23rd National Award for Excellence in Energy Management - 2022

Team Member:
S.K.Janghel (C.M.)
Lav Verma (Sr.Mgr.)
Shankar Singh (Dy.Mgr.)

Presented By:
Indian Farmers Fertiliser Cooperative Ltd.
Phulpur- II Unit
23rd – 25th August, 2022

IFFCO: At a Glance

IFFCO
पूर्णतः सहकारी स्वामित्व
Wholly owned by Cooperatives

IFFCO was established as the farmers' own initiative in Cooperative Sector on 3rd Nov. 1967

- **Largest producer of fertilisers in the country.**
- **Nos. of Plant : Five (Kandla, Kalol, Phulpur, Aonla, Paradeep)**

Installed/Revamped Annual Capacity (Lakh MT)

Urea	: 42.4
NP/NPK/DAP	: 43.3
Total 'N'	: 26.3
Total 'P_2O_5'	: 17.2
WSFs	: 0.15
Zinc Sulphate Monohydrate	: 0.30

IFFCO Phulpur Unit-II : Profile

IFFCO
पूर्णतः सहकारी स्वामित्व
Wholly owned by Cooperatives

Plant	Ammonia	Urea
Process Licenser	Haldor Topsoe, Denmark	Snamprogetti, Italy
Commissioned	December, 1997	
Daily Capacity (MTPD)	1740	3030
Annual Capacity (Lakhs MT)	5.7	10.0
Till Date Production (Lakhs MT)	134	233


Ammonia-II Plant

Urea-II Plant

IFFCO Phulpur Unit-II : Production Outline

IFFCO
पूर्णतः सहकारी स्वामित्व
Wholly owned by Cooperatives

RLNG

GTG-HRSG

Utility Boiler

RLNG

Ammonia Plant

HP Steam

HP Steam

Power

HP Steam

CO2

Ammonia

RAIL

ROAD

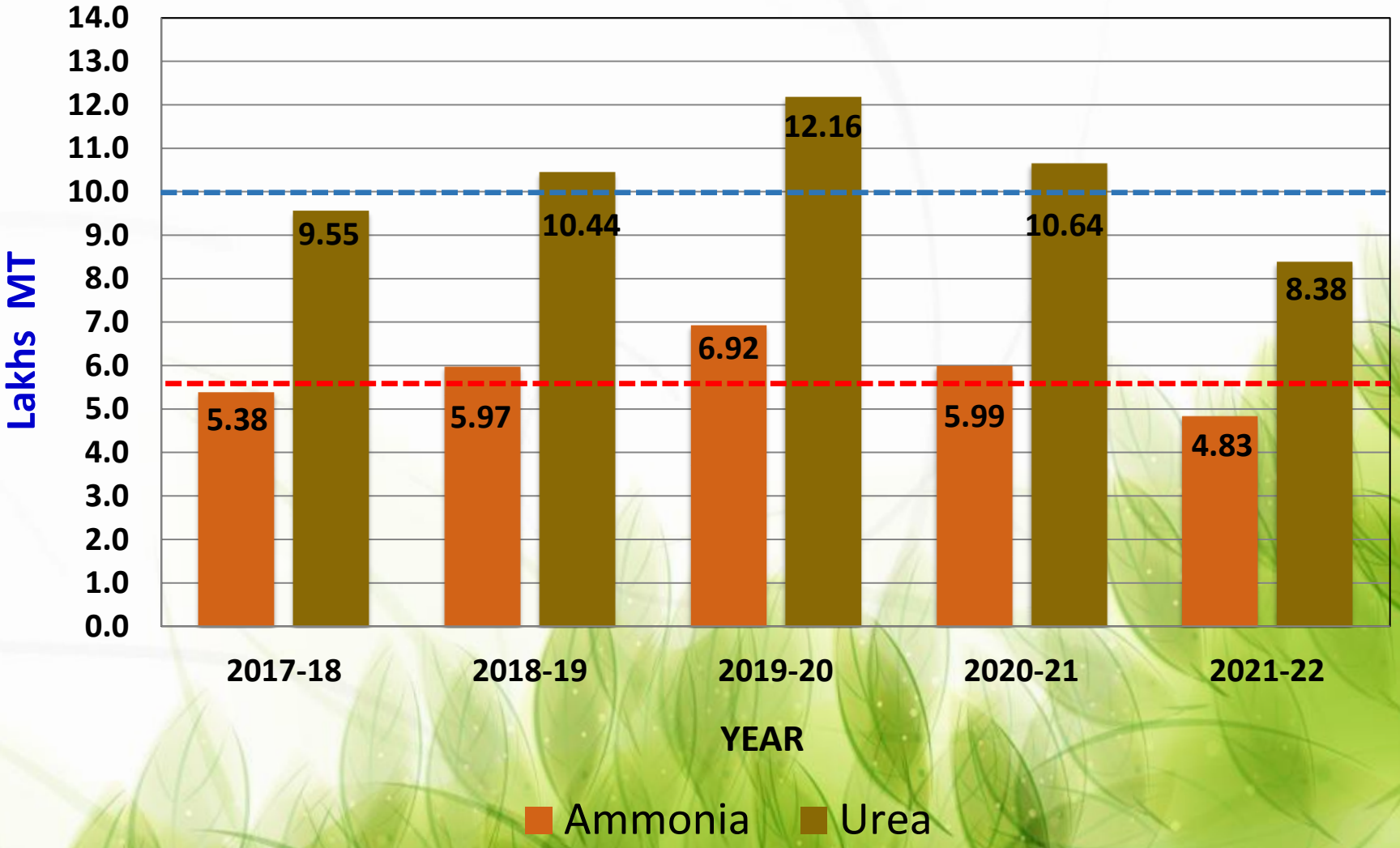
Neem Urea

Bagging Plant

Urea Plant

Phulpur-II: Production Performance

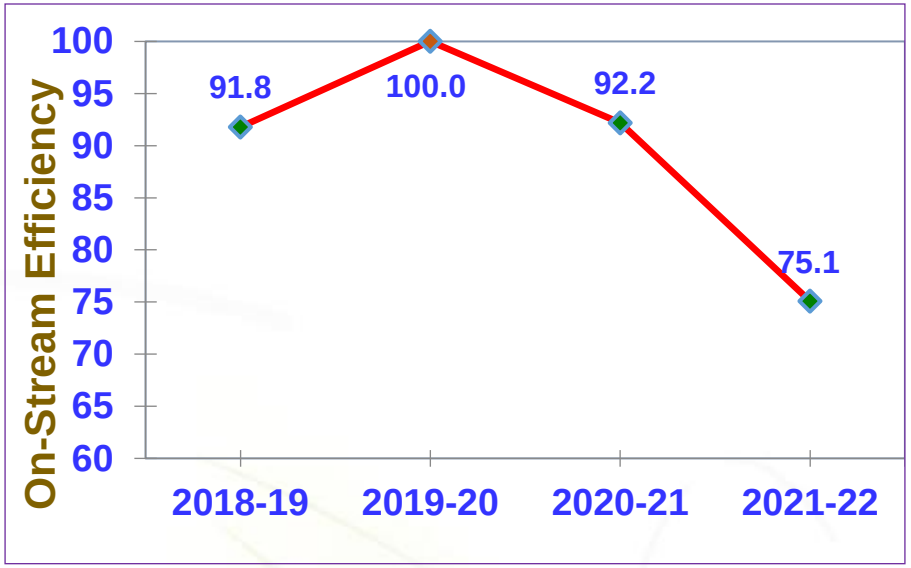
IFFCO
पूर्णतः सहकारी स्वामित्व
Wholly owned by Cooperatives



