Sai Life Sciences

Bidar, Karnataka

Sai

Representatives from Sai Life Sciences

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Sai Life Sciences At a glance

Sai Life Sciences delivers advanced Discovery, Contract Development and Manufacturing Solutions, through a broad suite of expert capabilities across the molecular lifecycle.

Having headquarter in Hyderabad, our R&D and manufacturing facilities are built to global standards and cater to international clients. New facilities are planned for future and existing ones are expanding with state-of-the-art infrastructure.

2900

EMPLOYEES

Strong pool of scientific talent consists of

1350	800	300
R&D	MANUFACTURING	QUALITY

Discovery Biology, Boston (USA)

Process R&D, Manchester

R&D Centre, Hyderabad

R&T Centre, Hyderabad

Biology Lab, Hyderabad

API Manufacturing, Bidar

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New facilities launched since FY20

Additional Clean Room Facility, Bidar

Biology Lab, Hyderabad

Amidites block, Bidar

GMP Kilo Lab, Manchester

Additional Manufacturing Facility (200 KL), Bidar

Discovery Expansion at R&T Centre, Hyderabad

Integrated Drug Discovery facility, Hyderabad

HPAPI Manufacturing facility, Bidar

Sai Schrodinger Research Laboratories (SSRL), Hyderabad

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Delivering successful programs to a growing client base

Clients

2	25	33	41	55
Clients	Clients	Clients	Clients	Clients
1999	2008	2016	2019	2020

>200
Clients
2023

35+

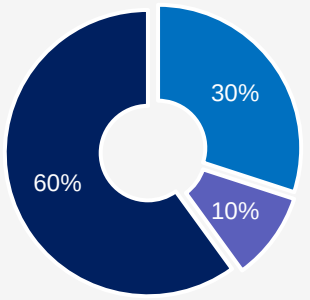
programs advanced to different clinical phases (IND to Phase-III)

28+ Programs

18 months

average turnaround time from Hit/Lead to Candidate

Services



DISCOVERY CHEMISTRY BIOLOGY INTEGRATED DISCOVERY

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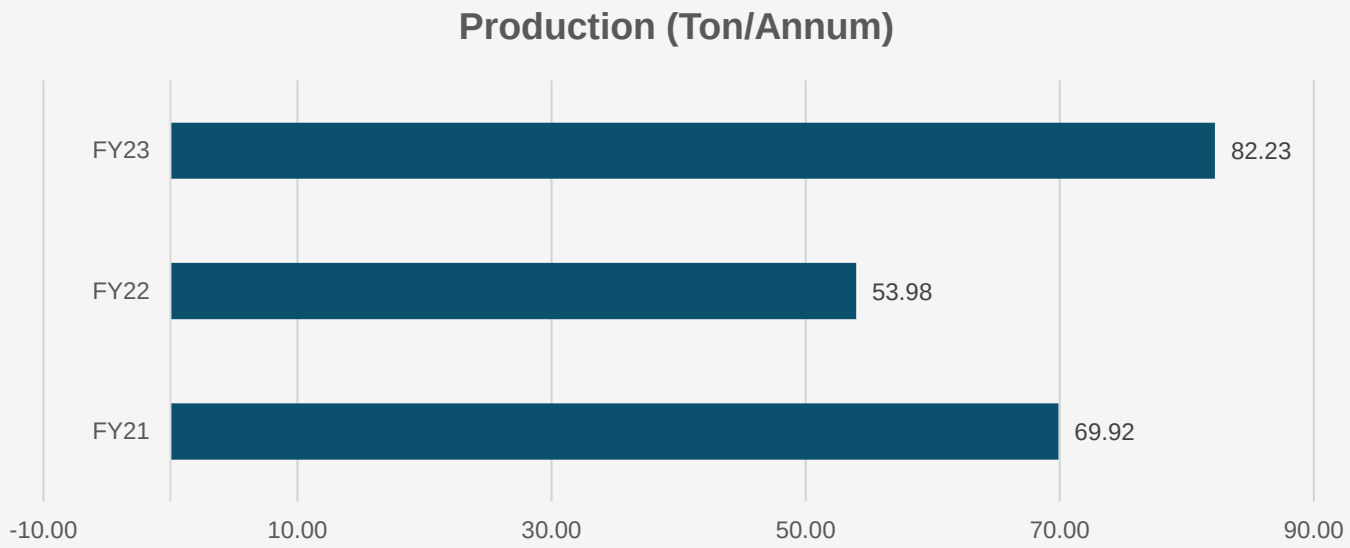
Production and SEC for last 3 years

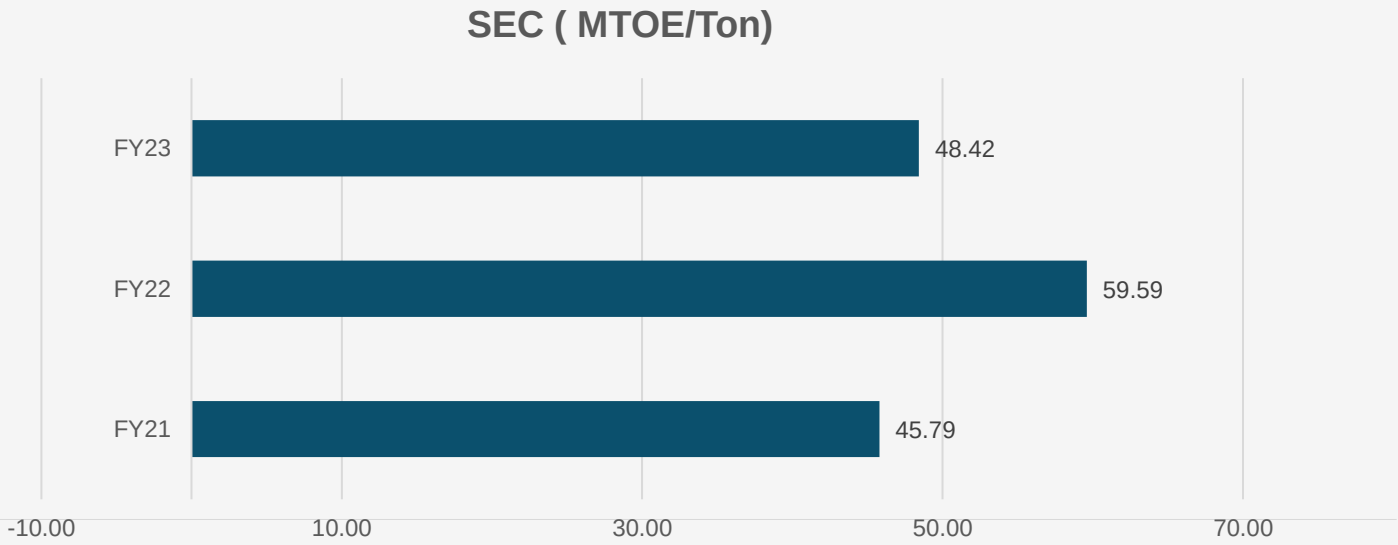
Annual production performance

- Due to appropriate initiatives, 52 % of production increased compared to FY22 and 18% increase compared with FY21.



Specific energy consumption (SEC)

- The outcome of EnCon initiatives, resulted 19% drop in SEC compared to FY22 and 6% increase compared with FY21.



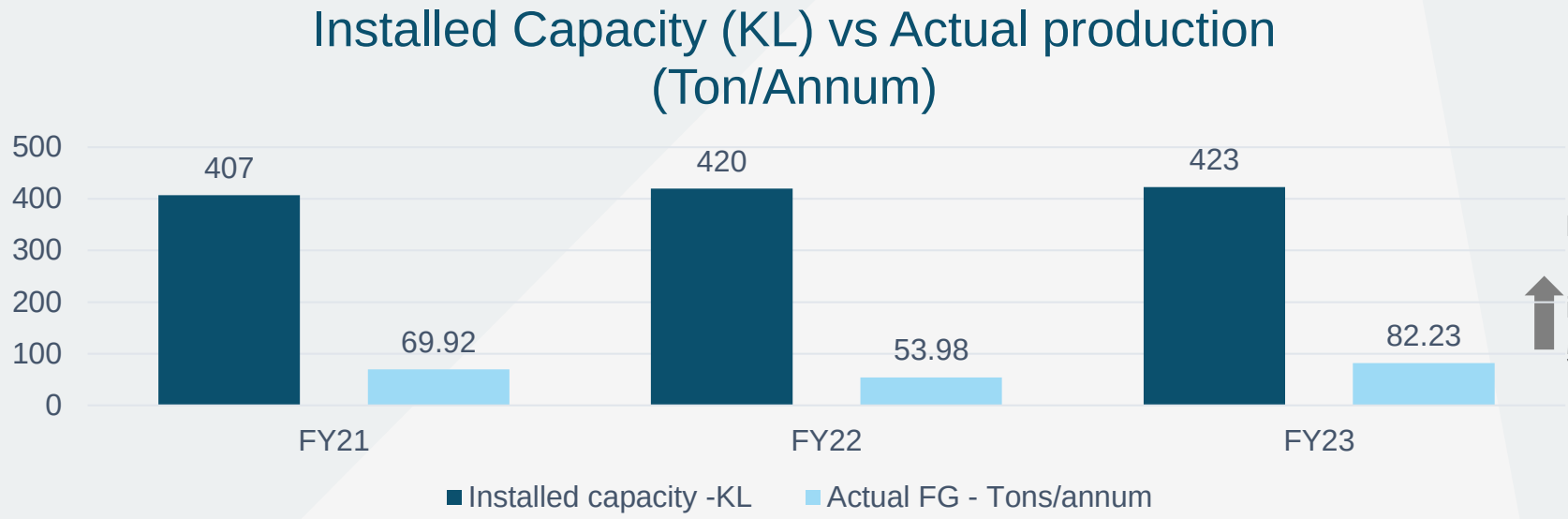
1.Installed Capacity vs. Actual Production vs. SEC

