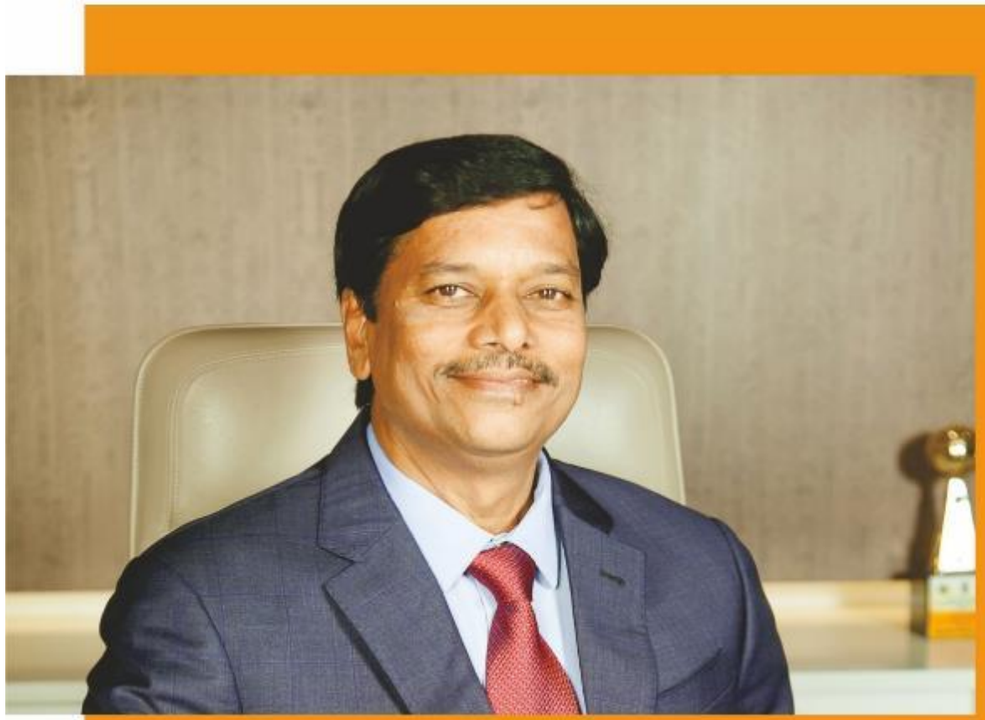
Inspiring human belief
in a healthier world.

HETERO LABS
UNIT-I, KAZIPALLY

NATIONAL AWARD FOR EXCELLENCE IN ENERGY MANAGEMENT - 2022

A. Soniya (TSD) – Engineer
K. Srihari (TSD) – Manager
G.V Reddy (Engg) – General Manager
K. Mallikarjuna Reddy (Plant Head) – AVP

BRIEF INTRODUCTION ON COMPANY/ UNIT



OUR

LEADING LIGHT

"COMMITTED TO SERVE THE WORLD WITH AFFORDABLE MEDICINES"

Hetero was founded in the year 1993, by the visionary scientist Dr. B. P.S. Reddy.

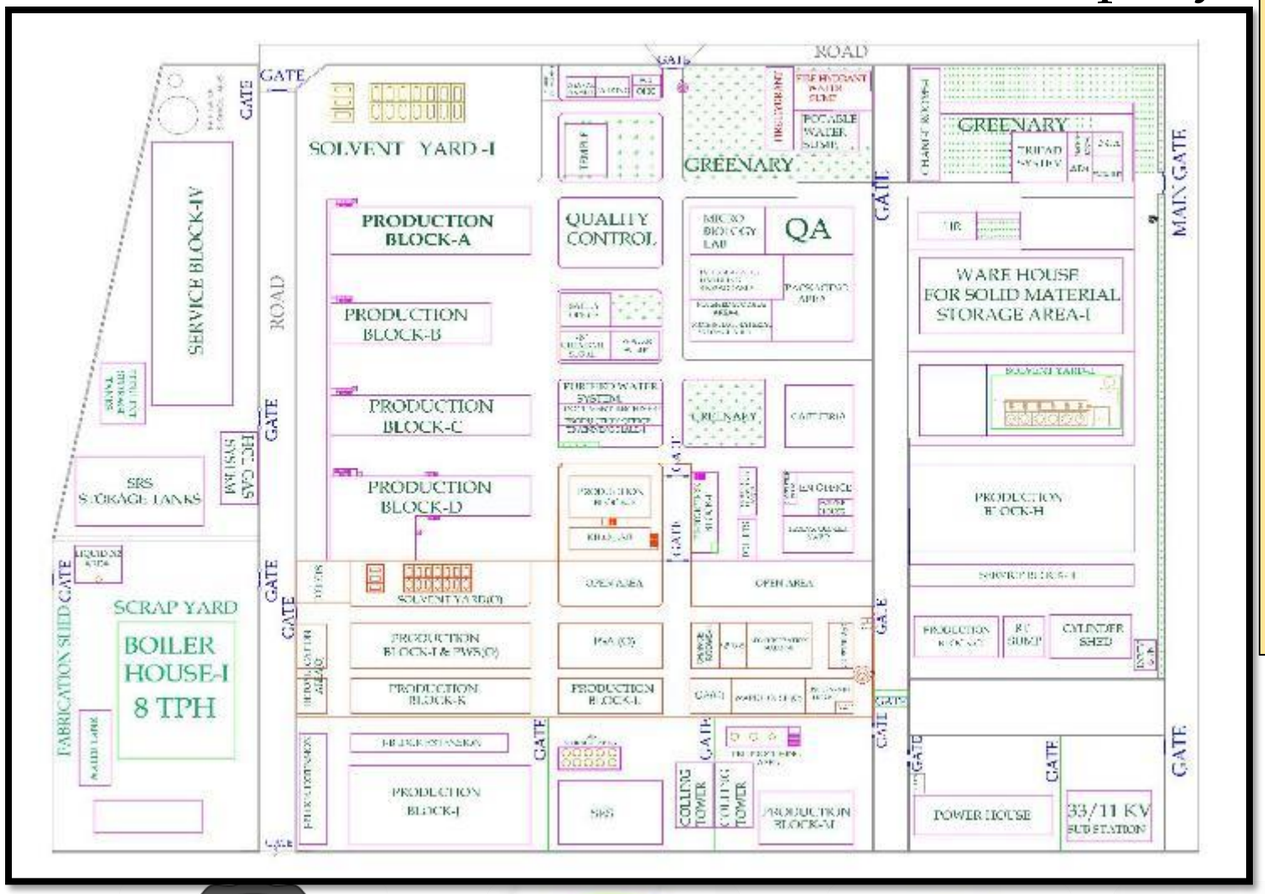
Under his leadership, Hetero has risen to become a world leader in the production of anti-retroviral drugs, partner of choice for customers and a globally trusted brand for high quality medicines.

