25th NATIONAL AWARD EXCELLENCE IN ENERGY MANAGEMENT

INDIAN FARMERS FERTILISER COOPERATIVE LIMITED (IFFCO), AONLA-I UNIT

Team Members:-

Mr. Puneet Prakash, Dy General Manager (Process)
Mr. Anubhav Dwivedi, Chief Manager (Urea)
Mr. Sajal Agarwal, Astt. Manager (Offsites)

IFFCO IN BRIEF

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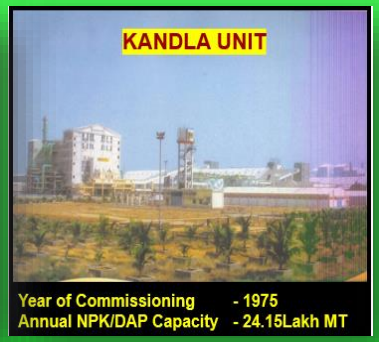
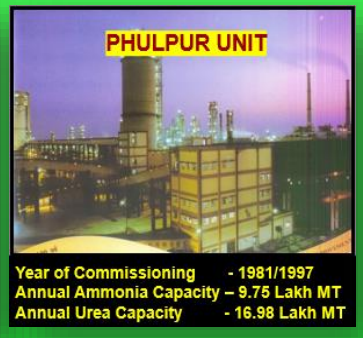
Leading producer & marketer of fertilizer in India

Number of Plant Locations in India: 5

Year of Commissioning - 1975
Annual Ammonia Capacity - 3.63 Lakh MT
Annual Urea Capacity - 5.45 Lakh MT



Year of Commissioning - 1975
Annual NPK/DAP Capacity - 24.15Lakh MT



Year of Commissioning - 1981/1997
Annual Ammonia Capacity – 9.75 Lakh MT
Annual Urea Capacity - 16.98 Lakh MT

Year of Commissioning - 1988/1996
Annual Ammonia Capacity - 11.48 Lakh MT
Annual Urea Capacity - 20.00 Lakh MT

Year of Acquiring - SEP-2005
Annual Capacity - 19.20 Lakh MT (DAP + COMPLEX)

Urea & DAP/NPK

Secondary Nutrient

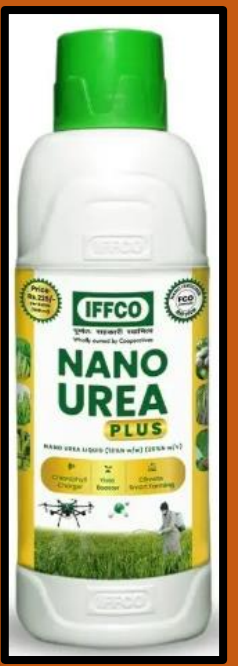
Water Soluble

Bio-Fertiliser

Growth Promoter

Nano Urea Plus
&
Nano DAP

An initiative of IFFCO to provide eco-friendly solution to maintain soil health & increase crop productivity.



IFFCO VENTURES

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JIFCO

OMIFCO

ics
Industries Chimiques du Sénégal

KIT

KLL

INDIAN POTASH LIMITED
IPL

NEW AGE
FINANCIAL ADVISORY

NCDEX

AquAgri

IFFCO BAZAR

CN IFFCO
FROZEN FOODS

IFFCO-TOKIO
GENERAL INSURANCE
Muskurate Raho

KISAN FINANCE

IFFCO – MC
CROP SCIENCE

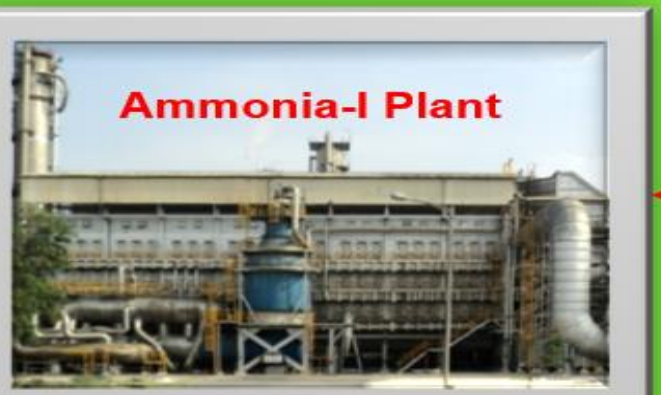
IFFCO KISAN

SIKKIM IFFCO organics

IFFCO AONLA UNIT

IFFCO Aonla Unit, located in northern part of India, operates **Two streams of Ammonia (capacity 1740 MTPD each)** and **Four streams of Urea (capacity 1515 MTPD each)** and is based on Natural Gas as Raw Material.

IFFCO AONLA UNIT: BRIEF



Production: 1900 MTPD
Technology: HTAS

Utilities: Cooling Tower, Air Compressors, IG Plant, Raw Water Handling System, DM Plant, Ammonia Storage Tanks, Effluent Treatment Plant

Production: 1900 MTPD
Technology: HTAS

Production: 3350 MTPD
Technology: SNAMPROGETTI

Power Generation: 35 MW
Steam Generation: 130 MT/hr

Production: 3350 MTPD
Technology: SNAMPROGETTI

AMMONIA-UREA MANUFACTURING FLOW DIAGRAM

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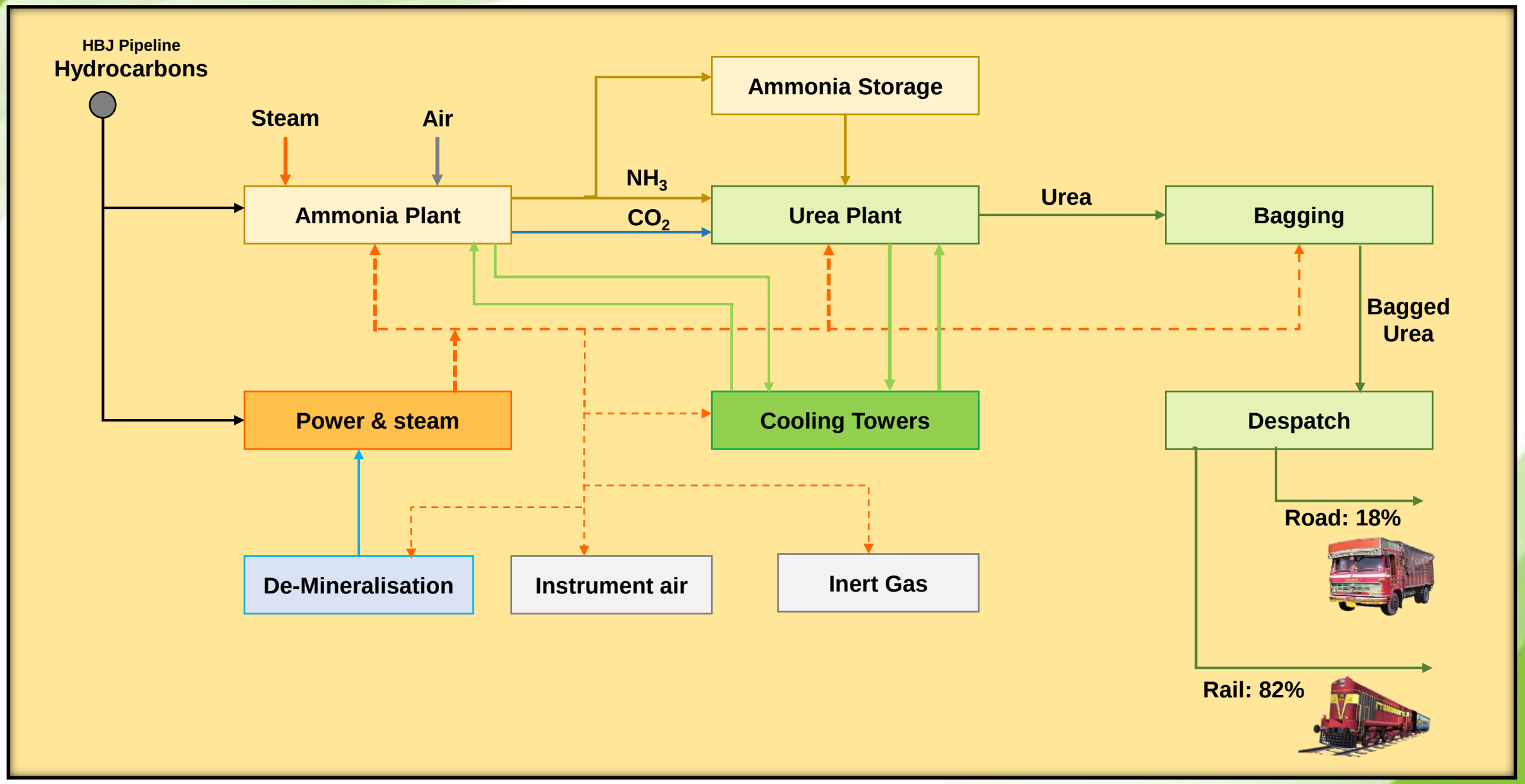