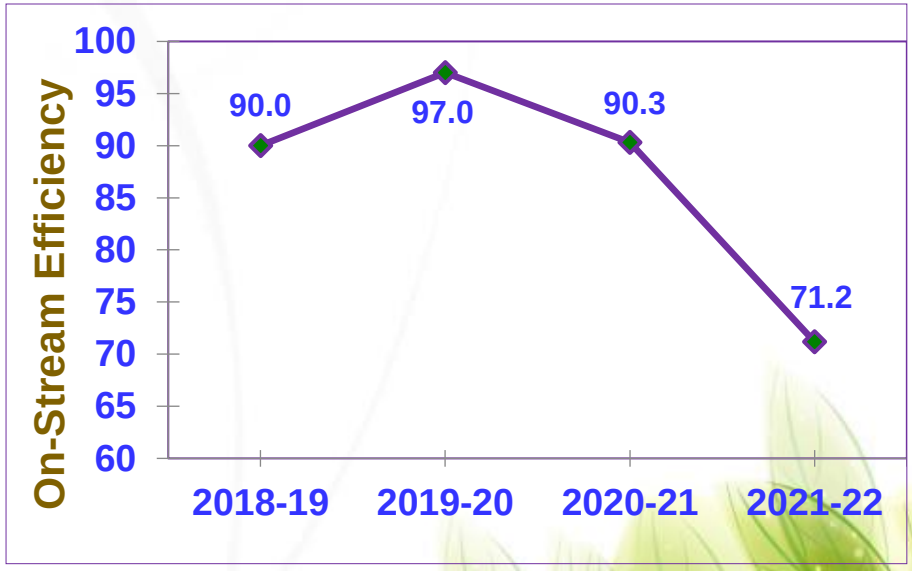
On-Stream Efficiency

IFFCO
पूर्णतः सहकारी स्वामित्व
Wholly owned by Cooperatives

Ammonia Plant On-Stream Efficiency



Urea Plant On-Stream Efficiency



One of the important factor which effects the Productivity / Energy of the fertiliser plant is the Downtime of the plant. On-stream efficiency is less due to extended Annual Turnaround which was taken in April, 2021 on account of COVID 19. Again, Annual Turn-around was taken on the same year to carry out Stripper shortening job because frequent strippers leakage occurred of both unit of Urea-II Plant.

- **Poor Reliability of Plant & Equipment leads to:**

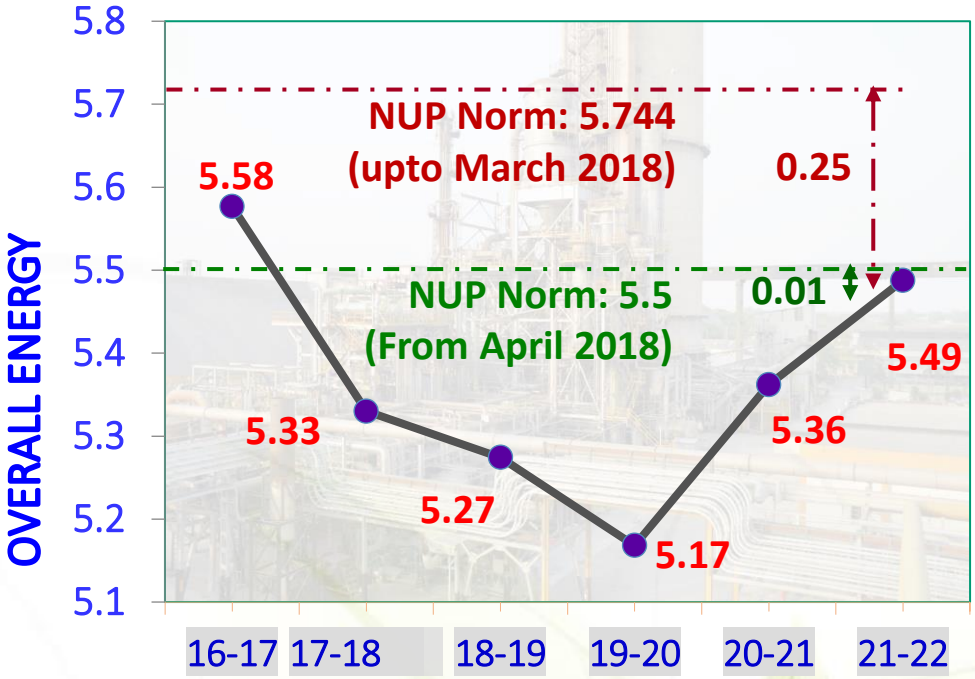
↑ ***Duration of Downtime days*** ↑ ***No. of Downtimes***

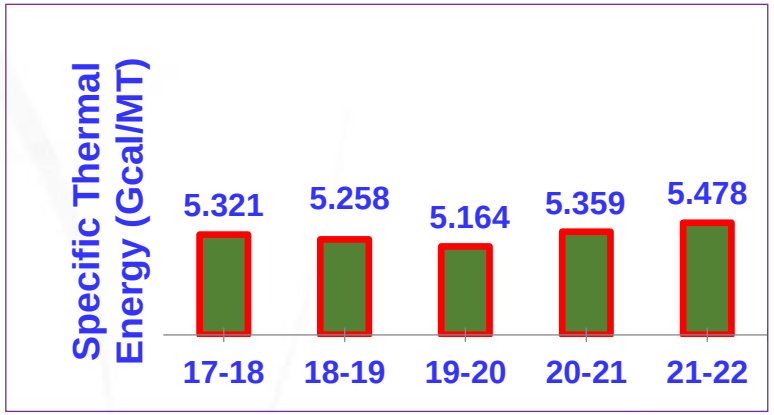
↓ ***Productivity*** ↓***Productivity / Energy Efficiency***