Number of employees: Over 22,000 +

Dr. B.P.S. Reddy
Chairman
Hetero Group of Companies

BRIEF INTRODUCTION ON COMPANY/ UNIT

Hetero Labs Limited, Unit-I, Kazipally



- Production Blocks
- Ware House
- Service Area
- ZLD Area
- Boiler Area
- QA/ QC
- Engineering/ TSD

S.No	Product Category	Quantity (MT)
1	General Product	568.64 (66%)
2	Sartan Product	235.41 (27%)
3	Potent Product	61.63 (7%)
Total		**865.69 (100%)**

FY 2021-22 Turnover:

Rs. 20,000 Millions +

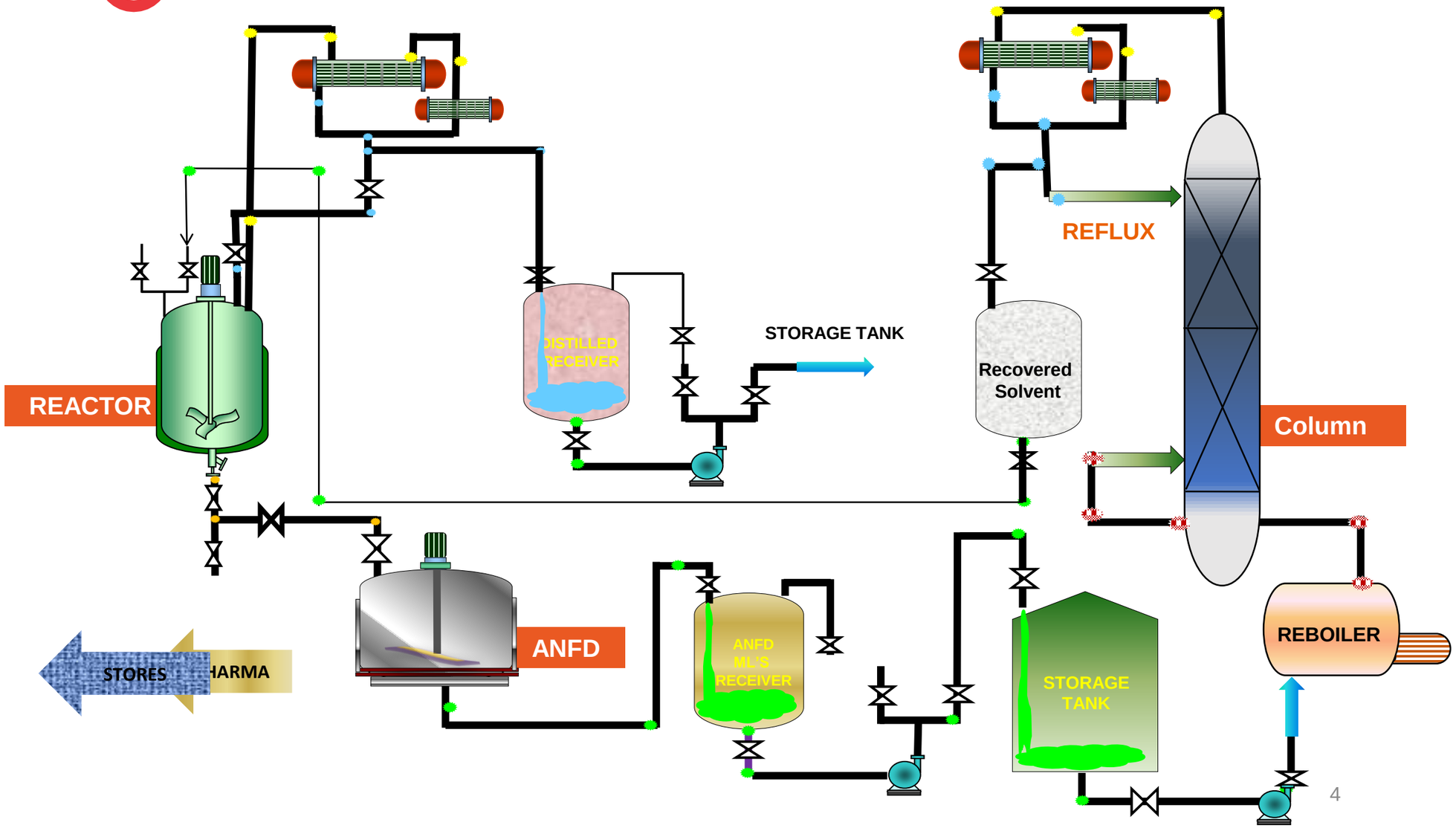
ISO 50001 CERTIFIED

ISO 14001 CERTIFIED

ISO 45001 CERTIFIED

ISO 9001 CERTIFIED

MANUFACTURING PROCESS

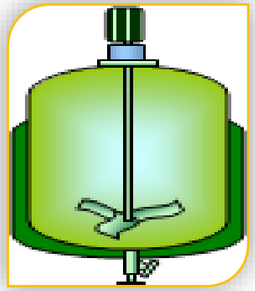


- Reaction
- Extraction/ Distillation/ Isolation
- Filtration
- Drying

MAJOR EQUIPMENT SECTIONS

- 12 +5,-5,-15,-20,-40°C Chillers
- 18 Air Compressors
- 2 Nitrogen Plants-500,200 m^3/Hr
- 9 Cooling Towers- 1000TR,750TR, 500 TR
- 2 Boilers- 16TPH, 8 TPH

- Reactors- 1KL to 10KL 250+
- Filters - ANFD, CF 100+
- Dryers - TD, VTD, Spray, FBD, ATFD, RCVD 200+
- Vacuum Pumps - DRV, ORV, Jet 100+



