EID PARRY (INDIA) LIMITED

NAGRAL-NAINEGALI, BAGALKOT - KARNATAKA

TEAM MEMBERS

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Murugappa Group Companies

Agriculture

- Coromandel — FUTURE POSITIVE
- PARRYS
- PARRY Nutraceuticals

Engineering

- TI INDIA
- CUMI
- Shanthi Gears
- Smart solutions. Strong relationships.
- WENDT

Financial Services

- Chola — Enter a better life
- Chola Financial Holdings
- Chola MS — GENERAL INSURANCE
- Chola MS — RISK SERVICES

Other Businesses

- COROMANDEL ENGINEERING
- Ambadi
- net access — Internet Technologies
- PARRY ENTERPRISES
- PARRY AGRO
- PARRY MURRAY
- MURUGAPPA WATER TECHNOLOGY & SOLUTIONS — Trusted Partner in Sustainability

Our Businesses

Agriculture

- Fertilisers
- Crop Protection Chemicals
- Bio-pesticides
- Specialty Nutrients
- Organic Manure
- Agri Retail
- Sugar
- Sugar Refinery
- Ethanol
- Co-generated Power
- Nutraceuticals

Engineering

- Precision Tubes And Steel Strips
- Bicycles
- Fitness Equipment
- Automotive & Industrial Chains
- Auto Components
- Railway Segments
- Power Generation
- Power Transmission & Management
- Door Frame & Fine Blanking
- Industrial Gears
- TMT Bars
- Truck Body Works
- Electric Mobility
- Fans
- Transformers
- Low Tension Motors
- Switch Gears
- Domestic & Agricultural Pumps
- Exhausts
- Traction Motors
- Electric Solutions for Railways
- Abrasives
- Electro Minerals
- Industrial Ceramics
- Refractories
- Phase Change Materials
- Polymers
- IT Services

Financial

- Vehicle Finance
- Home Equity
- Loan Against Property
- SME Loans
- Consumer & Small Enterprise Loans
- Secured Business & Personal Loans
- Wealth Management
- General Insurance
- Risk Management Services

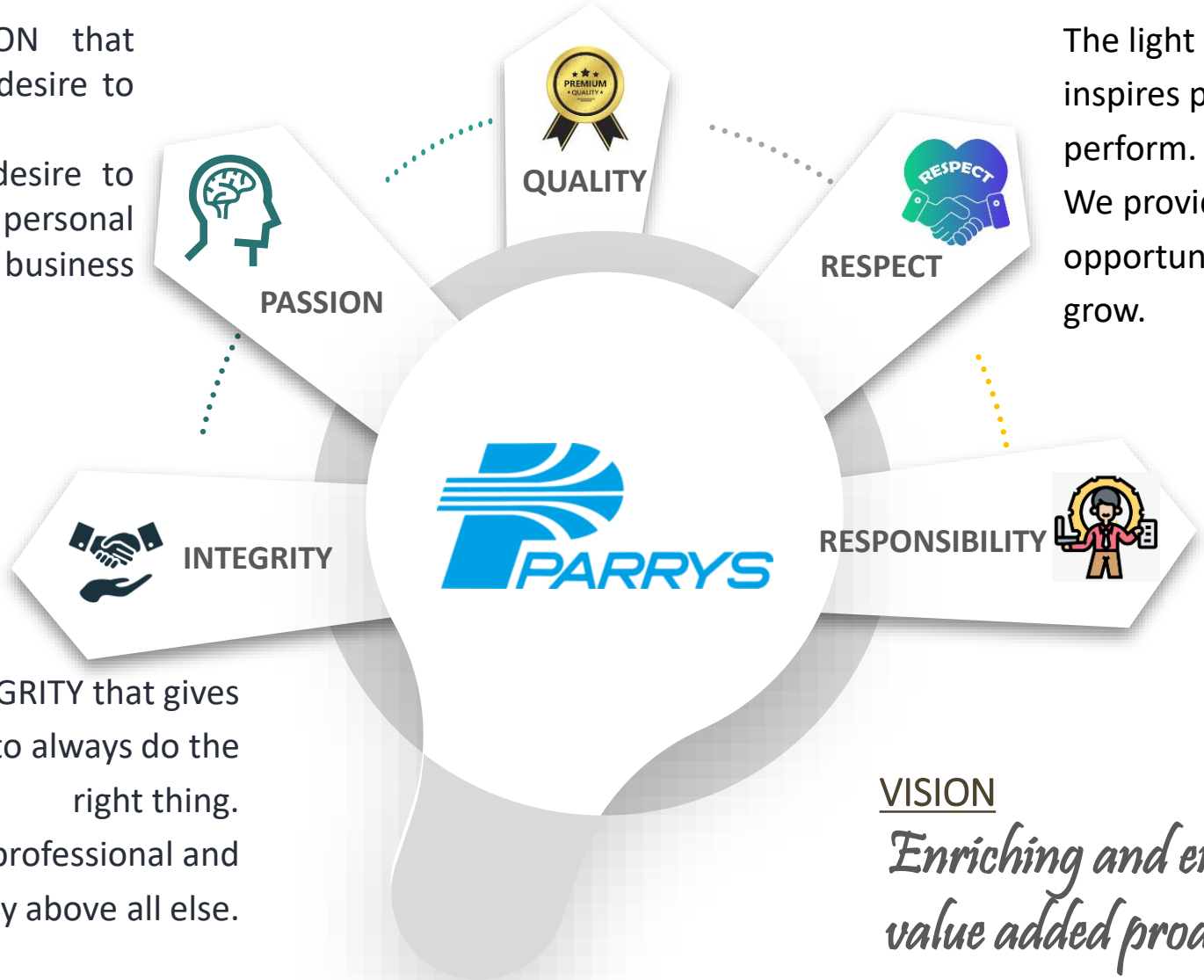
Other Business

- Tea
- Rubber
- Home Furnishings
- Textiles
- Travel Services
- Construction
- Water Treatment
- Polymer Nets & Packaging Products