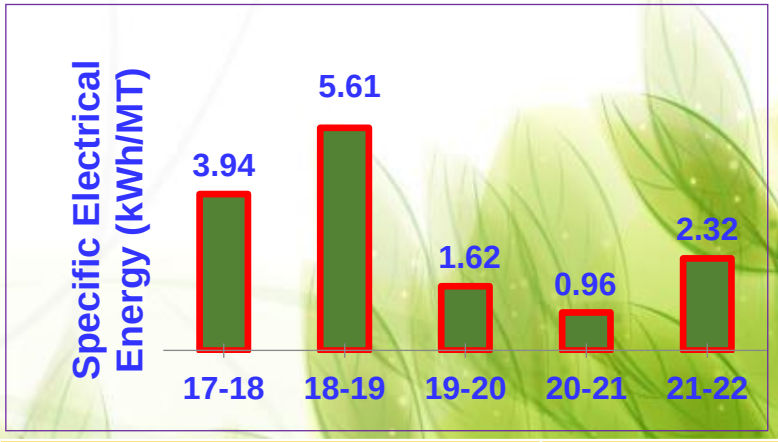
Phulpur-II : Sp. Energy Consumption

IFFCO
पूर्णतः सहकारी स्वामित्व
Wholly owned by Cooperatives

Energy in Gcal/MT of Urea







Energy Conservation Measures Planned in 2022-23	Expected Yearly Energy Saving (Gcal)	Investment (Rs. Lakh)
Replacement of Air Preheater (APH) of existing cast iron integral fin type with plate type APH in Ammonia-II plant.	15700.0	1922.0

Major Energy Conservation Measures in Phulpur-II Unit in the year 2021-22

IFFCO
पूर्णतः सहकारी स्वामित्व
Wholly owned by Cooperatives

Name of Energy saving Projects	Investment (INR Million)	Electrical Savings (kWh)	Thermal Savings (Million Kcal)	Saving (INR Millons)	Pay Back (Month)
Replacement of DM water Pump (P-4511 B) from Back Pressure Turbine Drive with 110 kW Motor drive in Ammonia-II Plant	0.58	0.0	13718.2	62.90	0.1
Replacement of Low Temperature Shift (LTS) Converter Catalyst in Ammonia-II Plant	50.13	0.0	13167.8	58.61	10.3
Replacement of Rotor in Induced Draft (ID) Fan Turbine in Ammonia-II Plant	6.00	0.0	12380.4	33.29	2.2
Replacement of 400 Nos of 2X36 W, 4 feet Tube light Fittings & 17 W per Choke with 2X2 feet, 20 W Surface Mounted LED Fixtures at Central School in Township	0.42	65564.0	0	1.31	3.9
Replacement of 400 Nos of 2X36 W, 4 feet Tube light Fittings & 17 W per Choke with 2X19 W LED Fixtures at Ammonia & Urea MCC Buildings	0.35	135102.0	0	2.70	1.6
Replacement of 200 Nos 250 W SON-T Fittings with 120 W Street Light at Bagging area & Plant Roads in Offsites	0.49	64571.0	0	1.29	4.6
Replacement of 2400 Nos 36 W, 4 Feet Tube Lights with 19 W, 4 feet Tube Lights at Bagging floor & Offsite area	0.55	101326.0	0	2.02	3.3
Replacement of 15 Nos 1000 W Tower Light Fixtures from Towers of Boundary wall with 300 W Flood Light	0.21	26077.0	0	0.52	4.9

Major Energy Conservation Measures in Phulpur-II Unit in the year 2020-21

IFFCO
पूर्णतः सहकारी स्वामित्व
Wholly owned by Cooperatives

Name of Energy saving Projects	Investment (INR Million)	Electrical Savings (Million kWh)	Thermal Savings (Million Kcal)	Saving (INR Millons)	Pay Back (Month)
Installation of Higher capacity Ammonia Condenser (E-3522) in place of existing Ammonia Condenser to reduce the Ammonia content at the outlet from Off Gas Absorber in Ammonia-II Plant	2.0	0.0	119.4	0.32	75
Replacement of 150 Nos of 400 W HPMV / Metal Halide Bay Light Fixtures from Township Street light with 200 Nos. 70 W Crompton make LED Street light fixtures	0.19	111048.0	0.0	1.91	1.2
Replacement of 30 Nos of 400 W HPMV / Metal Halide Bay Light Fixtures from Utsav Griha and A type quarters in Township with 250 W Crompton make LED Flood light fixtures	0.15	10863.0	0.0	0.19	9.5
Replacement of 100 Nos 150 W old High Pressure Sodium Fixure from Township with 70 W Crompton make LED Street light fixtures	0.18	19313.0	0.0	0.33	6.5
Replacement of 10 Nos 80 W Fluorescent tube Lamp from Administration Building with 40 W Recess / Suspended LED Fitting	0.013	1053.0	0.0	0.018	8.7
Replacement of 47 Nos 80 W Fluorescent tube Lamp from Central Canteen Building with 40 W Philips make Recess Mounting LED Luminaire	0.06	9902	0.0	0.17	4.2

Major Energy Conservation Measures in Phulpur-II Unit in the year 2019-20

IFFCO
पूर्णतः सहकारी स्वामित्व
Wholly owned by Cooperatives

Name of Energy saving Projects	Investment (INR Million)	Electrical Savings (kWh)	Thermal Savings (Million Kcal)	Saving (INR Millons)	Pay Back (Month)
Optimum Load Operation, Maximization of on-stream days & optimization of Process Parameters	0.00	0	118881.7	325.72	0.0
Revamping of Power Plant Cooling Tower-II in Phulpur-II Plant	16.60	0	2875	7.75	25.5
Online replacement of drift eliminator in Ammonia-II Cooling tower	5.95	222501	0	2.22	32.2
Replacement of 385 Nos of 80 Watt HPMV Well Glass Fixtures with 45 Watt LED Well Glass Fixtures in Urea-I, Ammonia-I Cooling Tower, Offsite-I Plant in Phulpur-I Unit	0.93	73237	0	1.07	10.2
Replacement of 150 Nos of 125 Watt HPMV Well Glass Fixtures with 45 Watt LED Well Glass Fixtures in Ammonia-II Cooling Tower	0.58	105408	0	1.54	4.5
Replacement of 550 Nos of 80 Watt HPMV Well Glass Fixtures with 45 Watt LED Well Glass Fixtures in Ammonia-II (33 and 35 area) and Urea-II Plant.	1.33	104625	0	1.53	10.4
Replacement of 30 Nos of 400 Watt HPMV Bay Light Fixtures with 120 Watt LED Bay Light Fixtures at below the Ammonia-II Compressor House	0.12	73786	0	1.08	1.3
Replacement of 110 Nos. of 72 Watt Recess Mounting Luminaire Fluorescent lamp with 38 Watt 90 Nos. Recess Mounting Luminaire LED Lamp at Power Plant Control room in Phulpur-II Plant	0.11	24458	0	0.36	3.7
Replacement of 120 Nos. of 22 Watt Recess Mounting Luminaire of compact Fluorescent lamp with 38 Watt 60 Nos. Recess Mounting Luminaire LED Lamp at Purchase Section of Phulpur-II Plant	0.08	1957	0	0.03	32.0
Replacement of 385 Nos of 35L Storage Type Old Geysers with 35L Storage Type 5 Star Geysers in Ghiyanagar Township	0.85	24322	0	0.36	28.3