SP. ENERGY CONSUMPTION IN LAST 3 YEARS

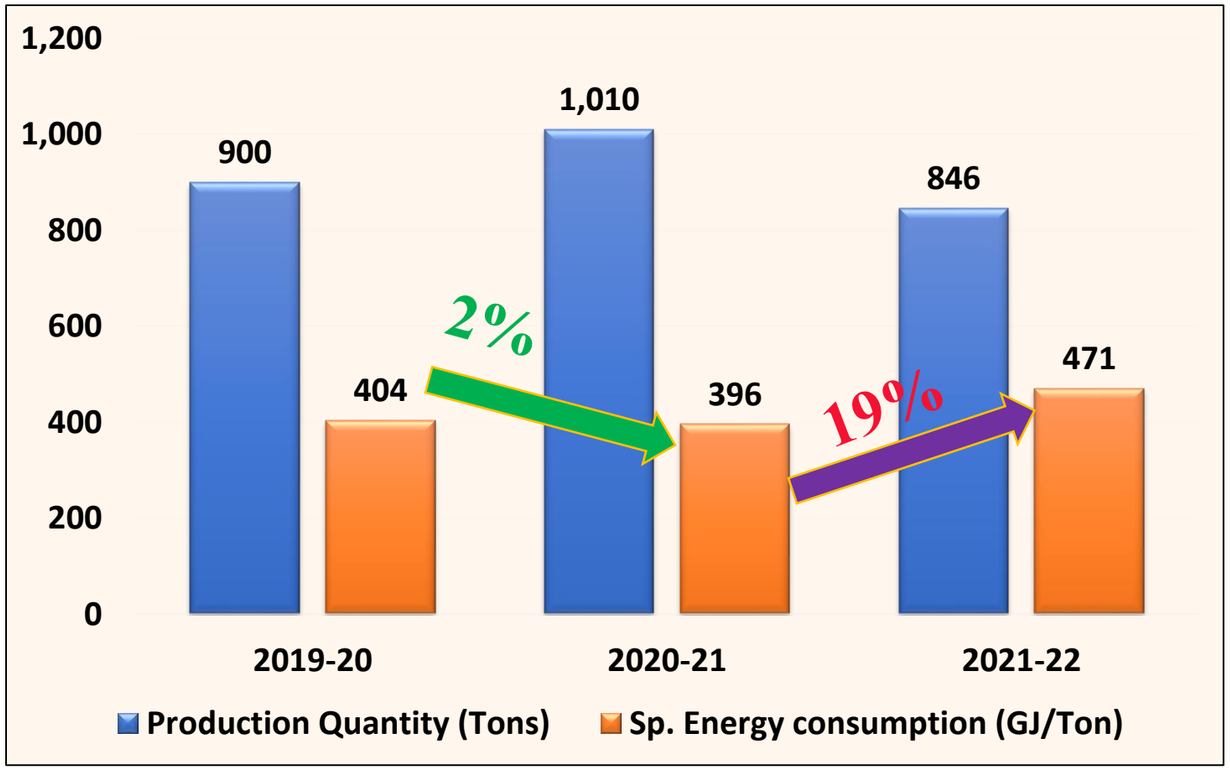
ENERGY DATA COMPARISION

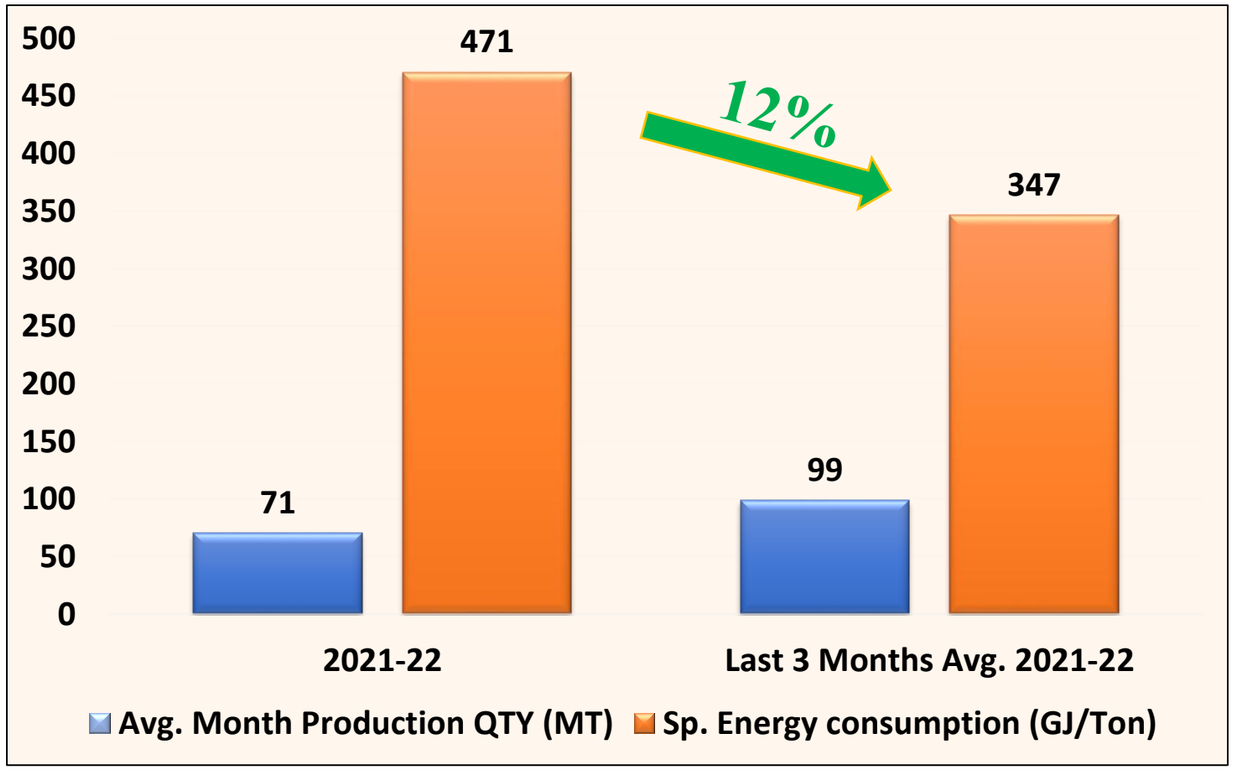
Year	Production Quantity (MT)	Electrical Energy Consumption (Million KWH)	Thermal Energy Consumption (Million KCal)	Sp. Electrical Energy Consumption (KWH/ MT)	Sp. Thermal Energy Consumption (Million KCal/MT)	Total Energy (GJ)	Sp. Energy consumption (GJ/MT)
2019-20	900	34.7	56,128	38,520	58.15	3,64,048	404
2020-21	1,010	38.1 ↑ (8.5%)	61,087 ↑ (8.8%)	37,725 ↓ (2.1%)	60.48 ↑ (3.9%)	3,99,570 ↑ (9.7%)	396 ↓ (2.0%)