AMMONIA PLANT PROCESS FLOW DIAGRAM

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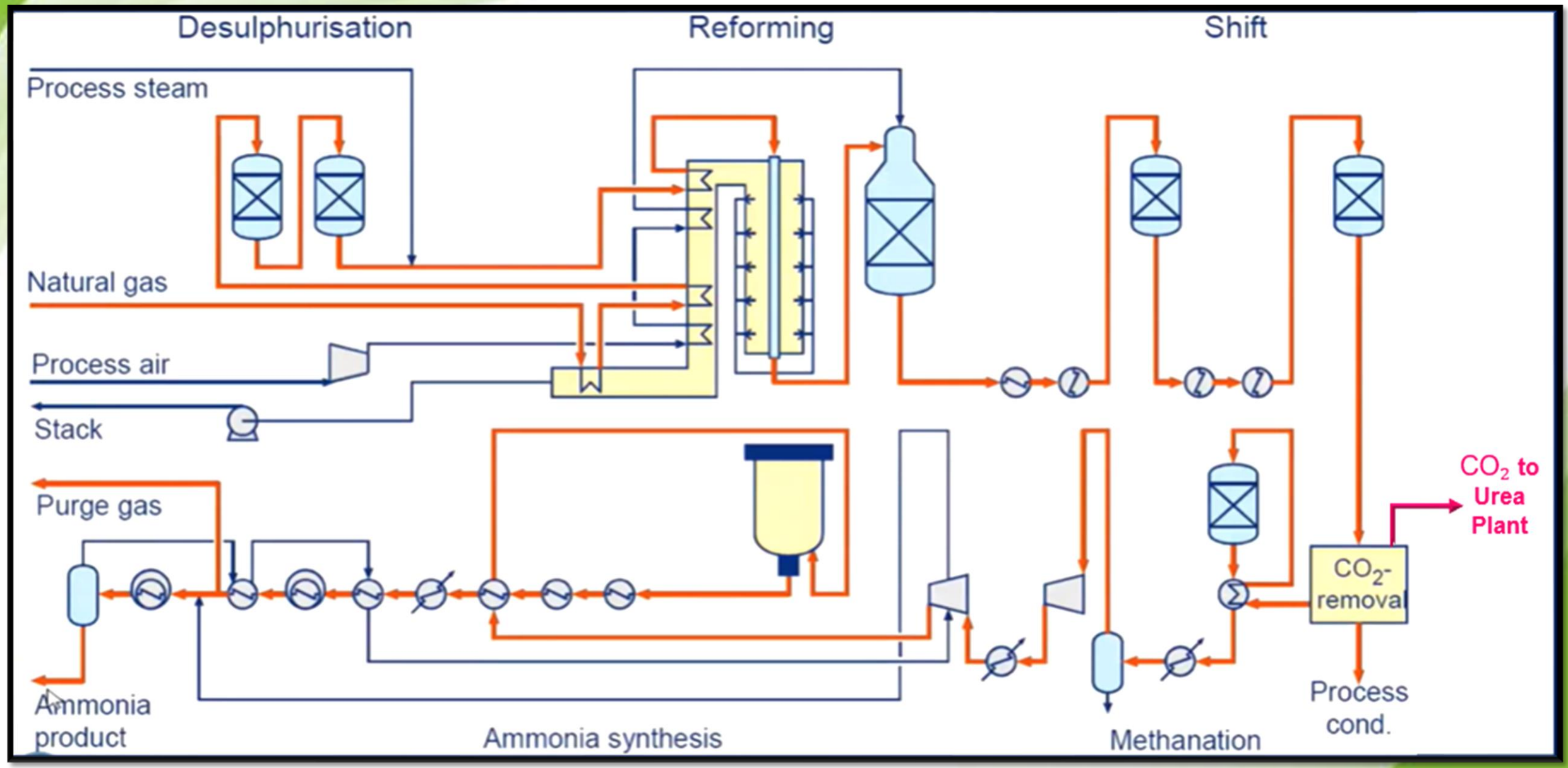

UREA PLANT PROCESS FLOW DIAGRAM

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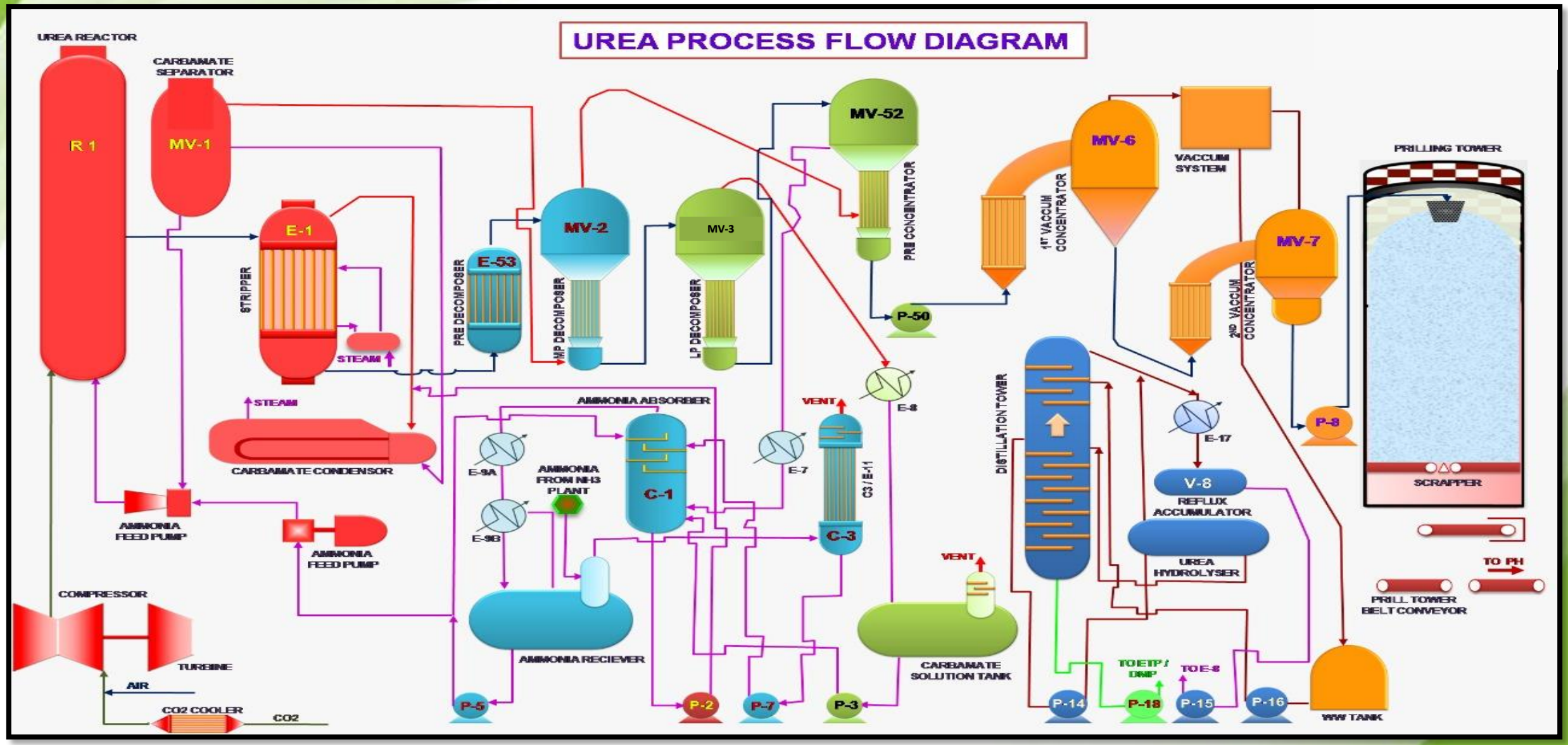
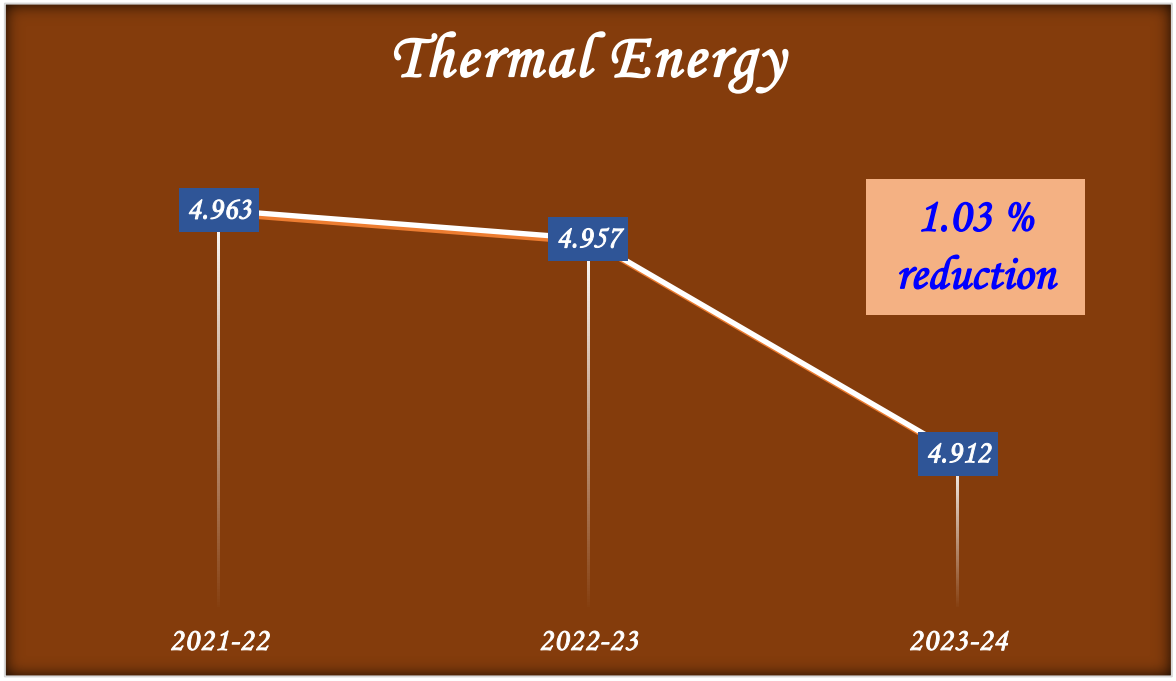
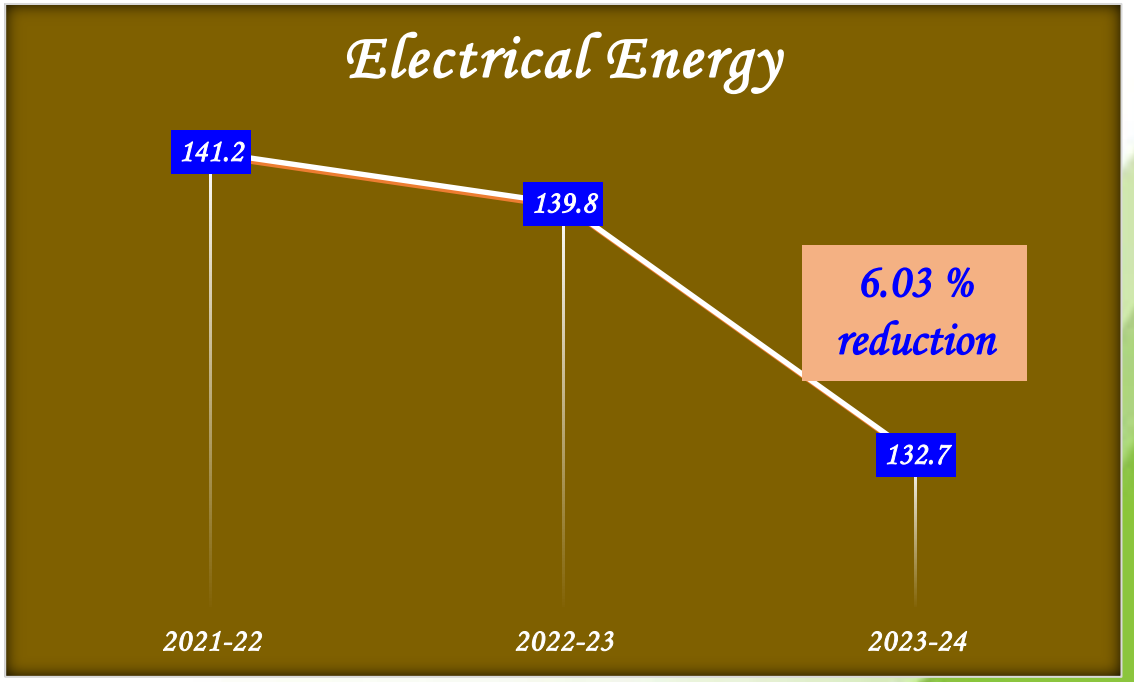


