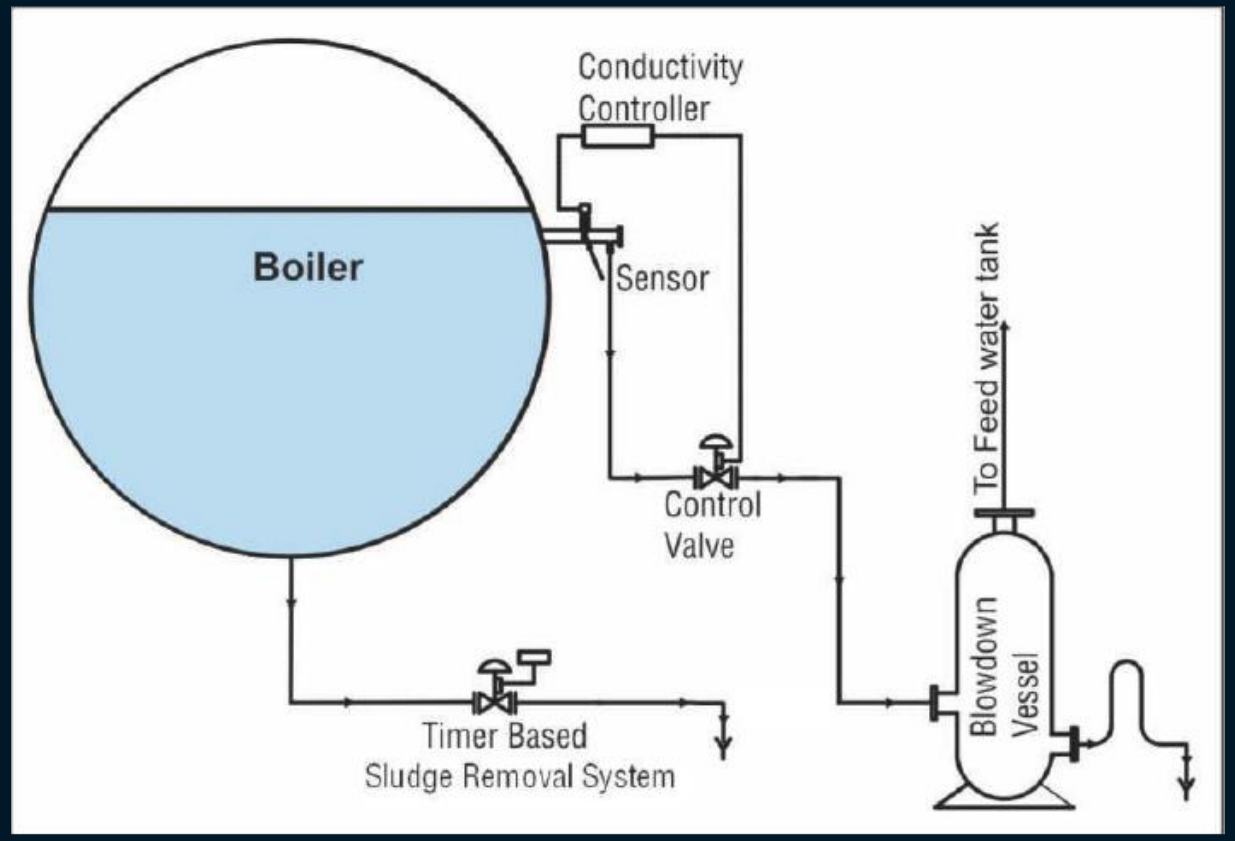
Idea Behind initiative

Installation of Effimax system all the parameter like o2 coal field & furnace pressure are maintained automatically.

Outcome

Around 4% coal saving with project
Rs. 10 Lacs/annum.

Installation of automatic blowdown & heat recovery



Idea Behind initiative

In the absence of Heat recovery system the Blowdown with high temperature of 160 °C is drained out. This is around 10-12% of steam generation. To avoid this losses Heat recovery system was installed and the heat is recovered and used for Boiler feed water heating.

Outcome

Saving from this project is Rs. 0.13 Cr/ Year. i.e.200 MT of coal.

INSTALLATION OF RF DRYER IN PLACE OF RAPID DRYER

Idea Behind initiative

The rapid dryer machine is used for drying which consumes compress air, steam and power. The team came up with an idea of using radio frequency dryer which helped in reducing the consumption of compressed air, Steam & power along with reducing CO2 emission

Outcome

With the installation of this initiative a total Saving of Rs. 14 Lakh has been achieved.
It has also resulted in reduction of CO2 emission by 320 Tons.

Separate steam pipe line for MEE plant

Idea Behind initiative

Taken survey of steam piping & got a solution for separate steam piping for MEE plant from Boiler itself. By new piping we have maintain the constant pressure in process.