Production Overview

FY 21 to FY 23

4 % – Installed capacity

18 % – Production



FY 22 to FY23

Nominal hike in installed capacity (1%)

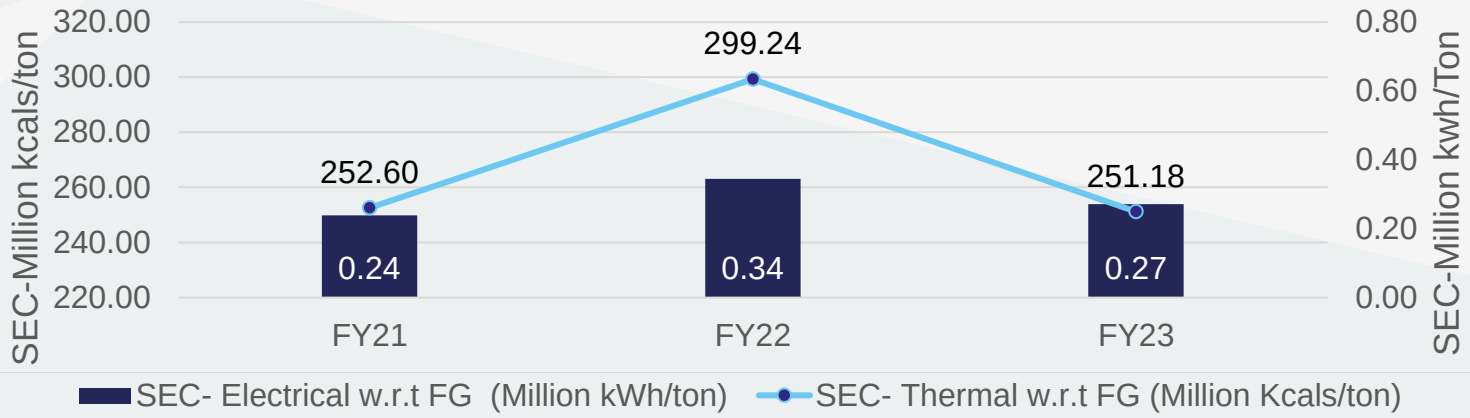
52% Production

SEC Overview

FY21 to FY23
(18% Production hike)

1 % (Thermal-SEC)

14 % (Electrical-SEC)



FY22 to FY23
(52% Production hike)

16% Drop in Thermal-SEC

21 % Drop in Electrical-SEC

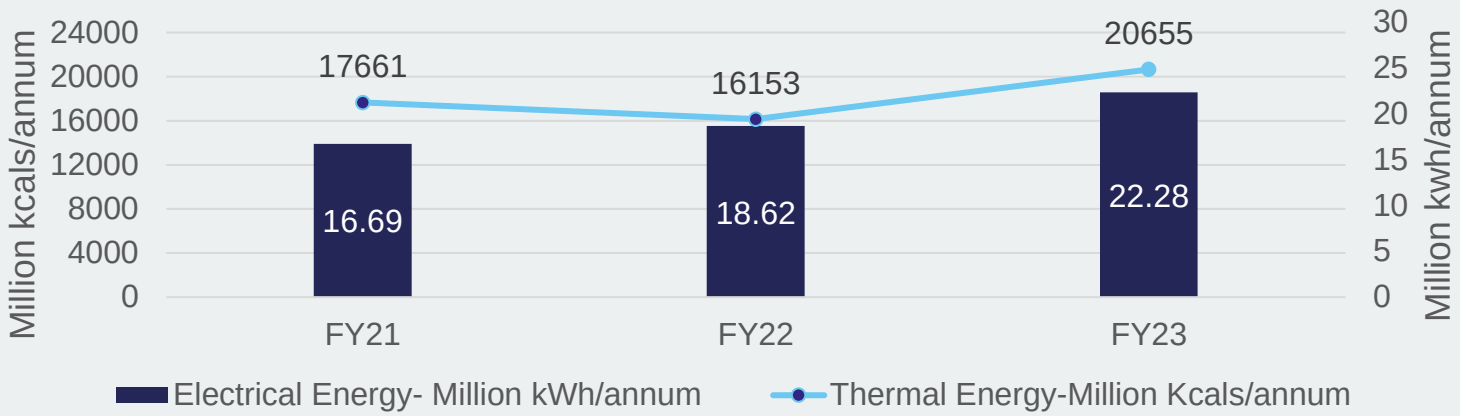
1.1 Energy Consumption Vs Energy cost-Thermal & Electrical

Energy Consumption Overview

FY21 to FY23
(18% Production hike)

17 % (Thermal)
33 % (Electrical)

Thermal Consumption vs Electrical Consumption
Million Kcals/annum vs Million kWh/ annum



FY22 to FY23
(52% Production hike)

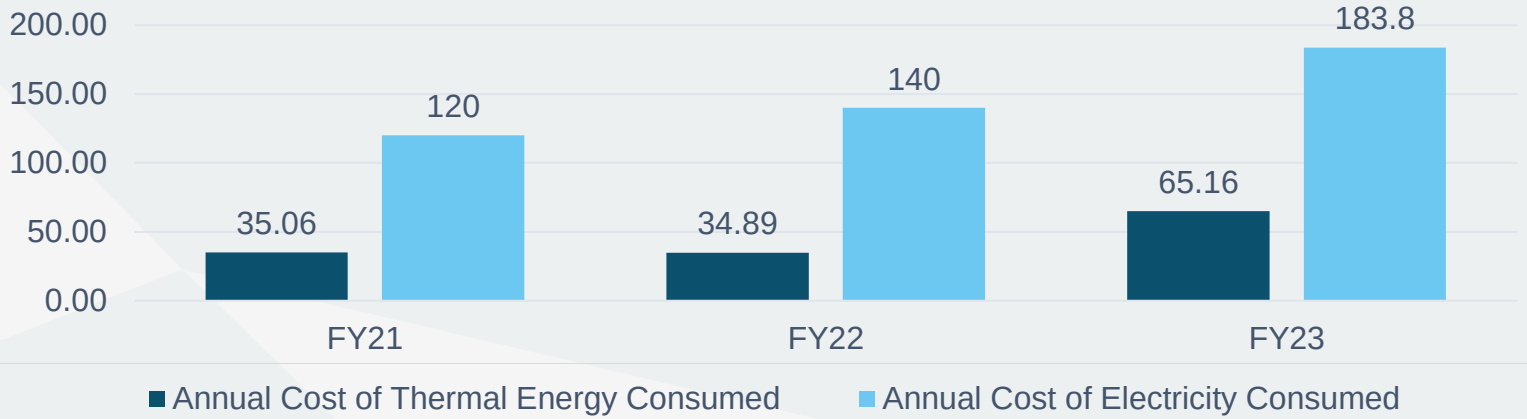
28 % high in Thermal
20 % high in Electrical

Energy Cost Overview

FY 21 to FY23

87 % - (Thermal)
53 % - (Electrical)