SPECIFIC ENERGY CONSUMPTION

Particulars	Urea Production (Lakh MT)	Overall Energy Consumption (Gcal/MT Urea)	Thermal Energy		Electrical Energy	
			Gcal/MT Urea	% Reduction	Kwh/MT Urea	% Reduction
FY 2021-22	12.07	5.085	4.963	-	141.2	-
FY 2022-23	11.52	5.102	4.957	0.12 %	139.8	1.03 %
FY 2023-24	12.26	5.042	4.912	**1.03 %**	132.7	**6.03 %**





BENCHMARK & ROADMAP FOR ENERGY EFFICIENCY

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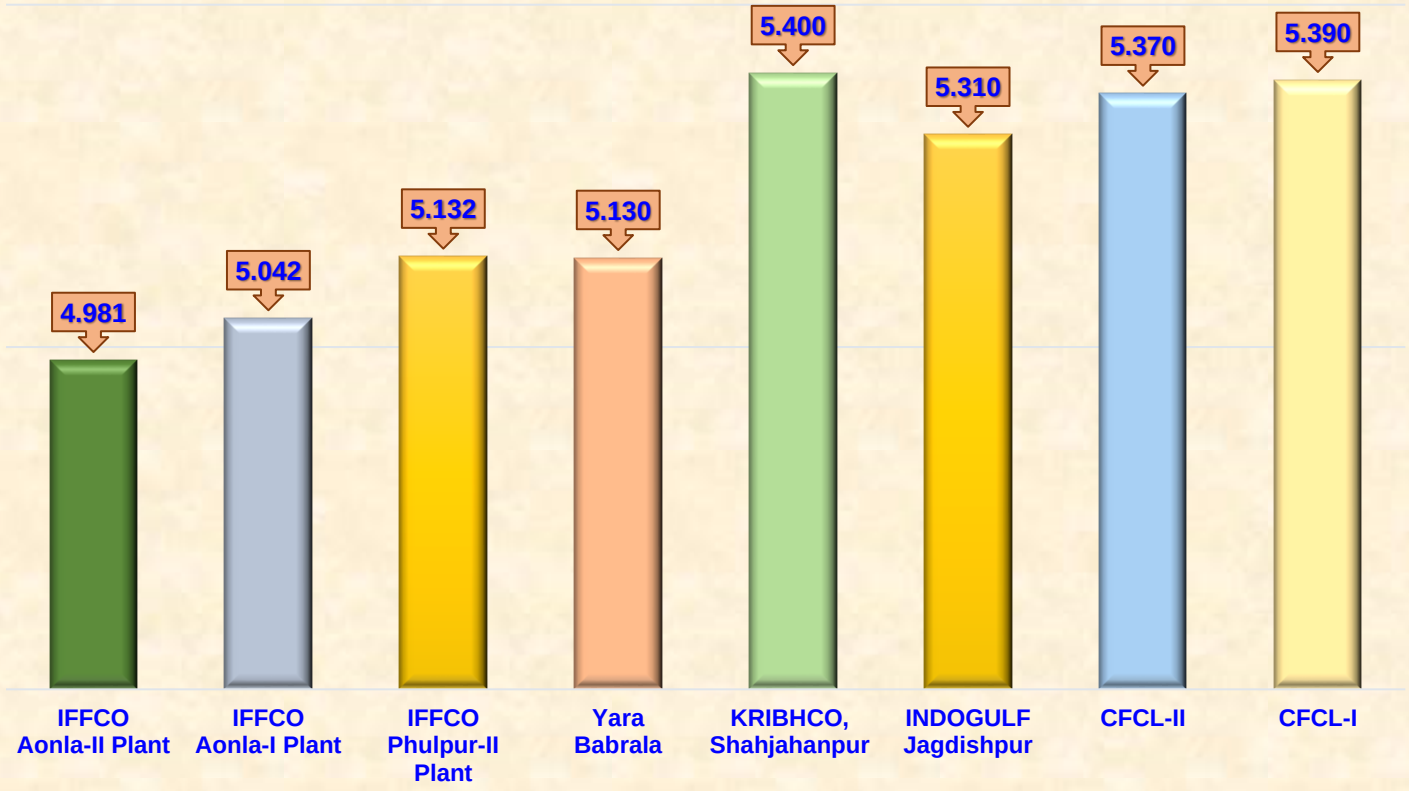
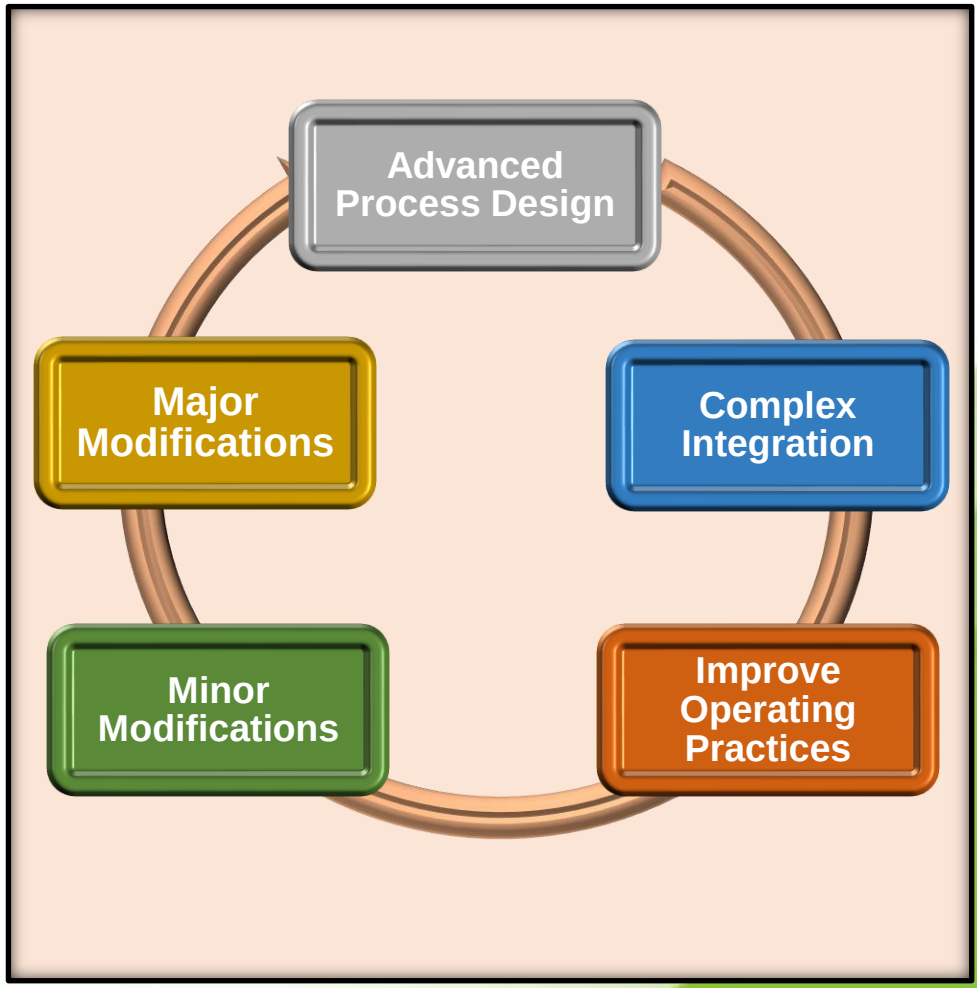
National Benchmark (Source: FAI)

Specific Energy Consumption (Gcal/MT Urea)



- **Lowest sp. energy consumption** among Plants of similar age **at National Level.**
- **One of lowest specific energy** consuming plants **at International level**.