Five Lights of Murugappa Group:

The light of QUALITY which makes us dream of excellence. We unfailingly meet high standards of quality in both what we do and the way we do it.

The light of PASSION that provides us with the desire to win.
We have a healthy desire to stretch, to achieve personal goals and accelerate business growth.



The light of RESPECT that inspires people around us to perform.
We provide everyone equal opportunities to progress and grow.

The light of INTEGRITY that gives us the courage to always do the right thing.
We value professional and personal integrity above all else.

The light of RESPONSIBILITY that gives us the humility to think about the world around us.
We believe we can help make a difference to our environment and change lives for the better.

VISION

Enriching and energizing lives by creating value added products from Agriculture

E.I.D Parry (India) Limited Operating Capacities

230+ Years, Industry experience

2,319 Employees

1,50,000+ Farmer partners

23+ Lakh Acre, Geo Area

SUGAR

- HALIYAL 12,000 TCD
- BAGALKOT 6,500 TCD
- SANKLI 5,000 TCD
- RAMDURG 5,000 TCD
- PUGALUR 4,800 TCD
- NELLIKUPPAM 7,500 TCD

COGEN

- HALIYAL 49 MW
- BAGALKOT 16 MW
- SANKLI 16 MW
- RAMDURG 13 MW
- PUGALUR 22 MW
- NELLIKUPPAM 25 MW

DISTILLERIES

- HALIYAL 170 KLPD
- Sankli 170 KLPD
- BAGALKOT 90 KLPD
- SIVAGANGA 64 KLPD
- NELLIKUPPAM 120 KLPD

Sugar and Cogeneration Plant

- Established in 2007
- Fully Operational in 2009
- Total area: 177.02 Acres
- Built-up area: 59.23 Acres
- Distance: 36 kms from city
- Number of employees : 400 + (including ESP)
- Trees Planted : 24000
- Lawn: 4.00 Acres
- Shrubs : 3.00 Acres

Distillery Plant

- Established in 2020
- Fully Operational in 2021
- Number of employees : 100 + (including ESP)
- Way forward to implement K-ash granulator plant & CO2 plant.

