CII National Award for Excellence in Energy Management 2021

Team Members

P Yedukondalu(Senior General Manager)

K H N Veera Bhadra Rao (General Manager)

V Yugeswara Sharma(Senior Engineer)

VIATRIS | Mylan + Upjohn A Legacy Division of Pfizer

Our Mission:

At Viatris, we see healthcare not as it is but as it should be. We act courageously and are uniquely positioned to be a source of stability in a world of evolving healthcare needs.

Viatris empowers people worldwide to live healthier at every stage of life.

We do so *via:*

Access
Providing high quality trusted medicines regardless of geography or circumstance

Leadership
Advancing sustainable operations and innovative solutions to improve patient health

Partnership
Leveraging our collective expertise to connect people to products and services

VIATRIS™

Manufacturing site was established in 1997 to produce **Active Pharma Ingredients (APIs)**

Total Factory Area	124687 m^2	
Built up Area	59438 m^2	48 %
Roads & Open	35876 m^2	28 %
Green Belt	29373 m^2	24 %

Plant Capacity

717 KL

Approvals

FDA edqm

Accreditations

ISO 50001 ENERGY MANAGEMENT

ISO 14001

OHSAS 18001

FACILITY & MAJOR EQUIPMENT

API UNIT 07

13 Manufacturing Blocks & **717 KL** Reactor Volume

3 Solvent Recovery Plants with **1200 KL** Capacity

PROCESS EQUIPMENT

235 Reactors

59 Centrifuges

27 ANFD

25 RCVD

25 Tray Drier

16 VTD

UTILITY EQUIPMENT

10 ChillingPlants,+5 (1042 TR)

07 Nitrogen Plants (520 Nm3/Hr)

02 ChillingPlants,-10 (150 TR)

12 Air Compressors (2670 CFM)

13 ChillingPlants,-20 (397TR)

19 Cooling Towers (9050 TR)

Electrical & Thermal Energy Demand

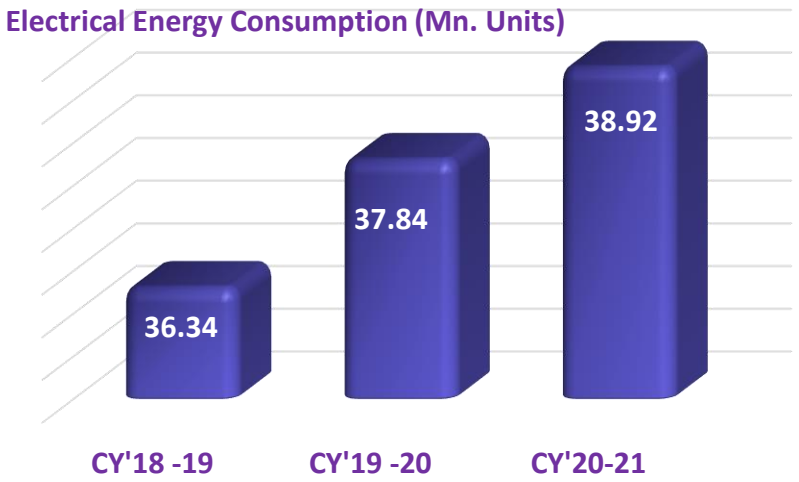
Power Demand (KVA)	6000
Connected Load (HP)	15924

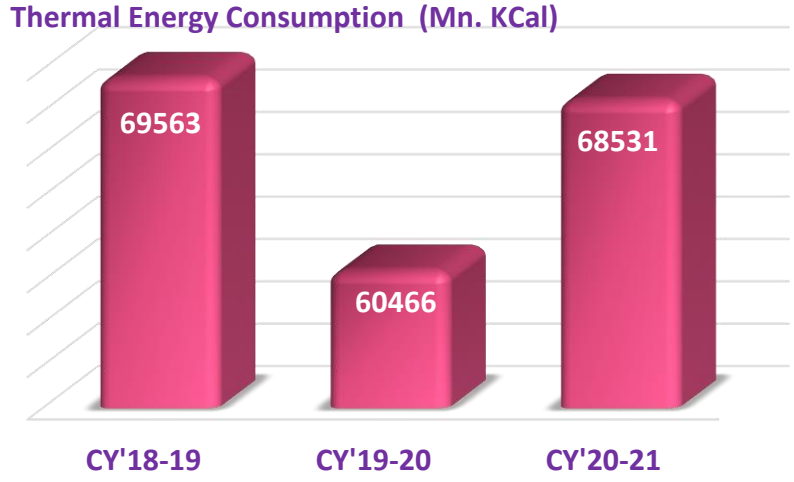
Electrical Energy Intensive Area

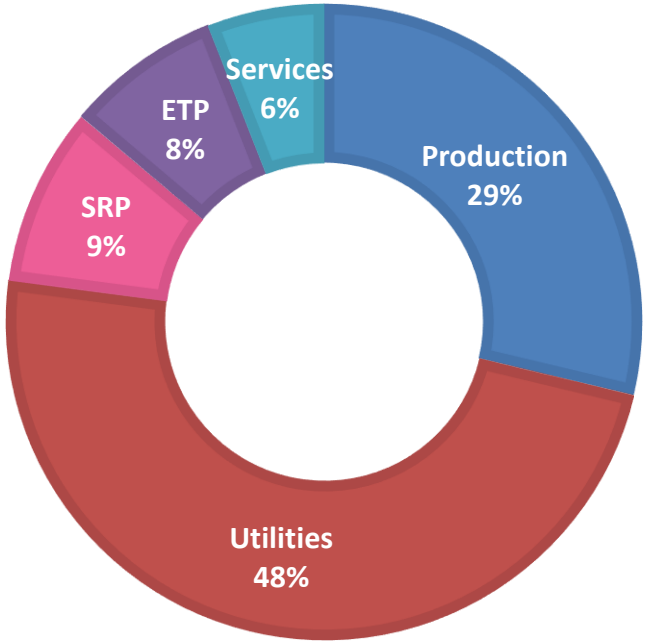
Chilling Plants	3135
Vacuum Pumps	1420
Air Compressors / NP	688
Cooling Towers	669
AHU Systems	730