2021-22	846	35.8 ↓ (5.2%)	62,279 ↑ (1.9%)	42,261 ↑ (12%)	73.61 ↑ (22%)	3,98,132 ↓ (0.4%)	471 ↑ (19%)

Specific Energy Consumption is increased in 2021-2022 due to lower productivity (Major production blocks C, D, H & J are under renovation).

PRODUCTION QUANTITY VS ENERGY CONSUMPTION

PRODUCTION QUANTITY (MT) VS SPECIFIC ENERGY CONSUMPTION (GJ/MT)





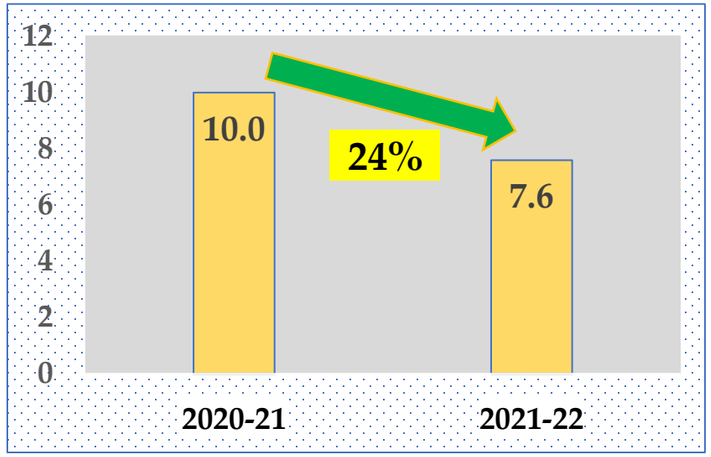
SEC increased due to low productivity (C, D, H & J Blocks are under renovation).