Electrical Cost Vs Thermal Cost -INR Millions/annum



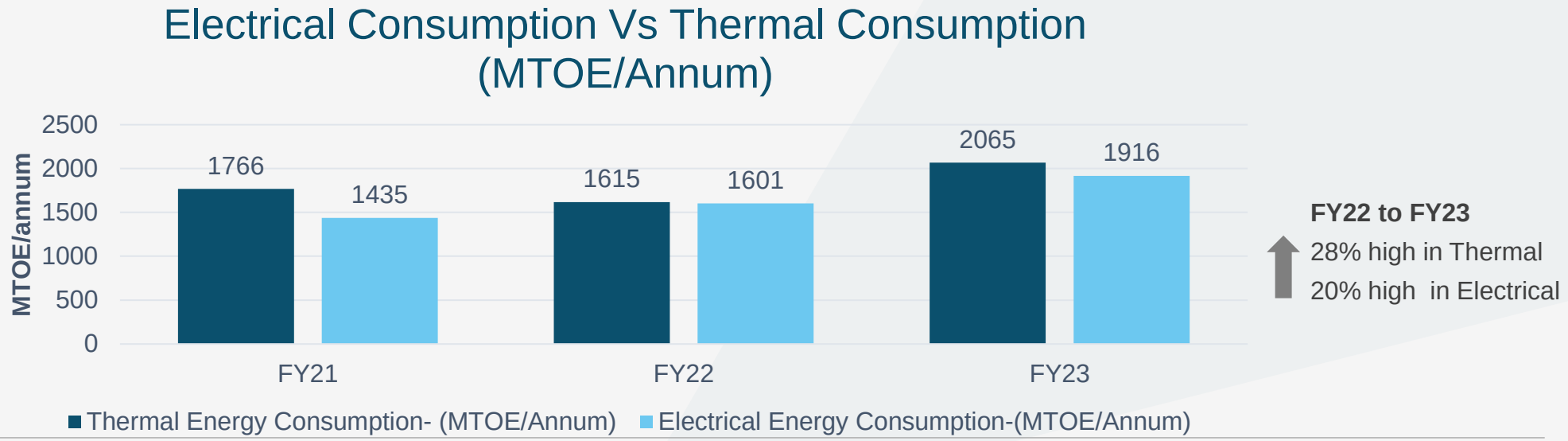
FY 22 to FY23

88 % high in Thermal
31 % high in Electrical

1.2 Energy Consumption & SEC variations w.r.t MTOE

Energy Consumption Overview

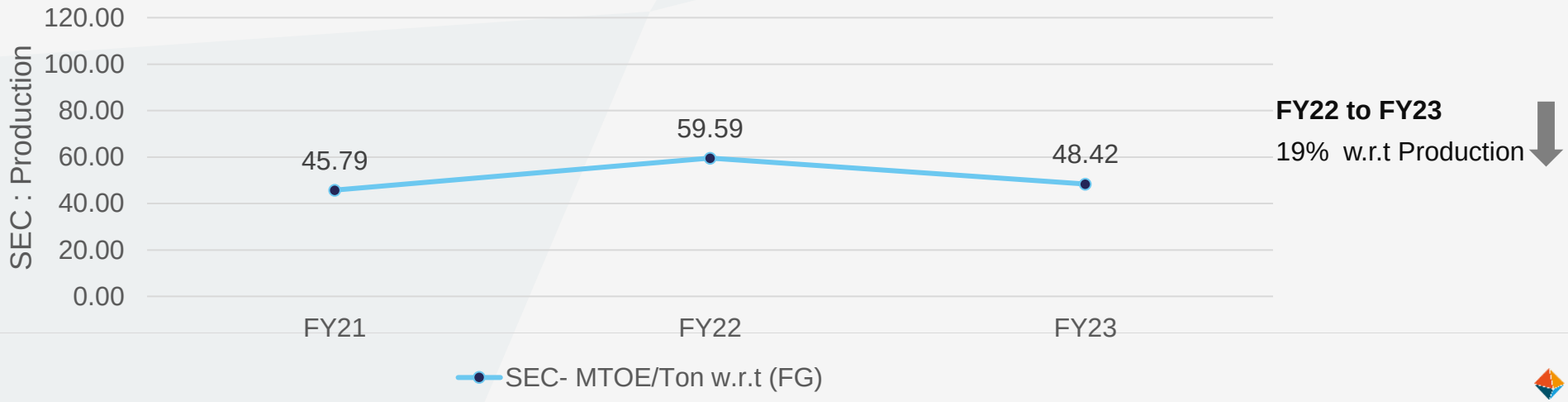
FY21 to FY23
17% (Thermal)
33% (Electrical)



FY22 to FY23
28% high in Thermal
20% high in Electrical

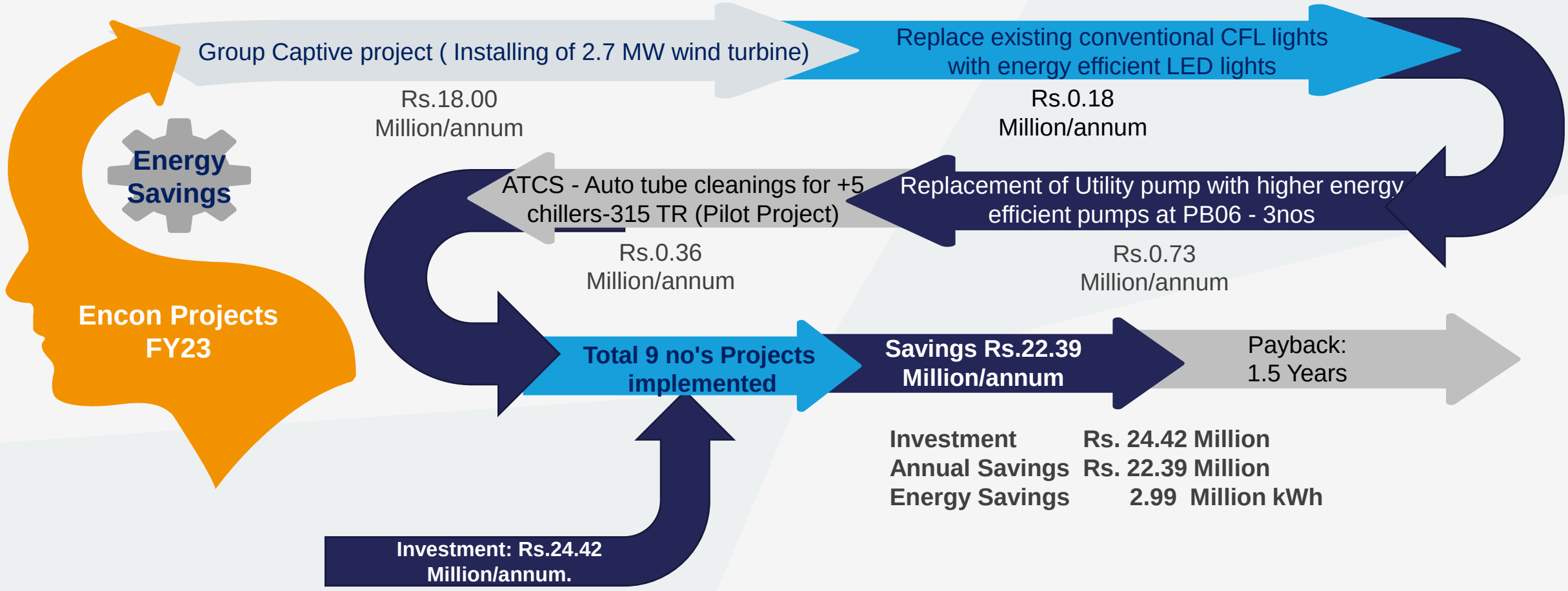
SEC Variations

FY21 to FY23
6% w.r.t Production



FY22 to FY23
19% w.r.t Production

2. List of EnCon projects implemented FY23



3. List of EnCon projects planned for FY24

	Project-1	Project-2	Project-3	Project-4
	Replace existing CFL lights with energy efficient LED lights.	Centralization of Air Comp with distribution lines	Installation of energy efficiency pump at MEE CT instead of two pumps Runnings	Conversion of AHU conventional blowers to EC- plus
TCD Status	Oct-2023 Under Progress	Nov-2023 Under progress	Nov-2023 Under progress	Dec-2023 Under progress
Savings	0.05 Million kWh/annum	0.22 Million kWh/annum	0.05 Million kWh/annum	0.04 Million kWh/annum
Investment	Rs. 0.44 Million	Rs.2.10 Million	Rs.0.79 Million	Rs.0.63 Million

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3.1 List of EnCon projects planned for FY24

	Project-5	Project-6	Project-7	Summary
	Bio ETP blower retrofit from twin lube blower to screw blower	Segregation of Air compressor at PB07, PB08	PB-6 & PB-4 :SF4D integration	Total Projects 7 Nos Planned
TCD Status	Dec-2023 Under progress	Dec-2023 Under progress	Jan-2024 Under progress	FY24
Savings	0.20 Million kWh/annum	0.02 Million kwh/annum	0.11 Million kWh/annum	0.69 Million kWh/annum
Investment	Rs. 2.83 Million	Rs.0.25 Million	Rs.1.00 Million	Rs.8.04 Million

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4. Last Three Years Projects

FY23

9 Nos Projects

Investment: Rs. 24.42 Million
Savings: Rs. 22.39 Million
Energy Savings: 2.99 Million kWh

ISO 50001: 2018 surveillance Audit Completed in May-23

FY22

4 Nos Projects

Investment: Rs. 2.79 Million
Savings: Rs. 3.68 Million
Energy Savings: 0.51 Million kWh

ISO 50001: 2018 Audit Completed in April-22
and Received Certificate on July-22

FY21

10 Nos Projects

Investment: : Rs. 2.39 Million
Savings: Rs. 9.64 Million
Energy Savings: 1.33 Million kWh

Initiated ISO 50001: 2018 – Jan-2021

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5. Innovative Projects Implemented

Category - D: 3 Projects

1. ATCS - Auto tube cleanings for +5 chillers-315 TR (Pilot Project).

Investment - Rs. 7.89 Lakhs.
Savings - Rs. 3.56 Lakhs/Annum.