RECAP OF CONVENTIONAL SYSTEM
SUGAR & DISTILLERY


SUGAR CANE


MILLING SECTION


JUICE CLARIFICATION


FILTERATION


EVAPORATION


SYRUP CLARIFICATION


CRYSTALLIZATION


CENTRIFUGATION


GRADING

FINAL PRODUCT

BY-PRODUCTS


BAGASSES


PRESSMUD


COGEN-POWER


BACK TO SOIL


MOLASSES


FERMENTATION


DISTILLATION


ALCOHOL

POTASH RICH FERTILIZER

BMSW EVAPORATOR-II & ATFD


INTEGREATED EVAPORATOR


BMSW RO PLANT


BIO-DIGESTER


BIO-GAS BOILER

FOOD, BEVERAGES AND CONFECTIONARY CUSTOMERS

Agro India

Mondelēz International

Coca-Cola enjoy

Adyar Ananda Bhavan SWEETS & SNACKS

CavinKare

Amway

LOTTE

PEPSICO

FERRERO

elite digital group
Formerly IO Creative Group

Nestlé

HATSUN

Fresh & Pure milma

NAVYA Bake Shop

RaSna

GRB

parag

SCHREIBER Dynamix

GCRIEBER

Hindustan Unilever Limited

ITC Limited

PERFETTI van Melle

Nilgiris 1905

INBISCO INBISCO

Reliance Industries Limited

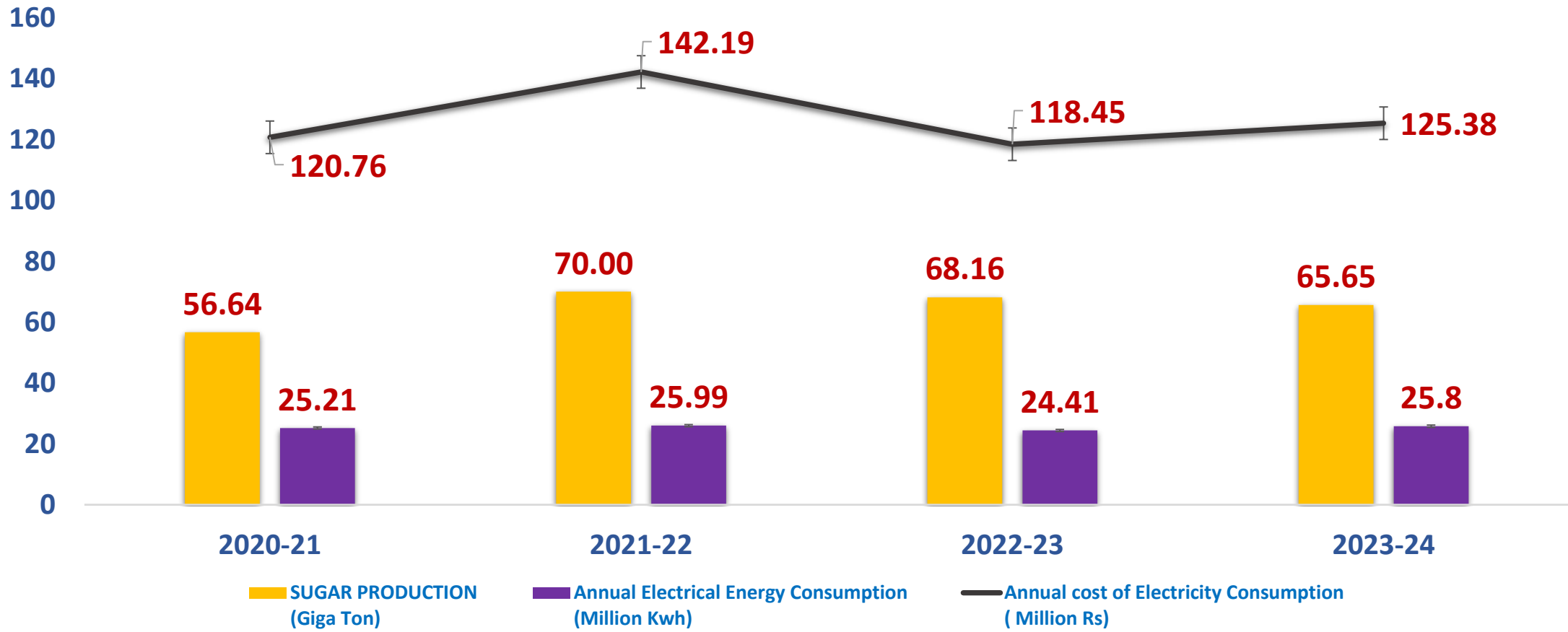
General Mills

LACTOSE LACTOSE (INDIA) LTD.