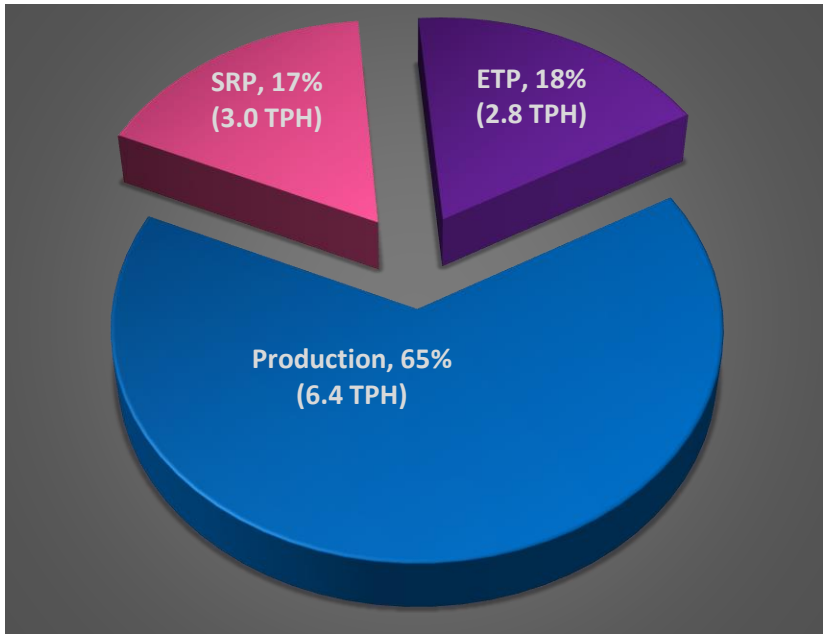
Boiler Capacity

Coal Boiler	20 TPH
Coal Boiler	8 TPH





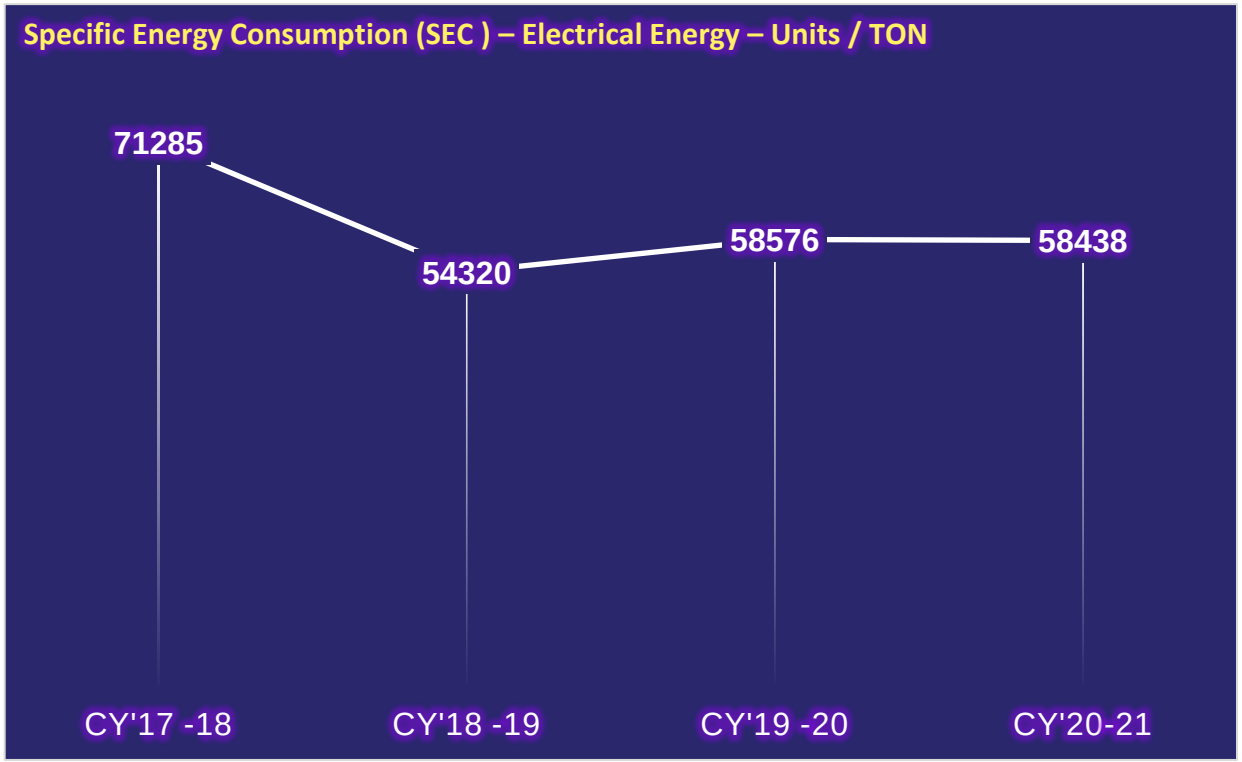


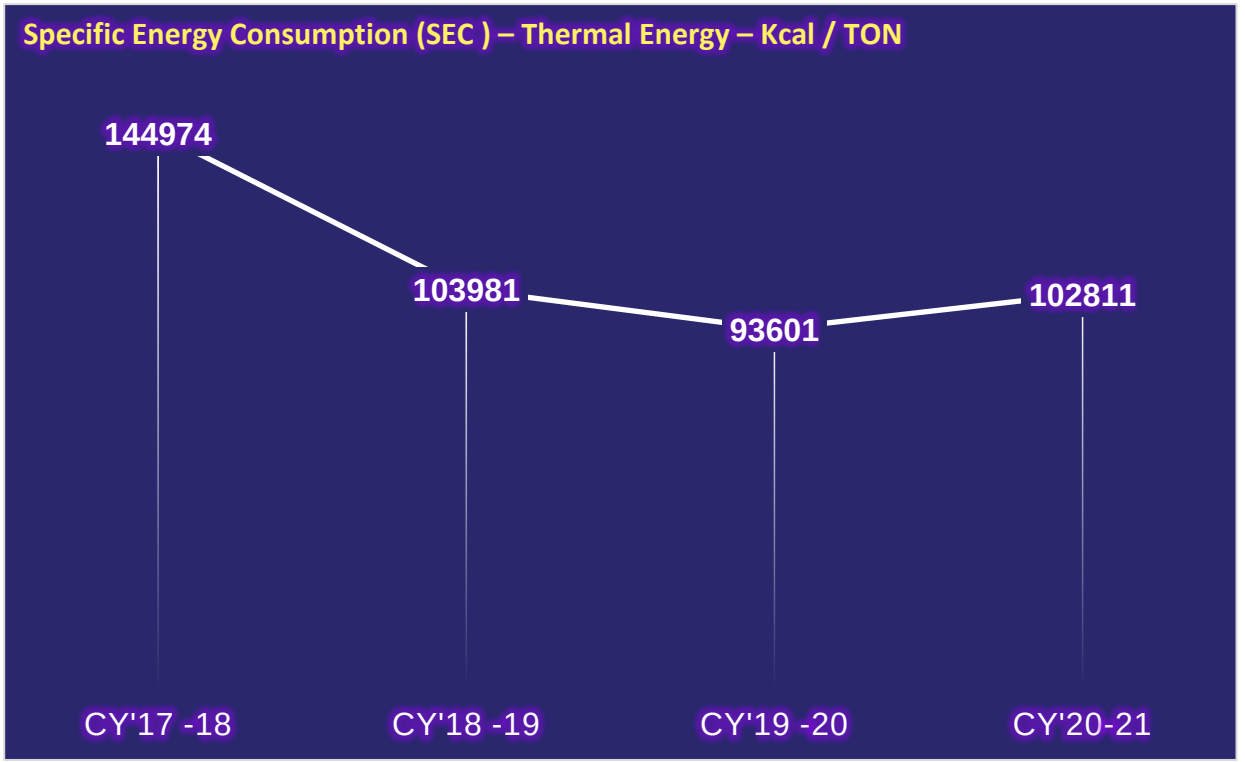


SPECIFIC ENERGY CONSUMPTION (SEC)

API UNIT 07

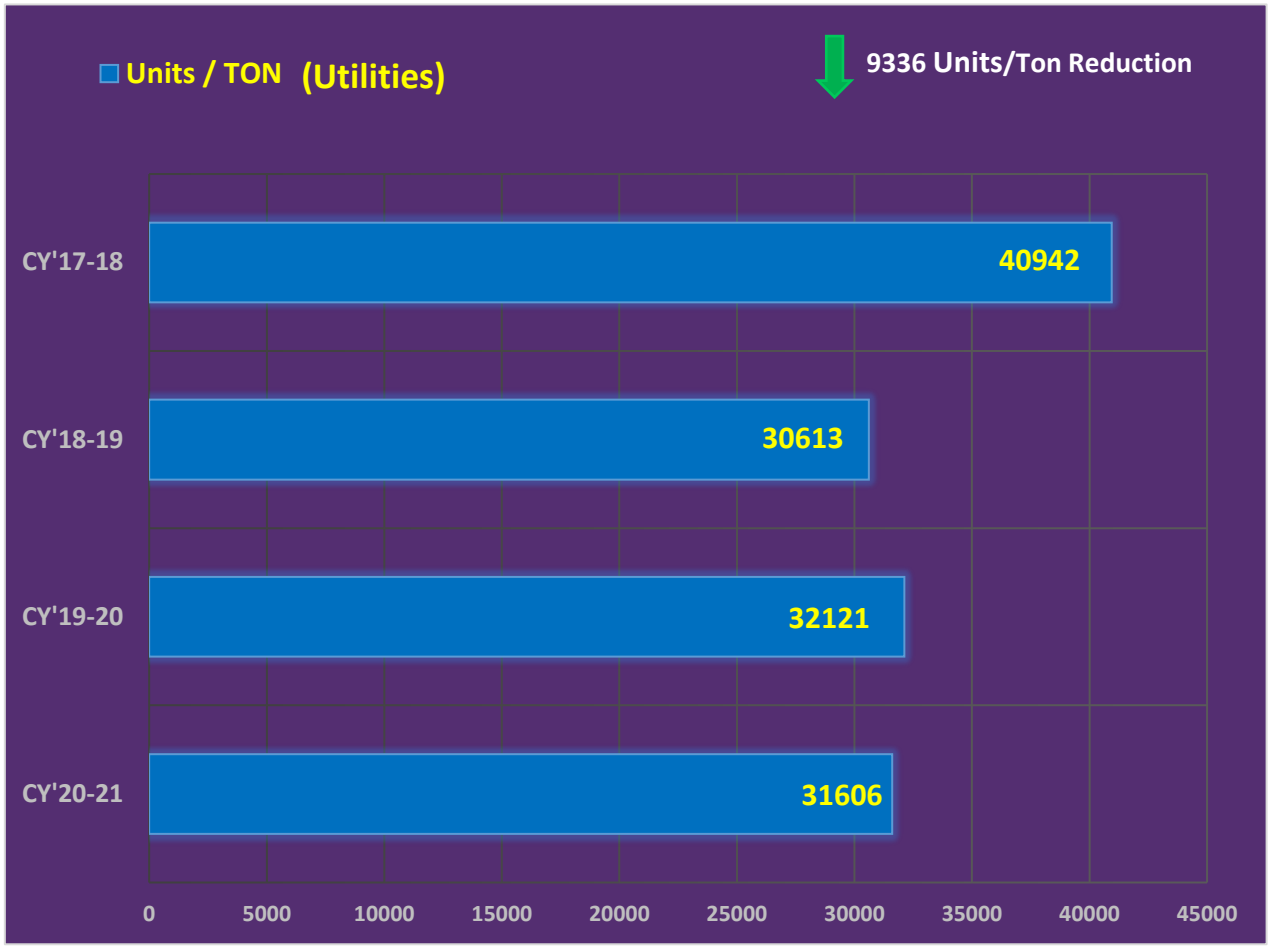
Year	Production (Tons)	Consumption – Electrical Energy (Mn. Units)	SEC – Electrical Energy (Units / Ton of PDN)	Consumption – Thermal Energy (Mn. Kcal)	SEC – Electrical Energy (Kcal / Ton of PDN)
CY'17 -18	467	33.29	71285	67703	144974
CY'18 -19	669	36.34	54320	69563	103981
CY'19 -20	646	37.84	58576	60466	93601
CY'20-21	666	38.92	58438	68531	102811