2. Replacement of centrifugal pump with PPP for steam condensate at New MEE Plant

Investment - Rs. 10.40 Lakhs.
Savings - Rs. 5.93 Lakhs/Annum.

3. Cooling tower fan retrofit with FRP aero dynamic blades

Investment - Rs. 12.45 Lakhs.
Savings - Rs. 7.25 Lakhs/Annum.

5.1 Innovative Project-1 (ATCS Installation)

Before	After
For 315 TR chiller presently condenser cleaning is being carried out through manual cleaning method monthly once to reduce the approach.	Replace existing manual tube cleaning practice to auto tube cleaning activity, to maintain the condenser approach 1.0 Deg C always and avoid the 4 hrs. of productivity down time

Investment - Rs. 7.89 Lakhs.
Savings attained in Rs: 3.56 Lakhs/Annum
Energy Savings : 0.49 Lac KWh/Annum

5.2 Innovative Project-2 (Installation of PPPU pump)

Before	After
Presently at New MEE condensate will be transfer by electrical centrifugal pump from condensate tank to Boiler feed tank and flash steam expose to atmosphere due to conventional pumping.	Installed Mech CEP pump at New MEE to transfer condensate to boiler feed tank without loss of flash steam and increase in condensate temp, which improve the feedwater temp and thus boiler efficiency will increase.

Investment - Rs. 10.40 Lakhs
Savings Attained in Rs: 5.93 Lakhs/Annum
Energy Savings : 0.82 Lac KWh/Annum

5.3 Innovative Project-3 (Cooling tower fan retrofit)

Before	After
Existing Cooling tower fans (7 Nos) are not aerodynamic design.	Replaced existing cooling tower fan with FRP (Aerodynamic Design, high efficiency).

Investment - Rs. 12.45 Lakhs
Savings Attained in Rs: 7.25 Lakhs/Annum
Energy Savings : 1.01 Lac KWh/Annum

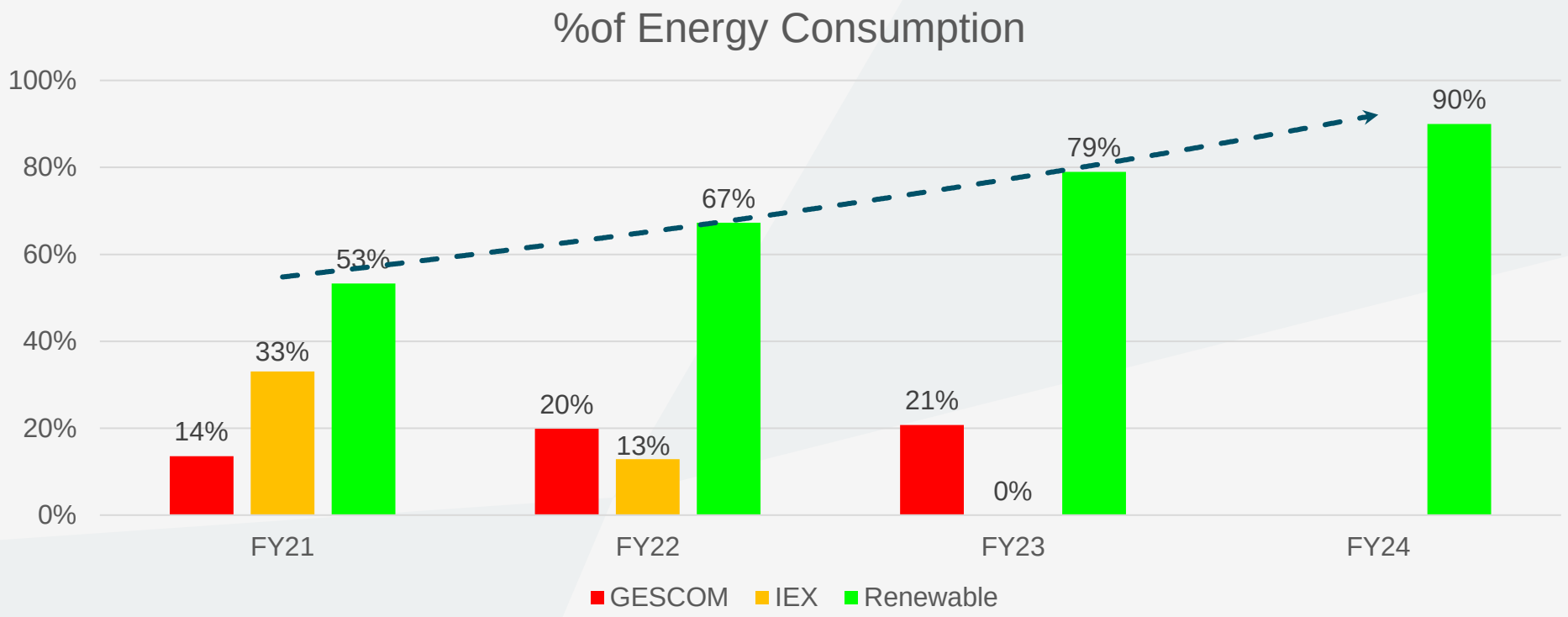
6. Utilization of Renewable Energy

Renewable Energy by PPA

FY21: 53%- Renewable

FY22: 67%- Renewable

FY23:79%-Renewable



7. Waste Utilization & Management

FY21

Land Filling 0%

Co-Processing 100%

FY22

Land Filling 0%

Co-Processing 100%

FY23

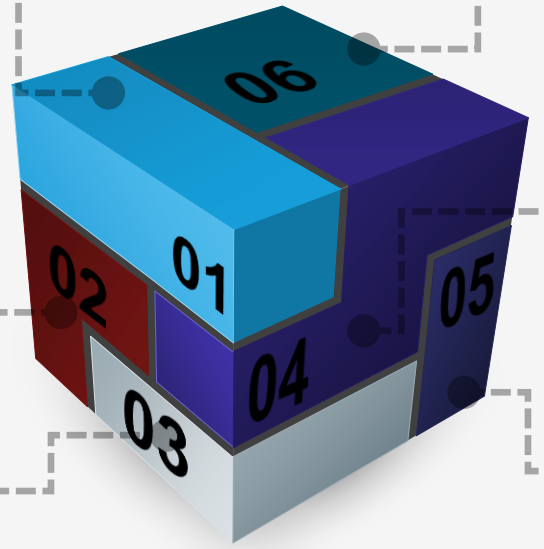
Land Filling 0%

Co-Processing 100%

7%
increase in Water recycling (YOY)

23%
Reduction in water requirement (YOY)
By using ETP RO permeate for utility

10%
Overall Operational cost reduction at ZLDS. (YOY)



92%
Environmental Tours Compliance in FY23

0%
Waste to landfill in FY23

22%
Increase in ZLD Energy Consumption FY23

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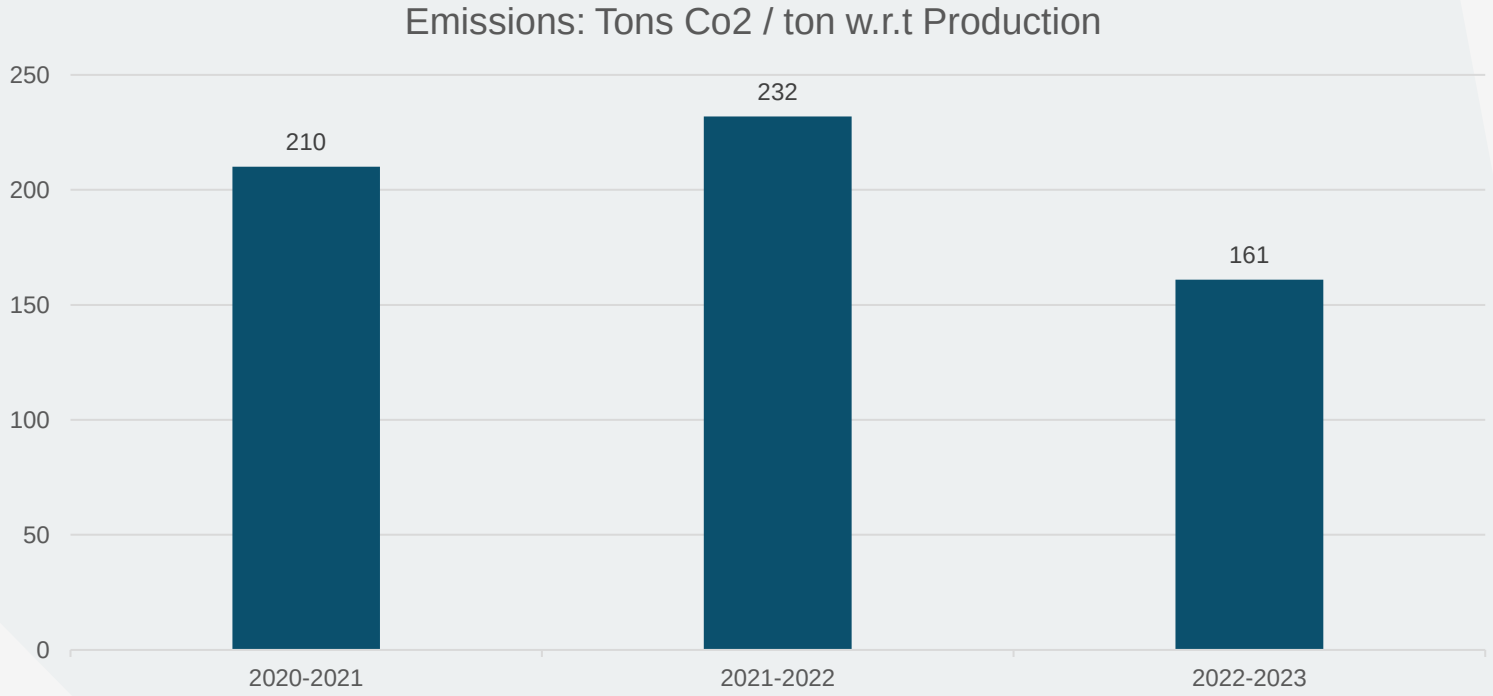
8. Co2 Emissions