Roadmap Adopted to achieve National & International Benchmark



MAJOR ENCON PROJECT PLANNED IN FY 2024-25

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Energy Saving Schemes	Annual Energy Saving
Provision of Power Plant VAM chilled water for AC system of Ammonia-I Plant Control Room	2316 Gcal
Provision of PAC VAM chilled water for AC system of Ammonia-I Plant Compressor House	478 Gcal
Provision of Power Plant VAM chilled water for AC system of Power Plant Control Room	826 Gcal
Installation of VFD for DM Water Pump in Raw Water Pump House Area	108 Gcal
Installation of VFD for Service Water Pump in Raw Water Pump House Area	49 Gcal
Installation of VFD for Cooling Tower Make-up Pump in Raw Water Pump House Area	189 Gcal
Installation of VFD for Drinking Water Pump in Raw Water Pump House Area	55 Gcal
Energy Efficiency Lighting fixtures	48 MWH

ENCON PROJECTS IMPLEMENTED IN LAST 3 YEARS

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Year	Energy Saving Projects	No of ENCON Projects	Investment (Rs. Million)	Electrical Savings (MWH)	Thermal Savings (Million Kcal)	Savings (Rs. Million)	Payback Period (in years)
FY 2021-22	Thermal Saving	1	1.7	-	889	4.1	5 months
	Electrical Saving	11	4.2	299	-	2.3	1.8
FY 2022-23	Thermal Saving	15	226.3	-	114325	861.1	4 months
	Electrical Saving	5	1.5	121	-	1.0	1.6
FY 2023-24	Thermal Saving	4	10.1	-	26000	146.4	1 month
	Electrical Saving	3	1.1	54	-	0.79	1.4

MAJOR ENCON PROJECTS (FY 2023-24)

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Schemes	Annual Thermal Energy Saving (Gcal)	Annual Electrical Energy Saving (MWH)	Annual Monetary Saving (Rs. Milions)	Investment (Rs. Millions)	Payback Period (Years)
Use of **C-3 offgas** of Urea-I Plant as fuel **in the burners of HRSGs** in Power Plant	21780	-	122.6	4.1	1 month
Replacement of fans of Ammonia-I Cooling Towers **by Encon Make Hollow Type FRP Fans** (6 nos. fans)	3065	-	17.3	5.5	4 months
Provision of an **interconnection line between P-21 discharge line** of 11 & 21 Unit in Urea-I Plant	204	-	1.2	0.4	5 months
Provision of additional **LS steam line to Pre-decomposer in 11 & 21 Unit** of Urea-I Plant	950	-	5.4	0.1	1 month
Energy Efficient Lighting Fixtures	-	54	0.8	1.1	1.4

MAJOR ENCON PROJECTS (FY 2022-23)

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Schemes	Annual Thermal Energy Saving (Gcal)	Annual Electrical Energy Saving (MWH)	Annual Monetary Saving (Rs. Milions)	Investment (Rs. Millions)	Payback Period (Years)
Provision of running **Inlet Guide Vane of GTGs in Auto Mode** in place of Manual Mode in Power Plant	5337	-	40.2	NIL	NIL
Recovery of Fire water used in IG and Compressor house during shutdown of Ammonia-I Cooling Tower	233	-	1.8	4.0	2.2
Minimizing use of VAM Machines in Power Plant for suction air cooling of Gas Turbines through following ways: a) Stoppage of VAM Machines of GT operating at Low Load b) Opening of interconnection i/v of VAM Chilled Water of both GTGs c) Running only one VAM Machine and stopping other VAM Machines	12038	-	90.7	NIL	NIL
Replacement of **fans of Urea-I Cooling Towers** by Hollow Type FRP Fans	3065	-	23.1	4.5	3 months

MAJOR ENCON PROJECTS (FY 2022-23)

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Schemes	Annual Thermal Energy Saving (Gcal)	Annual Electrical Energy Saving (MWH)	Annual Monetary Saving (Rs. Milions)	Investment (Rs. Millions)	Payback Period (Years)
New Plate Type Heat Exchangers (E2110, E-2109 & E-2101N) to **increase CO2 generation in CDR Unit**	9900	-	74.6	12.0	2 months
Provision of **CW supply to Aonla-I Centrifugal Air Compressor from Urea-I** underground CW headers	885	-	6.7	1.7	3 months
Increasing Ammonia Preheater heat duty by mixing wastewater recycle to MV-3 offgas at the downstream of Ammonia Preheater in Urea-I Plant	2376	-	17.9	NIL	NIL
Running one pump in place of two pumps of **Distillation Tower Feed Pumps** by changing impeller of pump by larger size	324	-	2.4	NIL	NIL
Replacement of **Tube Bundle of 1st Stage Intercooler (E-1451)** of Refrigration Compressor in Ammonia-I Plant	513	-	3.9	2.44	8 months

MAJOR ENCON PROJECTS (FY 2022-23)

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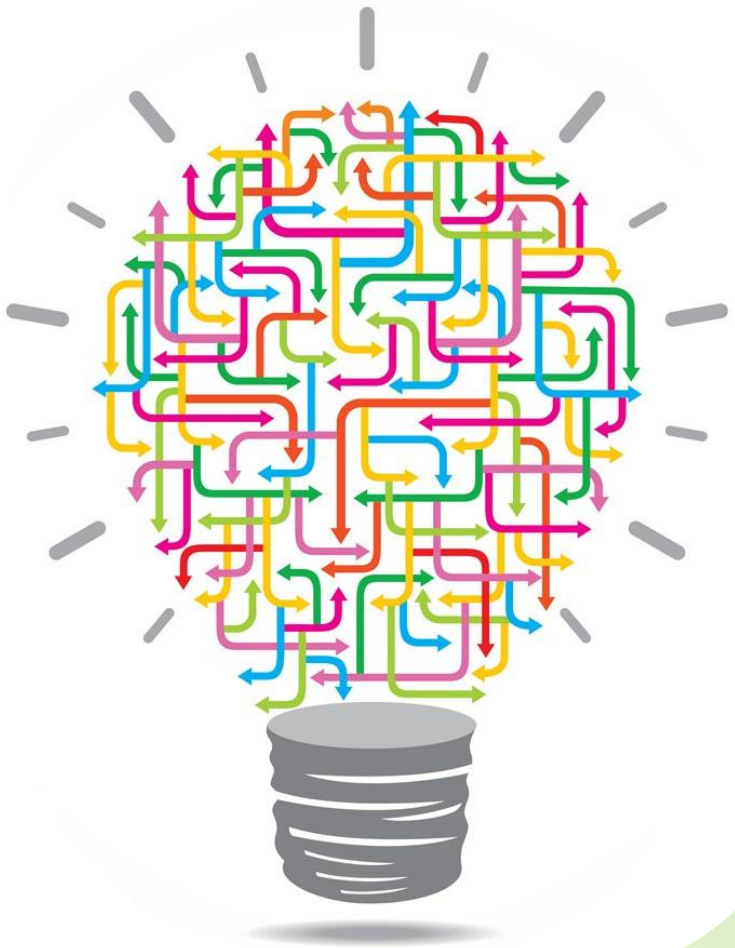
Schemes	Annual Thermal Energy Saving (Gcal)	Annual Electrical Energy Saving (MWH)	Annual Monetary Saving (Rs. Milions)	Investment (Rs. Millions)	Payback Period (Years)
Replacement of **1st Stage Intercooler of Process Air Compressor** in Ammonia-I Plant	513	-	3.9	5.0	1.3
Replacement of **Target tiles with Jumbo tiles in Secondary Reformer** in Ammonia-I Plant	475	-	3.6	8.0	2.2
Dry ice blasting of Catalyst Tube & Convection Coils, Catalyst Replacement and Cleaning of Combustion Air Preheater of Primary Reformer in Ammonia-I Plant	71280	-	536.9	53.3	2 months
Energy Efficient Lighting Fixtures	-	121	1.0	1.5	1.6
MAJOR ENCON PROJECTS (FY 2021-22)					
Replacement of solid FRP CT fan (2 Nos.) with ENCON make energy efficient hollow FRP fans for Ammonia-I Cooling Tower	889	-	4.1	1.7	5 months
Energy Efficient Lighting Fixture	-	299	2.3	4.2	1.8

