IFFCO

पूर्णतः सहकारी स्वामित्व

Wholly owned by Cooperatives

PARADEEP UNIT

WELCOMES HONOURABLE DISTINGUISHED JURY MEMBERS AND DELEGATES

24th CII National Award for Excellence in Energy Management 2023

Date: 13th-15th Sept, 2023

P K Mahapatra, JGM (Tech.)

OVERVIEW OF IFFCO

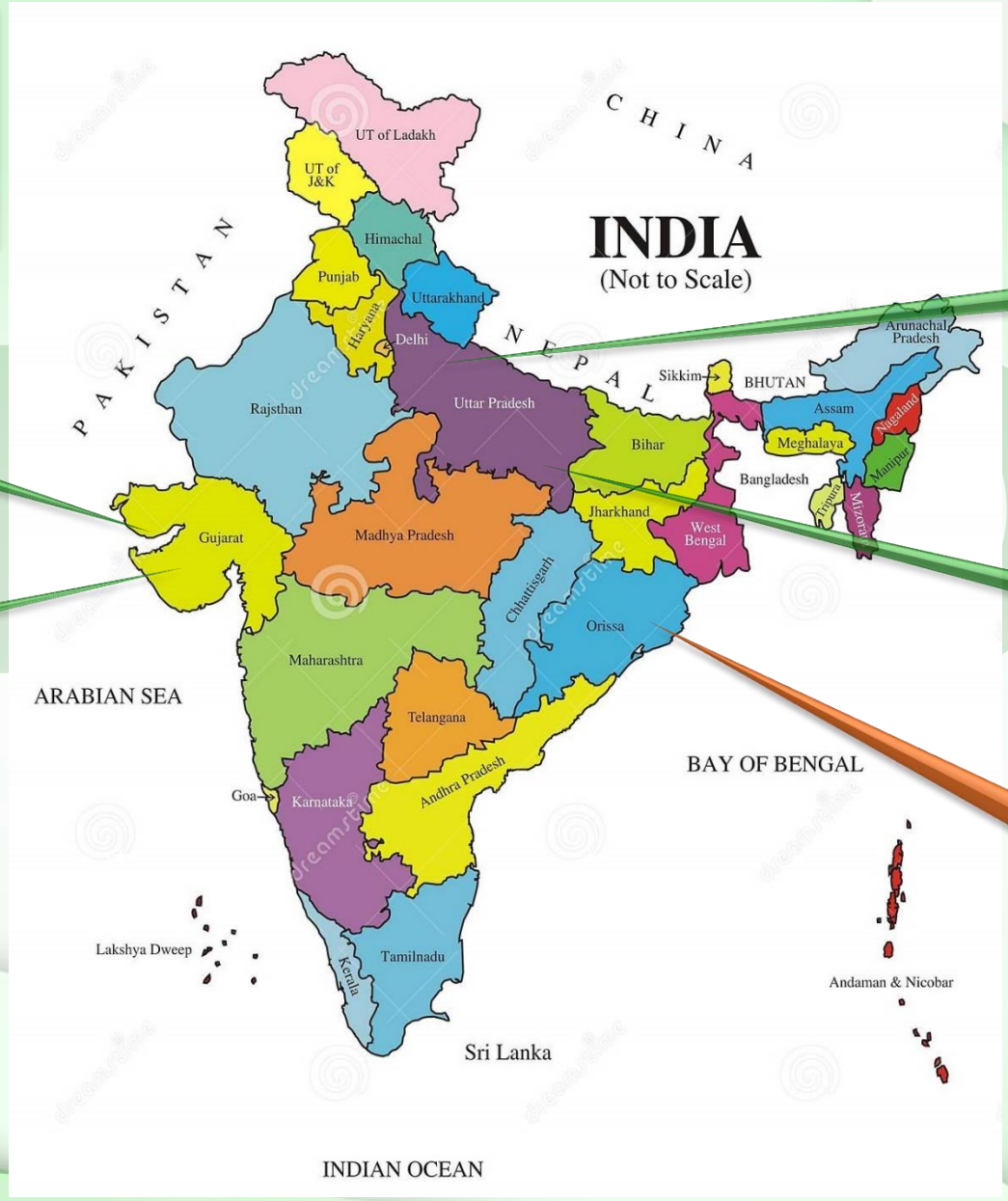
IFFCO
Wholly owned by Cooperatives

Production Capacity
Urea : 42.42 Lakh MTPA
NPK/DAP: 43.35 Lakh MTPA
Nano Fertiliser: 17 Cr. bottles PA

~35,000 member Cooperatives

IFFCO Kandla

IFFCO Kalol



IFFCO Aonla

IFFCO Phulpur

IFFCO Paradeep

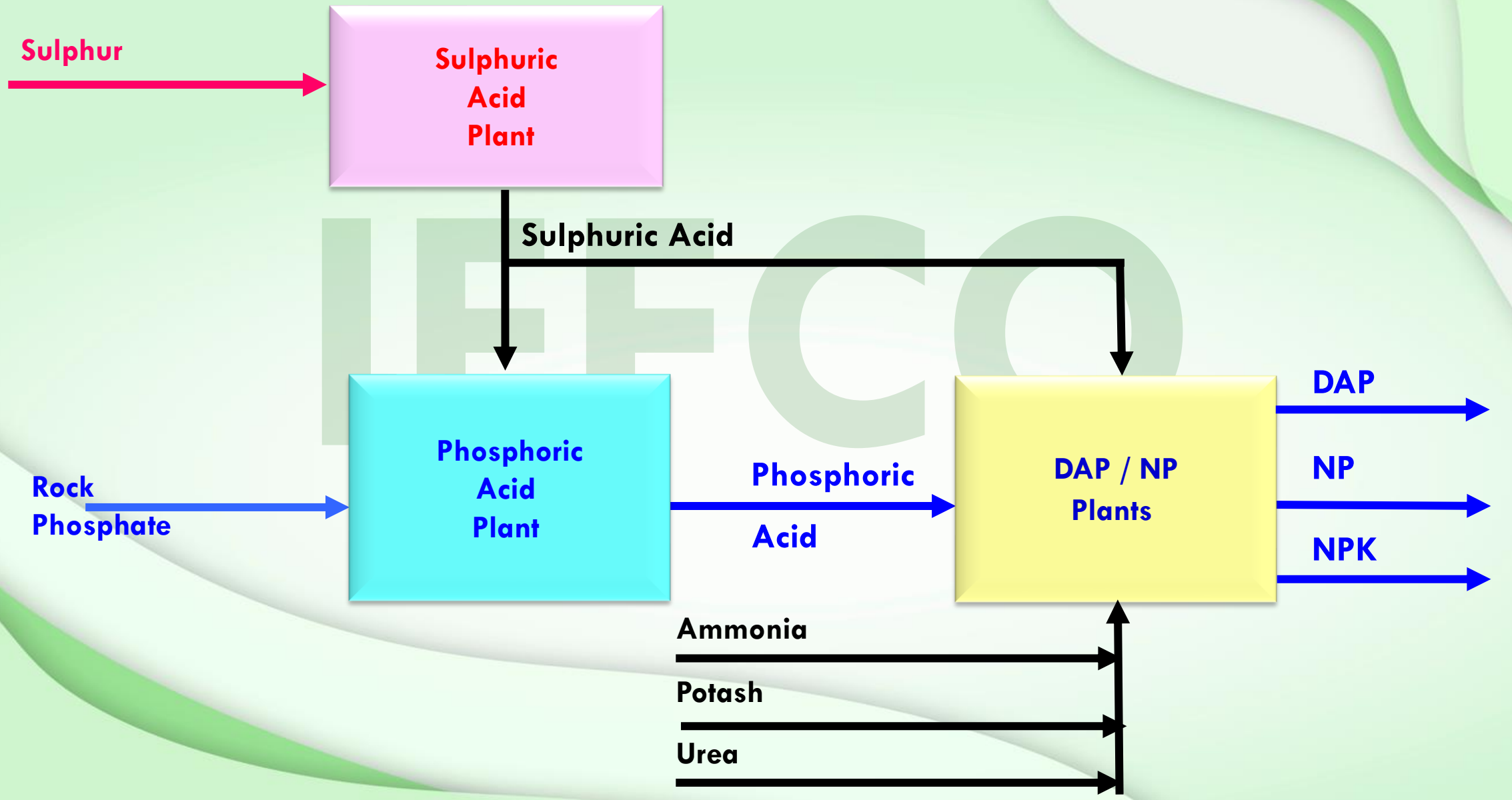
Every 3rd bag of DAP/NP & Every 5th bag of Urea produced in India comes from IFFCO