At Sai Life Sciences, we are committed to playing our part towards a more sustainable future. As a company committed to a healthier tomorrow, we understand our responsibility towards socio-economic development, climatic change mitigation, resource conservation and reduce Co2 emissions.

Sustainability @ Sai

FY 21 to FY23

20% drop in Co2 emissions w.r.t Production



FY22 to FY23

28 % drop in Co2 Emissions w.r.t Production

CO2 emission conversion considered as below

a) Electrical-Grid : 820 kg CO2/MWh
b) HSD fuel : 2.67 kgCO2/lit
c) Coal : 1816 kgCO2/ton
d) Furnace Oil : 2.93 kgCO2/lit

The enhanced Renewable Energy utilization during FY23, dropped 14250 tons of Co2 compared to FY22.

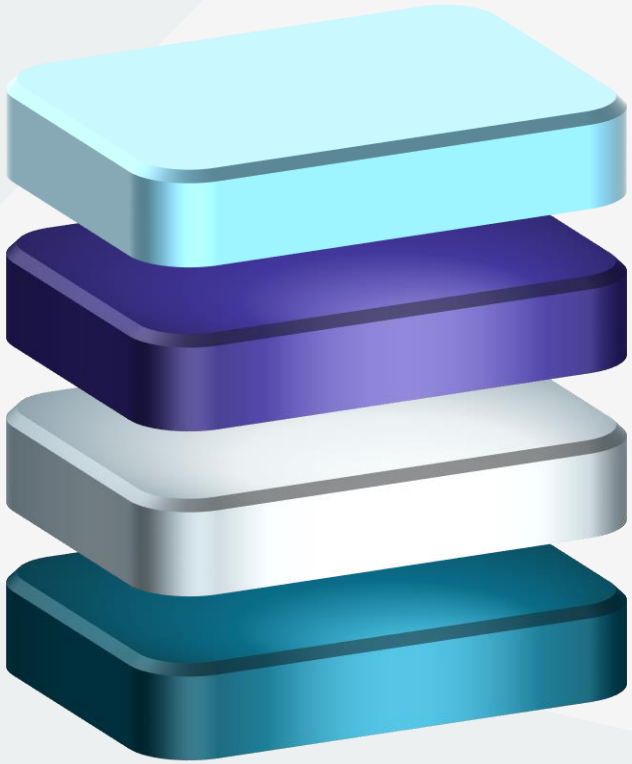
9. Green Supply Chain Management

Green SCM Policy

Sustainability is the integral part of business

Paperless office

100% RFQ, GMP pro, LMS



Use of biodegradable

For packing materials, raw materials, intermediates.

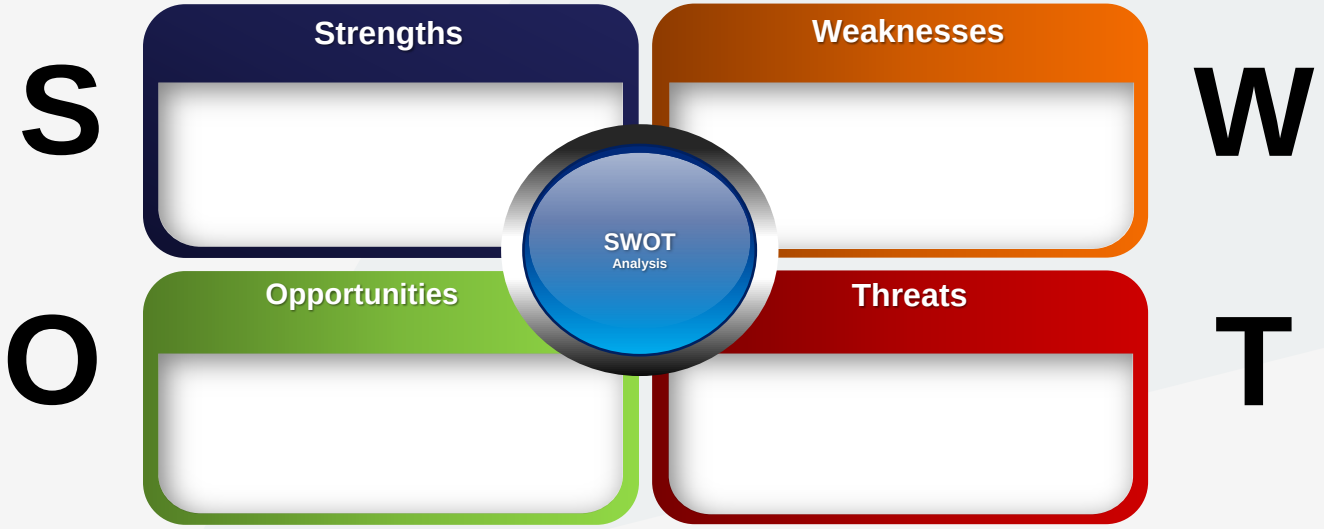
Partners segmentation

SWOT analysis for vendor identification.

9.1 Green Supply Chain Management

Vendor Assessment methodology:

- We at Sai, perform Vendor SWOT analysis of key projects
- Covering HSE aspects (Health, Safety and Environment)
- Technical expertise **(SOP revised-FY21)**
- Statutory & regulatory compliance
- Infrastructure & Quality Management Systems
- We also take help from Third party agencies for vendor assessment e.g., D&B, PWC, Meritor etc



Sl.No	Projects Implemented	Investment made (Rs. In Million)	Benefits Achieved
1	Renewable Power Purchase agreement	92.96	INR saving 29.39 Rs. million & 14250 Tons Co2 emissions reduction (79% Renewable Energy utilized in FY23)
2	Cargo consolidation	---	INR saving 1.02 Million & converted from road transport to Rail transport , thus reduced 600 KMs road transport to 10 Nos consignments per Month

9.2 Science Based Targets Initiative (SBTi)

- We have recently joined Science Based Targets initiative (SBTi) to set ambitious emission reduction targets in line with the latest climate science.
- We are committed to set near-term company-wide emission reductions in line with climate science with the SBTi. These are 5-10-year GHG (Greenhouse gas) mitigation targets in accordance with the Paris Agreement's aim to limit global temperature rise to 1.5°C to avoid the catastrophic impacts of climate change.
- As part of our renewed Sustainable Development Goals, We have committed to reduce specific greenhouse gas emissions by 30% and replace 70% of our energy requirement with renewable sources by the FY 2027 considering FY 2022 as the baseline year.