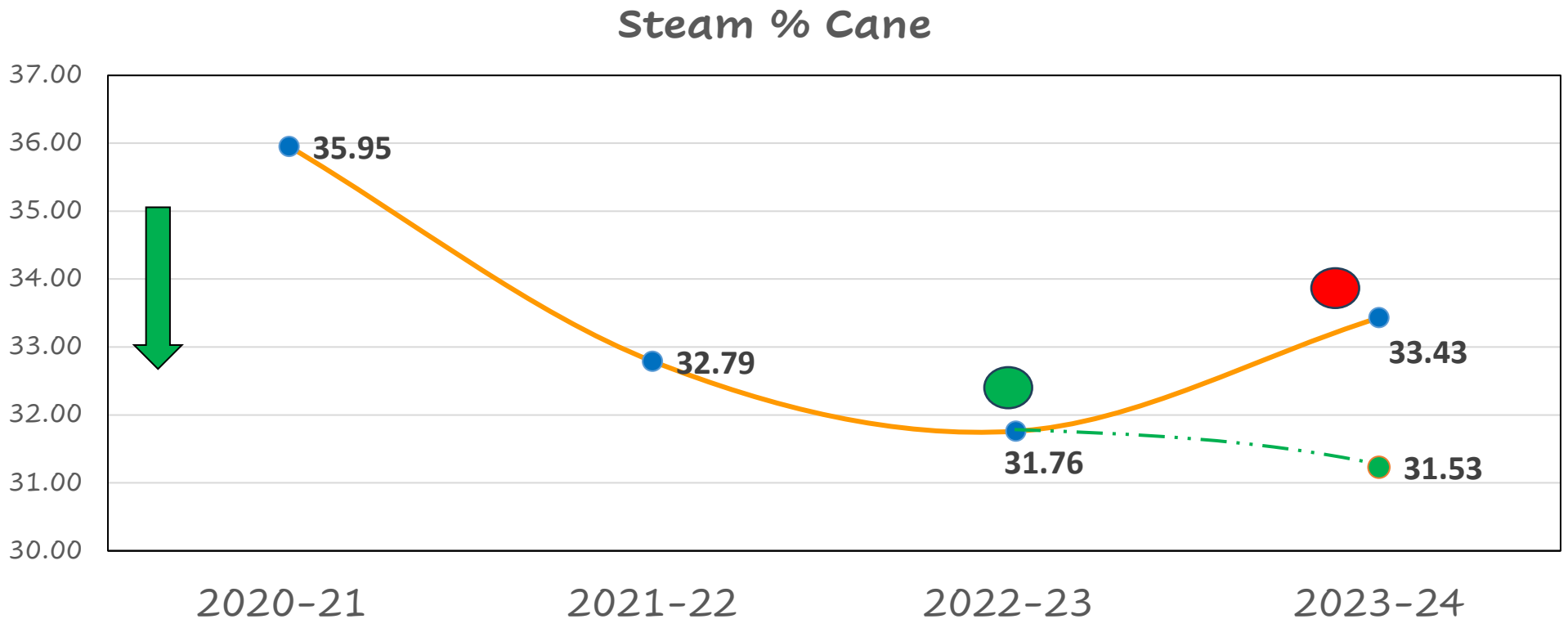
novel FOODS

Abbott A Promise for Life

PRODUCTION & POWER CONSUMPTION



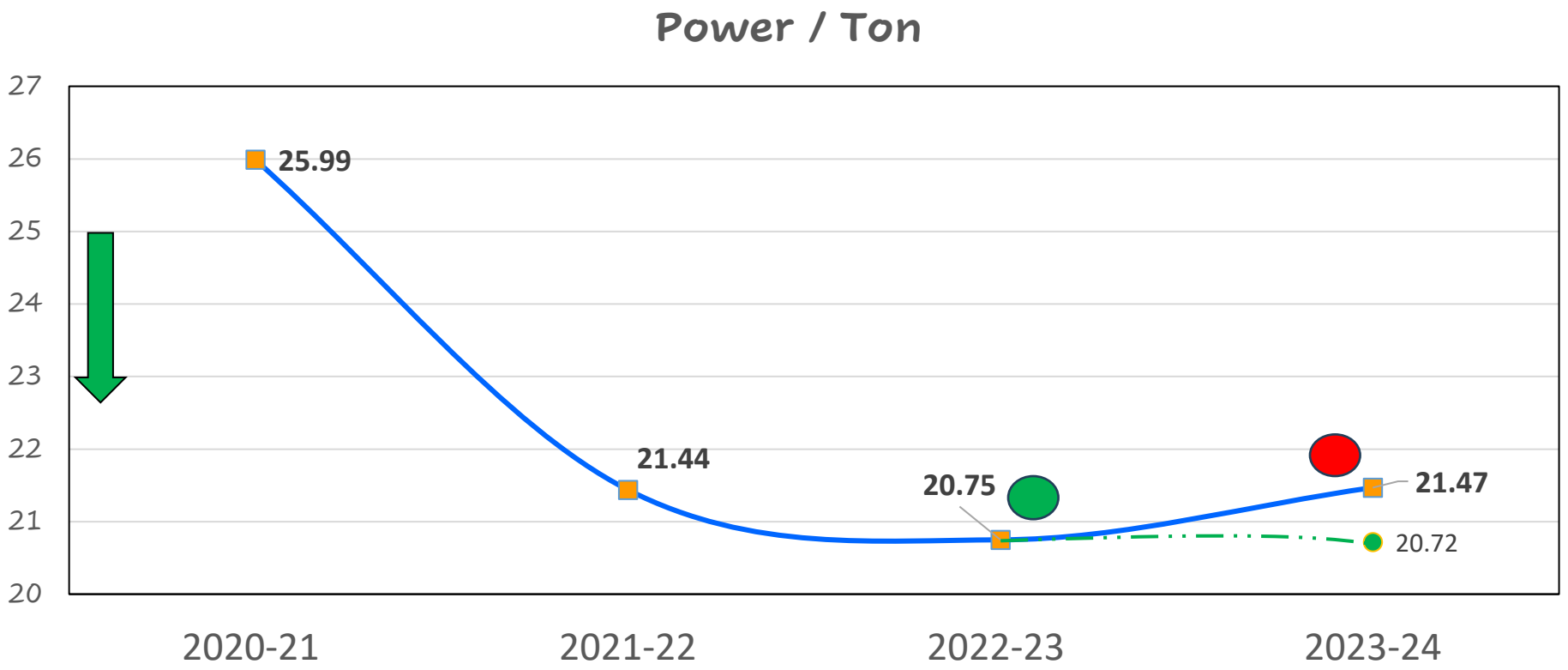
THERMAL ENERGY CONSUMTION (STEAM % CANE)



Steam % Cane Increased in 2023-24 due to operational change in C massecuite boiling

Note:- If not change in operational Steam % Cane will be in 2023-24 is 31.53%

ELECTRICAL ENERGY CONSUMPTION (KWH / MT OF CANE)



- Power per ton of Cane Increased in 2023-24 due to operational change in C massecuite boiling

- Note:- If not change in operational power/ton of Cane will be in 2023-24 is 20.72%

COMPARISON WITH GLOBAL BENCHMARKS

PARAMETERS	NATIONAL BENCHMARK	GLOBAL BENCHMARK	E.I.D PARRY - BAGALKOT
Specific Thermal Energy Consumption	38-40 %	38% As per ISSCT proceedings 2005	31.76 %
Specific Electrical Energy consumption	28 kWh / Ton of cane	27-28 kWh/ton of cane As per NFCSF	20.75 Kwh