INNOVATIVE PROJECTS



USE OF C-3 OFFGAS AS FUEL IN HRSG BURNERS

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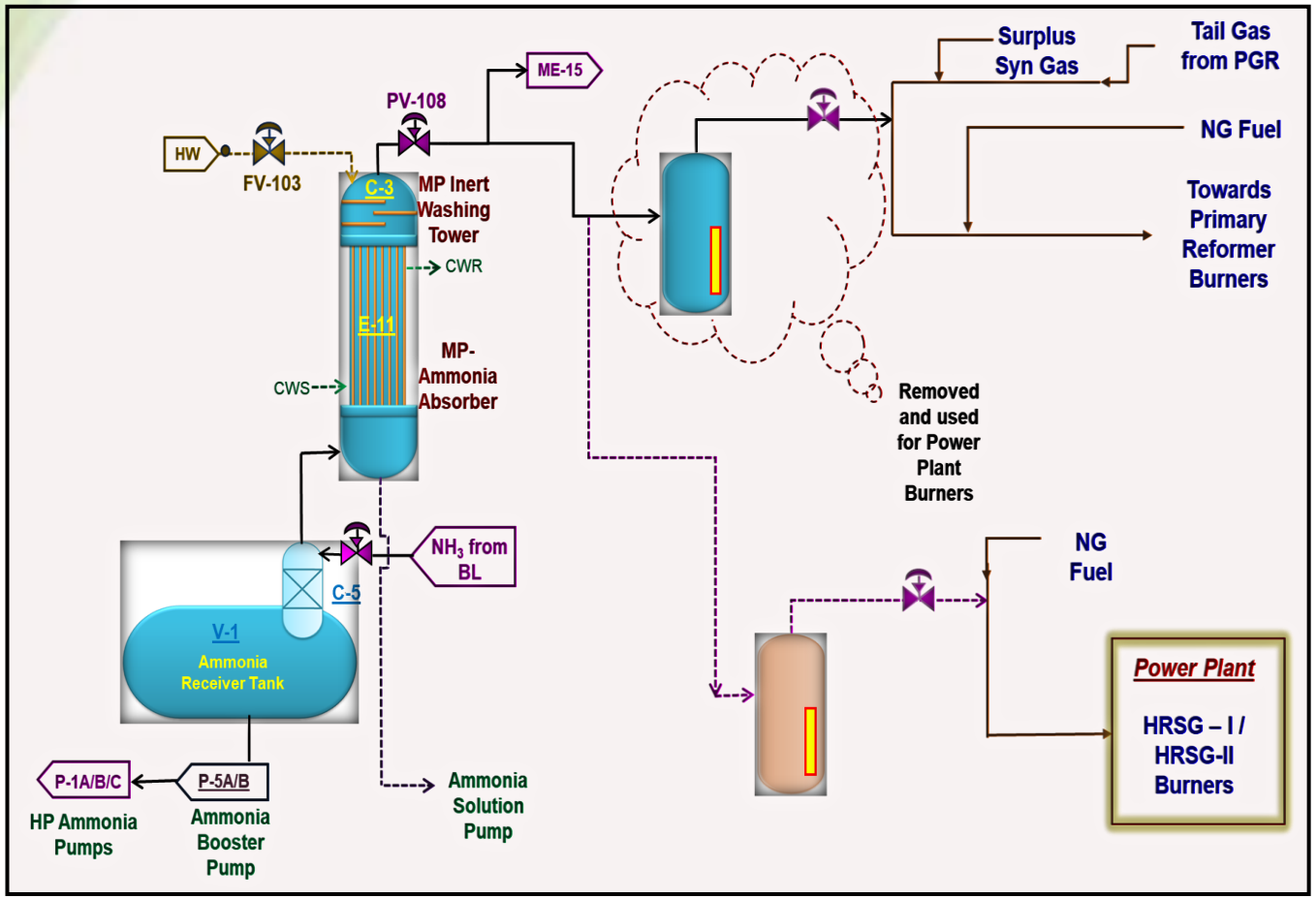
Problem Faced with Original System

- C-3 offgas contains combustible components and can be used as fuel. To maintain, pressure of MP section in Urea-I Plant, the gas was vented.
- Earlier a scheme was implemented to use C-3 offgas as fuel in the burners of Primary Reformer of Ammonia-I plant. But the scheme was removed due to the operational issues faced like increased pressure of burners, NOx formation (adverse effect on KS-1 solvent).



Modification

An option of using C-3 offgas as fuel in the burners of HRSGs in Power Plant was explored.

The scheme was implemented with minimal expenditure of **Rs 41 lakhs** due to utilization of following in-house resources:

- Pipelines & various components of old scheme were re-used to maximum extent.
- For the new control valves (3 nos.), old control valves available in the Stores were checked and reused. This avoided procurement of new Flow Control Valves.
- Sizing and making of flow orifice were done through in-house resources.

USE OF C-3 OFFGAS AS FUEL IN HRSG BURNERS

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Improvement in Process Parameters

Particulars	Units	Before	After
Urea-I Plant			
Ammonia content in C-3 offgas	%	5	0.5
NG added at u/s of MP Condenser (E-7) to avoid C-2 gas to fall in the explosive zone	NM3/hr	0	80x2 = 160
C-3 offgas from Urea-I to burners of HRSG-I & II of Power Plant	NM3/hr	1500	1660
Power Plant			
Total NG fuel to HRSGs (Keeping same power & steam generations)	NM3/hr	5000	4590
Energy Saving			
Ammonia saving in Urea-I plant	MTPD	**1.2**	
Net NG fuel saving in Complex	NM3/hr	**250**	
	Gcal/hr	**2.23**	

Tangible Benefits

- Ammonia recovered: **1.2 MTPD**.
- Energy Saving: **2.23 Gcal/hr (0.017 Gcal/MT Urea)**.
- Annual monetary benefit **Rs 11.5 Crores**.
- Payback Period: **Less than 1 month (Investment Cost: Rs 41 lakhs)**

Replication Potential

The scheme resulted in **significant energy and Annual monetary saving**.

Replicability of such scheme in other plants depends on the factors like:

- Availability of such offgas as waste
- Compatibility of burners to combust offgas efficient without compromising with any operational issue.

INSTALLATION OF E-2109 & E-2110 AND E-2101(N)

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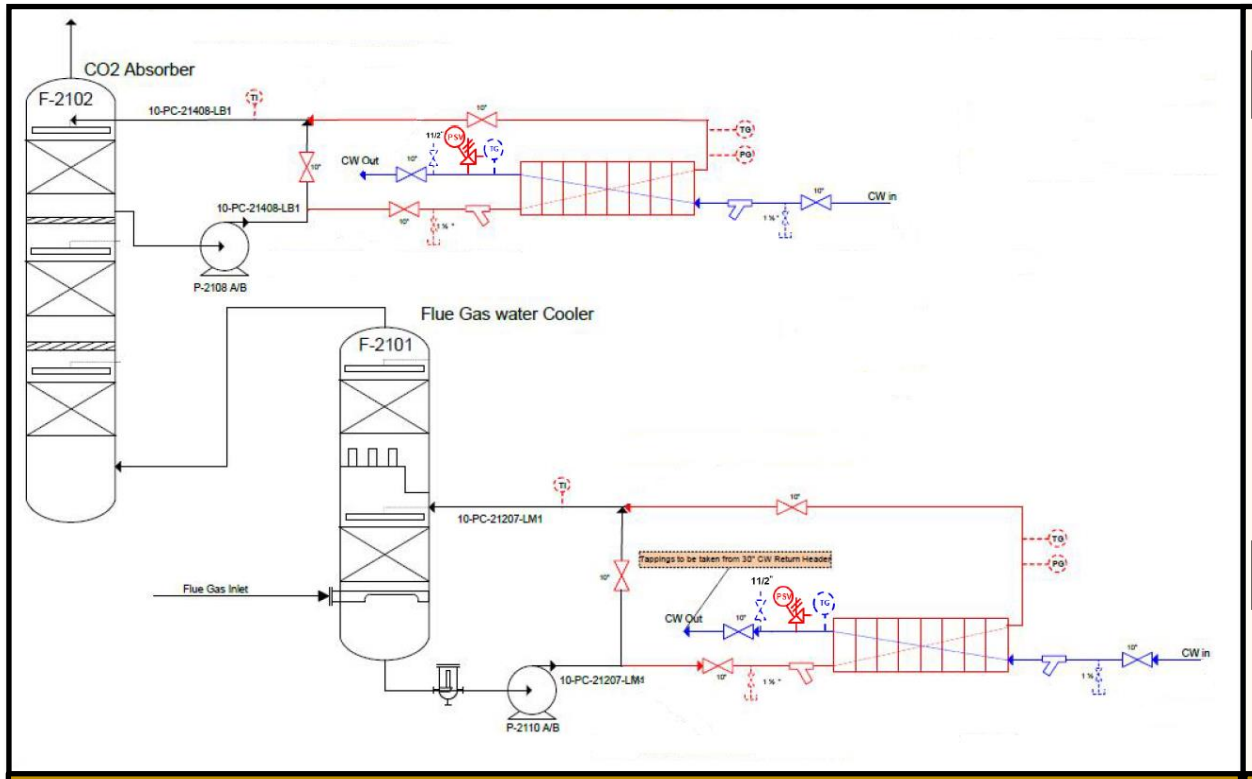
Problem Faced in CDR Unit: Limitation in CO2 generation, High KS-1 loss from CO2 Absorber

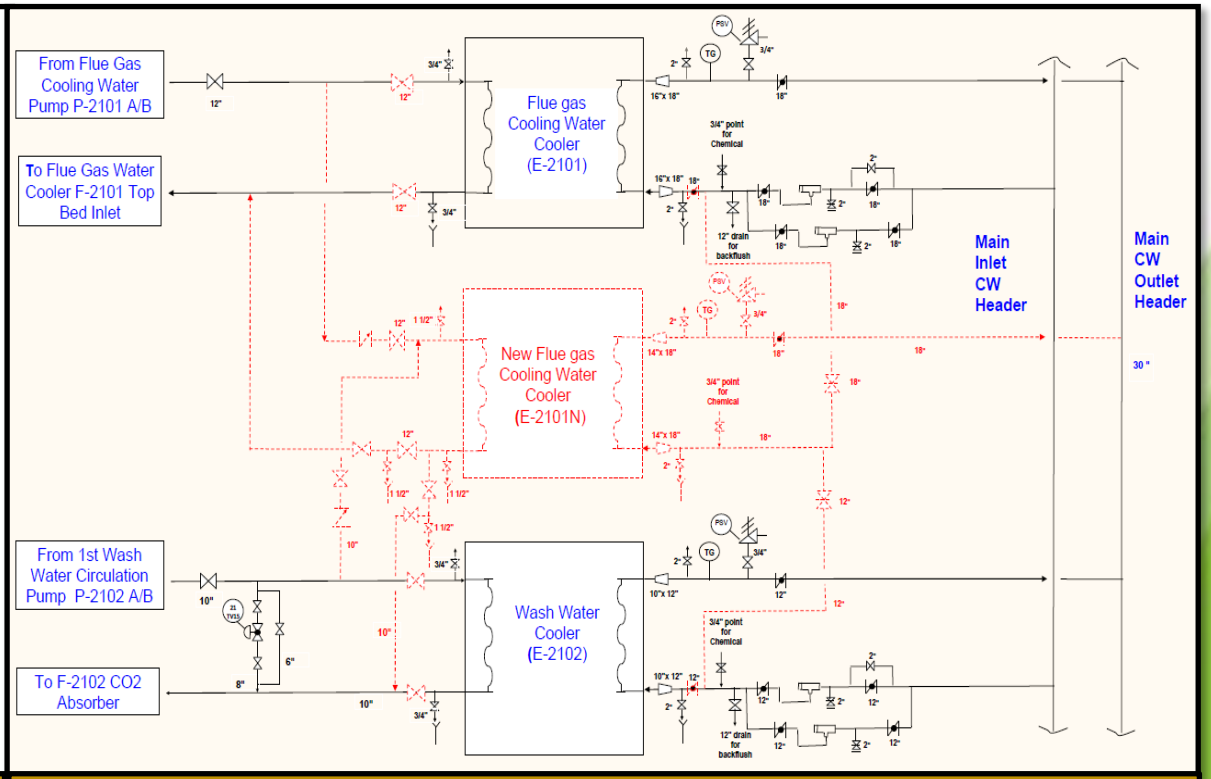
Root Cause Analysis: Heat removal from flue gas in Flue Gas Cooler (F-2101) & CO2 Absorber (F-2102) was low. This was due to design limitation at higher load and also due to frequent fouling of E-2101 & E-2102.