SCIENCE BASED TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

BUSINESS AMBITION FOR 1.5°C

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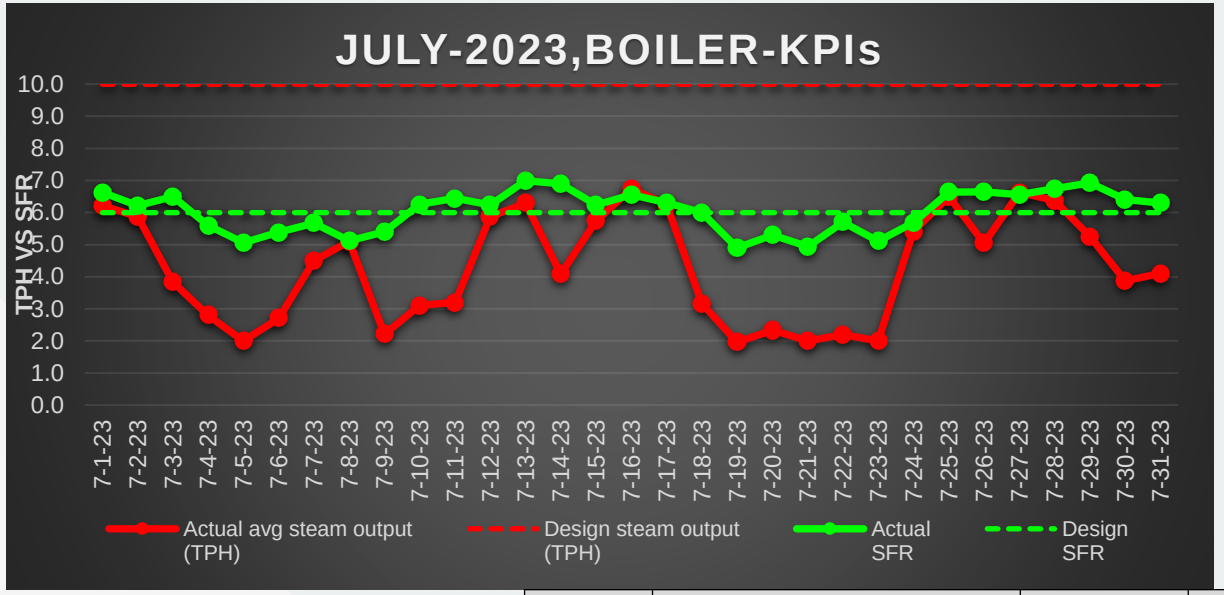
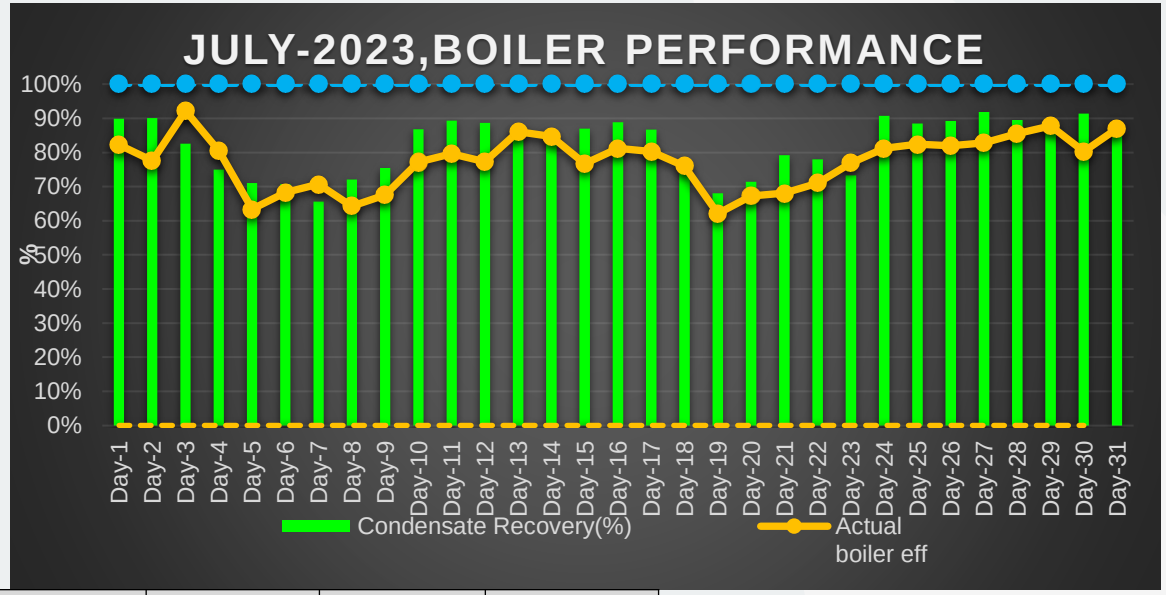
10. Energy Monitoring (Thermal)

Thermal Energy review @ Sai





SL NO.	PARAMETER	BASELINE	PREVIOUS DAY 07/29/2023	YESTERDAY 07/30/2023	Variation w.r.t baseline day & yesterday	Variation w.r.t previous day & yesterday
1	RUNNING Hrs.	24	24.0	24.0	0	0
2	AVG STEAM(TPH)	6.0	5.3	3.9	2.1	1.4
3	CONDENSATE RECOVERY(%)	70%	87%	91%	21	4
4	SPM(mg/m3)	100	91	106	6	15
5	SFR	6	6.9	6.4	0.4	0.5
6	BOILER EFFICIENCY(%)	70%	88%	80%	10	8
7	INDIAN COAL(%)	100%	100%	100%	0	0
8	IMPORTED COAL(%)	0%	0%	0%	0	0

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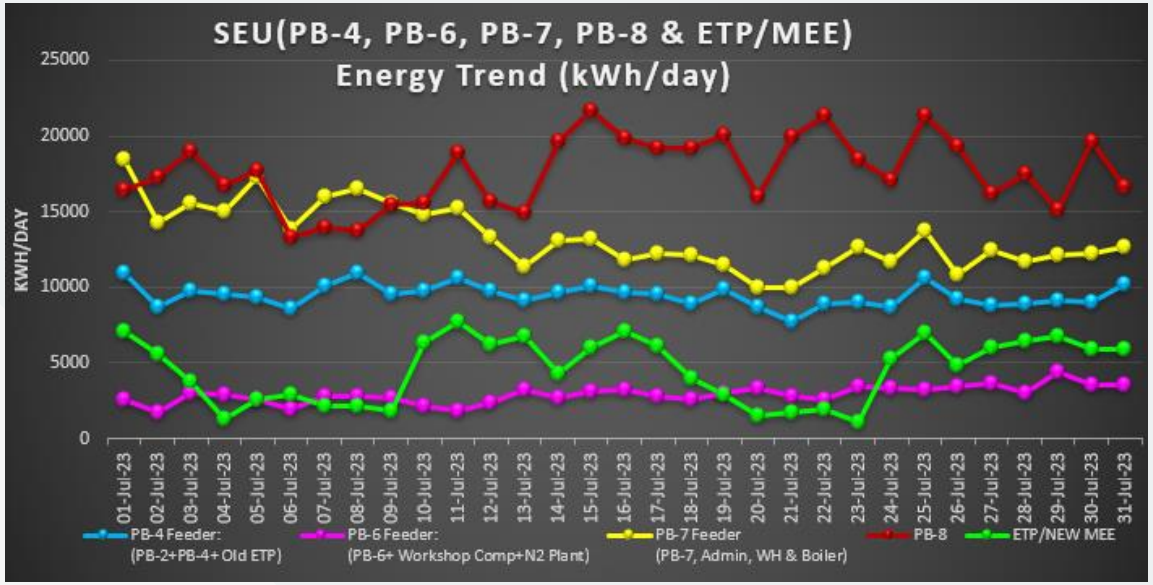
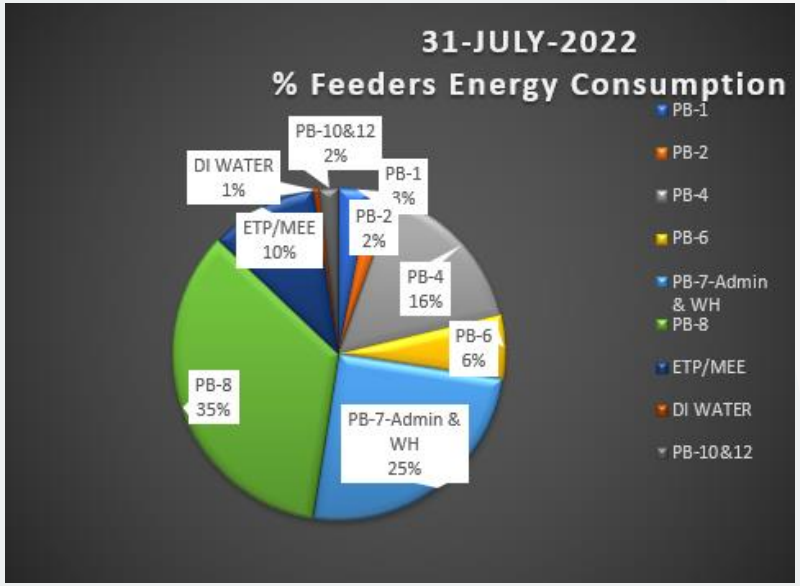
10.1 Energy Monitoring (Electrical)

Electrical Energy review @ Sai





Weekly & Monthly Energy Review to discuss on capex approvals, status of energy projects

Mr. Surya Prakash	- Vice President	(Corporate- Engineering & Projects)
Mr. Laxmipati	- Director	(Technology Absorption team)
Mr. Rajeev Jain	- General Manager	(GM-Engineering)
Mr. Venkatesan	- Sr.Manager	(Electrical-Engineering)
Mr. Krishna Chaitanya	- Asst. Manager	(Electrical-Engineering)
Mr. Sahoo	- Asst. Manager	(Utility-Engineering)

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10.2 Sustainability Initiatives & Energy Awareness

Energy review @ Sai Life Sciences

- Green Chemistry : Adoption of green chemistry principles in process development
- As per the standards GRI (Global Reporting Initiative) started publishing sustainability report .
- Green belt development program (4900 Nos Tree Plantation in FY 23)
- Energy Efficiency Awareness programs/Trainings
- Daily Shop floor Effectiveness Team (SET & AET meeting) to track Energy KPIs, Energy Conservation Action points, Kaizen Projects.