ABOUT IFFCO PARADEEP

Year of Commissioning : 2000

Product	Capacity MTPD	Technology
Sulphuric Acid	2 x 3500	Lurgi GMBH, Germany
Phosphoric Acid	1 x 2650	Jacobs Engg. USA
DAP/NP/NPK	3 x 2090	Jacobs Engg., USA
Captive Power Plant	2 x 55 MWH	LMZ Energy, Russia
Annual Production	1.92 Million tonnes	
Grades of Fertiliser	DAP (18:46:00), NP (20:20:00:13), NPK-I (10:26:26), NPK-II (12:32:16)	

PROCESS DIAGRAM

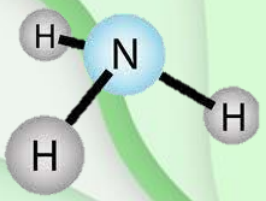


MATERIAL FLOW OVERVIEW

Sulphur

Sul. Acid Plant

Rock Phosphate



Ammonia

Phos. Acid Plant

Gypsum

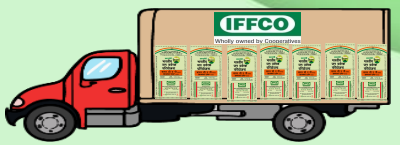
H_2SiF_6

Sulphuric Acid

Phosphoric Acid

DAP Plant

Sulphuric Acid



Bagging Plant

DAP,
NPS / NPK

RAW MATERIALS IMPORT IN FY 2022-23

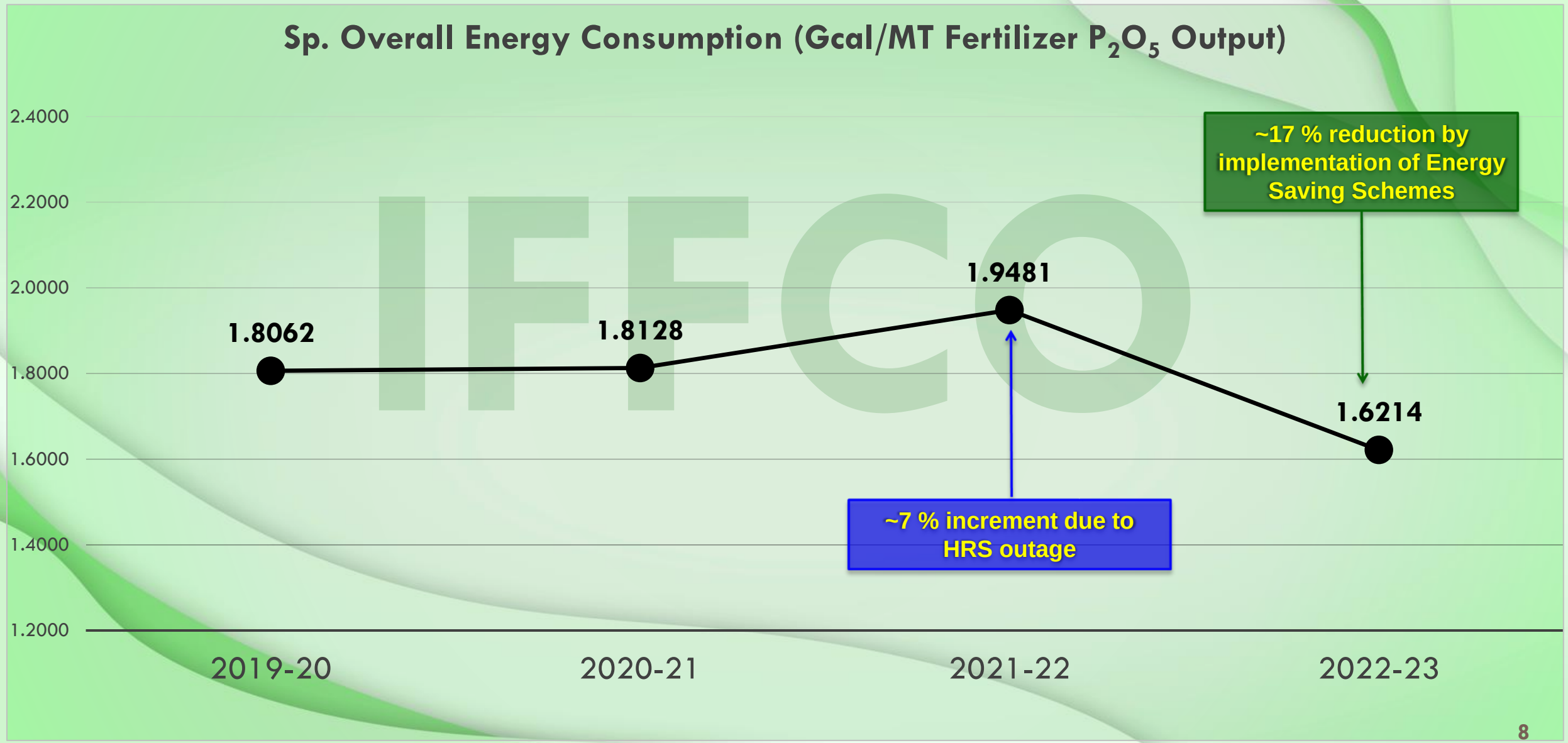
S.N.	Raw Materials	Unit	Quantity
1	Rock Phosphate	MT	30,51,684
2	Solid Sulphur	MT	4,47,549
3	Ammonia	MT	4,86,469
4	Sulphuric Acid	MT	8,92,088
5	Urea	MT	42,713

LAST 3 YEARS ENERGY PERFORMANCE

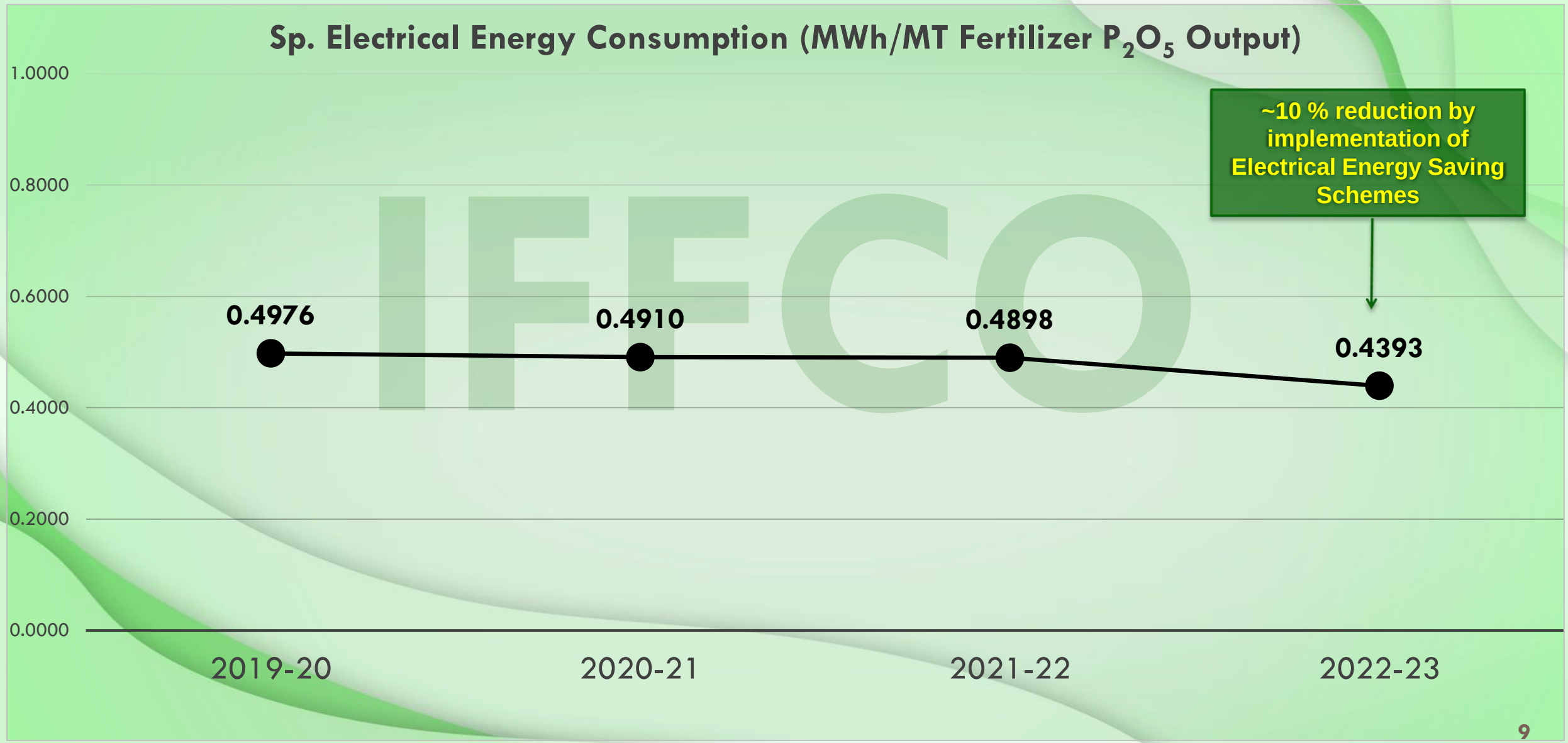
Parameters	Unit	2020-21	2021-22	2022-23
Bulk Fertilizer Production	MT	19,88,300	19,94,900	21,88,250
P_2O_5 output in Fertilizer	MT	7,35,816	7,79,880	8,36,425
Electrical Energy Consumption	Million kcal	3,10,853	3,28,638	3,16,188
Thermal Energy Consumption	Million kcal	10,23,040	11,90,655	10,39,992
Overall Energy Consumption	Million kcal	**13,33,893**	**15,19,293**	**13,56,180**