Last 3 Months Data: 12% Reduction in Specific Energy Consumption

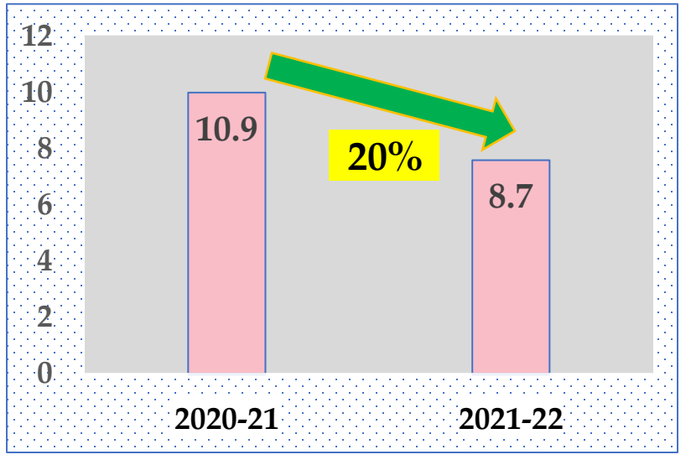
1) After implementation of 13 Major Projects &
2) After renovation of major production blocks

MAJOR PRODUCTS SPECIFIC ENERGY CONSUMPTION

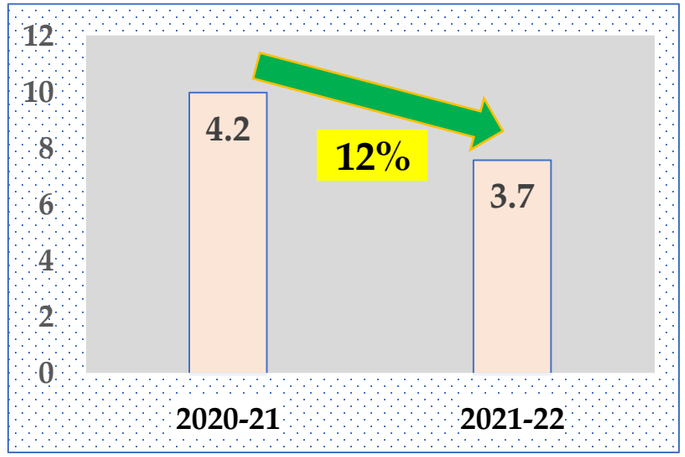
LPT KWH/Kg of Product



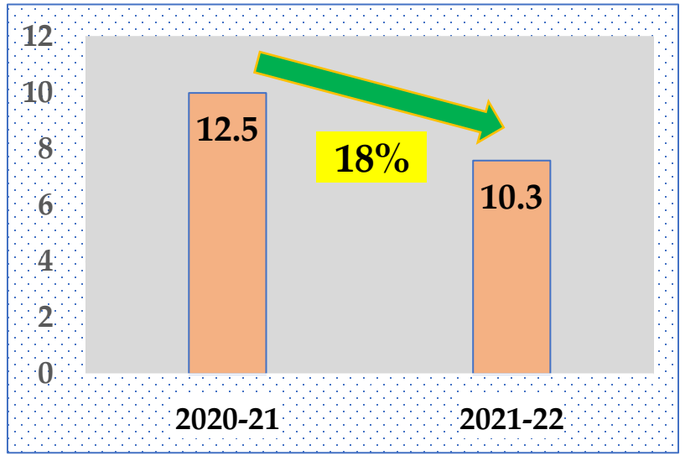
IRB KWH/Kg of Product



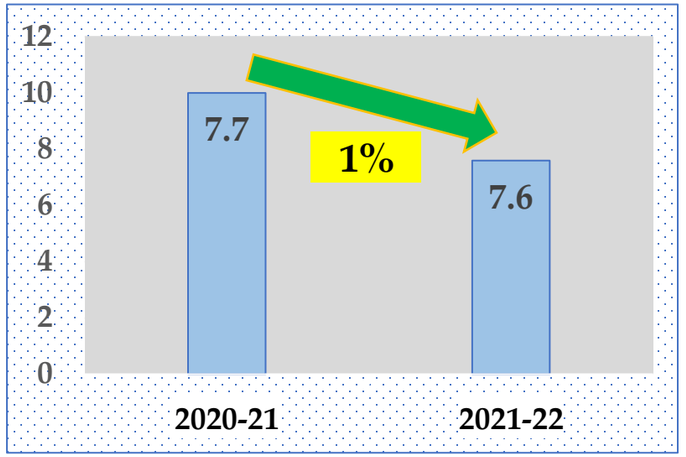
CAP KWH/Kg of Product



VQL KWH/Kg of Product



LTM KWH/Kg of Product



COMPETITORS, NATIONAL & GLOBAL BENCHMARK

Internal Benchmark & External Benchmark: No benchmarking, since multi-products & campaign based API manufacturing facility

Short Term Target on SEC: Reduction of Specific Energy Consumption by 10% from Last Year

Long Term Target on SEC: Reduce Specific Energy Consumption to 250 GJ/MT

List of major Encon Projects Planned in FY 2022-23

Year	No. of Energy Saving Projects	Investment (INR Million)	Electrical Savings (Million kWh)	Thermal Savings (Million Kcal)	Savings (INR Million/ Year)	Impact on SEC (Electrical, Thermal)
FY 2022-23	07	392	30	8580	305	Yes