Sai Make it better together

Sustainable Development Goals

April 01, 2019

At Sai Life Sciences, we are committed to playing our part towards a more sustainable future. As a company committed to a healthier tomorrow, we understand our responsibility towards socio-economic development, climatic change mitigation and resource conservation.

Considering FY 2019 as the baseline year, by the end of FY 2022 we commit to:

- Reduce specific water consumption by 10%
- Reduce specific greenhouse gas emission by 10% and replace 10% of our overall energy requirement with renewable sources
- Reduce specific hazardous waste generation by 10% and recycle 70% of hazardous waste through co-processing and alternate reuse
- Create more opportunities for women and increase the percentage of women employees in total workforce to 12%
- Provide education and create livelihood for 1500 people from financially and socially less privileged communities through our CSR programmes
- Provide free medical screening to 10,000 people through our healthcare programmes
- Perform competency profiling and risk assessment for all critical raw material suppliers

Krishna Kanumuri
Managing Director & CEO

Sivaramakrishnan Chittor
Chief Operating Officer

Sai Make it better together

Energy Policy

April 10, 2022

Sustainability is integral to every facet of our business. Every day and in every way, we implement a sustained strategy that creates a positive impact on people and planet.

Ever mindful of social responsibilities and environmental concerns, our Energy Policy ensures reduction in energy consumption and adoption of renewable energy. Our Sustainable Development Goals enable us to:

- Be one of the most energy efficient CRO-CDMO companies in the sector.
- Reduce energy consumption in plant operations, leading to lower carbon emission.
- Purchase energy at cost-effective tariffs and increase utilization of renewable energy.
- Work towards investment in and implementation of a greater number of energy-efficient technologies.
- Set energy targets and constantly review benchmarks.
- Create an understanding of our Energy Policy among Saimers, customers and business partners.
- Adhere to statutory and other requirements related to energy management.
- Procure energy efficient equipment.
- Adopt operational control in the design of new, modified and renovated facilities.

K Ranga Raju
Chairman

Krishna Kanumuri
Managing Director & CEO

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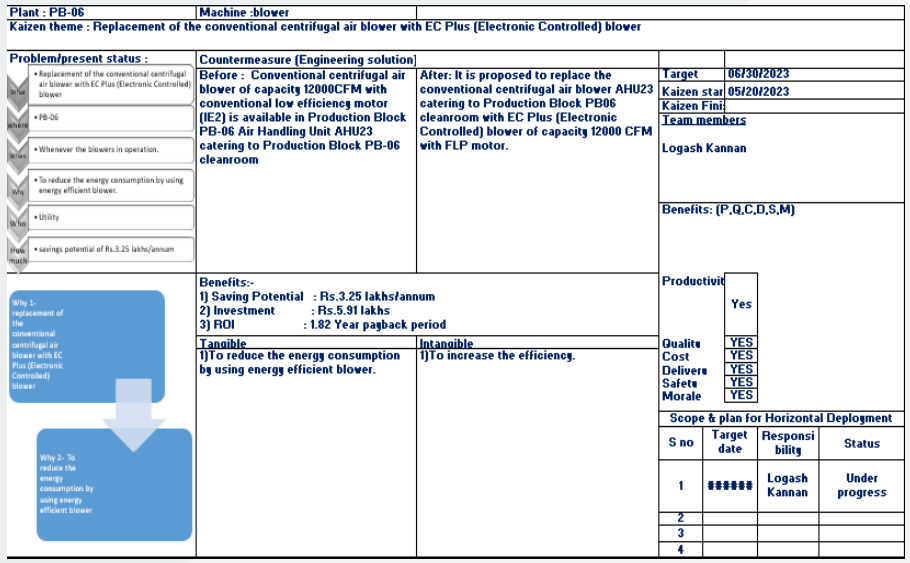
10.3 Kaizen Projects @ FY23

Total Nos of Kaizen : 123 Nos

Completed : 123 Nos



Plant : PB-06 | Machine :blower

Kaizen theme : Replacement of the conventional centrifugal air blower with EC Plus (Electronic Controlled) blower

Problem/present status :

- Replacement of the conventional centrifugal air blower with EC Plus (Electronic Controlled) blower
- PB-06
- Whenever the blowers in operation.
- To reduce the energy consumption by using energy efficient blower.
- Utility
- savings potential of Rs.3.25 lakhs/annum

Why 1- replacement of the conventional centrifugal air blower with EC Plus (Electronic Controlled) blower

Why 2- To reduce the energy consumption by using energy efficient blower

Countermeasure (Engineering solution)

Before : Conventional centrifugal air blower of capacity 12000CFM with conventional low efficiency motor (IE2) is available in Production Block PB-06 Air Handling Unit AHU23 catering to Production Block PB-06 cleanroom

After: It is proposed to replace the conventional centrifugal air blower AHU23 catering to Production Block PB06 cleanroom with EC Plus (Electronic Controlled) blower of capacity 12000 CFM with FLP motor.

Benefits:-
1) Saving Potential : Rs.3.25 lakhs/annum
2) Investment : Rs.5.91 lakhs
3) ROI : 1.82 Year payback period

Tangible	Intangible
1)To reduce the energy consumption by using energy efficient blower.	1)To increase the efficiency.

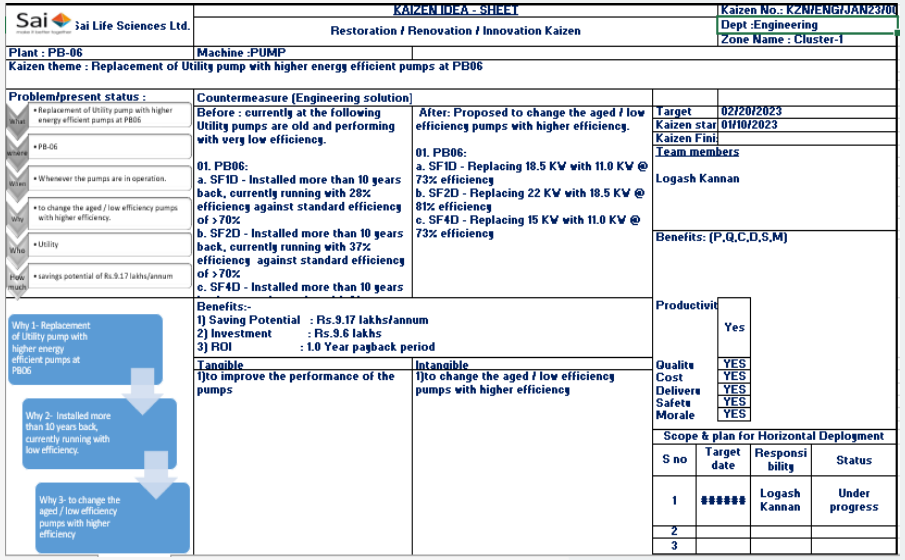
Target 06/30/2023
Kaizen star 05/20/2023
Kaizen Fini
Team members
Logash Kannan

Benefits: (P,Q,C,D,S,M)

Productivit	Yes
Qualit	YES
Cost	YES
Deliver	YES
Safet	YES
Morale	YES

Scope & plan for Horizontal Deployment

S no	Target date	Responsibility	Status
1	######	Logash Kannan	Under progress
2			
3			
4			



Sai Life Sciences Ltd.

KAIZEN IDEA - SHEET

Restoration / Renovation / Innovation Kaizen

Kaizen No.: KZN/ENG/JAN23/00
Dept :Engineering
Zone Name : Cluster-1

Plant : PB-06 | Machine :PUMP

Kaizen theme : Replacement of Utility pump with higher energy efficient pumps at PB06

Problem/present status :

- Replacement of Utility pump with higher energy efficient pumps at PB06
- PB-06
- Whenever the pumps are in operation.
- to change the aged / low efficiency pumps with higher efficiency.
- Utility
- savings potential of Rs.9.17 lakhs/annum

Why 1- Replacement of Utility pump with higher energy efficient pumps at PB06

Why 2- Installed more than 10 years back, currently running with low efficiency.

Why 3- to change the aged / low efficiency pumps with higher efficiency

Countermeasure (Engineering solution)

Before : currently at the following Utility pumps are old and performing with very low efficiency.

01. PB06:
a. SF1D - Installed more than 10 years back, currently running with 28% efficiency against standard efficiency of >70%
b. SF2D - Installed more than 10 years back, currently running with 37% efficiency against standard efficiency of >70%
c. SF4D - Installed more than 10 years

After: Proposed to change the aged / low efficiency pumps with higher efficiency.