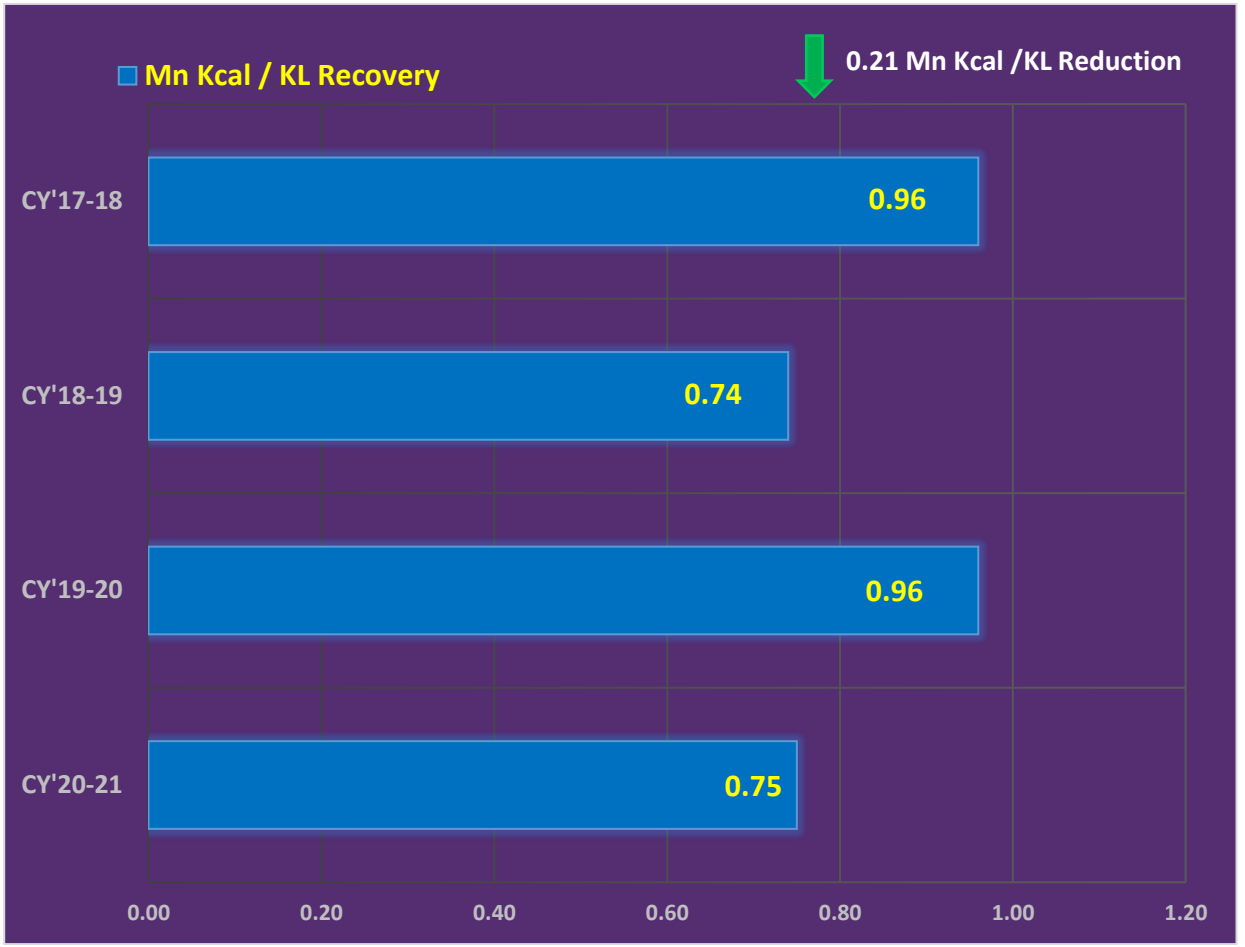




SPECIFIC ENERGY CONSUMPTION (SEC)

API UNIT 07



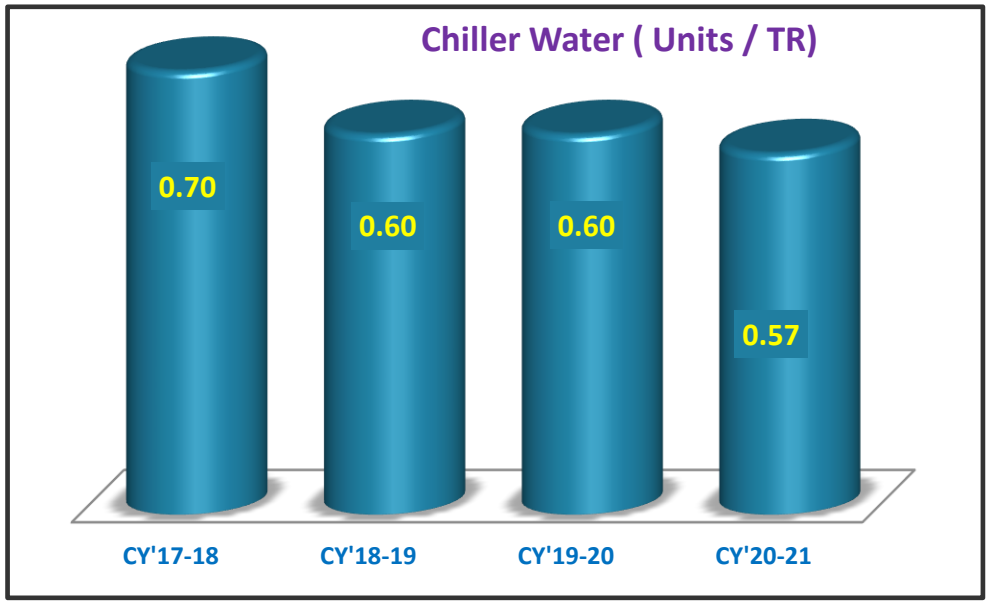


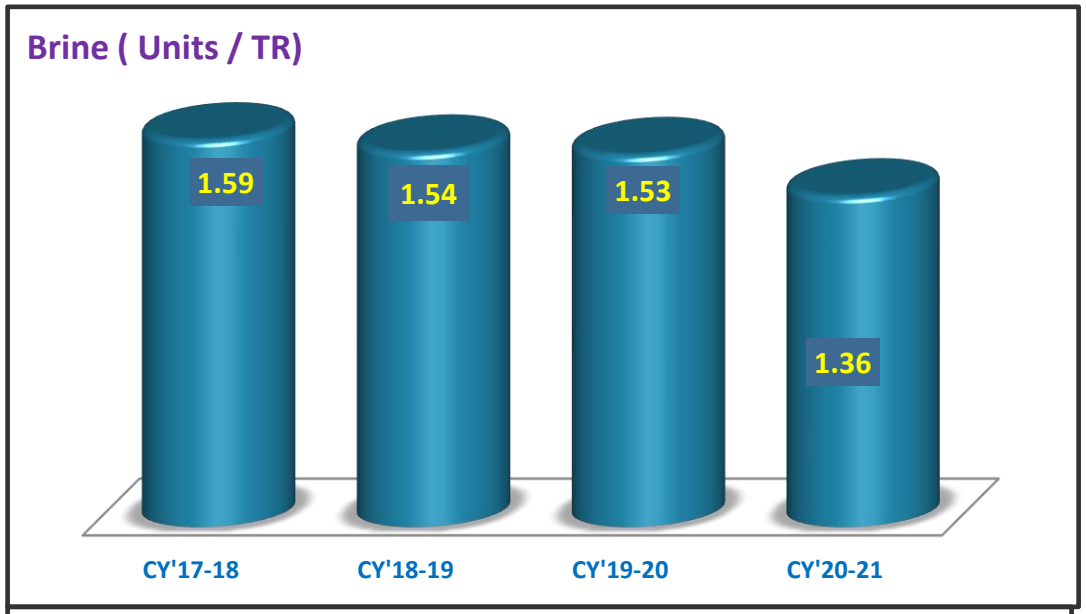
Details	CY'17-18	CY'18-19	CY'19-20	CY'20-21
Utilities Consumption (Million Units)	19.12	20.48	20.75	21.05
Production (Tons)	467	669	646	666
Units / TON	40942	30613	32121	31606

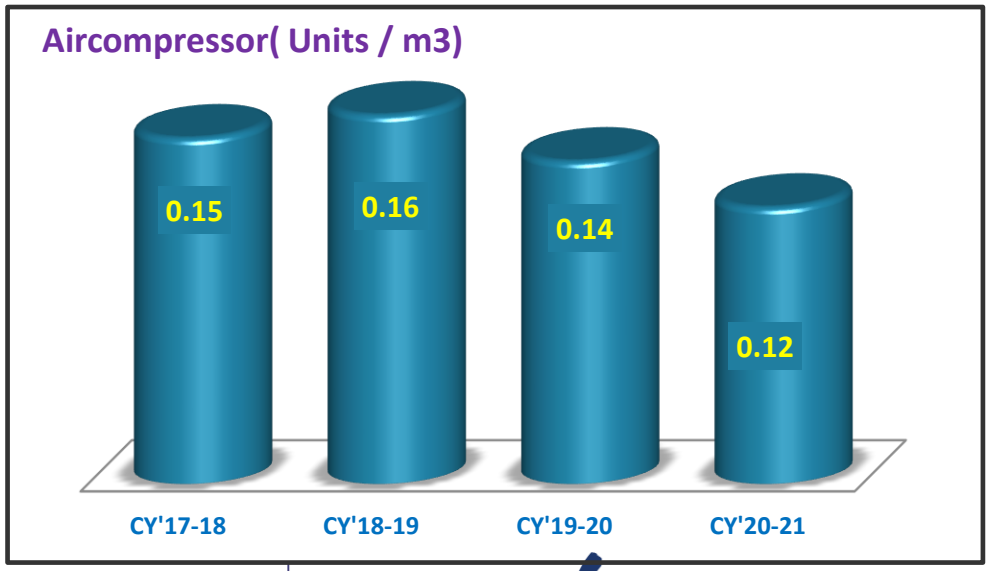
Details	CY'17-18	CY'18-19	CY'19-20	CY'20-21
Steam Consumption (Mn Kcal)	13380	11775	12352	13582
Solvent Recovery (KL)	13799	15789	12838	17955
Mn K Cal / / KL	0.96	0.74	0.96	0.75