1. Replacement of DM water Pump (P-4511 B) from Back Pressure Turbine Drive with 110 kW Motor drive in Ammonia-II Plant:

IFFCO
पूर्णतः सहकारी स्वामित्व
Wholly owned by Cooperatives

- DM water pumps (P-4511 A & P-4511 B) provided to pump DM water to Deaerator after getting preheated in DM water pre-heater.
- P-4511 A is a Motor drive and P-4511 B is back pressure Turbine Drive Pumps.
- But the Turbine drive pump (P-4511 B) was very old and inefficient. Steam consumption by the Turbine was on higher side and frequent steam leaking was there.
- To reduce the energy consumption old back pressure Turbine is replaced with Motor drive during the Annual Turn around in March & April, 2021.
- Annual thermal saving of the scheme is 13718.2 Gcal. The investment for the scheme to be around 5.8 Lakhs.

2. Replacement of Low Temperature Shift (LTS) Converter Catalyst in Ammonia-II Plant:

IFFCO
पूर्णतः सहकारी स्वामित्व
Wholly owned by Cooperatives

- The LTS converter is a two bed catalytic Reactor loaded with a copper based catalyst. The purpose LTS Converter is to convert Carbon monoxide (CO) in the reformed gas to carbon dioxide in presence of steam and to gain one mole of hydrogen for every mole of CO converted.
- The differential pressure was increased to 0.8 Kg/cm2 against PFD value of 0.3 Kg/cm2 and CO slip increased to 0.26 % (mole) resulting plant load limitation.
- After replacing the catalyst, the differential pressure came down to design figure and the CO slip reduced to 0.11% (mole). Thereby gaining of hydrogen production resulting increase of ammonia production.
- Annual thermal saving of the scheme is 13167.8 Gcal. The investment for the scheme to be around 501.3 Lakhs

3. Replacement of Rotor in Induced Draft (ID) Fan Turbine in Ammonia-II Plant:

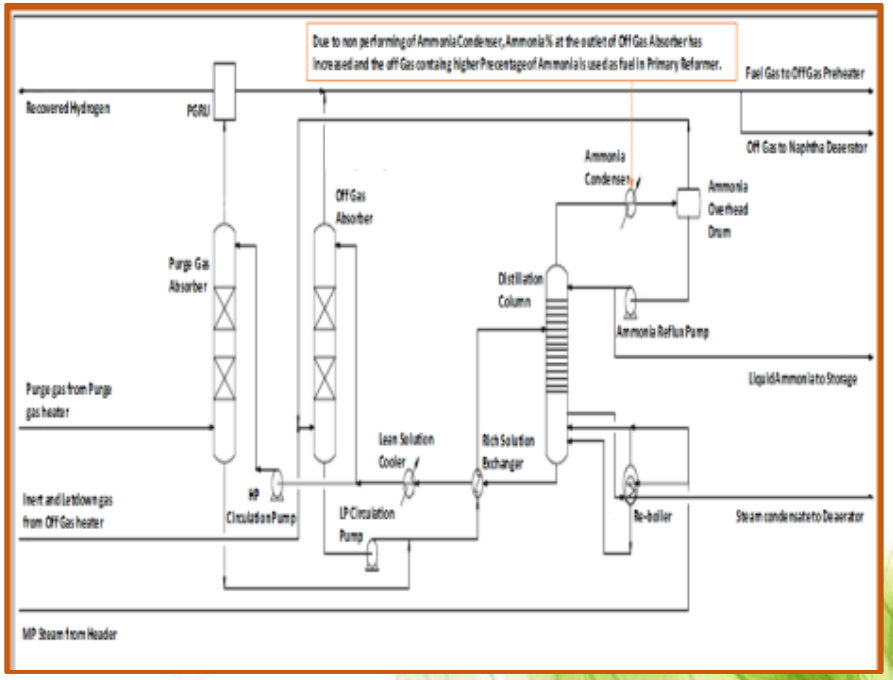
IFFCO
पूर्णतः सहकारी स्वामित्व
Wholly owned by Cooperatives

- The ID Fan is used to maintain draft in Primary Reformer by drawing flue gases through the convection section and discharging to CDR Plant / atmosphere.
- The Fan is normally driven by back pressure Steam turbine. The Steam Turbine is driven by MP Steam at 39 kg/cm2g and 394 deg C. During normal operation load limitation observed in ID Fan and MP steam consumption was high.
- During annual shutdown it has been noticed that turbine rotor blades got damaged. The old rotor has been replaced with spare rotor.
- After replacement, MP steam consumption in ID fan Turbine is reduced.
- Annual thermal saving of the scheme is 12380.4 Gcal. The investment for the scheme to be around 60 Lakhs.

4. Installation of Higher capacity Ammonia Condenser (E-3522) in place of existing Ammonia Condenser to reduce the Ammonia content at the outlet from Off Gas Absorber:

IFFCO
पूर्णतः सहकारी स्वामित्व
Wholly owned by Cooperatives

- Earlier, the existing Ammonia Condenser at the upstream of Ammonia OH Drum was not performing. The design heat duty of the exchanger was 0.25 Gcal/Hr corresponding to 25 m3/hr of CW flow.
- But, due to increased plant load after CEP & ESP-III, the heat load of the Condenser increased to more than 1.2 Gcal/Hr which corresponds to 120 m3/hr of CW.
- Earlier, it was tried to increase the CW flow by increasing CW supply line from 3" to 4" but performance of Condenser was not satisfactory.
- The ammonia percentage in the off-gases to the primary reformer burners was around 2.0 %.
- By replacing the condenser with higher capacity, the NH3 % is reduced in off gas and saving of ammonia in off gas which has been used as fuel in Primary Reformer.
- Yearly saving achieved from this scheme is 119.4 Gcal with investment cost of 20 Lakhs and saving of 3.2 lakhs as the on-stream days after implementing the scheme is around 2.5 months.