01. PB06:
a. SF1D - Replacing 18.5 KW with 11.0 KW @ 73% efficiency
b. SF2D - Replacing 22 KW with 18.5 KW @ 81% efficiency
c. SF4D - Replacing 15 KW with 11.0 KW @ 73% efficiency

Benefits:-
1) Saving Potential : Rs.9.17 lakhs/annum
2) Investment : Rs.9.6 lakhs
3) ROI : 1.0 Year payback period

Tangible	Intangible
1)to improve the performance of the pumps	1)to change the aged / low efficiency pumps with higher efficiency

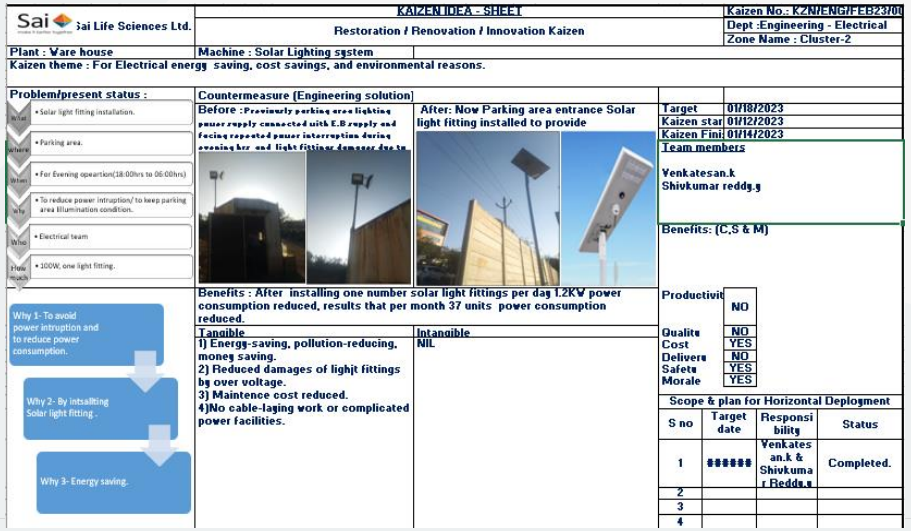
Target 02/20/2023
Kaizen star 01/10/2023
Kaizen Fini
Team members
Logash Kannan

Benefits: (P,Q,C,D,S,M)

Productivit	Yes
Qualit	YES
Cost	YES
Deliver	YES
Safet	YES
Morale	YES

Scope & plan for Horizontal Deployment

S no	Target date	Responsibility	Status
1	######	Logash Kannan	Under progress
2			
3			



Sai Life Sciences Ltd.

KAIZEN IDEA - SHEET

Restoration / Renovation / Innovation Kaizen

Kaizen No.: KZN/ENG/FEB23/00
Dept :Engineering - Electrical
Zone Name : Cluster-2

Plant : Ware house | Machine : Solar Lighting system

Kaizen theme : For Electrical energy saving, cost savings, and environmental reasons.

Problem/present status :

- Solar light fitting installation.
- Parking area.
- For Evening opeartion(18:00hrs to 06:00hrs)
- To reduce power intruption/ to keep parking area illumination condition.
- Electrical team
- 100W, one light fitting.

Why 1- To avoid power intruption and to reduce power consumption.

Why 2- By intsalling Solar light fitting .

Why 3- Energy saving.

Countermeasure (Engineering solution)

Before :Previously parking area lighting power supply connected with E.B supply and facing repeated power interruption during evening hrs and light fittings damages due to

After: Now Parking area entrance Solar light fitting installed to provide

Benefits : After installing one number solar light fittings per day 1.2KW power consumption reduced, results that per month 37 units power consumption reduced.

Tangible	Intangible
1) Energy-saving, pollution-reducing, money saving. 2) Reduced damages of light fittings by over voltage. 3) Maintence cost reduced. 4)No cable-laying work or complicated power facilities.	NIL

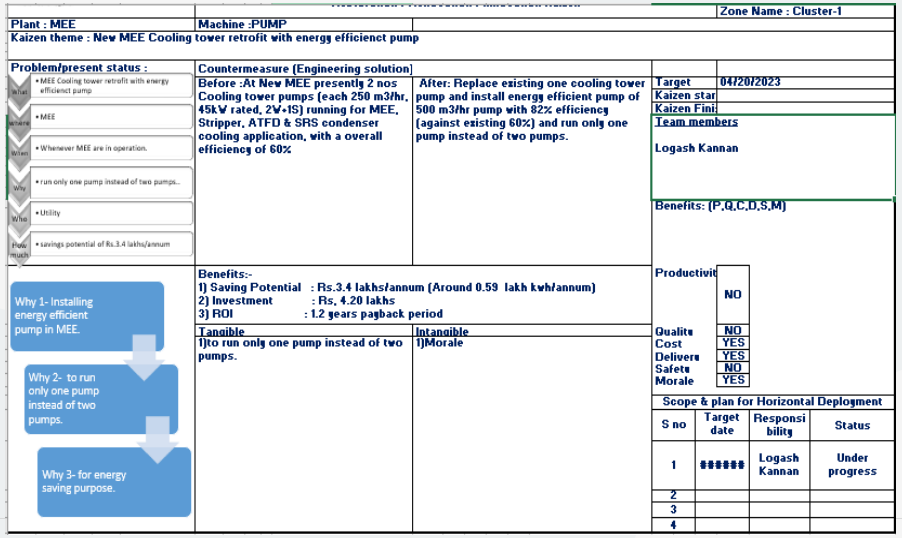
Target 01/18/2023
Kaizen star 01/12/2023
Kaizen Fini 01/14/2023
Team members
Yenkatesan.k
Shivkumar reddy.g

Benefits: (C,S & M)

Productivit	NO
Qualit	NO
Cost	YES
Deliver	NO
Safet	YES
Morale	YES

Scope & plan for Horizontal Deployment

S no	Target date	Responsibility	Status
1	######	Yenkatesan.k & Shivkumar Reddy.g	Completed.
2			
3			
4			



Zone Name : Cluster-1

Plant : MEE | Machine :PUMP

Kaizen theme : New MEE Cooling tower retrofit with energy efficienct pump

Problem/present status :

- MEE Cooling tower retrofit with energy efficienct pump
- MEE
- Whenever MEE are in operation.
- run only one pump instead of two pumps..
- Utility
- savings potential of Rs.3.4 lakhs/annum

Why 1- Installing energy efficient pump in MEE.

Why 2- to run only one pump instead of two pumps.

Why 3- for energy saving purpose.

Countermeasure (Engineering solution)

Before :At New MEE presently 2 nos Cooling tower pumps (each 250 m3/hr, 45kW rated, 2W+1S) running for MEE, Stripper, ATFD & SRS condenser cooling application, with a overall efficiency of 60%

After: Replace existing one cooling tower pump and install energy efficient pump of 500 m3/hr pump with 82% efficiency (against existing 60%) and run only one pump instead of two pumps.

Benefits:-
1) Saving Potential : Rs.3.4 lakhs/annum (Around 0.59 lakh kwh/annum)
2) Investment : Rs. 4.20 lakhs
3) ROI : 1.2 years payback period

Tangible	Intangible
1)to run only one pump instead of two pumps.	1)Morale

Target 04/20/2023
Kaizen star
Kaizen Fini
Team members
Logash Kannan

Benefits: (P,Q,C,D,S,M)

Productivit	NO
Qualit	NO
Cost	YES
Deliver	YES
Safet	NO
Morale	YES

Scope & plan for Horizontal Deployment

S no	Target date	Responsibility	Status
1	######	Logash Kannan	Under progress
2			
3			
4			

Sai

10.4 Energy Management Road Map

01

Improving Energy Efficiency at Sai Group level

02

Transforming the Energy Management to a system driven approach

03

Brainstormin g on Energy conservation activities

04

Enhancing investment in new Energy Efficient technologies

05

Involvement of Saimer in Energy Management activities

Certification, recognition and achievements for Unit 4

CII- 23rd National Energy Management Award 2022

CII- 22nd National Energy Management Award 2021

CII- 21st National Energy Management Award 2020

Silver medal

Achieved score of 63, improvement from previous year

Silver medal

Achieved score of 48, improvement from previous year

ISO 50001:2018

Unit-04, Bidar is ISO 50001 Certified Unit in 2022

ISO 14001 & 45001

Corporate office, R&D and Manufacturing facilities are now IMS certified in 2020

Golden Peacock

Winner of Golden Peacock Award - Training – 2021

Golden Peacock

Winner of Golden Peacock National Quality Award - 2021

CII-SR EHS Excellence Awards 2021

SCMPro forums IPLF Awards 2020

SCM shines with awards in Supply Risk & Supplier Relationship Management

CII EHS Excellence Awards 2020

5 star rating in EHS excellence in Pharma category

CII EHS Excellence Awards 2019

Twin win - 5 star rating in EHS excellence and runner up in Pharma category

Sai

Make it better together