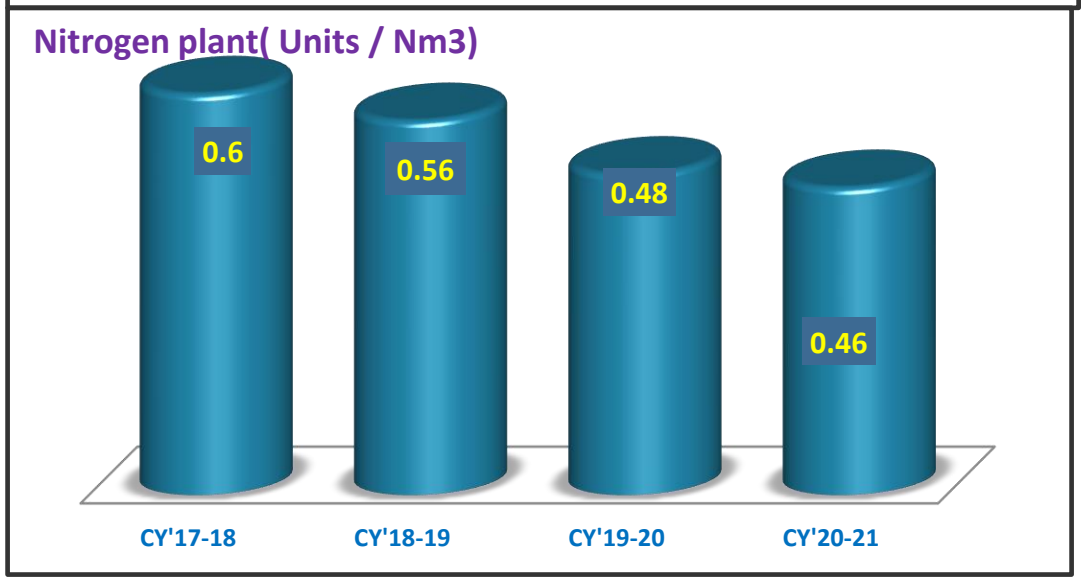
SPECIFIC ENERGY CONSUMPTION (SEC)-UTILITIES

API UNIT 07



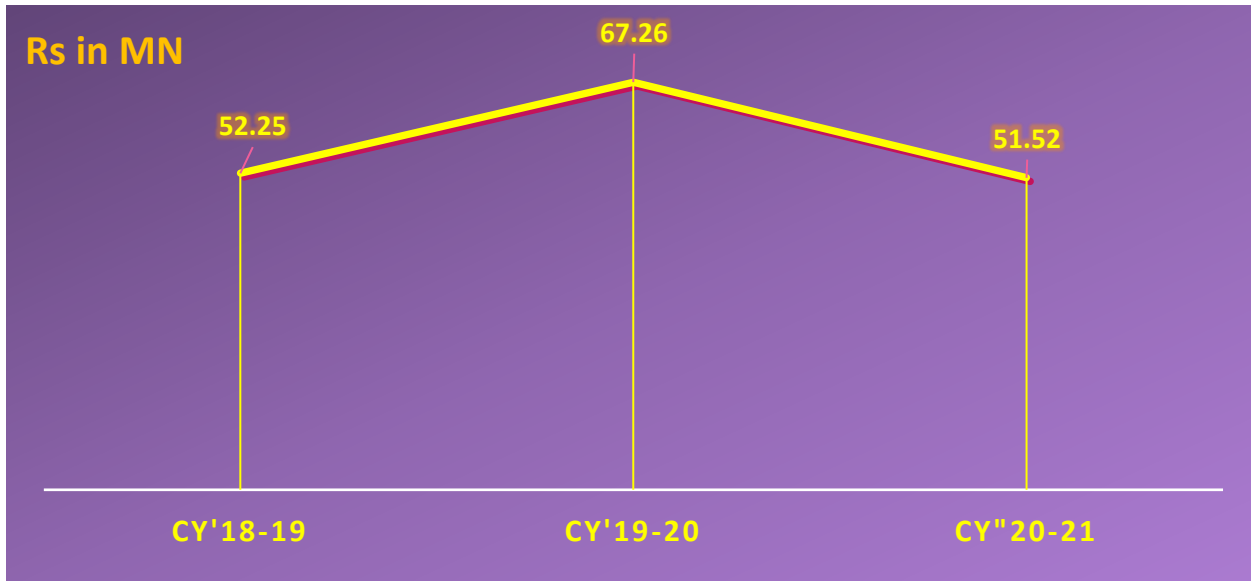


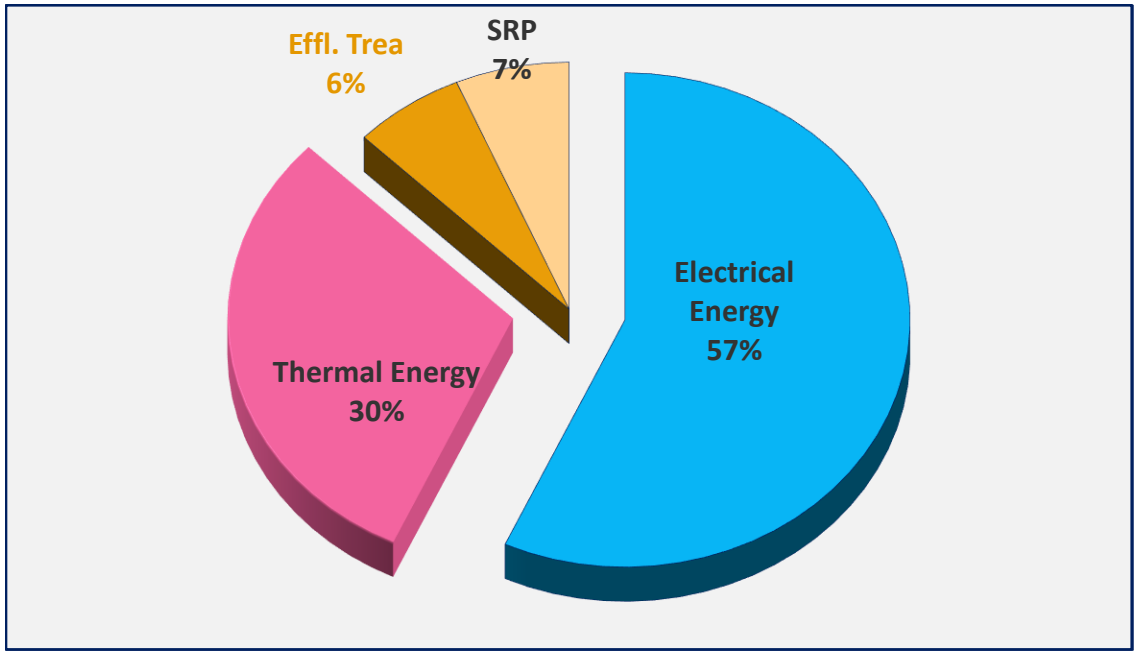


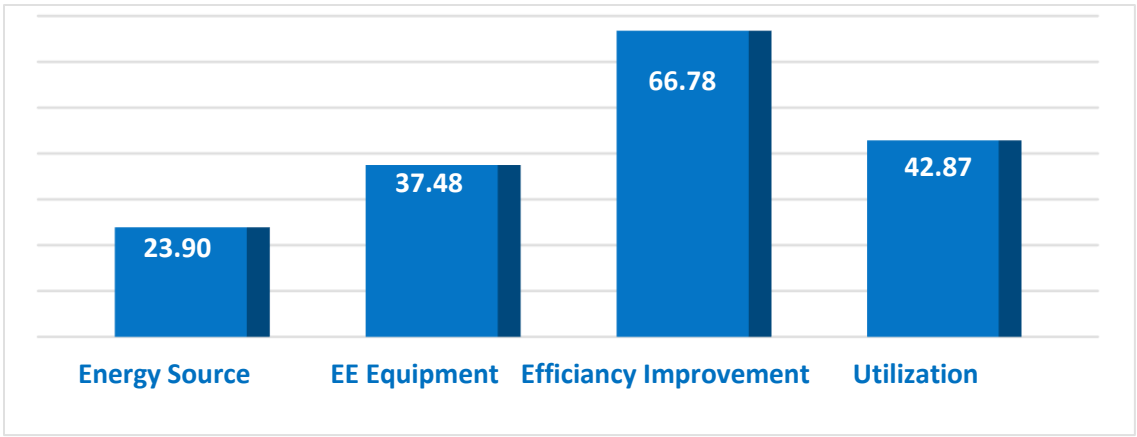


ACHIEVEMENTS

		Savings (Rs in Mn)
Savings - Electrical Energy	11.38 Mn Units	97.30
Savings – Thermal Energy	11587 Tons	51.92
Savings – Eff. Treatment Cost	9034 KL	10.77
Savings – Solvent Recovery	-	11.04
Total SAVINGS (Rs in Mn)		171.03