Modification:

- E-2110 installed for cooling of circulating water of bottom bed of Flue Gas Cooler (F-2101)
- E-2109 installed for cooling of circulating water of top bed of CO2 Absorber (F-2102)
- E-2101(N) installed as standby for E-2101 and E-2102



Installation of additional PHEs (E-2110 & E-2109) in CDR Unit



Installation of E-2101(N) as standby for E-2101 & E-2102

INSTALLATION OF E-2109 & E-2110 AND E-2101(N)

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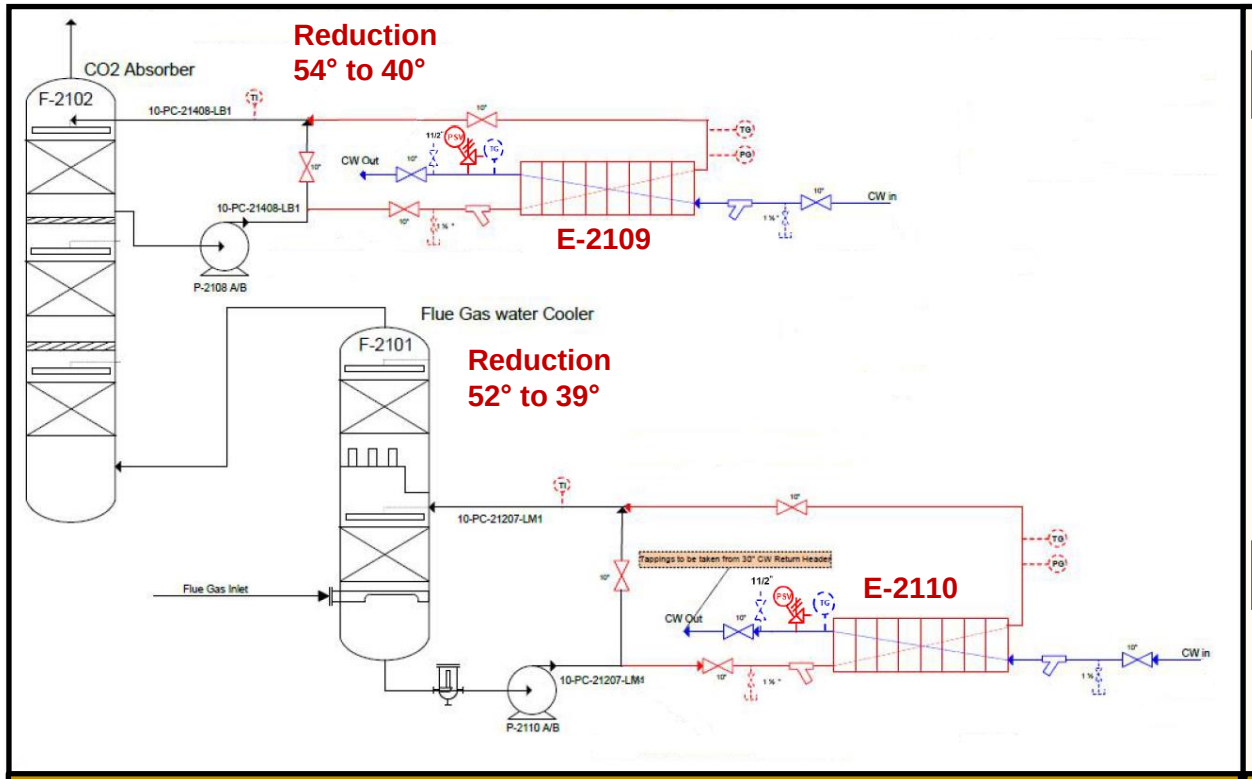
Problem Faced in CDR Unit: Limitation in CO2 generation, High KS-1 loss from CO2 Absorber

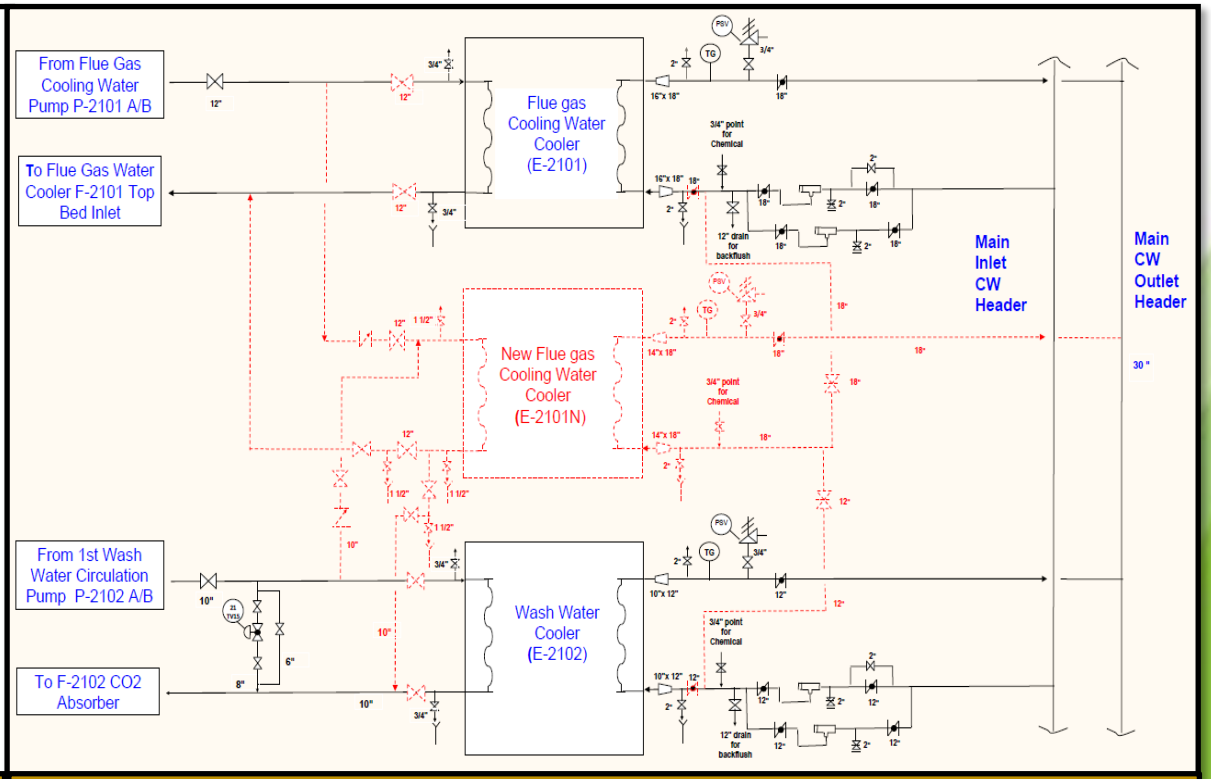
Root Cause Analysis: Heat removal from flue gas in Flue Gas Cooler (F-2101) & CO2 Absorber (F-2102) was low. This was due to design limitation at higher load and also due to frequent fouling of E-2101 & E-2102.

Modification:

- **E-2110** installed for cooling of circulating water of bottom bed of Flue Gas Cooler (F-2101)
- **E-2109** installed for cooling of circulating water of top bed of CO2 Absorber (F-2102)
- **E-2101(N)** installed as standby for E-2101 and E-2102



Installation of additional PHEs (E-2110 & E-2109) in CDR Unit



Installation of E-2101(N) as standby for E-2101 & E-2102

INSTALLATION OF E-2109 & E-2110 AND E-2101(N)

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Benefits Achieved

Particulars	Benefits
F-2101 top temp.	Decreased from **52 degC to 39 degC**
F-2102 top temp.	Decreased from **54 degC to 40 degC**
Increase in CO2 generation capacity in CDR Unit	Increased by **1000 NM3/hr**. Now, CO2 generation of **12500 NM3/hr** can be achieved (design capacity ***9952 NM3/hr***).
Margin in Flue Gas Blower	Due to reduction of F-2101 flue gas top temperature, there is no limitation upto 12500 NM3/hr CO2 generation.
KS-1 loss from CO2 Absorber	KS-1 loss reduced by **0.07 kg/MT pure CO2** **(KS-1 Cost: 445 Rs./kg)**
Energy saving (0.009 Gcal/MT Complex Urea)	**1.25 Gcal/hr** (Total energy saving is **2.5 Gcal/hr** for Aonla-I & Aonla-II Units)
Monetary Benefit	**Rs 7.46 Crores**
Payback period	2 months **(Investment Cost: Rs 1.2 Cr)**

Innovativeness of Scheme

- Fouling of E-2101 & E-2102 is faced in all CDR Units. The irony is that no standby is provided. Here, the innovativeness is the provision of common standby PHE for E-2101 & E-2102. By this way, throughout the year E-2101 & E-2102 will remain in cleaned condition.
- **Due to design limitation, further CO2 generation was not possible without major revamp in CDR Unit**. However, the root cause analysis indicated that the capacity can be increased only by installing E-2110 for cooling of recirculating water of bottom bed of F-2101 and E-2109 for cooling of top bed of F-2102.