The overall sp. energy consumption for the year 2022-23 is reduced by approx. 11% compared to previous year 2021-22.

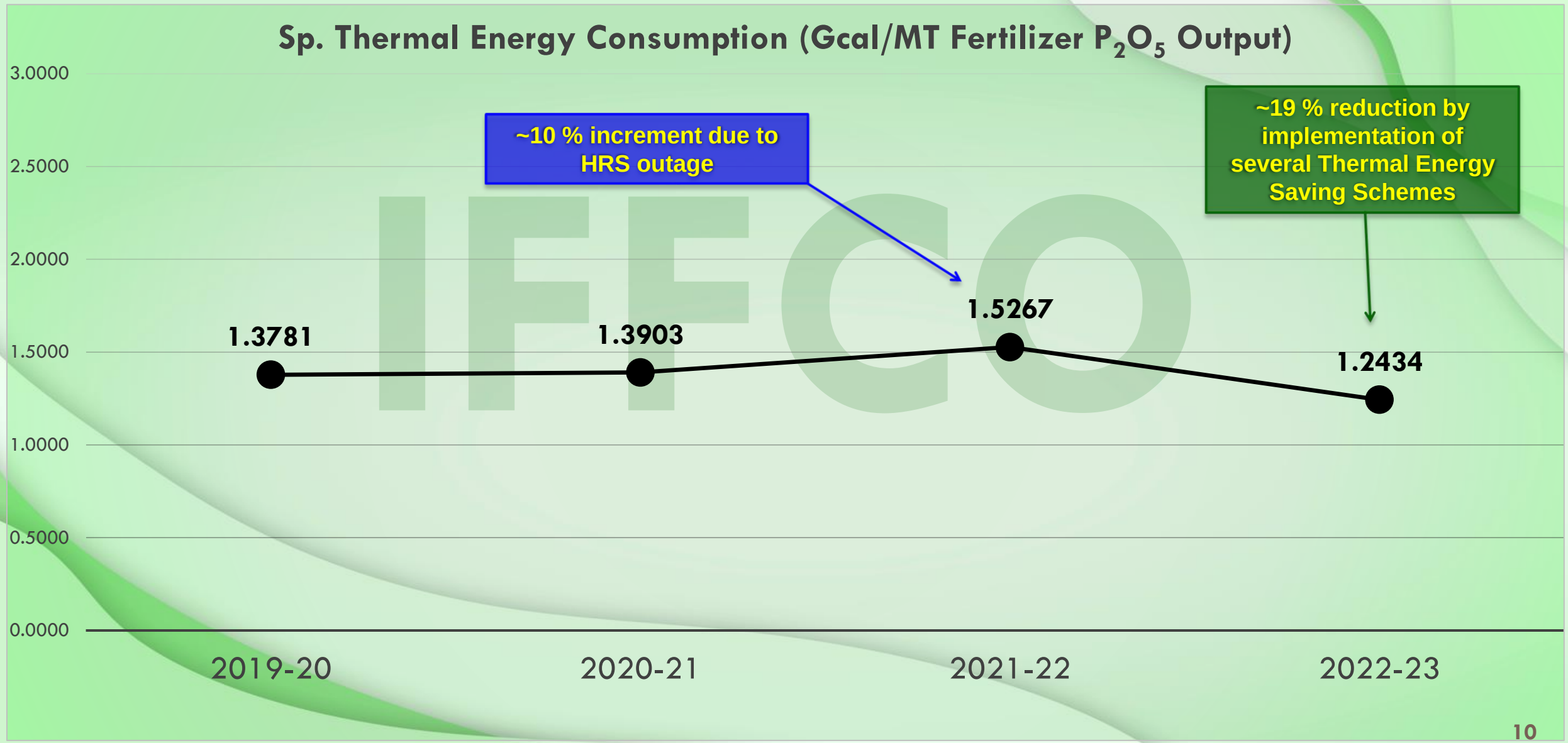
SPECIFIC OVERALL ENERGY CONSUMPTION



SPECIFIC ELECT. ENERGY CONSUMPTION



SPECIFIC THERMAL ENERGY CONSUMPTION



ENERGY CONSERVATION SCHEMES IN LAST 3 YEARS

Year	Name of Energy saving projects	Investments (INR Million)	Electrical savings (Million kWh)	Thermal savings (Million Kcal)	Savings (INR Million)	Payback Period (In months)
2020-21	Installation of higher head pump in Evaporator 'A' in Phosphoric Acid Plant	17.50	0	17,397	24.39	8.50
2021-22	Installation of high efficient motors (IE3) in place of low efficient motors (IE2)	10.08	0.11	0	0.91	133.36

ENERGY CONSERVATION SCHEMES IN LAST 3 YEARS

Year	Name of Energy saving projects	Investments (INR Million)	Electrical savings (Million kWh)	Thermal savings (Million Kcal)	Savings (INR Million)	Payback Period (In months)
2022-23	Replacement of old chiller unit with new & VFD control unit	4.31	0.15	0	1.08	47.90
	Replacement of old steam ejectors and optimization of steam consumption in Flash cooling vacuum cooling system in Phosphoric Acid Plant	8.00	0	76,109	200.64	0.48
	Installation of high efficient motors (IE3) in place of low efficient motors (IE2)	6.73	0.07	0	0.49	166.17
	Installation of higher head pump in Evaporator ‘E’ & ‘G’ in Phosphoric Acid Plant	35	0	16,055	42.32	9.92
	2022-23	**54.04**	**0.22**	**92,164**	**244.53**	**2.65**

INSTALLATION OF HIGHER HEAD PUMP IN EVAPORATOR

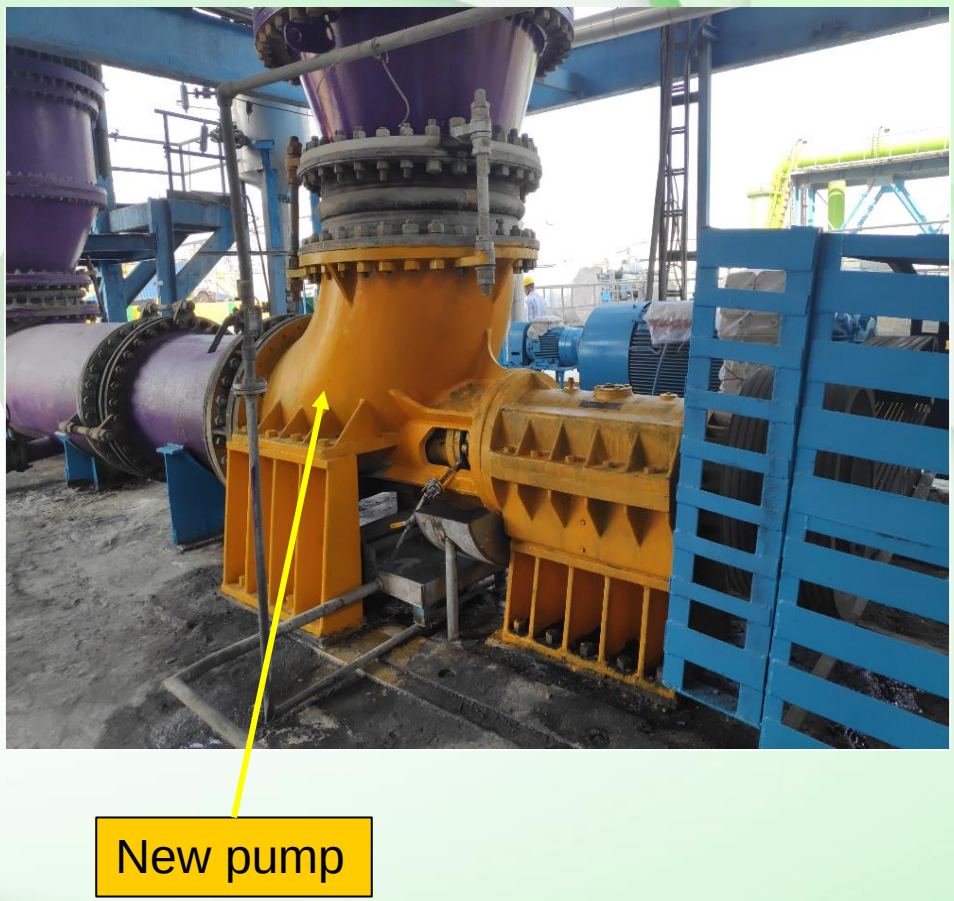
BEFORE MODIFICATION:

- There are eight evaporators available for concentrating weak acid (25% P_2O_5) to strong phosphoric acid (49-50%).
- There is circulator pump of capacity 7,315 m^3/hr circulates acid through heat exchanger, where it gains heat from low pressure steam.
- It was estimated that acid circulation through the tubes was lower than design due to increased resistance in the system because of solid deposition inside the tubes, tubes plugging, less vacuum in the evaporator than design.
- Production rate was very low around 10.5 Tons of P_2O_5/hr against design 17.0 tons/hr.

INSTALLATION OF HIGHER HEAD PUMP IN EVAPORATOR

MODIFICATION & BENEFITS:

- New pump with higher head & reduced speed installed in evaporator.
- Production improved by 10 -12 % due to increased circulation through evaporators.
- Sp. Steam consumption reduced by ~5% due to improved heat transfer.
- The savings in steam resulted in huge thermal energy savings with increased production.
- Increase in strong phosphoric acid production, results higher DAP production.



REPLACEMENT OF OLD STEAM EJECTORS & OPTIMIZATION OF STEAM CONSUMPTION

- Vacuum coolers are available to cool the reactor slurry. Vacuum in vacuum coolers is maintained by steam ejector system.
- Earlier about 6 TPH steam is consumed in each ejector (4 nos.) against a design consumption of 5.71 TPH.
- Now, old ejectors were replaced with new efficient ejectors, which consumes about 3 TPH steam in each ejector. There is saving of 12 TPH in all ejectors.

Parameters	Unit	Quantity
MP steam Sp. Consumption (FY 2022-23)	MTPH	**0.11**
MP steam Sp. Consumption (FY 2021-22)	MTPH	**0.25**
P2O5 Production	MTPY	**8,40,500**
Steam savings	MTPY	**1,11,509**
Equivalent HP steam saving	MTPY	**94,499**

RENEWABLE ENERGY

1. Installed floating type 100 kW solar photovoltaic panels on Raw water reservoir.
2. Installed 3 x 10 kW = 30 kW Photovoltaic Solar pack to generate power for Administrative building.
3. Installed 100 kW Photovoltaic Solar pack on Community Centre to generate power & is connected to Grid.
4. Installed 3 Nos. Solar water heaters for hot water generation.
5. Installed solar LED Flashers for traffic lights.

Details of energy saved by substitution of Conventional Energy with Renewable Energy:

Sr. No.	Particulars	Unit	2020-21	2021-22	2022-23
1.	**Energy Generated**	kWh/year	1,00,764	1,08,028	1,18,234
2.	**Annual Savings**	Rs. lakh	6.43	7.23	12.24

RENEWABLE ENERGY

Solar Panels on Administrative Building

Solar Panels on Community Centre

Solar LED Flasher lights

Floating Solar Panel on Reserve pond

Utilization of Waste heat from process replacing conventional energy

- ✓ Waste Heat of Sulphur Combustion & Conversion reactions is recovered in form of High Pressure superheated steam (62 kg/cm^2 g, 480 °C) & used for power generation.
- ✓ Part of Waste Heat of SO_3 absorption is recovered in HRS section, in form of LP saturated steam (4.5 kg/cm^2 g) and used for process heating.
- ✓ In spite of non-availability of LP steam from HRS in SAP, the waste heat as % of total energy in year 2022-23 has increased compared to year 20-21.

Year	Type of waste heat	Quantity of steam (MT/Year)	GCV (kcal/kg)	Waste heat as % of total energy
2020-21	WHRB & HRS	21,63,439	805.4	69.87 %
2021-22	WHRB	22,02,768	805.4	65.17 %
2022-23	WHRB	20,70,653	805.4	70.26 %

GREEN HOUSE GAS EMISSIONS

- CO_2 emission reduction is one of the Objectives in ISO 50001:2018 Energy management System
- Target for year 2025 is of 2% reduction in CO_2 emission over 2021-22.
- Year by year CO_2 emission:

Year	Total kg CO_2 / Ton of fertilizer
2019-20	137.6
2020-21	146.9
2021-22	169.1
2022-23	133.3

- With the implementation of projects like Steam Air Heater & Extraction Turbine, there will be further reduction in CO2 emission by about 63.01 kg per MT of fertilizer.

GHG EMISSION INTENSITIES OF FERTILIZERS

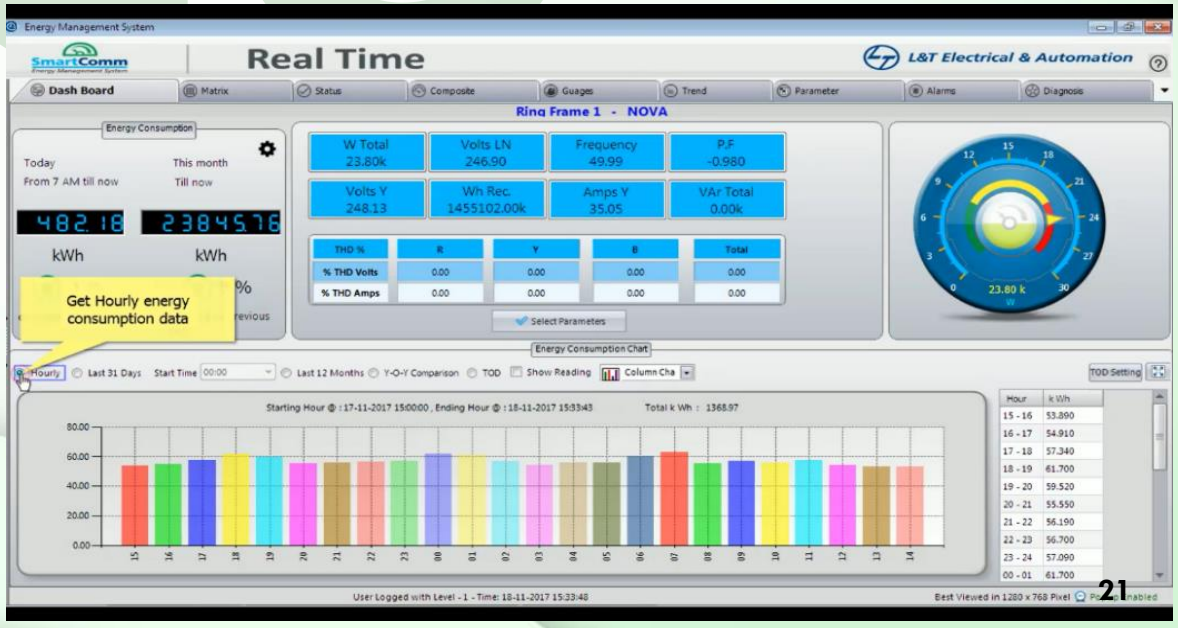
Stages	Urea (MT CO_2e/MT)	DAP (MT CO_2e/MT)	NPK (MT CO_2e/MT)	NP(S) (MT CO_2e/MT)	Nano Urea* (MT CO_2e/ 11.1 L)	Nano DAP* (MT CO_2e/ 10 L)
Raw material extraction and pre-processing	0.15	1.62	0.49	1.43	0.00	0.00
Upstream transportation	0.05	0.24	0.33	0.19	0.00	0.00
Manufacturing process	0.52	0.09	0.05	0.04	0.00	0.00
Packaging	0.01	0.01	0.01	0.01	0.00	0.00
Downstream transportation	0.00	0.03	0.03	0.03	0.00	0.00
Field application	3.10	0.93	0.33	0.36	-	-
Total	**3.83**	**2.91**	**1.24**	**2.06**	**0.00**	**0.00**

Product Carbon footprint of all the products

- To replace 1 MT of Urea (~22.2 bags of 45 kg Urea), around 11.1 L of Nano Urea is required. So, in order to make the comparative analysis, Nano Urea emission intensity is presented in the unit of MT CO_2e/ 11.1 L of Nano Urea in the table.
- To replace 1 MT of DAP (~20 bags of 50 kg DAP), around 10 L of Nano DAP is required. So, in order to make the comparative analysis, Nano Urea DAP intensity is presented in the unit of MT CO_2e/ 10 L of Nano DAP in the table.