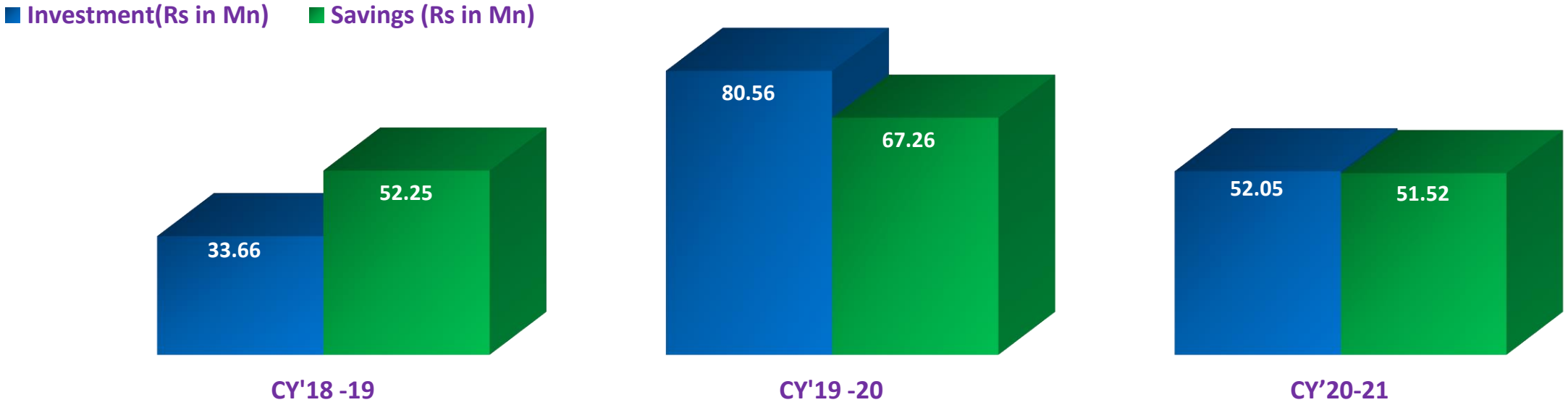




ENERGY SAVING PROJECTS (2018-2021)

API UNIT 07

Year	No of Saving Projects	Investment (Rs in Mn)	Savings (Rs in Mn)	Payback (Months)	Remarks
CY'18 -19	10	33.66	52.25	8 Months	-
CY'19 -20	13	80.56	67.26	15 Months	-
CY'20-21	16	52.05	51.52	12 Months	-
Total	39	166.27	171.03	11 Months	



ENERGY SAVING PROJECTS (2020-2021)

API UNIT 07

SL NO	Project Details	Investment (Rs in Mn)	Savings (Rs in Mn)	Payback (Months)
1	**Reduction of Process Time Cycles** Reduction of Time Cycles by Optimizing Equipment's & Increasing Capacities	2.55	9.20	14.
2	**COIL COOLER Installation for DG Sets(03 No's)** Replacement of coil cooler for 1250 & 1500 KVA DG Sets in place of RADIATOR COMPARTMENT. Improvement in Efficiency & SFC.	4.20	2.40	22
3	**Installation of Automation for Solvent Transfer system at Warehouse** Automation system for Solvent dispensing , Taker Unloading , Drum Unloading with Interlocking systems. Reduction in HP & Running Hours of the pump. (15 KW operating HP Reduced)	15	0.70	….
4	**Installation of VRV System for Laboratory** Installation of VRV System for Laboratory in place of CAC & Normal Air conditioners	2.0	0.94	25
5	**Interconnection Of Chilling Plant** Reduction of Running Hours of Chilling plants by inter connection & Efficiency Improvement in MB 05 / SRP / Basement / Utilities . 176 KW Operational load reduced per Hour	3.0	8.25	4
6	**Flash Steam Pumping System for Condensate Recovery** Provided Flash Steam Pumping system for Condensate recovery & Reduced power consumption. (15 KW Operating HP Reduced.)	0.20	0.70	3
7	**Procurement & Installation of IE3 Motors** Replaced Existing Motors with IE3 Motors related to Pumps to Improve efficiency .	1.20	1.41	10

ENERGY SAVING PROJECTS (2020-2021)

API UNIT 07

SL NO	Project Details	Investment (Rs in Mn)	Savings (Rs in Mn)	Payback (Months)
8	**Replacement of Chilling Plant (+5) with EE Chilling Plant** Replaced of Existing Chilling plant with EE Chilling plant to reduce power Consumption & Reduction in SEC. (180 KW Operating HP Reduced)	4.20	8.44	6
9	**Replacement of Brine plant (-10) with EE Brine Plant** Replaced of Existing Brine plant with Brine plant to reduce power Consumption & Reduction in SEC. (30 KW Operating HP Reduce)	2.8	1.41	24
10	**Replacement of Air compressor with EE- Air Compressor (02 No's)** Replaced Existing Air Compressors with EE Air Compressor to reduce power Consumption & Reduction in SEC. (60 KW Operating HP Reduced)	3.6	2.81	15
11	**Replacement of Vacuum Pumps with Efficient Vacuum Pumps.** Replaced Existing Vacuum pumps with high efficient vacuum pumps to reduce power Consumption & to improve vacuum for the process. (29 KW Operating HP Reduced)	9.0	1.36	80
12	Replacement of Conventional Lighting with LED Lighting in QC / SRP / Security / Admin (15 KW Operating HP Reduced)	0.85	0.7	15
13	**Replacement of Utility Pumps with Efficient Pumps (22 No's)** Replaced Existing Utility pumps with EE efficient to reduce power Consumption & to improve Efficiency. (44 KW Operating HP Reduced)	2.25	2.06	13
14	**Reduction of Energy Consumption by Installation & Operation New Cooling Tower & Pumps** in place of Existing Old Cooling tower /Pumps for Basement Utilities. (30 KW Operating HP Reduced)	1.2	1.41	10
15	**Reduction of Power Purchase Cost** with Effective Utilization of Solar Power & Private Power.	-	1.94	-
16	**Reduction of Steam Generation Cost** with Effective Utilization of Imported Coal , HGCV Coal & Domestic Coal	-	7.78	-
Total(CY'20-21)		**52.05**	**51.52**	**12 Months**

54.21 Mn Units of SOLAR POWER Utilized in CY'2018 - 2021

SOLAR POWER Utilization - 35% of the total plant consumption

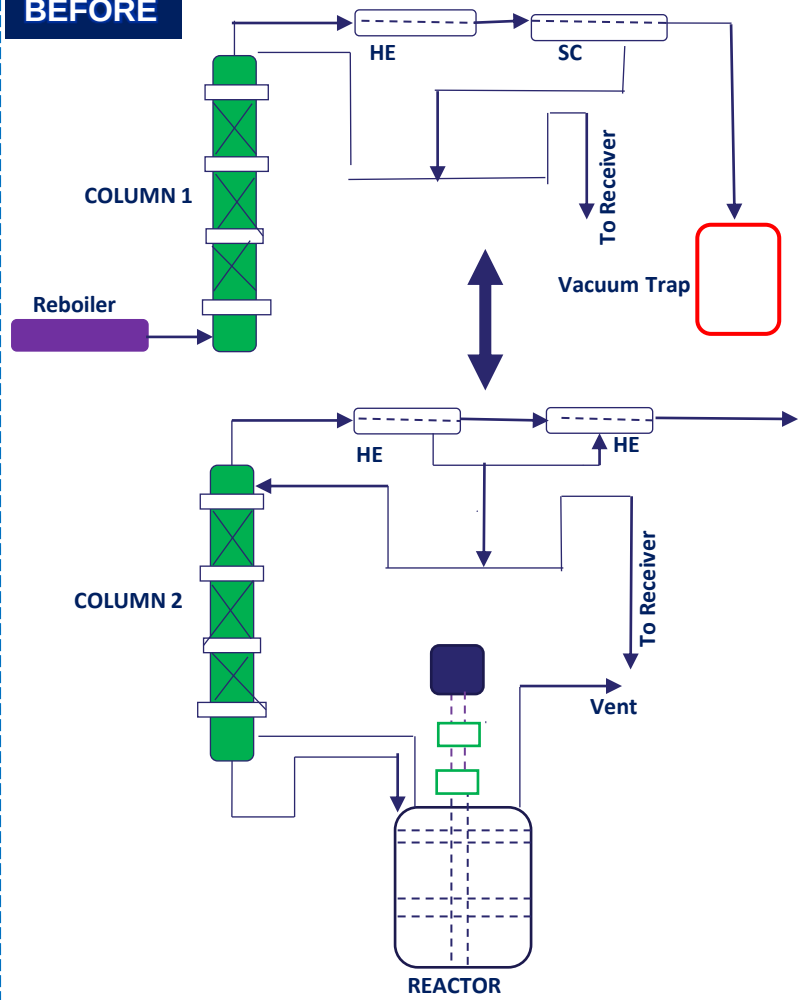
Future Initiatives

- **400 KW SOLAR Panels Installation inside the plant**
- **GREEN POWER Purchase of 3.54 Million Units per Annum**
- **SOLAR POWER Utilization up to 70%.**