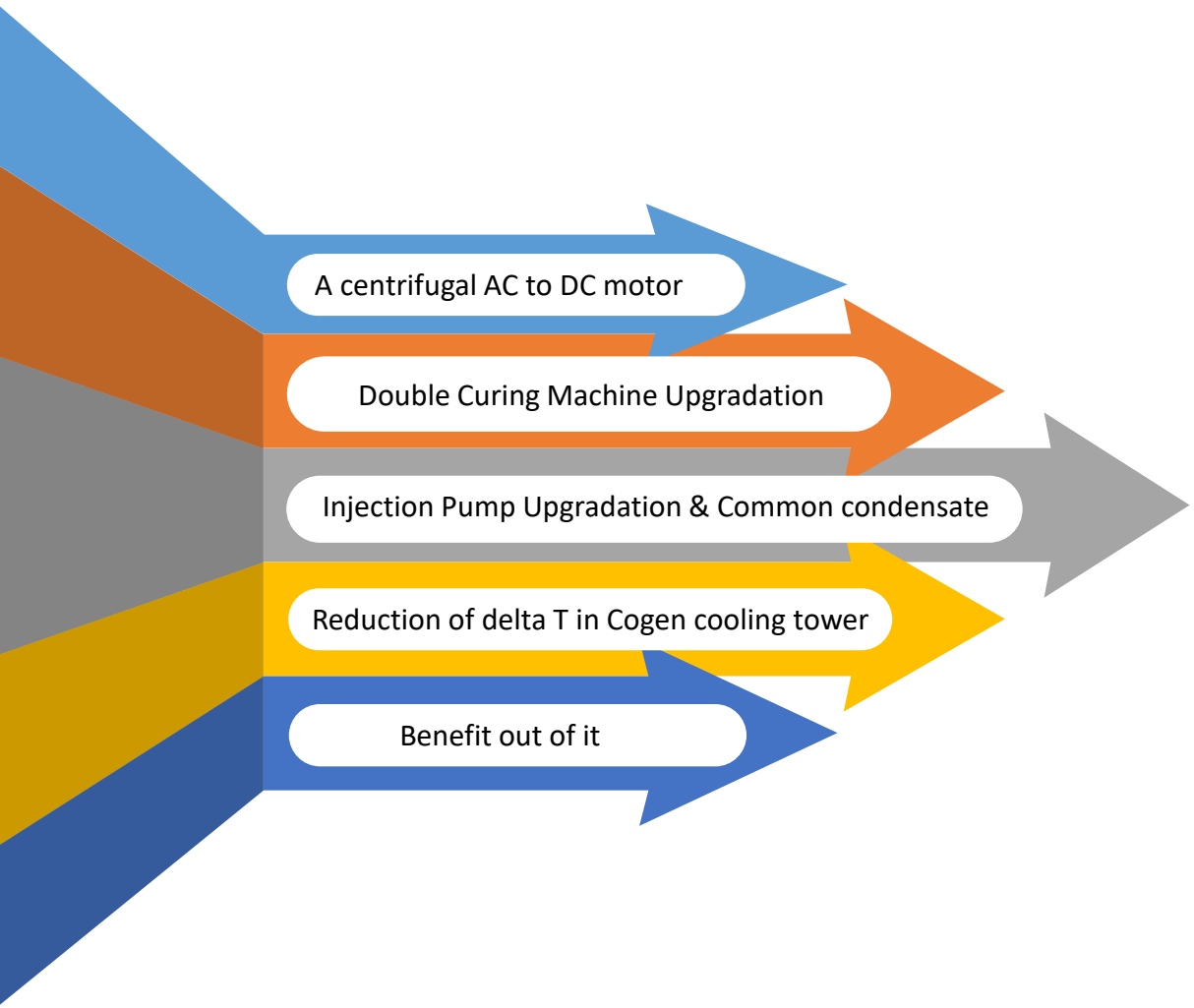
Steam Reduction Initiatives

S. No.	Particular	Achieved reduction	Job done
1	Use of flash heat recovery	0.80%	Internally designed cigar to use condensate flash heat
2	Re arrangement of juice heaters	0.20%	1- Increase in the condensate quantity for duplex juice heater.
			2- Three stage heating of raw juice.
			3- Two stage heating of clear juice heater
			4- Use of 1st condensate for SHWW heating (using PHE)
3	3rd Vapour for Pan	1%	Making 3rd body floating to use 3rd vapour for B conti and grain pan.
4	Effective Use of E boiler	0.10%	Modification in Sulphur coil and condensate withdrawal to use e boiler effectively

ENERGY CONSERVATION ACTIVITIES – FY 2021 to 2024

Sl. No	YEAR	TITLE OF PROJECT	ANNUAL ENERGY SAVING in (Lakhs)
1	2021-22	Injection Pump Upgradation to meet header pressure	55.10
2	2021-22	Common Condensate for individual condensing water line	10.31
3	2022-23	Double Curing Machine Upgradation by screen adjustment	16.60
4	2022-23	Reduction of delta T in Cogen cooling tower	68.32
5	2023-24	Upgradation of A Centrifugal from DC motor to AC motor	26.60

Key Initiatives from 2021-22 to 2023-24



Upgrading DC to AC A-batch motor

- Increased cycles per hour.
- Regenerative drive gives power payback.
- TEFC motor have less maintenance than DC motors.

Injection Pump & Common condensate

- No of Running equipment's reduced & increased energy conservation
- Operational & maintenance difficulty eliminated.

Double curing machine Upgradation

- Operating capacity increased from 12 MT to 15 MT on same power consumption and color reduction from 2360 IU to 623 IU

Auxiliary power

- Colling tower FRP fill Opti grid instead wooden fills
- Temperature control taken in DCS, and power consumption reduced from 8.45% to 7.54%

Injection Pump Upgrading:

- Split Casing pump have been replaced with Centrifugal MF pump of High Capacity with same Motor.
- Old Pump = 1600 m^3/Hr.
- New Pump = 2120 m^3/Hr.
- Previously - 4 pumps X 160 Kw load = 640 kw/Hr.
- Presently - 3 pumps X 160kw/Hr. = 480 kw/Hr.