ENERGY MONITORING

- There is a separate Budget under the head "Energy Saving Projects" dedicated for energy conservation projects.
- Energy Conservation Cell comprising of plant heads, maintenance section heads, energy manager and headed by HOD (Technical)
- Energy conservation cell overlooks energy performance monitoring, planning & implementation of energy saving measures.
- IFFCO has already installed energy meters in ALL the significant energy uses, which was an objective as per ISO 50001.
- Energy Monitoring software (Smart Comm) has been installed in DAP Plant to help in analyzing energy consumption patterns & optimization of energy consumption.



DAILY ENERGY REPORT

Wholly owned by Cooperatives

Specific Er

FILE | MESSAGE

Ignore | Junk | Delete | Reply | Reply All | Forward | Meeting | IM | More | Move to: ? | Team Email | Reply & Delete | To Manager | Done | Create New | Move | Rules | OneNote | Actions | Mark Unread | Categorize

Delete | Respond | Quick Steps | Move | Tags

Mon 12-09-2022 11:06

process_paradeep

Specific Energy Consumption for 11.09.2022

To KJ PATEL

Cc S D SHARMA; GMs-Paradeep; P K MAHAPATRA; VENKATESWARLU PATTABHI; JYOTI PRAKASH DASH

You forwarded this message on 13-09-2022 10:19.

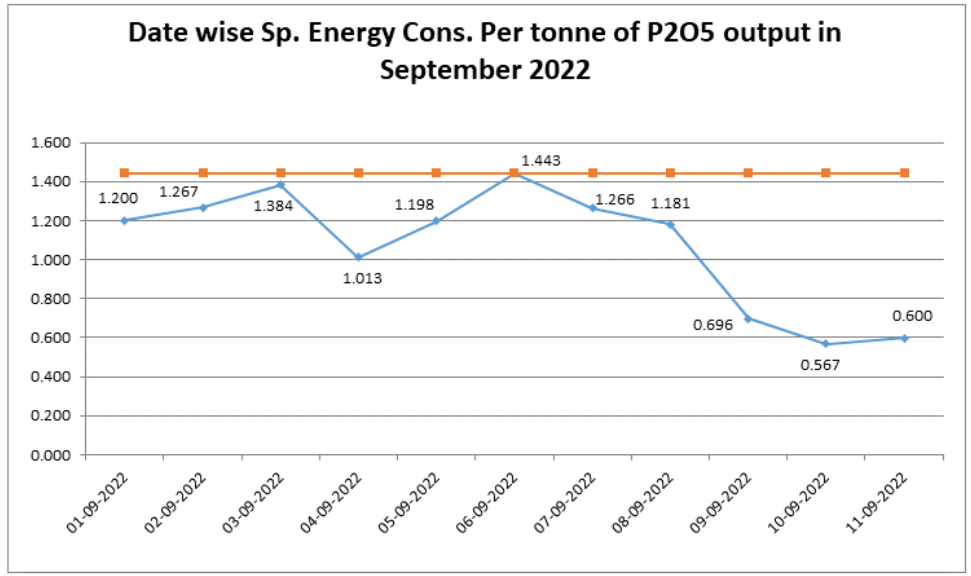
Message | Sp. energy Consumption Report 11.09.2022.pdf (12 KB)

Respected Sir,

Please find enclosed herewith the specific energy consumption report for the day.

Target ORB: 1.445 Gcal / MT P2O5 output

1. Graph for Date wise Sp. Energy Cons



2. Graph for Month wise Sp. Energy Cons.

IFFCO - PARADEEP UNIT

CALCULATION OF SPECIFIC CONSUMPTION OF ENERGY

Run Date : 12/09/2022 10:21:19

For the Period 11/09/22 To 11/09/22

Some of the reference values :

Fuel	For the Period		Upto the Period	
	Density Kg/Litre	KCal/Kg or KWH	Density Kg/Litre	KCal/Kg or KWH
POWER		2860		2860
HSD	.845	11840	.845	11840
FO	.986	10050	.986	10050
COAL (Ind)		3650		3650
COAL (Imp)		5000		5000

	Particulars for Calculations of Specific Consumption of Energy	For the Period	Upto the Period
(A)	Production of DAP	4850	648850
(B)	Production of NP (20:20:00:13)	2250	304350
(C)	Production of NPK-1 (10:26:26)	0	0
(D)	Production of NPK-2 (12:32:16)	0	0
(E)	Production of NP (28:28:00)	0	0
(N)	Nitrogen output in the product	1323	177663
(P)	P2O5 output in the product	2681	359341
(K)	K2O output in the product	0	0
(O)	Total nutrient in the product	4004	537004
(Q)	Grid Power purchased	0	36901.55
(R1)	Coal (Ind) consumed	240	30926.05
(R2)	Coal (Imp) consumed	60	55735.95
(R)	Total Coal consumed	300	86662
(S)	HSD consumed	0	157
(T)	F.O consumed (in KL)	0	0
(T1)	F.O consumed (in MT)	43	4150.487
(I)	Specific consumption of Coal per tonne of steam generated from AFBC Boiler	.248963	.201145
(II)	Specific consumption of Steam per MWH of steam generated from TG	3.538835	3.616369
(III)	Specific consumption of Coal per MWH of Power generated	.881039	.727415
(IV)	Export P2O5	0	0
(V)	Specific Consumption of Captive Power in PAP	.228238	.174725
(VI)	Captive power consumption for Export P2O5	0	0
(VII)	Coal consumed for power for Export P2O5	0	0
(VIII)	Specific consumption of LP Steam in PAP	1.316667	1.776787
(IX)	Consumption of LP Steam for Export P2O5	0	0
(X)	Equivalent HP Steam consumption	0	0
(XI)	Specific consumption of MP Steam in PAP	.109524	.125908
(XII)	Consumption of MP Steam for Export P2O5	0	0
(XIII)	Equivalent HP Steam consumption	0	0
(XIV)	Total HP Steam consumption	0	0
(XV)	Coal consumed for HP Steam consumption	0	0
(XVI)	Specific consumption of Grid Power in PAP	0	.056445
(XVII)	Grid power consumption for Export P2O5	0	0
(XVIII)	Total Export Power	0	0
(XIX)	Coal consumed for Export power	0	0
(XX)	Total quantity of Coal deductable	0	0

	Different values for Specific Consumption of Energy	For the Period	Upto the Period
1.	Total energy consumed in the complex Gcal, E	1608.15	540381.41345
2.	Specific consumption of energy per tonne of complex fertiliser, E / (A+B+C+D+E)	.2265	.566913
3.	Specific consumption of energy per tonne of P2O5 output in fertiliser, E / (P)	.599832	1.503812
4.	Specific consumption of energy per tonne of total nutrient output in fertiliser, E / (O)	.401636	1.006289
5.	Total energy consumed in the complex (without deduction) Gcal, E '	1608.15	540381.41345
6.	Specific consumption of energy per tonne of P2O5 output in fertiliser, E ' / (P)	.599832	1.503812

GREEN RESIDENTIAL TOWNSHIP

- IFFCO Paradeep Township is a Green Residential Society **(Platinum)** certified by Indian Green Building Council (IGBC).
- Under this certification many initiatives for energy & water conservations were undertaken apart from other requirements.
- The Energy conservation initiatives were:
  - 5 star rated appliances in common facilities
  - Efficient lightning fixtures for street lights with astronomical timers.
  - Use of renewable energy.
  - Energy metering for common areas.

Confederation of Indian Industry

Indian Green Building Council

Indian Green Building Council (IGBC)

hereby certifies that

IFFCO Paradeep Township

Surinder Jakhar Nagar

(IGBC Registration No: GRS 17 039)

has successfully achieved the Green Building Standards required for the following level of certification under the IGBC Green Residential Society Rating System

IGBC Green Residential Society Platinum

October 2017

Mala Singh	Syed Mohamed Beary	Dr Prem C Jain	K S Venkatagiri
Co-Chair GRS Rating	Chair GRS Rating	Chairman IGBC	Executive Director CII-Godrej GBC

CERTIFIED for ISO 14001:2015, 45001:2018 & 50001:2018, IFA Protect & Sustain Stewardship

INDIAN FARMERS FERTILISER COOPERATIVE LIMITED

IFFCO
Wholly owned by Cooperatives

VILLAGE: MUSADIA, P.O.: PARADEEP, DIST: JAGATSINGHPUR – 754 142, ODISHA, INDIA.