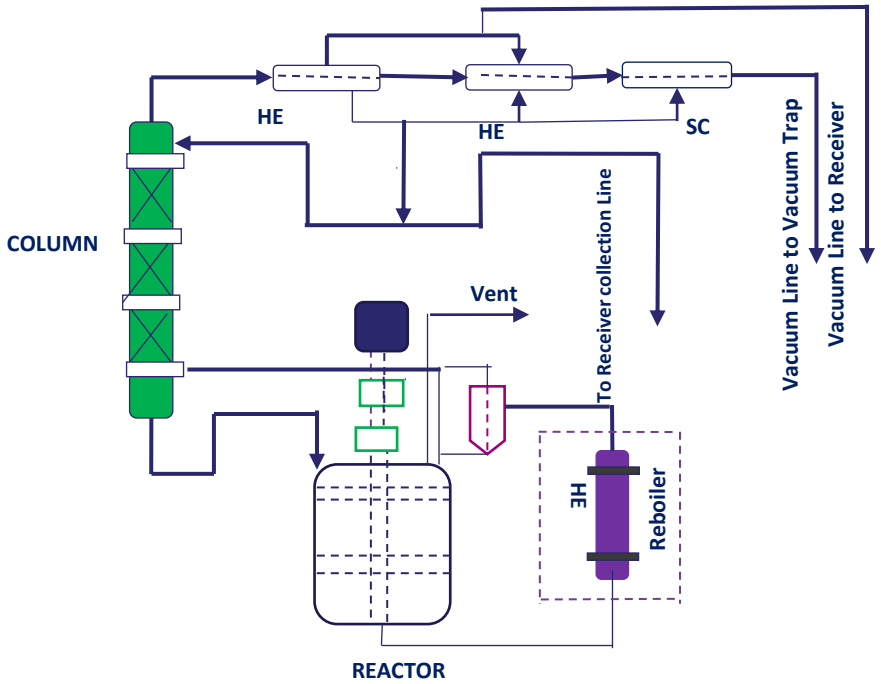
REDUCTION OF PROCESS TIME CYCLE

Reduction of Time Cycles by Optimizing Equipment's & Increasing Capacities.

BEFORE



AFTER MODIFICATION



Advantages

- Time Cycles Reduced.
- Equipment Optimization
- Increased Inhouse Solvent Recovery
- Reduced Steam Consumption of 867 Tons
- Reduced Power Utilization of 0.14 Mn Units

Investment	Rs.2.55 Mn
Savings	Rs.2.13 Mn
Pay Back	14 Months

COIL COOLER for DG Sets

Replaced Existing RADIATOR COMPARTMENT with COIL COOLER

Advantages

- Better Cooling System with Separate HT & LT Circuits
- 100% Power Generation in all Weather Conditions
- Efficiency Improved.
- 8% Increase in Specific Fuel Consumption (SFC)
- Fuel Savings up to 22 KL per Annum

Investment	Rs. 4.20 Mn
Savings	Rs. 2.40 Mn
Pay Back	22 Months

Energy Efficient Equipment's

Installed Energy Efficient Equipment's in the plant to replace Existing Utility Equipment's .

Chilling Plants	04 Nos
Air Compressors	03 Nos
Air Conditioners	40 Nos
Motors – IE3	100 Nos
Vacuum Pumps	15 Nos
Utility Pumps	22 Nos
VRV System	04 Nos
Cooling Towers	03 Nos

Advantages

- Reduction of 365 HP & Power Consumption
- Reduction of R22 Refrigerant Usage & Consumption.
- R 134 A & R 32 Eco friendly Refrigerant Usage.
- Equipment & Cooling Efficiencies Improved.
- Reduction in Specific Energy Consumptions of the Equipment.

Investment	Rs.23.50 Mn
Savings	Rs.11.97 Mn
Pay Back	24 Months

FUTURE PROJECTS (CY'2021-2023)

API UNIT 07

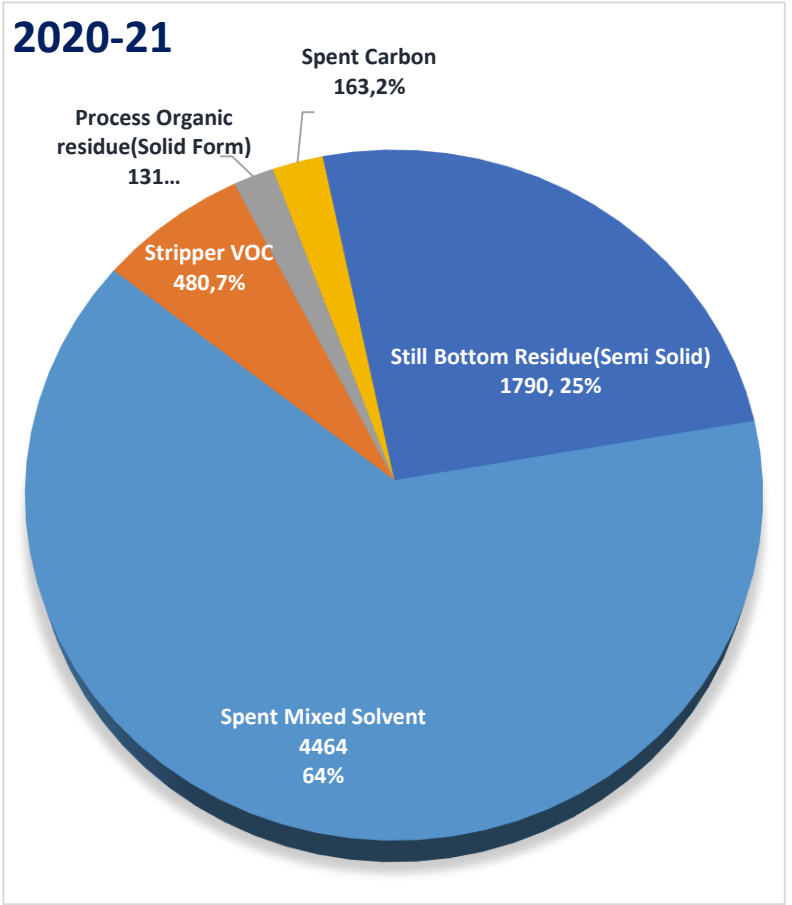
		Investment.	Savings	Pay Back
Green Power Purchase	• 3.53 Mn Units Purchase per Annum	Rs.0.5 Mn.	Rs.7.11 Mn	1 Month
Auto Tube Cleaning Machines for SRP	• Providing ATC System for Process Heat Exchangers , Chilling Plants.	Rs. 11 Mn.	Rs.9.25 Mn.	15 Months
Electro Lite Treatment System for Cooling Tower Water treatment	• Installation of Electro lite Treatment System for Cooling tower water treatment.	Rs. 6.0 Mn.	Rs.3.35 Mn.	20 Months
Energy Efficient Equipment's (Chilling plants/ Air Compressors/ Pumps/Motors)	• 800 HP Reduction Planned. • 4.8 Mn Units Consumption Reduction per Annum	Rs. 32 Mn.	Rs.28.50 Mn.	15 Months.
660 KW Power Turbine (In House Power Generation)	• 4.24 Mn Units Generation per annum. • Unit Cost Reduction by Rs.4/- per Unit	Rs. 18.0 Mn	Rs.16.90 Mn	11 Months
Utility Automation	Automation Provided for Utility operations with Interlock & Ensuring Effective Utilization (Two Blocks)	Rs. 30 Mn.	Rs.2.8 Mn.	42 Months
Solar Power Increase up to 70%	• Present 40% Solar Power Utilizing.. • Panning to Increase up to 70 % by PPA & Roof top solar Installations	Rs. 2.0 Mn.	Rs.9.5 Mn.	2 Months
Total (Rs in Mn)		Rs.99.50 Mn	Rs.77.41 Mn.	16 Months.