5. Innovative way for on-line replacement of drift eliminator in Ammonia-II Cooling tower in Phulpur-II Plant:

- In every cooling tower, drift is the undesirable loss of liquid water to the environment via small droplets that become entrained in the leaving air stream.
- The drift loss through the cooling Tower was on higher side resulting the water droplets carry with them chemicals and minerals which impacting the surrounding environment.
- Thus, the old and inefficient drift eliminator replaced with latest designed efficient drift eliminators.
- The Project was implemented successfully in running plant without tripping of Ammonia –II Plant.
- Thereby reducing the drift losses in cooling tower and power consumption in motor of Bore-well Pumps.
- The chemicals Consumption and make up water is reduced.
- The yearly Power saving was 222501 kWh and in terms of Rs. 22.2 Lakhs.

6. In-house modification of LTS out Separator Condensate Pump drive changed from Back Pressure Turbine to old spare Motor in Ammonia-II Plant:

IFFCO
पूर्णतः सहकारी स्वामित्व
Wholly owned by Cooperatives

- Previously LTS outlet separator condensate Pump was driven by back pressure Turbine.
- But the Turbine was very old and inefficient. Steam consumption by the Turbine was on higher side.
- There was frequent steam leakage from the Steam inlet valve & Gland etc.
- To reduce the energy consumption old back pressure Turbine was changed to old spare Motor drive during last Annual Turn-around of Phulpur-II.
- In this in-house Modification no investment was required because the Motor was old and kept as spare.
- Yearly energy saving was 5048.2 Gcal. The cost saving is 175 Lakhs.

Motor Driven LTS out separator condensate Pump (MP-3323B)

7. In-house modification of Bulk Absorber Inlet Separator condensate Pump drive changed from Back Pressure Turbine to old spare Motor in Ammonia-II Plant:

IFFCO
पूर्णतः सहकारी स्वामित्व
Wholly owned by Cooperatives

- Previously Bulk Absorber inlet separator condensate Pump was driven by back pressure Turbine.
- But the Turbine was very old and inefficient. Steam consumption by the Turbine was on higher side.
- There was frequent steam leakage from the Steam inlet valve & Gland etc..
- To reduce the energy consumption old back pressure Turbine was changed to old spare Motor drive during last Annual Turn-around of Phulpur-II.
- In this in-house Modification no investment was required because the Motor was old and kept as spare.
- The yearly energy saving was 9129.8 Gcal. The cost saving is 316 Lakhs.

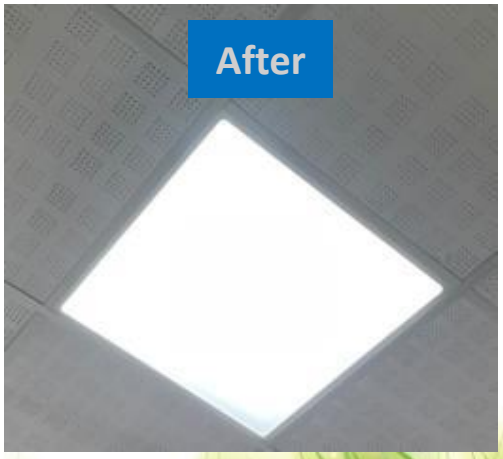
Motor Driven Bulk Absorber Inlet Separator condensate Pump (MP-3323B)

Electrical Energy saving during 2021-22

IFFCO
पूर्णतः सहकारी स्वामित्व
Wholly owned by Cooperatives

1. Replacement of 400 Nos of 2X36 W, 4 feet Tube light Fittings & 17 W per Choke with 2X2 feet, 20 W Surface Mounted LED Fixtures at Central School in Township

To reduce the energy consumption, 400 Nos. of 2X36 W, 4 feet Tube light Fittings & 17 W per Choke replaced with 2X2 feet, 20 W Surface Mounted LED Fixtures at Central School in Township. Annual saving comes 65564 kWh.



2. Replacement of 400 Nos of 2X36 W, 4 feet Tube light Fittings & 17 W per Choke with 2X19 W LED Fixtures at Ammonia & Urea MCC Building:

To reduce the energy consumption, 400 Nos. of 2X36 W, 4 feet Tube light Fittings & 17 W per Choke replaced with 2X19 W LED Fixtures at Ammonia & Urea MCC Buildings. Annual saving comes 135102 kWh.

Electrical Energy saving during 2021-22

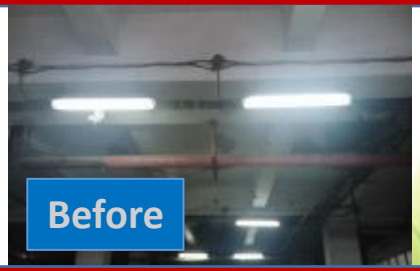
IFFCO
पूर्णतः सहकारी स्वामित्व
Wholly owned by Cooperatives

3. Replacement of 200 Nos 250 W SON-T Fittings with 120 W Street Light at Bagging area & Plant Roads in Offsites:

To reduce the energy consumption, 200 Nos 250 W SON-T Fittings replaced with 120 W Street Light at Bagging area & Plant Roads in Offsites. Annual saving comes 64571 kWh.

4. Replacement of 2400 Nos 36 W, 4 Feet Tube Lights with 19 W, 4 feet Tube Lights at Bagging floor & Offsites:

To reduce the energy consumption, 2400 Nos 36 W, 4 Feet Tube Lights replaced with 19 W, 4 feet Tube Lights at Bagging floor & Offsites. Annual saving comes 101326 kWh.



5. Replacement of 15 Nos 1000 W Tower Light Fixtures from Towers of Boundary wall with 300 W Flood Light:

To reduce the energy consumption, 15 Nos 1000 W Tower Light Fixtures from Towers of Boundary wall replaced with 300 W Flood Light. Annual saving comes 26077 kWh.

UTILISATIONS OF RENEWABLE ENERGY RESOURCES

IFFCO
पूर्णतः सहकारी स्वामित्व
Wholly owned by Cooperatives


Raw water Pump House


Bagging Top Floor


Roof of Central Canteen


Roof of Control Room


Solar Unit at Plant

Solar Power Pack:

- 800 KWp Solar power pack installed in plants and is connected to the LT Grid.
- The Solar Power Units are in continuous operation generating Electric Power there by reduction of CO2 emission.
- Solar light installed at different locations inside the plant and as well as also township.