Power Saving /Hr. = 160 kw approx.

SEASON SUGAR OPERATION	DAYS	146.00
Power saving	Kwh	560640.00
Power cost per Kwh FY 2021-22	Rs	4.80
Annual electrical cost saving	Rs Lakhs	26.91
Bagasse required for 1 MW generation	MT	2.51
Annual thermal bagasse saving	Million Kcal	3.238
Annual thermal bagasse cost saving	Rs Lakhs	28.20
Total annual cost saving	Rs Lakhs	55.10
Invest made for pump upgradation	Rs Lakhs	15.00

Common Condensate Upgrading:

- Previously up to 2020-21 Individual condensate pumps – 5 no's X 15 kw = 75 Kw/Hr.
- Presently from (2021-22) Single Condensate pump running – 1 no X 45kw = 45kw/Hr.

Power Saving/Hr. = 24 Kw/Hr.

Note- 80% of motor load considered

No of days sugar operation	Days	146.00
Power saving	Kwh	105120.0
Power cost per Kwh FY **2021-22**	Rs	4.80
Annual electrical cost saving	Rs Lakhs	4.04
Bagasse required for 1 MW generation	MT	2.51
Annual thermal bagasse saving	Million Kcal	6.07
Annual thermal bagasse cost saving	Rs Lakhs	5.27
Total annual cost saving	Rs Lakhs	9.31
Invest made for pump upgradation	Rs Lakhs	5.00

Double Curing Machine Upgradation:

- Previously Special-B Curing capacity = 12MT
- Upgraded to Double Curing-Conti = 15MT

After Basket adjustment in Double curing machine,

- B – Conti Motor Capacity – 110 KW
- Number of B- Conti machine Running reduced from 3 nos to 2.5 nos.

(i.e., 12 hrs/day 1 machine stopped)

- Motor capacity utilized is 90kw/hr
  - Previously – 3no X 90kw = 270kw/hr
  - Presently- 2.5no X 90kw = 225kw/hr

Power Saved/Hr = 45 Kw/hr

No of days sugar operation	Days	142.00
Power saving	Kwh	153360.0
Power cost per Kwh **FY 2022-23**	Rs	5.60
Annual electrical cost saving	Rs Lakhs	8.59
Bagasse required for 1 MW generation	MT	2.49
Annual thermal bagasse saving	Million Kcal	0.88
Annual thermal bagasse cost saving	Rs Lakhs	8.03
Total annual cost saving	Rs Lakhs	16.60
Invest made for pump upgradation	Rs Lakhs	10.0

Auxiliary power reduction: by delta-T improvement

- Power Saving is possible because of the Renovation of Cooling Tower with FRP fill Opti – Grid instead of wooden fills.
- Due to that the Δt got increased almost 6^{o} C to 8^{o} C. The efficiency of cooling increased.
- CT fan motors speed control taken in cascade mode with temperature feedback.

Description	Unit	2021-22	2022-23
MCW Motor capacity	Kw	220	220
CT Fan Motor capacity	Kw	45	45
MCW Motor capacity utilization	Kw	300	150
CT Fan Motor capacity utilization	Kw	105	70
No of MCW motor running	Nos	2	1
No of CT Fan motor running	Nos	3	2
Total Motor Power Saving	**Kw**	**0**	**185**

No of days sugar operation	**Days**	**142.00**
Power saving	Kwh	630480.0
Power cost per Kwh FY **2022-23**	Rs	5.60
Annual electrical cost saving	Rs Lakhs	35.31
Bagasse required for 1 MW generation	MT	2.49
Annual thermal bagasse saving	Million Kcal	3.62
Annual thermal bagasse cost saving	Rs Lakhs	33.01
Total annual cost saving	**Rs Lakhs**	**68.32**
Invest made for pump upgradation	**Rs Lakhs**	**33.0**

A MACHINE UPGRADATION FROM DC TO AC MOTOR

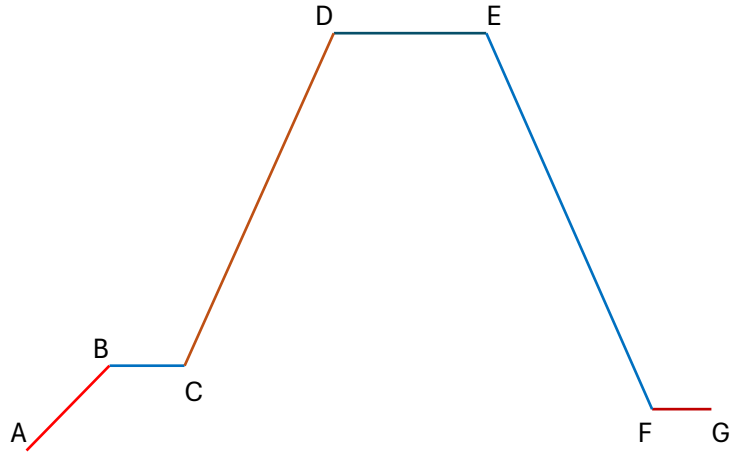
- **A Batch Centrifugal machine with DC motor have been upgraded with AC motor to achieve.**
  - To Improve the No. of cycles/hr
  - To reduce the power consumption. (i.e., By using Re-Generative VFD ACS880-14-505A) & AC motor Avg. Power consumption/cycle = 2.4 kw.
  - To eliminate the maintenance cost in DC motors. (e.g., Carbon brush, Commutator, etc.,)