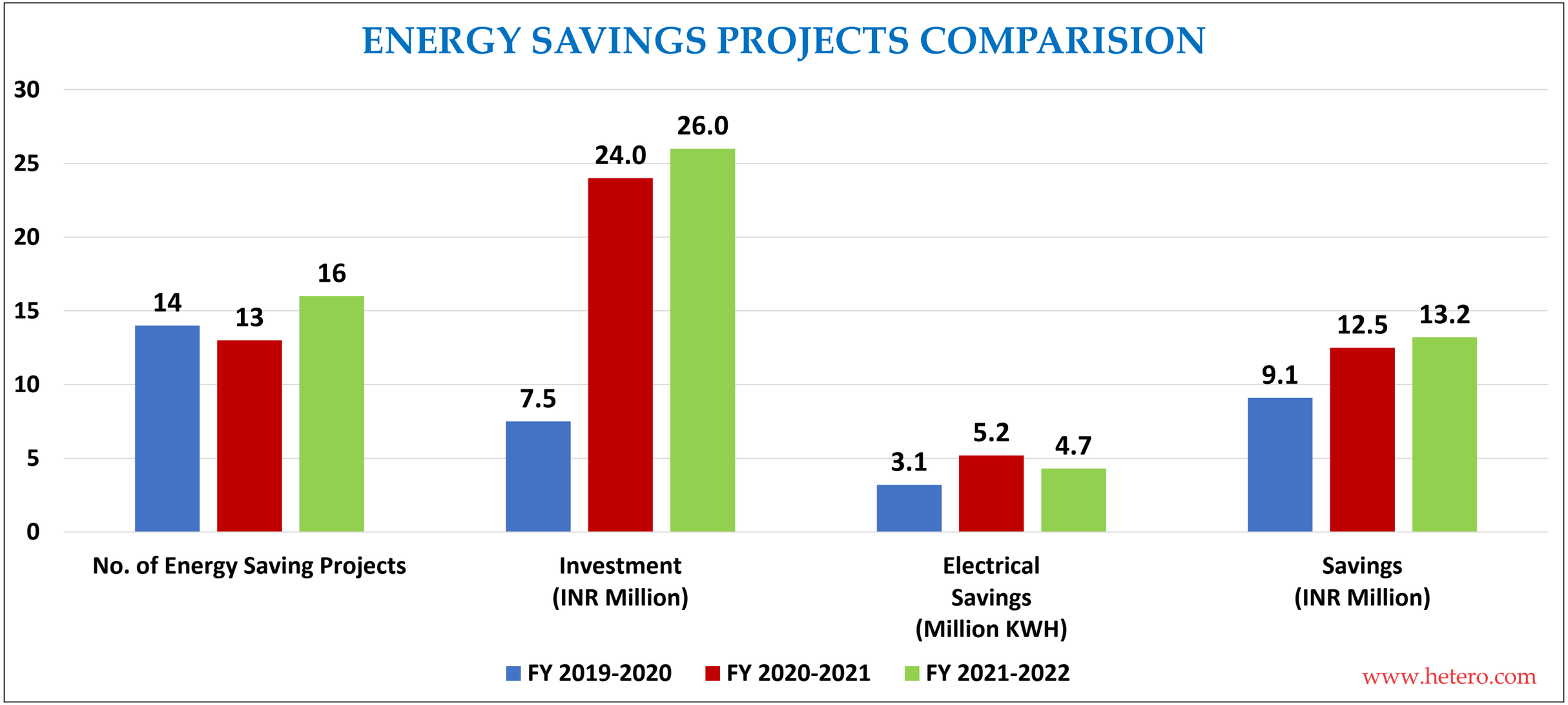
MAJOR ENCON PROJECT PLANNED IN FY 2022-23

S.No	Project Title	Investment (Rs.Million)	Electrical Savings (Rs.Million KWH)	Thermal Savings (Rs.Million KCal)	Savings (Rs. Million/ Year)	Impact on SEC (Electrical, Thermal)
01	Installation of 4.713 MW Solar Panel System for utilization of renewable energy to power generation.	223	6.08		47	Yes
02	Installation Steam Turbine at 16 TPH Boiler for Power generation.	38	4.00	--	31	Yes
03	Usage of ATFD instead of batch reactor for effective dry distillation leads to yield improvement.	5	0.66	80	80	Yes
04	Replacement of high cost fuel (Coal) with low cost fuel (Rice husk) at 16 TPH boiler to reduce steam operating cost.	12	--	--	19	No
05	Switch over HTDS effluent pre-treatment process from batch mode to continuous mode for effective separation of organic matter leads to MEE & RO Plant efficiency improvement.	20	--	500	49	Yes
06	Replacement of MEE with MVR (Mechanical vapor recompression) technology for effluent treatment purpose to reduce operating cost.	34	13	8000	28	Yes
07	Avoid Micronization by using Homogenizer technology to meet desired PSD specifications in crystallizer itself to reduce power consumption.	60	6.76	--	52	Yes
		392	**30**	**8580**	**305**	

ENERGY SAVINGS PROJECTS IN LAST THREE YEARS

Year	No. of Energy Saving Projects	Investment (INR Million)	Electrical Savings (Million kWh)	Thermal Savings (Million Kcal/ MTOE)	Savings (INR Million)	Impact on SEC (Electrical, Thermal)
FY 2019-2020	14	7.5	3.1	3614	9.1	Yes
FY 2020-2021	13	24	5.2	0.1	12.5	Yes
FY 2021-2022	16	26	4.7	134	13.2	Yes

ENERGY SAVINGS PROJECTS IN LAST THREE YEARS



INNOVATIVE PROJECTS

-40°C UTILITY REPLACEMENT WITH -20°C UTILITY

- Reactor internal coils arranged to increase effective heat transfer area and for effective removal of exothermic which is generated from the process.
- Usage of low cost utility (-20°C Brine) from high cost utility (-40°C Brine) and time cycle reduction.