Replication Potential

- Plants based on MHI technology face similar issues. They can be benefited by imitating the innovating schemes implemented in IFFCO Aonla Unit.

CONNECTION OF P-21 DISCHARGE OF 11 & 21 UNITS

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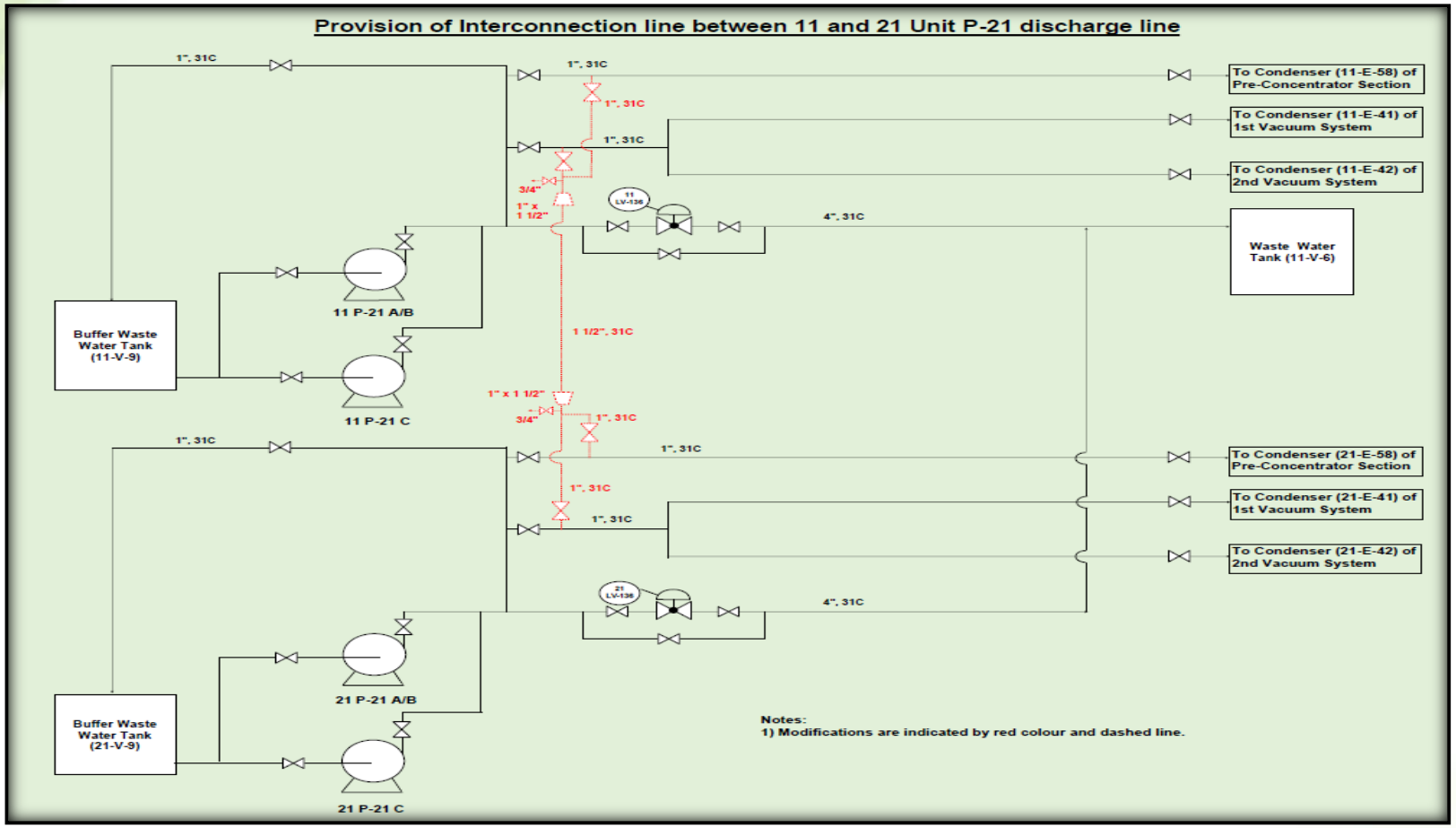
Original System:

- Earlier, **Two nos. small size V-6 Feed Pumps (P-21A/B)** per Unit for **the transfer of Waste water from Vacuum Section to Waste Water Section.**
- Later, Large capacity pump (P-21C) installed for flushing of Condensers.
- Presently, in both 11 & 21 Units, large size pumps are run for both purpose.



Modification:

- Interconnection line between discharge lines of P-21 pumps of both Units.
- One Unit runs large pump (P-21C) for condenser flushing and wastewater transfer and other Unit runs small pump (P-21A/B) for wastewater transfer.

Benefits:

- Innovative interconnection of pumps led to Electrical **power saving of 12 kwh** on hourly basis.
- Resulted in **Annual Monetary saving of Rs 12 lakhs (Investment: Rs 4 lakhs)**.
- Interconnection line introduces a layer of operational flexibility.

Replication Potential:

- This process improvement has the potential to be replicated in similar plants that utilize parallel wastewater handling systems.

UTILISATION OF RENEWABLE ENERGY SOURCES

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Year	Technology (Electrical)	Type of Energy	Onsite/ Offsite	Installed Capacity (MW)	Generation (million kWh)	% of total Electrical power requirement
2021-22	Roof Top Solar panel	Solar Energy	Onsite	0.916	1.069	0.63
2022-23	Roof Top Solar panel	Solar Energy	Onsite	0.941	1.109	0.66
2023-24	Roof Top Solar panel	Solar Energy	Onsite	**0.981**	1.121	**0.69**

Year	Capacity addition (Aonla Complex) (MW)	Investment made, Rs. Lakhs
2021-22	-	-
2022-23	0.050	31.2
2023-24	0.080	49.7

GHG EMISSION REDUCTION: WASTE HEAT UTILIZATION

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CO2 Emission from Aonla-I Unit

Year	CO2 Emission, MT	Emission Intensity, MT/MT Urea
2021-22	473673	0.39
2022-23	464587	0.40
2023-24	474998	**0.39**

The calculated **CO2 emission is based on NG fuel consumption in Ammonia-I and Captive Power Plant.** It also considers the emission due to consumption of **Purchased Power from UPPCL**.

Various Steps taken for GHG Emission Reduction through Waste Heat Utilization

- CO2 Recovery Unit (CDR) (Capacity: 450 MTPD) installed in year 2006, contributes significantly to **reduce GHG emission**. For FY 2023-24, GHG reduction due to CDR Unit is 183967 MTPA.
- **Purge gas from Ammonia-I plant** is sent to PGR Unit to recover hydrogen from it and to send back for usage in **1st suction of Syn Gas Compressor. The tail gas is used as fuel in Primary Reformer Burners** which in turn **saves NG fuel**. For FY 2023-24, GHG reduction due to use of Ammonia-I purge gas in PGR Unit is 29045 MTPA.

GHG EMISSION REDUCTION: WASTE HEAT UTILIZATION

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Various Steps taken for GHG Emission Reduction through Waste Heat Utilization

- Earlier, overhead vapour of LP Condensate Stripper in Ammonia Plant was condensed in a condenser cooled by cooling water. **DM Water Heater has been installed to utilize the waste heat of overhead vapour.** For FY 2023-24, GHG reduction due to the scheme is 17829 MTPA.

- **By-Cast Type Combustion Air Preheater** has been replaced with Plate Type Combustion Air Preheater to **recover more heat from flue gas in the convection section of Primary Reformer**.
  For FY 2023-24, GHG reduction due to the scheme is 4214 MTPA.

- Earlier, **C-3 offgas from MP section** was vented as waste gas in Urea-I Plant. A scheme has been implemented to use this waste gas **as fuel in HRSGs of Power Plant.**
  For FY 2023-24, GHG reduction due to the scheme is 4098 MTPA.

Likewise, continual energy saving efforts are taken to reduce energy consumption of Unit which in turn **reduces GHG emissions from Stacks**. **This include brainstorming sessions to identify and target energy loss area for improving energy efficiency of the Unit.**

ENERGY MANAGEMENT SYSTEM

- **Daily Monitoring System:** Plants key process parameters, production & specific consumption of various inputs are reviewed in Daily Production Meeting on daily basis to monitor the energy performance of the Unit. **Plant problems are identified on daily basis and brainstorming activities are carried out to mitigate those problems.**

  The meeting is chaired by Unit Head.

- **Energy Conservation Cell:** A Core Energy Conservation Cell and plant wise Energy Conservation Sub-cells are already existing with representatives from different departments/sections related to the plant. The role of the energy conservation cells include **monitoring of energy consumption, identification of areas and coordination of various activities for energy conservation**.

- **Budget Allocation:** Knowing the importance of energy saving in the profitability of Unit, the top management is very supportive for energy conservation schemes. Schemes are assessed based on their **cost benefit analysis and accordingly budget is allocated** for these schemes under Energy Conservation head.

- **Energy efficiency awareness training program : Periodically classes** are being conducted for plant personnel to aware them about **efficient use of energy as well as to reduce the energy losses**.