Outcome

Saving after new piping Rs. 14 Lac per annum

INSTALLATION OF SLUDGE DRYER

Idea Behind initiative

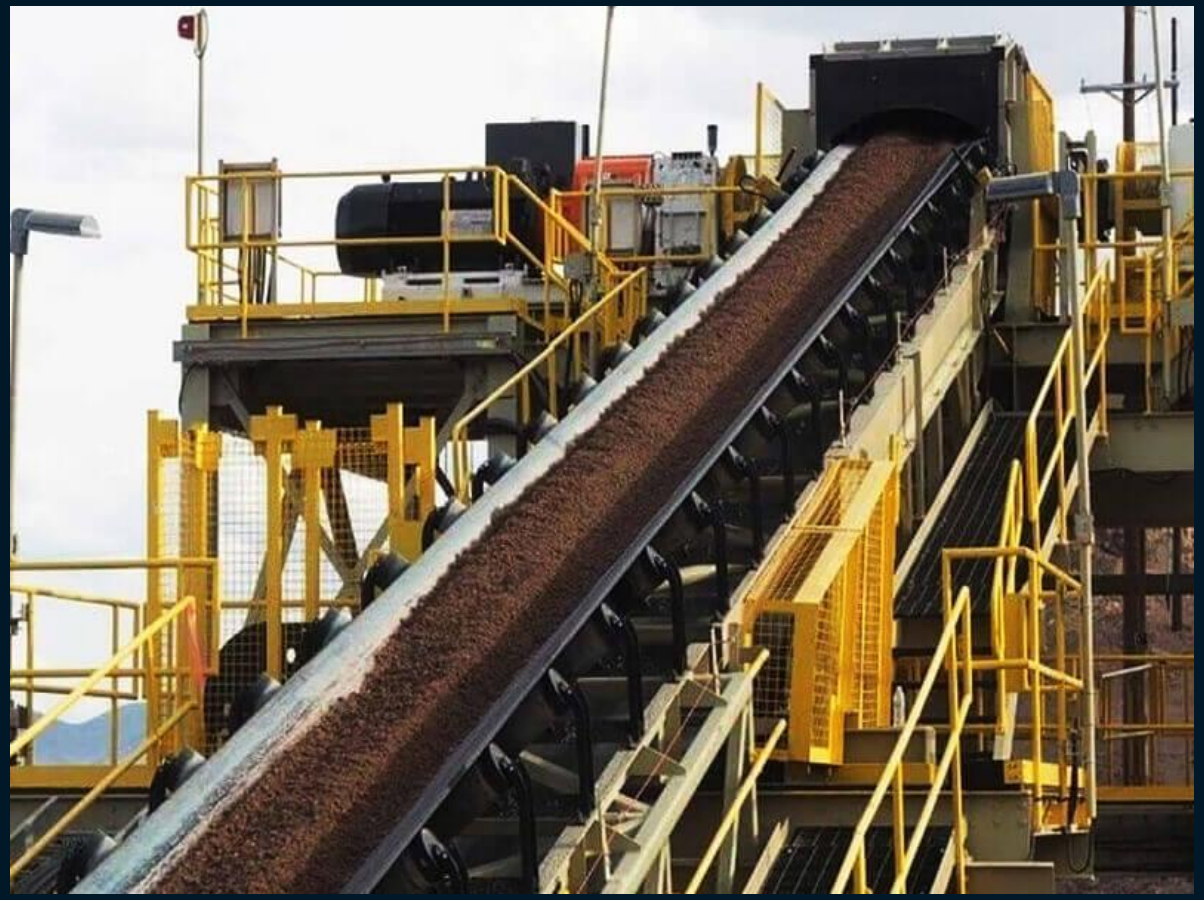
With the earlier setup of decanter, the sludge generation was 250 tons per month which was having 82-85% moisture , the cost of logistic & disposal was around Rs 3700/ton (around Rs 7.5 lac/month) . By installation of Sludge drier the quantity has been **reduced to 50-60 tons .**

Outcome

Due to reduction of sludge quantity we have saved Rs. 6 Lakhs.

It has also resulted in reduction of CO2 emission by 50 Tons/ Month , Also land fill quantity is reduce by 150 MT/ Month

PRE-SCREEN INSTALLED IN CHP



Idea Behind initiative

Indonesian coal is used for Boiler and Thermopac which contains almost 40% of acceptable size and can be fed directly to Boiler and thermopac. Also due to unnecessary crushing increases fines in coal and goes unburnt. So it was decided to modify the system by introducing a prescreen before crusher. This system is operational and the results are favorable.

Outcome

The advantage is reduction in operation time of crusher & reduction in fine coal. Saving achieved is Rs.10 Lacs (Coal + Power)

IMPROVEMENT IN CONDENSATE RECOVERY

Idea Behind initiative

Due to addition of extra machine the condensate load was increase due to this in many place condensate was not recovered & wasted & so we study redesigning the condensate pump & pipe line and also replace the inefficient insulation

Outcome

With the help of this initiatives a total saving of Coal is 150 MT which is Rs. 15 lakhs.
This initiative has also resulted in reduction of CO2 emission by 220 Tons.

DEVELOPED INDICATION LAMP OF LOOM BY USING SCRAP AND FAULTY LED TUBE LIGHT.

Idea Behind initiative

Used faulty and scrap LED tube light for developing indication lamp.