DESCRIPTION	PREVIOUS SCENARIO	PROPOSED SCENARIO
Utility used for Cooling	-40°C	-20°C
Utility Circulation	Reactor Jacket	**Reactor Jacket & Reactor Internal Coils**
Time Cycle for Reaction	12 Hrs /batch	11 Hrs /batch
Savings & Payback	**Rs. 1.4 Millions/Year & < 1 Year**	

INNOVATIVE PROJECTS

-20°C UTILITY REPLACEMENT WITH RT UTILITY

- Single fluid system condenser capacity increased from 8 m^2 to 40 m^2 for usage of low cost utility (RT) from high cost utility (-20°C Brine).
- Benefits: Power Consumption Reduction

DESCRIPTION	PREVIOUS SCENARIO	PROPOSED SCENARIO
Utility used for Cooling	Brine	RT
Condenser Capacity	8 m2	**40 m2**
Savings	**Rs. 2.7 Millions/Year & < 1 Year**	

INNOVATIVE PROJECTS

DISTILLATION TIME CYCLE REDUCTION

- Additional 2″ Chilled water line arranged for Condenser (ethanol distillation reactors) to increase the condenser utility flow rate for reduction of distillation time cycle and recovery solvent improvement.

- Benefits: Recovery Solvent Improvement
  Power Consumption Reduction

DESCRIPTION	PREVIOUS SCENARIO	PROPOSED SCENARIO
Distillation Time Cycle	30 Hrs/batch	16 Hrs/batch
Ethanol Recovery	70%	**85%**
Savings & Payback	**Rs. 2.58 Millions/Year**	

UTILISATION OF RENEWABLE ENERGY SOURCES

No Renewable energy sources

Future Acton Plan: Installation of 4.713 MW Solar Panel System

DESCRIPTION	Value
Investment (Rs. Millions)	223
Electrical Savings (Rs. Millions KWH)	6.08
Savings (Rs. Million /Year)	47
Payback (Years)	4.7

WASTE UTILIZATION & MANAGEMENT

S.No	Year (FY19-20 to FY 21-22)	Type of Waste	Quantity (MT)	GCV (Cal/gm)	Waste as percentage of total fuel	Remarks
1	2019-20	Process Organic Waste	1461	9694	13%	Onsite co-processing/ Incineration is not allowed by the statutory authorities so that we are sending the same material to an authorized cement industry
2	2020-21	Process Organic Waste	2023	10015	16%	
3	2021-22	Process Organic Waste	3213	3000	23%	

WASTE UTILIZATION & MANAGEMENT

S.No	Type of Waste Generated	Year (FY19-20 to FY 21-22)	Quantity of waste generated (MT/Year)	Disposal Method
1	Coal Ash	FY 2019-20	1800	Ramky Waste Management
		FY 2020-21	1440 ↓ (20%)	
		FY 2021-22	1368 ↓ (5%)	
2	Rain water	FY 2019-20	5321	Used as boiler feed water after R.O water treatment
		FY 2020-21	6215 ↑ (17%)	
		FY 2021-22	7747 ↑ (25%)	
3	ATFD salts	FY 2019-20	1435	Ramky Waste Management
		FY 2020-21	1337 ↓ (7%)	
		FY 2021-22	1325 ↓ (1%)	
4	Used papers	FY 2019-20	2.21	Waste Management System, Renigunta.
		FY 2020-21	1.68 ↓ (24%)	
		FY 2021-22	1.44 ↓ (14%)	
5	Food waste	FY 2019-20	26	Organic Waste Converter (OWC) machine used to convert solid food waste and tree leaves into valuable compost that can be used for plants
		FY 2020-21	22 ↓ (15%)	
		FY 2021-22	15 ↓ (32%)	
6	Garden waste (Tree leaves)	FY 2019-20	22	
		FY 2020-21	18 ↑ (18%)	
		FY 2021-22	26 ↑ (23%)	





GHG INVENTORISATION

- **Please mention the scope of emissions (I,II,III) you have considered.**

  CO2 emissions, Water vapors, Process emissions/ leakages

- **Information on GHG Inventorisation and public disclosure.:**

  Yes Public display

- **Short Term Action plans for CO2 emission reduction:**

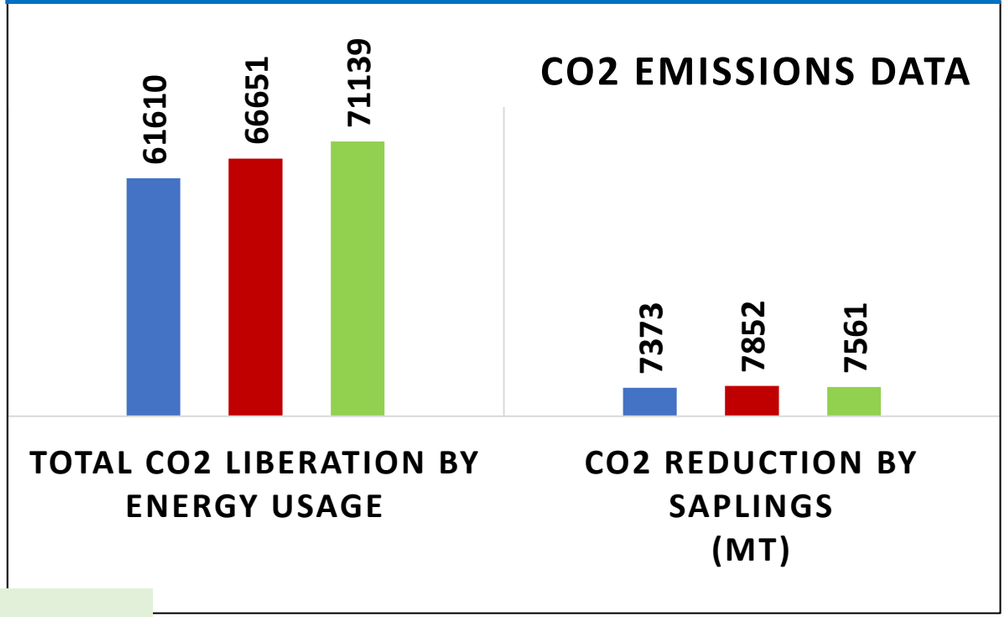
  More Saplings, Reduce operations time cycle