green power tomorrow

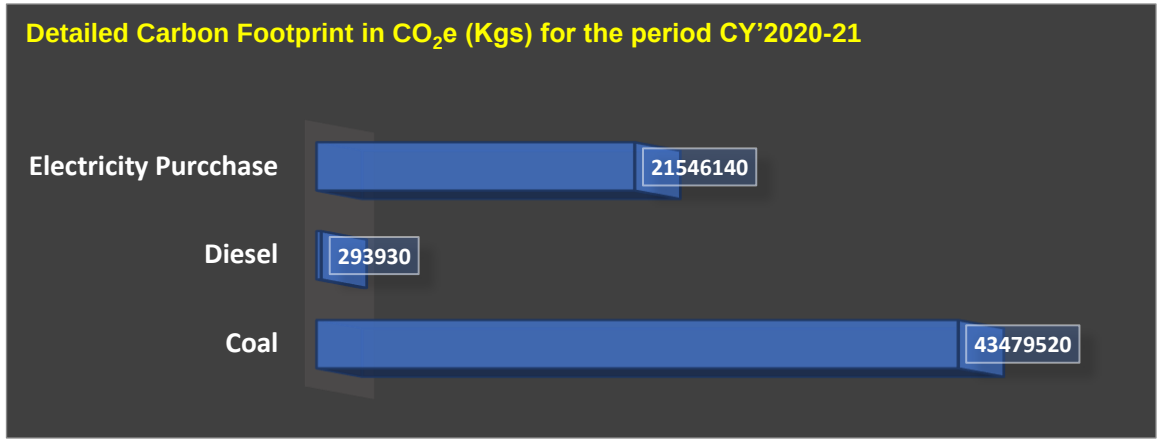
WATER CONSERVATION

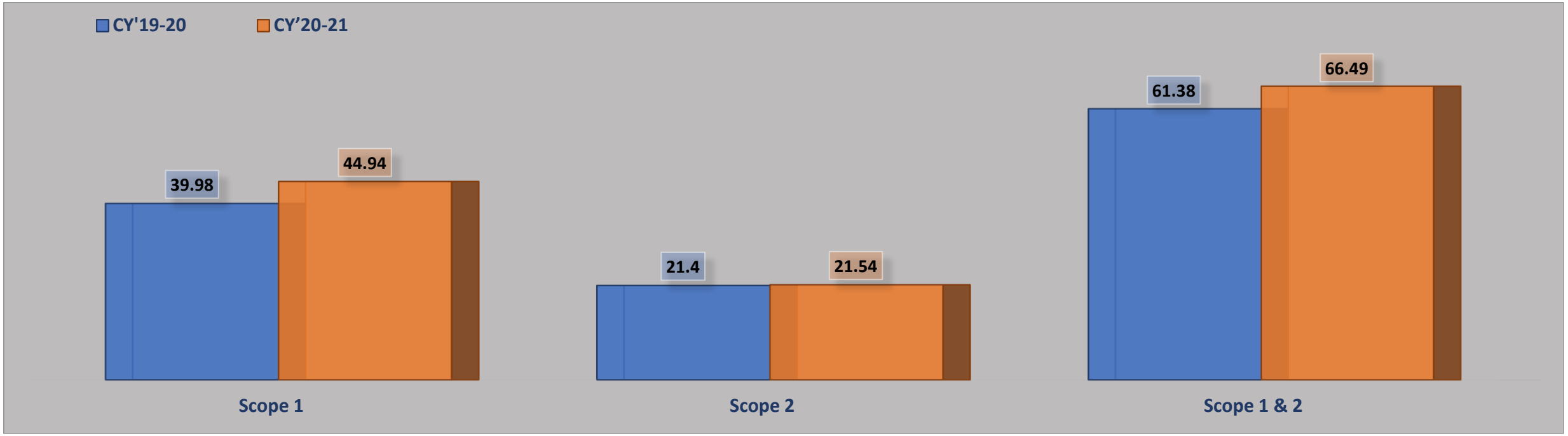
This Hazardous Waste Generated Materials are disposing to TSDF/Cement Industries through Agreement / PO & They are using the same as alternate fuel

Type of Residue	2018-19	2019-20	2020-21
Spent Mixed Solvent	4850 T	5859 T	4464 T
Stripper VOC	504 T	435 T	480 T
Process Organic residue(Solid Form)	232 T	251 T	131 T
Spent Carbon	230 T	179 T	163 T
Still Bottom Residue(Semi Solid)	829 T	1326 T	1790 T



Scope-wise Emissions in CO_2e (kgs) per Kg of Production		
Fuel/Period	**CY'19-20**	**CY'20-21**
Scope 1	39.98	44.94
Scope 2	21.40	21.54
Scope 1 & 2	**61.38**	**66.49**





CARBON FOOTPRINT –GREEN SUPLLY CHAIN MANAGEMENT

API UNIT 07

Initiative	Last 3 Years Implementations	Future Action Plan
GREEN / SOLAR Power Purchase 	• **54.21 Million Solar Units are utilized from CY'18 to CY'21** • **35% of SOLAR POWER Utilization of total plant consumption**	• **Initiated GREEN POWER Purchase of 3.54 Million Units per annum.** • **400 KW SOLAR Panels Installations inside the plant.** • **Increasing SOLAR Power utilization up to 70%**
Reduction of R 22 Refrigerant R134a R32	• **60 No's of R 134 A & R 32 Refrigerant Equipment's are Replaced in place of R 22 Refrigerant Equipment's.** (Chilling Plants / Inverter Air Conditioners)	**Planned to Replace the following R 134 A & R 32 Refrigerant Equipment's to avoid R22 Refrigerant usage in the plant FY'2021-2023** • Chilling Plants (14 No's) • Air Conditioners (85 No's)
Solvent Emission Control & Solvent Recovery system	• **Solvent Emissions controlled by Increasing Solvent Recovery through Installing condenser to Dry Vacuum Pumps Vents.**	**Initiated New Solvent Recovery plant to Increase In house recovery to avoid External party Recovery.**
ESP Erection for Boiler	• **Electro Static Precipitator Installed** to reduce removes fine particles, like dust and smoke, from a flowing gas using the force of an induced electrostatic charge minimally impeding the flow of gases through the unit.	--
WATER CONSERVATION	• ZERO Liquid Discharge Plant. • 260 KL Treated Water using for Cooling Towers , Wash Area & Gardening. • Increased Condensate Recovery inside the plant	**Increasing Condensate Recovery by 10%**
Paper Savings THINK BEFORE YOU PRINT	**Implemented E log towards electronic documentation across API**	**Putting Efforts to reduce paper by online paperless documentation.**
Increasing Green Belt.	**Planted 2100 Plants inside the plant & Increased green belt Increased**	**Increasing green belt area by doing trees plantation in the plant.**

Senior Management

Inculcate Energy Management Policy in organization.

Providing Necessary Resources for Successful Implementation.

Senior management Reviewing Energy Conservation Initiatives, Implementation Status and Saving on Monthly Basis.

ENERGY MANAGEMENT SYSTEM (EnMS) POLICY

Mylan
Seeing is believing

Mylan Laboratories Ltd recognises its responsibility to conserve and manage energy in all its operations. We have developed this policy as a constant reminder of our responsibilities to ensure a continuous management commitment, to act effectively and to reduce energy consumption.

Being the premier API manufacturer, we adhere to alignment of business strategy with this EnMS policy and ensure commitment to:

- Conduct the operations in accordance with all applicable statutory and other requirements.
- Make every effort to commit organizational resources towards energy management.
- Minimize our energy costs and give priority to energy efficiency by utilizing available resources more efficiently.
- Increase employee awareness in conducting their operations in an energy effective manner by conducting periodic reviews.
- Conduct periodic trainings to provide employees an exposure and motivate them on various energy related aspects while on the job and off the job.
- Review the EnMS performance on a periodic basis which will include setting and review of EnMS (Energy Management System) objectives and targets for promoting continual improvement.

The policy will be communicated to all the employees and will be available to all stakeholders on their request.

The senior management committee has overall responsibility to implement the policy and review it on a periodic basis.

This policy is applicable to all Mylan employees and facilities.

Dt: 25-NOV-2015

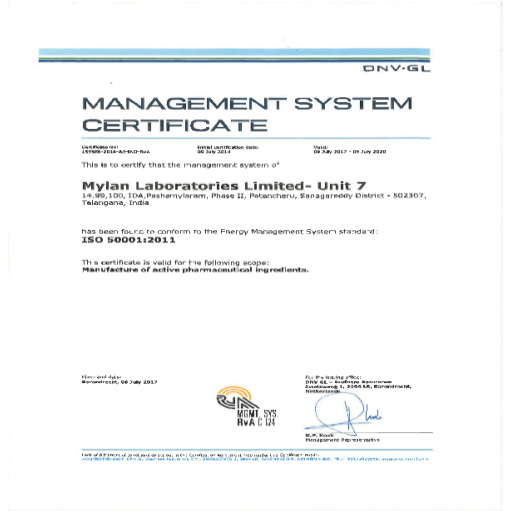
Mr. Rakesh Bamzai
CEO& Managing Director

Innovation • Integrity • Reliability • Service • Teamwork

Formed Core Committee with 52 members in the plant from all Departments.

Experienced, Expertise and Trained people leading their Individual teams

Senior General Managers / DGM /AGM/ Managers / Executives



DNV·GL

MANAGEMENT SYSTEM CERTIFICATE

This is to certify that the management system of

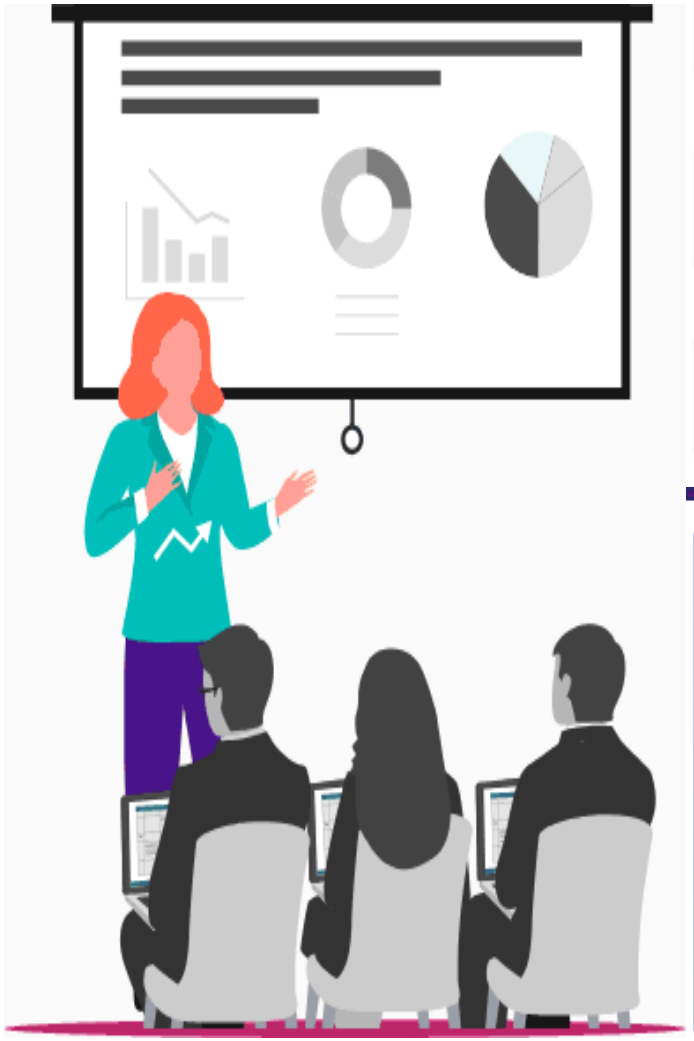
Mylan Laboratories Limited- Unit 7
I-4,9B,10D, IDA,Pashamylaram, Phase II, Patancheru, Sanagareddy District - 502307, Telangana, India

has been found to conform to the Energy Management System standard:
ISO 50001:2011

This certificate is valid for the following scope:
Manufacture of active pharmaceutical ingredients.