ENERGY MANAGEMENT SYSTEM

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➢ Employees Involvement through "Employees Suggestion Schemes":

- ✓ Energy saving ideas are received through involvement of Workmen and Officers category. Schemes are assessed for the economical and operational feasibility.
- ✓ Best Suggestions are adjudged for awards on Award Ceremony during 15th August and 26th January Celebration each year.
- ✓ Best Suggestions are selected for National Level Summit organised by INSSAN (Indian National Suggestion Scheme Association).
- ✓ Inter-Unit Creativity Meet is organised to share the values suggestions which resulted in remarkable tangible & intangible benefits.
- ✓ **Total tangible savings of Rs 11.0 Cr and Rs 34 Cr were realized for 2022-23 & 2023-24 respectively.**

➢ Learning from Award Programs: Award Program is a knowledge sharing platform:

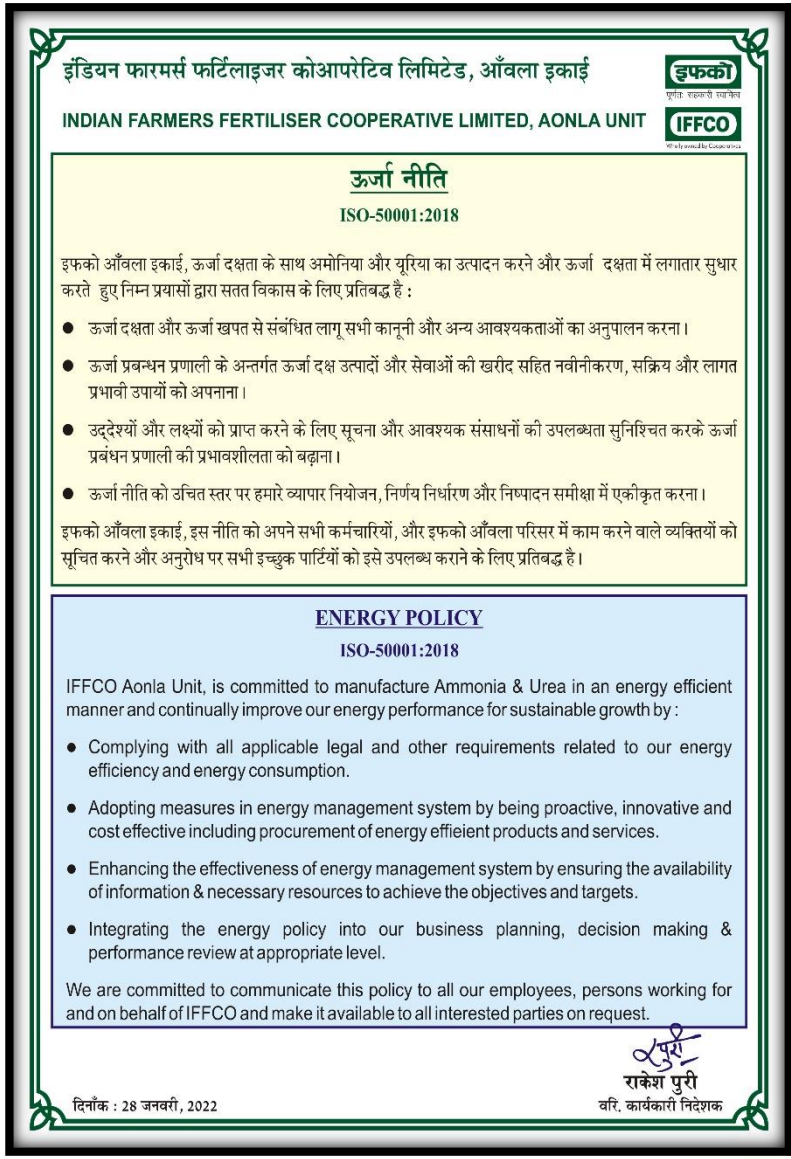
- ✓ To know about the ideas adopted by other companies
- ✓ Gives a thrust for more energy conservation as well as improved plant operation.

IMPLEMENTATION OF EMS: ISO 50001

- In Aonla Unit, Energy Management System **ISO 50001:2011** was implemented from November 2014.
- Now IFFCO Aonla is certified with **ISO 50001:2018.**

  18th January 2022 is effective date of implementation.

  Validity: **3 years**
- Other than EMS, the Unit is certified for Integrated Management System (IMS) including **ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018.**



इंडियन फारमर्स फर्टिलाइजर कोआपरेटिव लिमिटेड, आँवला इकाई

INDIAN FARMERS FERTILISER COOPERATIVE LIMITED, AONLA UNIT

ऊर्जा नीति

ISO-50001:2018

इफको आँवला इकाई, ऊर्जा दक्षता के साथ अमोनिया और यूरिया का उत्पादन करने और ऊर्जा दक्षता में लगातार सुधार करते हुए निम्न प्रयासों द्वारा सतत विकास के लिए प्रतिबद्ध है :

- ऊर्जा दक्षता और ऊर्जा खपत से संबंधित लागू सभी कानूनी और अन्य आवश्यकताओं का अनुपालन करना।
- ऊर्जा प्रबन्धन प्रणाली के अन्तर्गत ऊर्जा दक्ष उत्पादों और सेवाओं की खरीद सहित नवीनीकरण, सक्रिय और लागत प्रभावी उपायों को अपनाना।
- उद्देश्यों और लक्ष्यों को प्राप्त करने के लिए सूचना और आवश्यक संसाधनों की उपलब्धता सुनिश्चित करके ऊर्जा प्रबंधन प्रणाली की प्रभावशीलता को बढ़ाना।
- ऊर्जा नीति को उचित स्तर पर हमारे व्यापार नियोजन, निर्णय निर्धारण और निष्पादन समीक्षा में एकीकृत करना।

इफको आँवला इकाई, इस नीति को अपने सभी कर्मचारियों, और इफको आँवला परिसर में काम करने वाले व्यक्तियों को सूचित करने और अनुरोध पर सभी इच्छुक पार्टियों को इसे उपलब्ध कराने के लिए प्रतिबद्ध है।

ENERGY POLICY

ISO-50001:2018

IFFCO Aonla Unit, is committed to manufacture Ammonia & Urea in an energy efficient manner and continually improve our energy performance for sustainable growth by :

- Complying with all applicable legal and other requirements related to our energy efficiency and energy consumption.
- Adopting measures in energy management system by being proactive, innovative and cost effective including procurement of energy effieient products and services.
- Enhancing the effectiveness of energy management system by ensuring the availability of information & necessary resources to achieve the objectives and targets.
- Integrating the energy policy into our business planning, decision making & performance review at appropriate level.

We are committed to communicate this policy to all our employees, persons working for and on behalf of IFFCO and make it available to all interested parties on request.

दिनाँक : 28 जनवरी, 2022

राकेश पुरी
वरि. कार्यकारी निदेशक

bsi.

Certificate of Registration

ENERGY MANAGEMENT SYSTEM - ISO 50001:2018

This is to certify that: Indian Farmers Fertiliser Cooperative Ltd.
Aonla Unit:
Paul Pothen Nagar
P.O.: IFFCO Aonla Township
Bareilly 243 403
Uttar Pradesh
India

Holds Certificate No: **ENMS 751679**

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

The Manufacture of Urea and Generation of Power.

For and on behalf of BSI:

Michael Lam - Managing Director Assurance, APAC

Original Registration Date: 2022-01-18
Latest Revision Date: 2022-01-18
Effective Date: 2022-01-18
Expiry Date: 2025-01-17

Page: 1 of 1

...making excellence a habit.

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

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

AWARDS RECEIVED IN RECENT YEARS

IFFCO
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CII
Confederation of Indian Industry
125 Years - Since 1895

21st National Award for Excellence in Energy Management 2020

This is to certify that

Indian Farmers Fertiliser Cooperative Limited, Aonla Unit-I

has been recognized as

"Energy Efficient Unit"

This acknowledgement is based on the evaluation by panel of judges at the "National Award for Excellence in Energy Management" held during 25 - 28 August 2020.

K S Venkatagiri
Executive Director
CII - Godrej GBC

Ravichandran Purushothaman
Chairman, Energy Efficiency Council
CII - Godrej GBC

Energy Efficient Unit-2020

FAI Best Production Performance Award-2022-23

NECA-2020 (2nd Prize)

Top Performer DC of PAT Cycle-II (Winner)

State Energy Conservation Award-2021 (2nd Prize)

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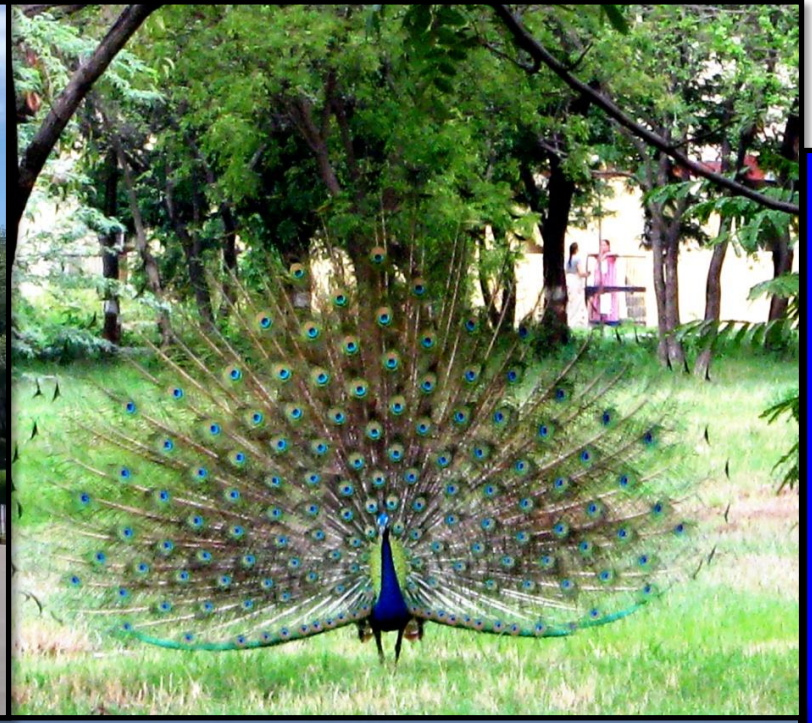

THANK YOU

Lead Presenter Details:-

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Email: puneet@iffco.in