- **Long Term Action plans for CO2 emission reduction:**

  Solar Panel System, Steam Turbine, Process optimization

- **Any initiative on Carbon capture, other reduction measures can be mentioned separately: Usage of Carbon Pads instead of Carbon powder**

Emissions of last three years (FY 19-20 to FY 21-22)



GREEN SUPPLY CHAIN MANAGEMENT

Implemented & Continuous Monitoring on SCM

- ✓ Replacement of Old motors with IE3 & IE4 energy efficient motors.
- ✓ 2.0 KL & 5.0 KL movable tanks to avoid mutiple times solvent drums handling for solvent.
- ✓ Usage of spray balls instead of manual reactor cleaning to reduce solvent & water consumption.
- ✓ Replacement of rubber insulation with puff insulation.
- ✓ Energy efficient agiators to reduce power consumption.
- ✓ Gland replacement with Mechanical Seal.
- ✓ Belt drive gear box to vertical drive gear box replacement.

Investment: 8.6 Rs. Millions

Savings: 5.4 Rs. Millions

Future Action Plans

- ✓ Steam Turbine
- ✓ Solar Panel system

TEAMWORK, EMPLOYEE INVOLVEMENT & MONITORING

- **Daily monitoring system:**

  Implemented remote monitoring system through Smart phone/ Laptop

- **Daily Review meeting chaired by**

  Plant Head and Monthly Review with Director

- **Separate budget for Energy Conservation:**

  Rs. 6.6 Millions/ Month

- **Energy efficiency / awareness training program:**

  On daily basis

- **Projects implemented through Kaizens (Workers and Supervisor level):**

  Implemented LDOM at shop floor in 2021

LEARNING FROM CII ENERGY AWARD

- **Utilization of Renewable Energy Sources**

  Planned to implement in FY 2022-23

- **Savings Projects implementation**

  Rs. 400 Millions Investment projection planned in FY 2022-23

IMPLEMENTATION OF ISO & ENERGY INVESTEMNT

1. **Implementation of ISO 50001:2018 certification**

2. **1% investment of energy saving projects on total turnover of the company (FY 21-22)**

bsi.

Certificate of Registration

ENERGY MANAGEMENT SYSTEM - ISO 50001:2018

This is to certify that: Hetero Labs Limited, Unit-I
Survey No. 10, I.D.A.
Gaddapotharam Village
Jinnaram Mandal
Sangareddy District 502 319
Telangana
India

Holds Certificate No: ENMS 651933

and operates an Energy Management System which complies with the requirements of ISO 50001:2018 for the following scope:

Manufacture and Dispatch of Active Pharmaceutical Ingredients and Intermediates, utilizing Electricity, Coal and Diesel

For and on behalf of BSI:

Chris Cheung, Head of Compliance & Risk - Asia Pacific

Original Registration Date: 2016-05-10
Latest Revision Date: 2020-04-21

Effective Date: 2019-05-10
Expiry Date: 2022-05-09

Page: 1 of 1

...making excellence a habit.

This certificate was issued electronically and remains the property of BSI and is bound by the conditions of contract.
An electronic certificate can be authenticated online.
Printed copies can be validated at www.bsi-global.com/ClientDirectory or telephone +91 11 2692 9000.
Further clarifications regarding the scope of this certificate and the applicability of ISO 50001:2018 requirements may be obtained by consulting the organization.
This certificate is valid only if provided original copies are in complete set.

Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP. Tel: + 44 345 080 9000
BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.
A Member of the BSI Group of Companies.

HETERO

ENERGY MANAGEMENT POLICY

Hetero Group of Companies is committed to continuous improvement of its performance and reduction of energy costs. We strived to improve energy efficiency in all our operations and work towards sustainable development while providing a safe and comfortable work environment.

It is the mission of Hetero to promote sound energy management practices while ensuring outstanding pharma manufacturing efficiency We commit to track our energy use, to achieve reduction in energy use and costs and to create a culture of energy awareness and conservation.

The goals of Hetero are:

- Become one of the most energy-efficient Pharmaceutical companies in the sector.
- Reduce energy consumption in all operations to support our overall business goals including improving production, quality and environmental stewardship and safety practices and thus reduces carbon emissions.
- Engineering solutions for saving energy rather than rely solely on manual intervention.
- Benchmark energy use of all facilities within the sector by specific period of time.
- Purchase energy at the most effective cost and reduce energy usage wherever possible,consistent with our business goals.
- Ensure that staff, customers and suppliers are made aware of our energy management policy and encourage and motivate them conserve energy.
- Comply with all applicable statutory and other requirements related to organization's energy use, consumption and efficiency.

This energy management policy will be reviewed as and when required and up-dated to take into account changing business circumstances and ensure that it provides opportunities for improvement.

The effective date of implementation of the said Energy Management System Policy is from 1st December,2015.

Dr.B.P.S.Reddy
CMD,Hetero Group of Companies.

December 1st,2015.

AWARDS & CERTIFICATIONS

2016

2017

2018

2020

2021

Thank You

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