Bureau Veritas Certification Holding SAS – UK Branch certifies that the Management System of the above Organisation has been audited and found to be in accordance with the requirements of the Management System Standards detailed below.

Standards

ISO 14001:2015 & ISO 45001:2018

Scope of certification

MANUFACTURE OF PHOSPHATIC FERTILISERS LIKE DAP (DI-AMMONIUM PHOSPHATE), NP (AMMONIUM PHOSPHATE SULPHATE) & NPK (NITROGEN PHOSPHATE & POTASH) COMPLEX FERTILISER AND BYPRODUCTS LIKE PHOSPHOGYPSUM & HYDRO FLUROSILISIC ACID INCLUDING THE INTERMEDIATES LIKE SULPHURIC ACID & PHOSPHORIC ACID AND CAPTIVE POWER GENERATION OF 2x55 MW

Original cycle start date for ISO 14001: **15 July 2011**
Original cycle start date for ISO 45001: **15 July 2020**
Recertification cycle start date: **13 July 2023**
Subject to the continued satisfactory operation of the Organisation's Management System, this certificate is valid until: **14 July 2026**
Certificate No. **IND.23.6133/IM/U** Version: **1** Issue date: **13 July 2023**

For certificate authenticity, click here https://certcheck.ukas.com/

ISO 14001	IN044282
ISO 45001	IN044283

Signed on behalf of BVCH SAS UK Branch
Jagdheesh N. MANIAN
Director – CERTIFICATION, South Asia
Commodities, Industry & Facilities Division

UKAS MANAGEMENT SYSTEMS 0008

Certification body address: 5th Floor, 66 Prescot Street, London, E1 8HG, United Kingdom.

Local office: Bureau Veritas (India) Private Limited (Certification Business) 72 Business Park, Marol Industrial Area, MIDC Cross Road "C", Andheri (East), Mumbai – 400 093, India.

Further clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organisation.
To check this certificate validity please call + 91 22 6274 2000.

EMS ISO 14001:2015 & OH&S ISO 45001:2018

INDIAN FARMERS FERTILISER COOPERATIVE LTD.

IFFCO
Wholly owned by Cooperatives
PARADEEP UNIT

IFFCO TOWNSHIP, MUSADIA, PARADEEP, JAGATSINGHPUR, ODISHA – 754 142, ODISHA, INDIA

Bureau Veritas Certification Holding SAS – UK Branch certifies that the Management System of the above organization has been audited and found to be in accordance with the requirements of the Management System standard detailed below.

Standard

ISO 50001:2018

Scope of certification

MANUFACTURE OF PHOSPHATIC FERTILISERS (DAP, NP, NPK) INCLUDING INTERMEDIATES LIKE SULPHURIC ACID, PHOSPHORIC ACID AND CAPTIVE POWER GENERATION.

Original cycle start date: **05 October 2020**
Expiry date of previous cycle: **Not Applicable**
Certification Audit date: **31 August 2020**
Certification cycle start date: **05 October 2020**
Subject to the continued satisfactory operation of the organization's Management System, this certificate expires on: **04 October 2023**
Certificate No. **IND.20.9081/EN/U** Version : **1** Revision date: **05 October 2020**

Signed on behalf of BVCH SAS – UK Branch
Jagdheesh N. MANIAN
Head – CERTIFICATION, South Asia
Commodities, Industry & Facilities Division

UKAS MANAGEMENT SYSTEMS 0008

Certification body address: 5th Floor, 66 Prescot Street, London, E1 8HG, United Kingdom.

Local office: Bureau Veritas (India) Private Limited (Certification Business) 72 Business Park, Marol Industrial Area, MIDC Cross Road "C", Andheri (East), Mumbai – 400 093, India.

Further clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organization.
To check this certificate validity please call +91 22 6274 2000.

ISO EnMS 50001:2018

SGS

Certificate IN22/00000428

This is to certify that

Indian Farmers Fertiliser Cooperative Limited

IFFCO Sadan, C-1, Distt. Centre, Saket Place, New Delhi – 110017, India

meets the minimum requirements as defined under the

IFA Protect & Sustain Product Stewardship Programme

To achieve the level of IFA Product Steward Excellence

Production of Neem Coated Urea Fertilizers/ Production of DAP, NP, NPK, Water Soluble Fertilizers

Detailed information is available on request at the offices of SGS United Kingdom Ltd

This certificate is valid from 01 July 2022 until 01 July 2025
Issue 1. Certified since 01 July 2022

This is a multi-site certification.
Additional site details are listed on the subsequent page.

Authorised by

SGS United Kingdom Ltd Certification and Business Enhancement
Rossmore Business Park Ellesmere Port Cheshire CH65 3EN UK
t +44 (0)151 350-6666 f +44 (0)151 350-6600 www.sgs.com

SGS IFA 01 0118 M2

Page 1 of 2

International Fertilizer Industry Association

protect&sustain

IFA Protect & Sustain Stewardship

ISO 50001 ENERGY OBJECTIVES & TARGETS

IFFCO Wholly owned by Cooperatives PARADEEP UNIT	INDIAN FARMERS FERTILISER COOPERATIVE LTD. PARADEEP		
	Energy Management System	Dept./ Function	MR
Document	**Energy Objectives and Targets**	Issue No & date	02 / 22.10.2019
Doc. No.	EnMS-P-03-F-03	Rev No & date	00 / 22.10.2019

Unit Level Energy Objectives & Targets

Performance Cycle: April 2022 – March 2025

Sr. No.	Objective	Unit	Base line*	Target	Completion date	Remarks
1	1% improvement in energy performance over baseline in next 3 year	Gcal/MT Fertilizer	0.467	0.462	March 2025	
2	3% improvement in energy efficiency of lighting over baseline in next 3 years	Lumens/ watt	84.62	87.15	March 2025	
3	3% increase in waste heat recovery over baseline in next 3 years	%	68.49	70.55	March 2025	
4	2% reduction in emission of greenhouse gases by conservation of fossil fuels over base line in next 3 years	Ton CO_2/MT Fertilizer	0.151	0.148	March 2025	

* Base line is the average value for the years 2019-20, 2020-21 & 2021-22

		Prepared By:	Approved By:
Signature	:		
Designation	:	MR	Unit Head
Date	:	04.04.2022	04.04.2022

ISO 50001 ENERGY MANAGEMENT SYSTEM

- The Unit is certified for ISO 50001:2018 Energy Management System (EnMS) since 2014.

Bureau Veritas Certification

INDIAN FARMERS FERTILISER COOPERATIVE LTD.

IFFCO
Wholly owned by Cooperatives
PARADEEP UNIT

IFFCO TOWNSHIP, MUSADIA, PARADEEP, JAGATSINGHPUR, ODISHA – 754 142, ODISHA, INDIA

Bureau Veritas Certification Holding SAS – UK Branch certifies that the Management System of the above organization has been audited and found to be in accordance with the requirements of the Management System standard detailed below.

Standard

ISO 50001:2018

Scope of certification

MANUFACTURE OF PHOSPHATIC FERTILISERS (DAP, NP, NPK) INCLUDING INTERMEDIATES LIKE SULPHURIC ACID, PHOSPHORIC ACID AND CAPTIVE POWER GENERATION.

Original cycle start date: 05 October 2020
Expiry date of previous cycle: Not Applicable
Certification Audit date: 31 August 2020
Certification cycle start date: 05 October 2020
Subject to the continued satisfactory operation of the organization's Management System, this certificate expires on: 04 October 2023
Certificate No. IND.20.9081/EN/U Version : 1 Revision date: 05 October 2020

Signed on behalf of BVCH SAS – UK Branch
Jagdheesh N. MANIAN
Head – CERTIFICATION, South Asia
Commodities, Industry & Facilities Division

UKAS MANAGEMENT SYSTEMS 0008

Certification body address: 5th Floor, 66 Prescot Street, London, E1 8HG, United Kingdom.
Local office: Bureau Veritas (India) Private Limited (Certification Business) 72 Business Park, Marol Industrial Area, MIDC Cross Road "C", Andheri (East), Mumbai – 400 093, India.

Further clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organization.