Description	Unit	2022-23	2023-24
DC Motor capacity	Kw	145	145
AC Motor capacity	Kw	-	250
Motor capacity utilization	Kw	145	250
AC Motor Power Saving	Kw	-	27.1
No of motor running	Nos	4	3
No of Cycles/Hr	Nos	16-18	21-24
Total Power Saving	**Kw**	**0**	**81.30**

No of days sugar operation	Days	142.00
Power saving	Kwh	253981.0
Power cost per Kwh FY **2023-24**	Rs	5.60
Annual electrical cost saving	Rs Lakhs	12.70
Bagasse required for 1 MW generation	MT	2.60
Annual thermal bagasse saving	Million Kcal	1.52
Annual thermal bagasse cost saving	Rs Lakhs	13.89
Total annual cost saving	**Rs Lakhs**	**26.60**
Invest made for Motor upgradation	**Rs Lakhs**	**62.0**

Upgraded A centrifugal machine from DC to AC Motor:

➢ **A Batch Centrifugal machine time comparison & No. of cycle actual calculation from field.**



A - B - C	CHARGING ZONE
C – D	ACCELERATION ZONE
D – E	SPINNING ZONE
E – F	RETARDATION ZONE
F – G	PLOUGHING ZONE

Sl.NO	OPERATION DESCRIPTION	UNIT	BATCH CENTRIFUGAL MACHINE						
			A1	A2		A3		A4	
				IDEAL	LOAD	IDEAL	LOAD	IDEAL	LOAD
1	A -- B	Sec	10	6	4	6	4	6	4
2	B -- C	Sec	18	8	16	8	19	8	18
3	C -- D	Sec	45	30	31	30	40	30	41
4	D -- E	Sec	30	7	20	7	20	8	20
5	E -- F	Sec	50	28	30	28	39	26	39
6	F -- G	Sec	50	38	39	25	27	24	26
8	TOTAL TIME FOR 1 CYCLE	Sec	203	117	140	104	149	102	148
9	NUMBER OF CYCLES / HR	No's	17.73	30.77	25.71	34.62	24.16	35.29	24.32
10	CURRENT LIMIT	%		100%		100%		100%	
11	MAX ACCELERATION CURRENT	AMPS		450		450		450	
12	MAX DE-ACCELERATION CURRENT	AMPS		470		470		471	
	PERFORMANCE INCREASED	%		41.50	30.00	48.00	25.50	49.00	26.00
	A1- DC A centrifugal machine		A2-A3-A4-AC A centrifugal M/c			**A3 & A4 are in Interlock**			

Energy conservation Projects way forward..

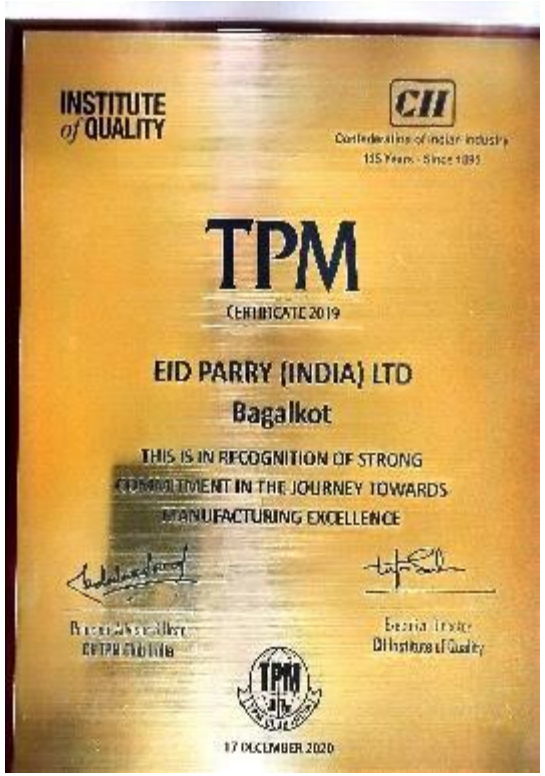
Energy Management System	CII energy audit gap assessment finding to be implemented. Energy Management System (EMS) is a structured approach to managing and optimizing energy use in organizations, buildings, or industrial processes.
Renewable Energy Integration	Solar Photovoltaics (PV) is a technology to be implemented; that converts sunlight directly into electricity using semiconductor materials. It's a cornerstone of renewable energy systems due to its scalability, decreasing costs, and environmental benefits.
Harmonic Distortion	Intended to Reduce Harmonic Distortion Passive Filters, Active Filters and Harmonic Filters in VFDs.
Improving power factor by installing capacitor bank	A capacitor bank helps correct power factor by compensating for the lagging reactive power caused by inductive loads, such as motors and transformers.