Year	Technology (Electrical)	Type of Energy	Onsite / Offsite	Installed Capacity (MW)	Generation (Million kWh)
FY-2019-20	Solar PV System	Electrical	Onsite	0.8	0.967
FY-2020-21	Solar PV System	Electrical	Onsite	0.8	1.014
FY-2021-22	Solar PV System	Electrical	Onsite	0.8	0.971

Solar Water Heaters

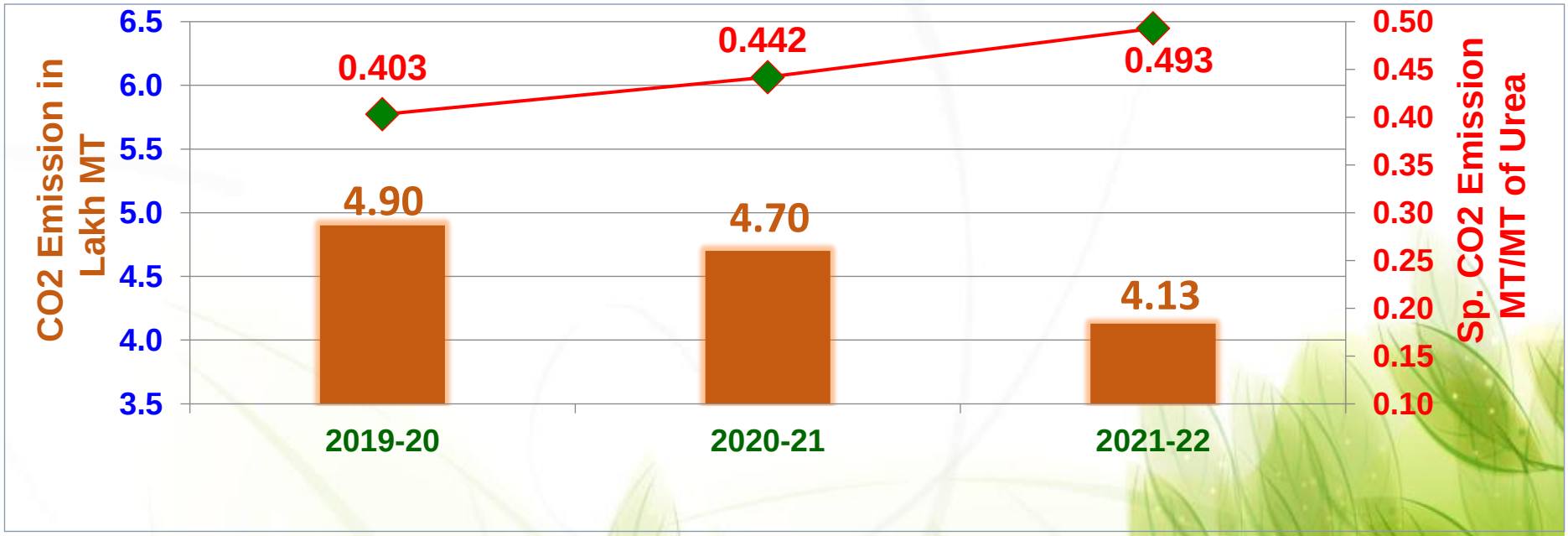
6 Nos. of Solar Water Heater installed in Guest House.

Bio-Methanation Plant

Carbon Foot Print

IFFCO
पूर्णतः सहकारी स्वामित्व
tives

Our endeavours for every year is to reduce specific energy consumption, which will also result in lesser CO2 emissions. We have also installed solar power plants which also reduce CO2 emission.



- **Phulpur-II Unit has already installed a Carbon Di Oxide Recovery (CDR) Plant of 450 MTPD capacity in the year 2006-07, to recover CO2 from flue gases of Ammonia-II Plant primary reformer furnace.**
- **We have also installed solar power plants at different locations inside the Plants such as at the roof of Bagging Plant, Raw water storage tank, roof of central canteen and roof of plant control rooms to reduce CO2 emission.**

WASTE MANAGEMENT AND WASTE UTILISATION

IFFCO
पूर्णतः सहकारी स्वामित्व
Wholly owned by Cooperatives

YEAR	TYPE OF WASTE	QUANTITY OF WASTE GENERATED (KL)	DISPOSAL METHOD	TYPE OF WASTE	QUANTITY OF WASTE GENERATED (MT)	DISPOSAL METHOD
FY- 2019-20	LUBE OIL & TRANSFORMER OIL	47.25	Sent to Authorise Vendor	SPENT CATALYST	56.67	Sent to Authorise Vendor
FY- 2020-21	LUBE OIL & TRANSFORMER OIL	52.50	Sent to Authorise Vendor	SPENT CATALYST	NIL	Sent to Authorise Vendor
FY- 2021-22	LUBE OIL & TRANSFORMER OIL	52.50	Sent to Authorise Vendor	SPENT CATALYST	50.92	Sent to Authorise Vendor

YEAR	NAME OF FUEL	QUANTITY OF WASTE FUEL USED (MT/YEAR)	HEATING VALUE MILLION KCAL/YEAR
FY- 2019-20	TAIL GAS AND FLASH GAS	59441.328	227481
FY- 2020-21	TAIL GAS AND FLASH GAS	54648.262	209138
FY- 2021-22	TAIL GAS AND FLASH GAS	44505.206	170321

Environment & Sustainability

IFFCO
पूर्णतः सहकारी स्वामित्व
Wholly owned by Cooperatives

Liquid Effluent Treatment

Rejection water of Reverse Osmosis Plant used in Coal yard in Phulpur Unit:

We are using cooling tower blowdown for RO Feed. The recovered RO product is being used in softening plant as make-up water and the reject water is being used in coal yard to supress the coal dust. The Plant Capacity is 3000 M3 /day (Recovery 85 %).

Sewage Treatment cum Recycle Plant:

The sewage generated in Plant Township is treated in Sewage Treatment Plant and is being used for irrigation purpose at Farm Land. The Plant Capacity is 125 M3 / hr.

Waste Disposal:

Bio degradable wastes from kitchen and horticulture are converted into very good manure by vermi composting System. The manure is used in horticulture, green belt area & 150 Acres farm land at Cordet

Rain water Harvesting System:

Total 5 Nos. Rain Water Harvesting systems are installed in township. IFFCO is also planning to install more Rain water harvesting systems at different locations.

Installation of Online Environment Monitoring System

IFFCO
पूर्णतः सहकारी स्वामित्व
Wholly owned by Cooperatives

Liquid Effluent Monitoring:

IFFCO Phulpur Unit continuously monitored the pH, Ammonical Nitrogen at guard pond area and Flow in pipe line of liquid effluent generated in the complex. After treatment, the liquid effluent reused effluent in horticulture & irrigation of farmland within IFFCO's premises.