ISO EnMS 50001:2018

IFFCO
Wholly owned by Cooperatives

Indian Farmers Fertiliser Cooperative Ltd., Paradeep Unit

ENERGY POLICY

IFFCO PARADEEP unit, having the world's largest phosphoric acid plant and manufacturing phosphatic fertilizers strives to reduce its energy consumption and Improve Energy performance

We are committed to:

- Maintain high standards of energy performance;
- Ensuring availability of information and all necessary resources to achieve objectives and energy targets;
- Complying with energy management related legal obligations and other requirements related to energy efficiency, use and consumption;
- Achieve Continual Improvement in Energy performance in our operations and the EnMS;
- Adopting proven, energy efficient and eco-friendly technologies and promoting renewable energy usage; and
- Gainful recovery of waste heat and low level of energy.

We shall achieve this by:

- Setting Objectives & Energy targets and review them periodically
- Monitor, control, report and carrying out all significant activities to endeavor higher performance;
- Conducting regular energy audit;
- Ensuring Purchase of energy efficient products, services, and design for energy performance improvement;
- Modification in existing process and machine to optimize energy consumption;
- Creating awareness for energy conservation among employees and their families;

This policy will be reviewed periodically during management reviews.

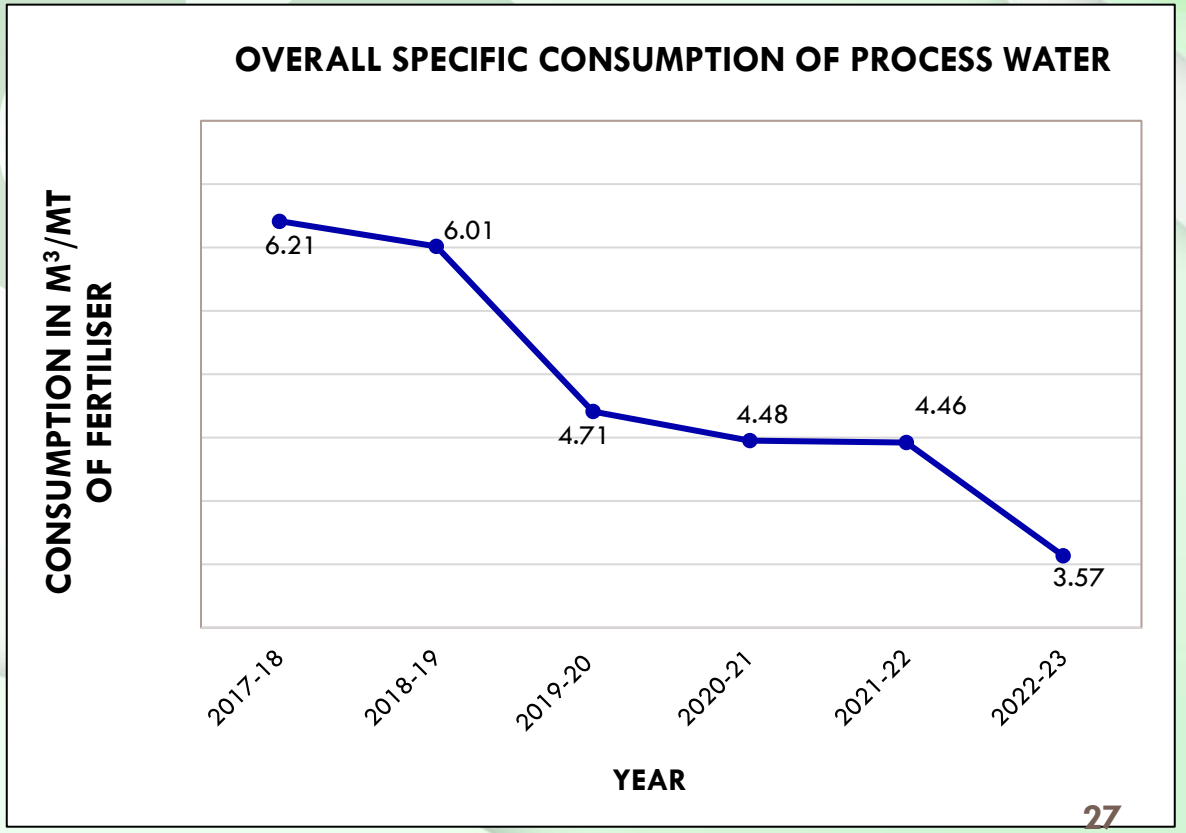
DATE: 1st October, 2019

K. J. Patel
Sr. General Manager

ISO 50001 Energy Policy

WATER CONSERVATION

- Water conservation is a direct form of energy conservation.
- With implementation of several water conservation measures and continuous on-going efforts the water consumption per MT of fertilizer has reduced and has a reducing trend further.
- For 2022-23 the specific consumption of water reduced to 3.57 m^3/ MT of fertiliser equivalent to about 5.2 MGD.
- Water demand has been reduced from 10 MGD to 7 MGD.

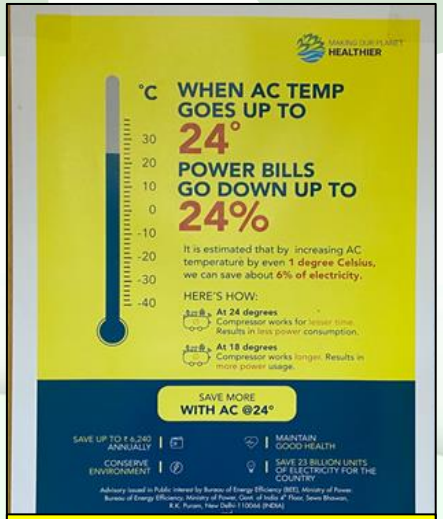


AWARENESS REGARDING ENERGY CONSERVATION

Celebration of Energy week at IFFCO Paradeep Unit

Program on Energy conservation for ladies

Awareness drive for school students



Posters displayed at various places

Energy & water conservation tips Leaflet for township residents

INVOLVEMENT OF EMPLOYEES & EXTENT OF TEAM WORK IN ENCON.

- Plant refresher course is conducted for all engineers, operators and technicians twice in a year.
- Periodic Energy Audits, Continuous Monitoring, Review of Targets & Bench Marks for Energy Consumption done by Top Management.
- Identification of Potential Areas & Equipments For Energy Conservation.
- Looking For Latest Technologies, its Implementation & Up gradation.
- Employees are consistently motivated to give innovative ideas through online suggestion scheme in various fields like energy saving, safety, environment, quality, etc.

Energy saving & Renewable Energy projects for next three years

- Installation of SAP-3 plant with waste heat boiler which will generate about 100 TPH steam and reduce coal consumption. (770 crores.)
- Condensing type Steam Turbo Generator replacement with extraction cum condensing type STG. Commissioned in August 2023.(Rs. 100 Crores)
- Steam Air Heater in DAP Train A & B to replace existing FO based combustion chamber with waste steam based heater. (Rs. 60 Cr.)
- Replacement of old conventional motors with energy efficient motor.

Energy saving & Renewable Energy projects for next three years

- To conduct compressor air audit, water audit & energy audit during financial year 2023-24
- Replacement of existing metal halide fittings (2 X 400 Watt) of high mast towers by 350 Watt LED fittings.
- Dry ice blasting for cleaning the boiler tubes to increase the heat transfer efficiency of waste heat recovery boiler.
- Installation of coal dedusting system to reduce coal losses.