Water conservation by Recycling - Water consumption against the target 2023-24

Units	2022-23 Consumption in KL	2023-24 Target in KL	2023-24 Target in % Vs 2022-23	2023-24 Consumption in KL	% Reduction
Nellikuppam	277244	259416	-6.4%	263468	-5.0
Pugalur	92204	111882	21.3%	126183	36.9
Sivaganga	133385	131119	-1.7%	130239	-2.4
Oonaiyur	82994	78844	-5.0%	44117	-46.8
Saveriyarpuram	27192	26784	-1.5%	25359	-6.7
Haliyal	452447	361958	-20.0%	422030	-6.7
Bagalkot	**577305**	**548440**	**-5.0%**	**404579**	**-29.9**
Ramdurg	89579	62705	-30.0%	75725	-15.5
Sankili	404015	341298	-16.0%	326181	-19.3
TOTAL	**2136365**	**1922446**	**-10.0%**	**1817881**	**-14.9**

Note:- Bagalkot plant achieved 30% of Fresh water saving.

AWARDS & RECOGNITIONS



AWARDS & RECOGNITIONS

Received Bronze Award for Excellence in safety from CII in 2024

Silver Award for Best Technical Efficiency in 2022

Gold Award for Best Technical Efficiency in 2023

Achieved SISSTA Platinum awards for Best cane development in 2014.

Achieved SISSTA golden award for Best Technical efficiency award in 2014.

Achieved silver awards for Best technical efficiency award in 2016

Vishwakarma Rastriya Puraskar & National Safety Awards by Ministry of Labour, Government of India

Performance Year -2016, 2017 and 2018

“National Safety Award -2016”
Runner up award for
Highest Accident-free year

“National Safety Award -2017”
Runner up award for
Lowest average frequency rate.

“National Safety Award -2018”
Winner award for
Highest Accident-free days
Lowest average frequency rate.

Project **"NANNEER"** Way Forward

FOOT NOTE

Project Nanneer: Water, water everywhere .... to drink and to sow

Nandini.sengupta@timesgroup.com

It's a back-to-basics solution for parched lands. During the lockdown, the Murugappa Group, through group company EID Parry and the AMM Foundation, began a CSR project on water sustainability called Project Nanneer. The aim was to rejuvenate seven water bodies in Sivaganga and Pudukkottai, two of the most water-deficient districts in Tamil Nadu. With Coimbatore-based NGO Siruthuli as implementation partner, the group started the project in late 2021; most of the work was done in the summer of 2022.

A year on, Project Nanneer provides relief to close to 2,000 farming families, ensuring an incremental 1 billion litres of water in the local water ecosystem, up from just 200 million litres. Its target: Two billion litres in the next 12 months and 10 billion litres by 2026.

For the Murugappa Group, this is both good business and good community service. The group has a close connect with the farming community thanks to companies such as EID Parry and Coromandel International. "Farmers are central to where we are as an organisation today," says EID Parry CEO Muthu Murugappan.

Project Nanneer water storage: Farmers can now cultivate their land

"EID Parry has some acreage under algae production in Sivaganga and Pudukkottai. In summer, the acreage reduces because of water scarcity as this region is monsoon fed. We were looking for ways to run the farms in perpetuity and also do something for this arid part of the state given that the group's ancestry comes from this region," he says. With Project Nanneer increasing water storage, farmers can now cultivate their land twice, sometimes even three times a year.

The project is repairing existing water bodies and rainwater harvesting structures to increase storage. The districts of Sivaganga and Pudukkottai are home to numerous water bodies called ooranis and kanmais, besides temple tanks. However, many of these once-large bodies of water have diminished in size and capacity over time, because of the build-up of silt and a lack of maintenance. "We are strengthening bunds, cleaning channels, desilting, introducing islands, removing vegetation, creating a biosphere for birds and other animals and working with communities," says Murugappan. At the Vadakudipatti and Chettiyan kanmais, 3,000 tree saplings have been planted as bio fencing. The 10 islands created from desilted soil are being developed as bird habitats.

MUTHU MURUGAPPAN | CEO, EID Parry

Sivaganga and Pudukottai have been selected in the first phase. After a detailed watershed management study of 5 km radius from Oonaiyur village, two water bodies in Sivaganga (Vadakudipatti kanmai, Chettiyan kanmai) and five in Pudukkottai district (Kaana kanmai, Raayar kanmai, Panangudi tank, Oonaiyur big tank and Oonaiyur drinking pond) are being rejuvenated. In the next phase, the project will be extended to other districts where the group has a footprint. "Already Karur, Erode and Cuddalore districts have shown interest and we will expand there in the next 12 months," says Murugappan. "There is also talk of other districts such as Ranipet, Hosur and coastal Andhra Pradesh showing an interest in Project Nanneer."

Currently entirely funded by the AMM Foundation, the project will look for partners as it expands its footprint. "We would like to take this project to locations across the country where we have business installations. We will broad base the funding across stakeholders the group works with as they are already eager to participate in Project Nanneer," says Murugappan.

NANNEER MAKES A DIFFERENCE

- Seven lakes with an area of 250 acres identified for desilting and five lakes restored in 2022-23
- Rise in water holding capacity up to 1 billion litres

1,825 families benefited

1,250 acres of cultivation helped

3,000 native trees planted in the bunds

- Perennial water supply for livestock
- Islands and bio fencing in the bunds attract many migratory birds

With project "NANNEER" our aspiration is to reach **10 Billion Liters** of "Water Under Management" by **2026**

Project "**NANNEER** For Example

Before - 0

After – 21.47 Million Liters

CII Assessors visited the Project site

Thank you !