Flow Instrument & local display

Local display for pH & TAN

Installation of Ammonia Sensor at strategic locations of Plants:

To monitor ammonia leakage, ammonia sensor is installed at strategic locations of Ammonia-II, Urea-II and Ammonia Storage Tank area of IFFCO Phulpur Unit. In case of any leakages in the plants, the Panel operator shall identify the location of Ammonia Leakage and take action accordingly to arrest the leakage. Water curtain has been provided at the periphery of the control room as well as ammonia feed pumps for safety of the Plant personnel.

Procurement Process

IFFCO
पूर्णतः सहकारी स्वामित्व
Wholly owned by Cooperatives

IFFCO Phulpur has taken care of Energy optimization right from Procurement process among Vendors / Suppliers / Contractors

- The Evaluation of a Bid is done on the basis of Operating Cost
- Loading is being done to take care of the Performance and Productivity of equipment offered.
- In case the consumption of utilities is different for different Bidders. Extra operating cost over the minimum one shall be calculated as below for loading.

Operating cost = Difference in utilities consumption x Unit cost of Utility x 8760 x 0.9 x 5.5860 x N

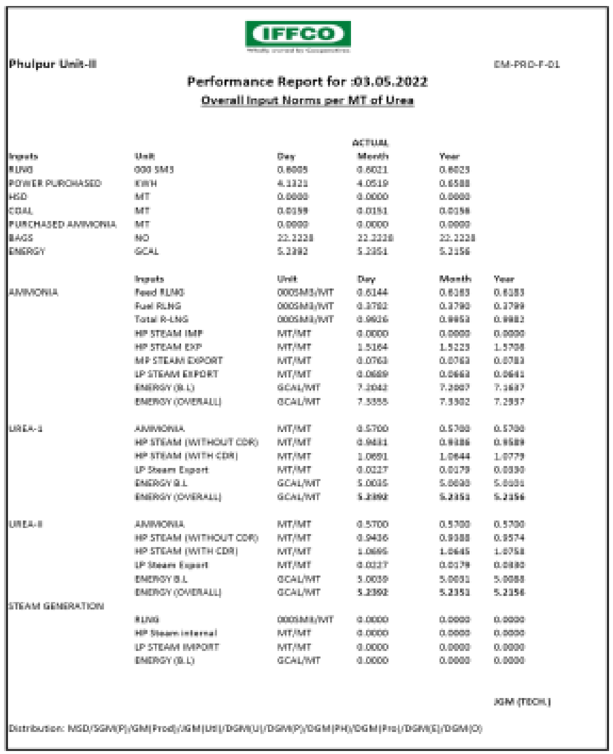
Where:

- 8760 is number of available hours in a year
- 0.9 is availability factor
- 5.5860 is discount factor at an interest rate of 10% per annum for
- one year erection/commissioning and ten years operational period.
- N is the number of operating equipment items.

Teamwork, Employee Involvement & Monitoring

IFFCO
पूर्णतः सहकारी स्वामित्व
Wholly owned by Cooperatives

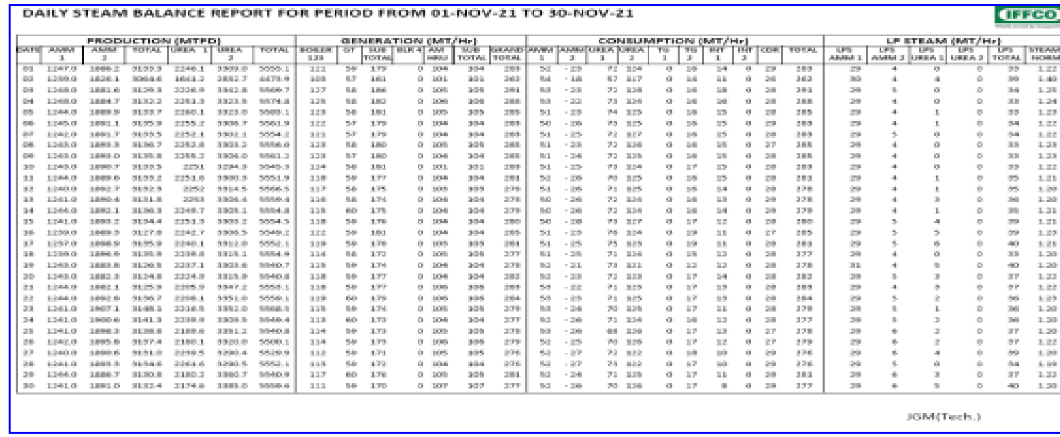
- Energy is monitored daily in presence of Unit Head, to facilitate this various reports are prepared and corrective actions are taken immediately to rectify the problem area.
- Various types of Reports are generated on daily/weekly/monthly/ quarterly and yearly basis for Reporting & Monitoring the Energy Consumption:



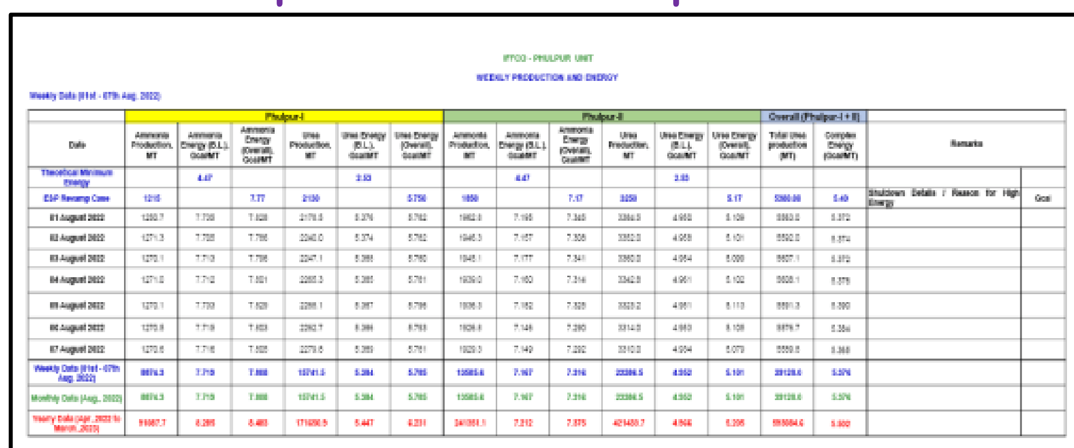
Sample Performance Reports

Employee Engagement:

- IFFCO Phulpur Unit encourages its employees through Suggestion Scheme to give ideas of energy conservation.
- In our Unit, the have a suggestion scheme for all Employees. All Employees (Workman & Supervisor Level) participated the Suggestion Scheme Awards.



Sample Steam Balance Reports



Sample Weekly Energy Reports

INTERNATIONAL CERTIFICATIONS

IFFCO
पूर्णतः सहकारी स्वामित्व
Wholly owned by Cooperatives

bsi.