ENERGY SCENARIO

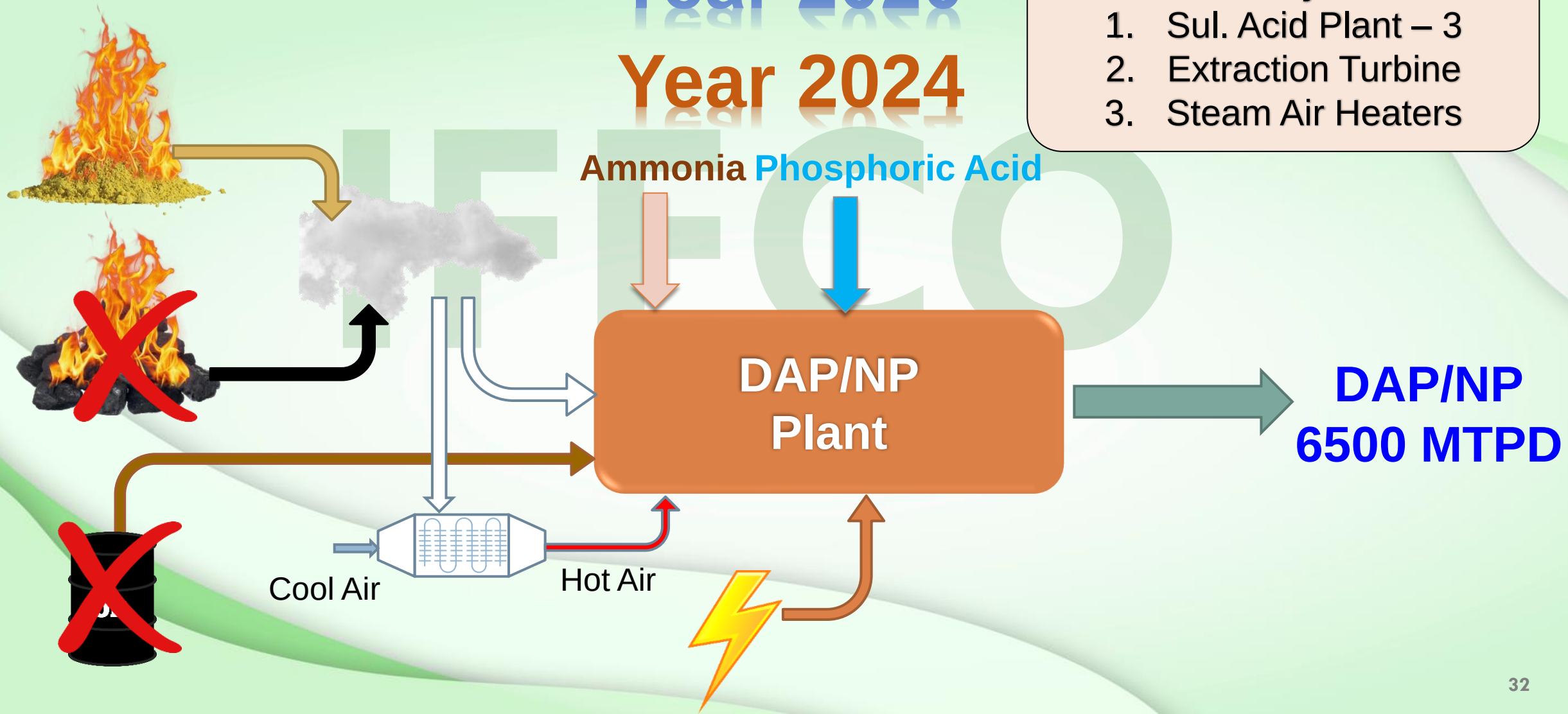
Bulk Fertiliser Plant

Year 2020

Year 2024

New Projects :

1. Sul. Acid Plant – 3
2. Extraction Turbine
3. Steam Air Heaters



EMISSIONS TREND

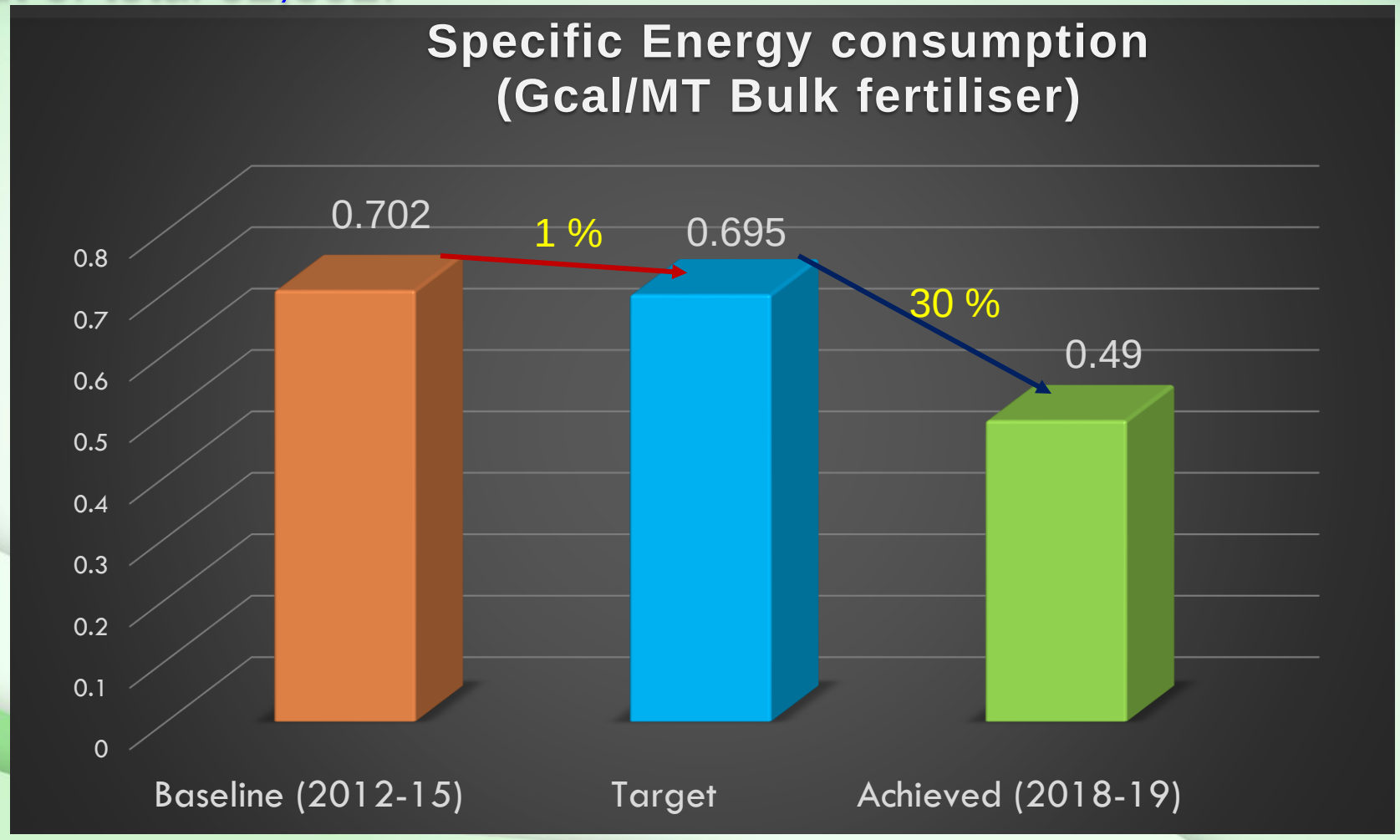
	Year 2016	Year 2020	Year 2024
Energy Sources			
Carbon Sink created			
No. of Plantations	3.6 Lakhs	5.2 Lakhs	6.8 Lakhs
CO_2 absorbed/yr.	9,000 MT/yr.	13,000 MT/yr.	17,000 MT/yr.

A **tree absorbs** approximately 25 kg of CO2 per year.

Net Emissions	Positive 	Positive 	Net Zero 

PAT SCHEME

- IFFCO Paradeep unit has been received 32,532 ESCerts from BEE and emerged as Top Performer in fertilizer sector during PAT cycle II. Till date 18.08.23, 7,606 ESCerts were sold out of total 32,532.



AWARDS & ACCOLADES

- **Bureau of Energy Efficiency, Ministry of Power, Govt. of India, has felicitated IFFCO Paradeep unit as a top performer for its outstanding achievement in Energy performance during PAT Cycle II. The certificate of appreciation was received from Sh. R K Singh, Hon'ble Minister of Power, Government of India during celebration of BEE Foundation Day and Decade of PAT Scheme at Scope Auditorium, CGO Complex, New Delhi on 1st Mar, 2023, in presence of senior government officials from key line Ministries/Departments of Government of India and State Government and various Industries.**

CERTIFICATE OF APPRECIATION

This is to certify that M/s. IFFCO Paradeep, Odisha

has been recognised as a Top Performer Designated Consumer for Fertiliser

Sector of PAT Cycle II under National Mission for Enhanced Energy Efficiency (NMEEE).

This Certificate is presented on 1st March, 2023 by

Hon'ble Cabinet Minister (Power, New and Renewable Energy) Shri R.K. Singh

on the occasion of 21st BEE Foundation Day and celebration of 1st Decade of PAT Scheme.

Mission Director
(NMEEE)

AWARDS & ACCOLADES

FAI Environment Protection Award 2022

FAI Best Production Performance Award 2022

Kalinga Environment Excellence Award 2022

Productivity Excellence Award-2022

Kalinga Safety Excellence Award (Platinum) - 2021

CII EnCon 4.75 Star Certificate 2021

CII Excellent Energy Efficient Unit 2021

National Safety Award

IFFCO

पूर्णतः सहकारी स्वामित्व

Wholly owned by Cooperatives

PARADEEP UNIT

Thank You

Energy Saved is Energy Produced

www.twitter.com/hashtag/iffco

www.facebook.com/IFFCO