VIATRIS | Mylan + Upjohn A Legacy Division of Pfizer

Training & Awareness



Awareness & Training Programs providing to all levels & achieving positive Results

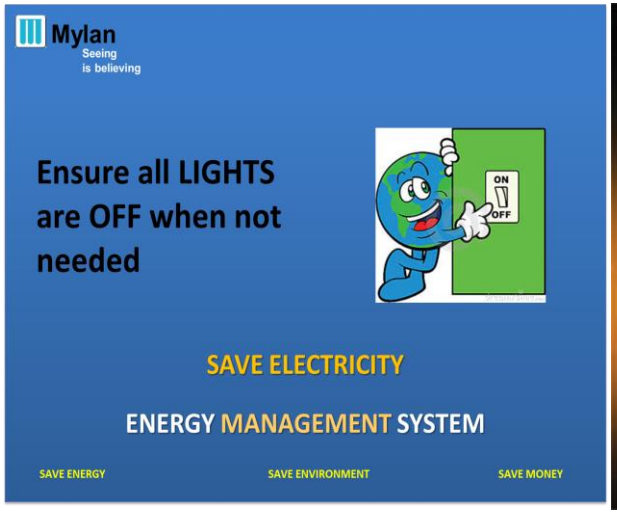
All employees are taking ownership for successful implementation of Energy Saving Initiatives.

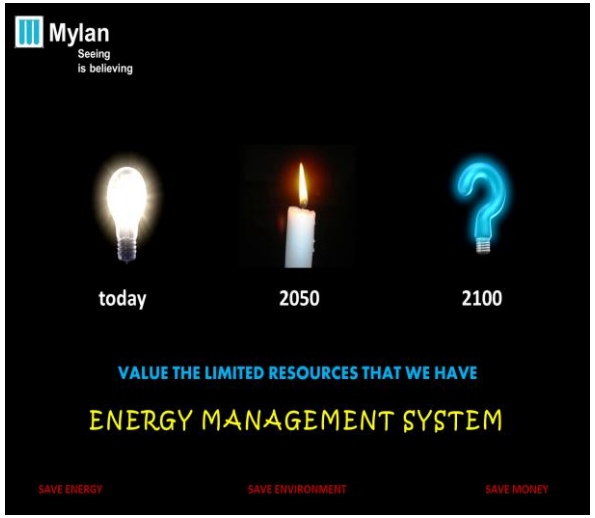
Giving Communication & sharing information on Energy Saving Achievement periodically.

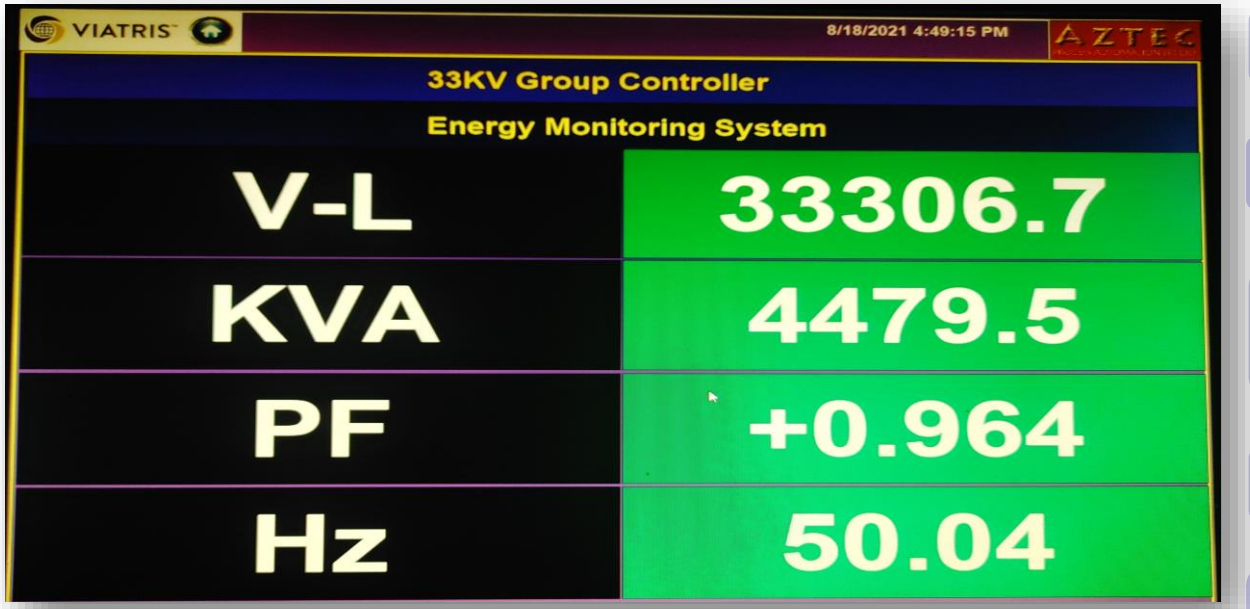
Mylan

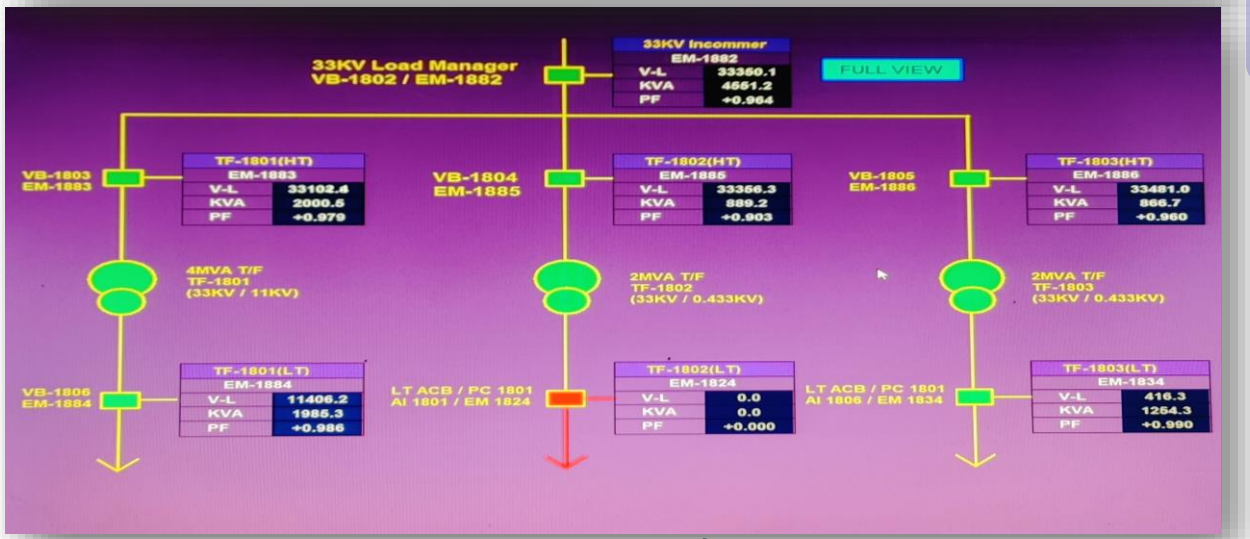
Mylan Laboratories Limited
Unit-7, Pashamylaram

Energy Saving Opportunity(ESO) / ఇంధన పొదుపు అవకాశం(ఇ.స్.ఓ)	
Name & Emp code.No/ పేరు & ఇస్.నం	
Department/ డిపార్టుమెంటు	
Location of ESO observed/ ఇంధన పొదుపు అవకాశం గమనించిన ప్రదేశం	
Date of ESO observed/ ఇంధన పొదుపు అవకాశం గమనించిన తేది	
What Energy Losses observed in System or Equipment (Put Tick(☑)Mark)/ ఎటువంటి ఇంధన పొదుపు అవకాశం ((☑)మార్కు చెయుండి)	Electrical/Steam/cooling/water/Air/Nitrogen/ విద్యుత్/స్టీమ్/కూలింగ్/నీరు/గాలి/నైట్రోజన్/ఇతర
Description of ESO observed/ గమనించిన ఇంధన పొదుపు అవకాశం	
What immediate control did you taken? / మీరు తీసుకున్న తక్షణ చర్య ఏమిటి?	









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- Above 30 HP Motors, Energy Monitoring Devices, Trends with Hour Meters .
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