Outcome

Decrease in failure rate of lamp.
Cost saving – 220/- per loom
Before modification power required = 20 watt / loom
After modification power required = 8 watt / loom
Total power saving = 2100 – 840 = 1260 watt for 120 looms

Replacement of Lithium battery over Lead Acid Battery

Parameter	Lead Acid (LA)	Battery Power Pack
Distilled water	Yes	NIL
Electrolyte	Acid	NIL
Machine Rest	8 hrs	NIL
Production Loss	Yes	NIL
Maintenance	Yes	NIL
Energy efficiency	60%	94%
Battery Charging	Slow	Fast
Load response	Slow	Fast
Safety compliance from Pollution Board	No	Yes
Carbon Footprint	Negative	Positive

Future plans for Energy Conservation / Renewable Energy

Sr. No.	Capex Heading	Description	Value in Rs Crores	Saving in Rs Crores
1	Lithium Battery	Replacement of Lead acid battery with lithium battery to increase the effeciency of battery from 60% to 90 % in material handling equipment	0.15	0.05
1	Compressor 132 VSD	At present load on the compressor is full and we are not able to take compressor in maintenance. If 1500 CFM compressor goes in breakdown then machines like Rapid drier and delta are kept off. Additional compressor is required.	0.5	0.17
2	Modification of SSM machine.	In SSM Machine there is a frequent failure of traverse motor and wire rope and the replacement cost is around Rs. 18 lacs/year. This will help to reduce breakdown and increase production	0.32	0.16
3	New Weft straightener	Existing weft straightener is not in proper condition the overhauling cost including spares & up gradation is around Rs. 20 lakhs . Hence It is recommended to replace the machine. This will reduce reprocess and increase production.	0.3	0.15
4	Harmonic filters	Installation of Harmonic filters to reduce the Harmonic distortion, improve power factor and reduce breakdowns	0.35	
5	Grinding attachment for Sanfor	Will improve the fabric finish and will also reduce the grinding time from 8 hrs to 4 hrs	0.3	0.1
6	Modification of AWT (Weaving & Sampling)	Existing system will be replaced with advance nozzles and pump which will help to maintain the required humidity and temperature in department.	0.21	0.07
7	Energy Efficient Motors	Replacement of 30 KW motors with energy efficient EEF 4 motors ,	0.1	0.02
8	IOT	IOT Projects for Steam traps, Vibration, Air pressure	0.25	0
9	Roof top solar 500 kW	Addition of solar panels to the existing to increase the capacity by 500 kW	2	0.4998
10	Water Monitoring and Management	Installation of Flow meter, recycling of water and rain water harvesting	0.4	0.1
11	Centrifuge for Dyeing	Use of centrifuge for removing water from yarn before drying in Rapid Drier	0.4	0.2
12	Low grade heat recovery	Recover heat from dyeing effluent and use generated hot water in process and dyeing	0.3	0.15
		Total	5.58	1.32

New Technologies employed

- Online monitoring of Steam , Air and water Data with daily auto generated reports
- High Lumens/watt LED lights for plant lighting.
- Trials are taken with special developed ultra membrane which will help to eliminate the process in ETP which will led to saving in Electricity and Steam consumption.
- Automation for recovery of flash steam with temperature and level sensor.
- Harmonic filter to reduce harmonics
- DO control in ETP
- 300 Amp Static switch for automatic online changeover within 5 millisecond- this is controlled through PLC for maintaining the MD

Use of sustainable Technics to reduce Energy consumption :

- Water less Dyeing : Eco Dyes from Huntsman consumes less water & salt, almost 50% of water saving & 30 % less salt is required. Fixation of these dyes are excellent so less load on ETP .
- Zelan R3 – water repellent finish from Huntsman which is a natural extracted product, water repellence is good. Less water consumption and easy washable less energy consumption.
- B Fresh Finish also comes under sustainable as it claims 50% water, electricity & detergent consumption at consumers end.

AM ROBOT FOR YARN SHIFTING .

Awards and Recognitions in respect of energy conservation:

- Winner of NSCI Safety Award 2011, 2012
- **Won the award for Exceptional Contribution to Employee Engagement – Raymond Awards for Excellence 2013**
- **Winner of Vasundhara Award from Maharashra Pollution Control Board**
- **Won Gold Award for outstanding achievement in Safety Management, in 18th Annual Greentech Safety Awards 2019, 19th Annual Greentech Environment Award 2019 as a 'WINNER' (Platinum Category)**
- **Received 14th National Awards for Excellence in cost Management- for 3 consecutive years (2013-14, 2014-15, 2015-16, 2016-17);**
- **Received 10th, 11th, 13th ,14th ,15th and 16th state level EC award received from Maharashtra Energy Development Agency.**

Awareness Program on energy conservation

- EnMS 50001: 2018 certification – all the employees are involved and are trained
- Suggestions on energy saving
- Energy week celebration – competitions are conducted, Banners are displayed, Energy saving products and method

Vision :

To be Asia’s leading premium high value cotton fabrics producer

Thank you