Certificate of Registration

ENERGY MANAGEMENT SYSTEM - ISO 50001:2018

This is to certify that: Indian Farmers Fertilizers Co-Operative Ltd. Phulpur Unit: Ghiya Nagar Allahabad 212 404 Uttar Pradesh India

Holds Certificate No: EnMS 567240

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

The Manufacture of Urea and Ammonia, Generation of Compressed Air, Generation of Steam through Coal Fired, Natural Gas Boilers and HRSG, Generation of Power through Steam Turbine and Gas Turbine.

For and on behalf of BSI: Chris Cheung, Head of Compliance & Risk - Asia Pacific

Original Registration Date: 2010-10-25 Effective Date: 2020-12-18
Latest Revision Date: 2020-12-18 Expiry Date: 2023-12-17

Page: 1 of 1

...making excellence a habit.

bsi.

Certificate of Registration

ENVIRONMENTAL MANAGEMENT SYSTEM - ISO 14001:2015

This is to certify that: Indian Farmers Fertilizers Co-Operative Ltd. Phulpur Unit: Ghiya Nagar Allahabad 212 404 Uttar Pradesh India

Holds Certificate No: EMS 534419

and operates an Environmental Management System which complies with the requirements of ISO 14001:2015 for the following scope:

The Manufacture of Fertiliser Grade Urea (excluding activities at Moti Lal Nehru Farmers Training Institute, Ghiyanagar Residential Township and Township Hospital.

For and on behalf of BSI: Chris Cheung, Head of Compliance & Risk - Asia Pacific

Original Registration Date: 2008-07-15 Effective Date: 2020-05-16
Latest Revision Date: 2020-12-14 Expiry Date: 2023-05-15

Page: 1 of 1

...making excellence a habit.

SGS

Indian Farmers Fertiliser Cooperative Limited

IFFCO Sadan, C-1 District Centre, Saket, New Delhi, 110017, India

IFA Protect & Sustain Product Stewardship Programme

To achieve the level of IFA Product Steward Excellence

Production of Urea, Neem Coated Urea Fertilisers/ Production of DAP, NPK Fertilisers

This certificate is valid from 11 December 2018 until 11 December 2021
Issue 1: Certified since 11 December 2018

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

protect&sustain

SGS SGS SGS

bsi.

Certificate of Registration

QUALITY MANAGEMENT SYSTEM - ISO 9001:2015

This is to certify that: Indian Farmers Fertilizers Co-Operative Ltd. Phulpur Unit: Ghiya Nagar Allahabad 212 404 Uttar Pradesh India

Holds Certificate No: FM 534418

and operates a Quality Management System which complies with the requirements of ISO 9001:2015 for the following scope:

The Manufacture and Supply of Fertiliser Grade Urea.

For and on behalf of BSI: Chris Cheung, Head of Compliance & Risk - Asia Pacific

Original Registration Date: 2008-07-15 Effective Date: 2020-05-16
Latest Revision Date: 2020-12-14 Expiry Date: 2023-05-15

Page: 1 of 1

...making excellence a habit.

bsi.

Certificate of Registration

OCCUPATIONAL HEALTH & SAFETY MANAGEMENT SYSTEM - ISO 45001:2018

This is to certify that: Indian Farmers Fertilizers Co-Operative Ltd. Phulpur Unit: Ghiya Nagar Allahabad 212 404 Uttar Pradesh India

Holds Certificate No: OHS 582315

and operates an Occupational Health and Safety Management System which complies with the requirements of ISO 45001:2018 for the following scope:

The Manufacture of Urea.

For and on behalf of BSI: Chris Cheung, Head of Compliance & Risk - Asia Pacific

Original Registration Date: 2017-12-22 Effective Date: 2020-12-22
Latest Revision Date: 2020-12-14 Expiry Date: 2023-12-21

Page: 1 of 1

...making excellence a habit.

SGS

Indian Farmers Fertiliser Cooperative Limited

IFA Protect & Sustain Product Stewardship Programme

To achieve the level of IFA Product Steward Excellence

protect&sustain

Site 1: Indian Farmers Fertiliser Cooperative Limited, Phulpur, P.O. Ghiyanagar, Prayagraj, Pin -212404 (Uttar Pradesh), India. Production of Urea/ Neem Coated Urea Fertilisers

Site 2: Indian Farmers Fertiliser Cooperative Limited, Aonla, Paul Pothen Nagar, P.O. IFFCO Township, Bareilly, Pin -243403, (Uttar Pradesh), India. Production of Urea/ Neem Coated Urea Fertilisers

Site 3: Indian Farmers Fertiliser Cooperative Limited, Kalol, Kasbol Nagar, Gandhi Nagar, Pin -382423 (Gujarat), India. Production of Urea/ Neem Coated Urea Fertilisers

Site 4: Indian Farmers Fertiliser Cooperative Limited, Kandla, Post Box No.12, Gandhidham, Kandla (Kutchchh), Gujarat, 370201, India. Production of DAP, NPK Fertilisers

Site 5: Indian Farmers Fertiliser Cooperative Limited, Paradeep – Village Mussadia, PO Paradeep, Dist. Jagatsinghpur, Pin -754142 (Odisha), India. Production of DAP, NPK Fertilisers

ENCON PROJECT BUDGET ALLOCATION

IFFCO
पूर्णतः सहकारी स्वामित्व
Wholly owned by Cooperatives

Details	2018-19	2019-20	2020-21	2021-22
Total turn over of company/plant (Rs. Million)	25431.8	27003.0	21140.6	26257.7
Amount Invested in ENCON Projects (Rs. Million)	120.92	26.55	2.693	58.73
Investment %	0.48	0.10	0.01	0.22

Learning from CII Energy Award 2021 or any other award program:

- **The objective of the awards is to recognise and Award "Excellence" in Energy Management in Industries and to facilitate sharing of information by excellent energy efficient companies.**
- **It is a sense of competition to motivate other plants to achieve excellence and establish futurity by pinpointing Carbon Emission Reduction initiatives focused on energy conservation.**
- **The Awards evaluate all kinds of new processes, products, services, technologies, and other types of innovations in a common platform. They also assess new ideas and approaches along with tangible results.**

Awards & Recognition

IFFCO
पूर्णतः सहकारी स्वामित्व
Wholly owned by Cooperatives

22nd National Award for Excellence in Energy Management in 2021 by CII .

Greentech Energy Conservation Award - 2021

Platinum Award- Grow Care Energy Conservation 2021

"National Energy Conservation Awards-2020"

FAI Best Production Performance Award-2020

Team Member:

S.K.Janghel (9410499505)
Lav Verma (9415670592)
Shankar Singh (9454802683)