

Chambal Fertilisers and Chemicals Ltd. Gadepan-I, Kota (Rajasthan)

UNIT PROFILE

Chambal Fertilizers & Chemicals Limited (CFCL), the flagship company of Zuari-Chambal group has its Nitrogenous fertiliser manufacturing facilities located at Gadepan, District Kota in the state of Rajasthan. The complex at Gadepan has two independent Ammonia & Urea Plants with common Offsite facilities.

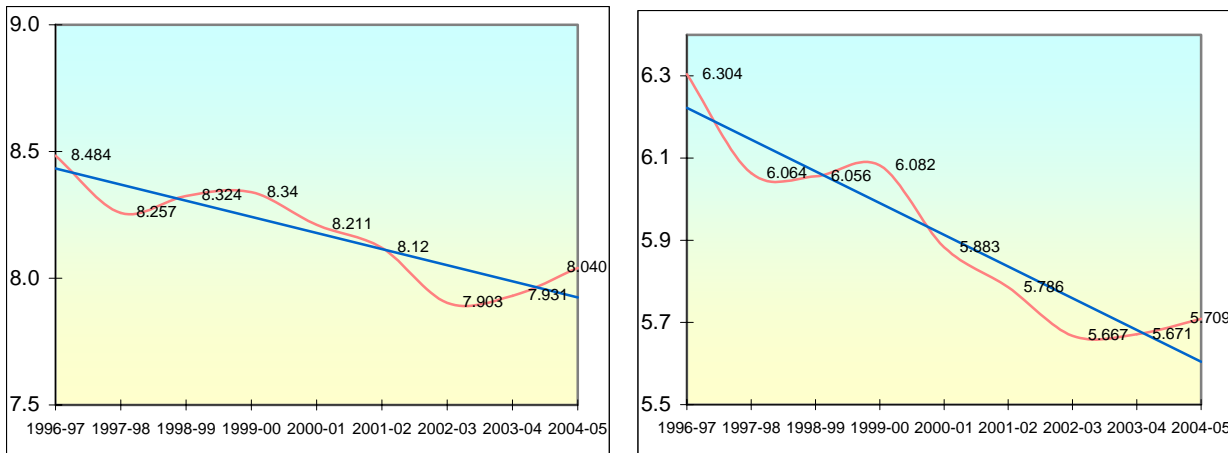
Gadepan-I plant has a total production capacity of 864600 tons of Urea per annum based on Haldor Topsoe Steam Reforming Ammonia Process and Snamprogetti Technology for Urea Process, were commissioned in Jan'94. The re-assessed capacity of Ammonia and Urea plants are 1520 TPD and 2620 TPD respectively.

CFCL, an ISO-14001/18001 certified company, has a well documented written down Environmental, Safety & Health and Energy Management Policies where utmost thrust has been given for resource conservation.

ENERGY CONSUMPTION

With continuous efforts, rigorous monitoring and implementing nos. of energy conservation measures CFCL have achieved continual improvement in Specific Energy consumption since commissioning of the plant. The reduction trend is reflected in the Figures as given below:-

SPECIFIC ENERGY- AMMONIA-I (GCAL / MT) SPECIFIC ENERGY- UREA-I (GCAL / MT)



Further, a summary table for specific energy consumption, energy cost and energy cost as % of total manufacturing cost for last three years viz. 2002-05 is given below. Sp. Energy of Urea has been increased due to more naphtha usage. Energy cost is also higher than previous years due to more naphtha usage as well as higher cost of naphtha, but the energy cost as % of total manufacturing cost has increased in last two years mainly due to:-

- (i) Increase in thermal energy consumption as more naphtha was used because of acute short supply of NG
- (ii) Steep rise in naphtha price particularly since 2003-04.

S.N	Description	Unit	2002-03	2003-04	2004-05
1	Annual Ammonia Production	MT	495568	521652	550554
2	Annual Urea Production	MT	864900	907731	961179
3	Spec. Energy consumption- Ammonia	Mkcal/ MT	7.903	7.931	8.040
4	Spec. Energy consumption- Urea	Mkcal/ MT	5.667	5.671	5.709
5	Total Manufacturing Cost	Rs/Lacs	40633.15	49182.03	61800.94
6	Total Energy Cost	Rs/Lacs	16995.15	24542.56	31297.04
7	Energy Cost as % of Total	%	41.8	49.9	50.6

	Manufacturing cost				
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ENERGY CONSERVATION COMMITMENT, POLICY AND SET-UP

COMMITMENT /POLICY

M/s. Chambal Fertilisers as an organization is aware of the fact that the world is moving from abundance to scarcity in terms of available energy resources. Chambal Fertilisers' vision of becoming the largest player in the fertilizer industry cannot be realized unless there is top management commitment and thrust towards Energy Management, which is reflected in Energy policy



Chambal Fertilisers and Chemicals Limited

GADEPAN (KOTA)

ENERGY MANAGEMENT POLICY

OUR AIM

- ❖ To reduce energy consumption by optimizing our chemical processes, equipment and electrical system efficiencies through continual improvement.
- ❖ Share and enrich our experience on energy conservation within and outside the organization with the objective to enhance awareness.
- ❖ Benchmark continuously our performance against the best in the world.

OUR ENDEAVOUR

- ❖ Manage efficiently the utilization of energy resources (like Natural Gas, Naphtha, LNG etc.) by updating hardware, operational practices and employing more efficient and appropriate technology from time to time .
- ❖ Train and educate our employees to be trendsetter in the area of ENCON.
- ❖ Carry out periodic internal and external audits to identify areas of improvements and implement the energy Conservation schemes.
- ❖ Maximize recovery of waste energy.

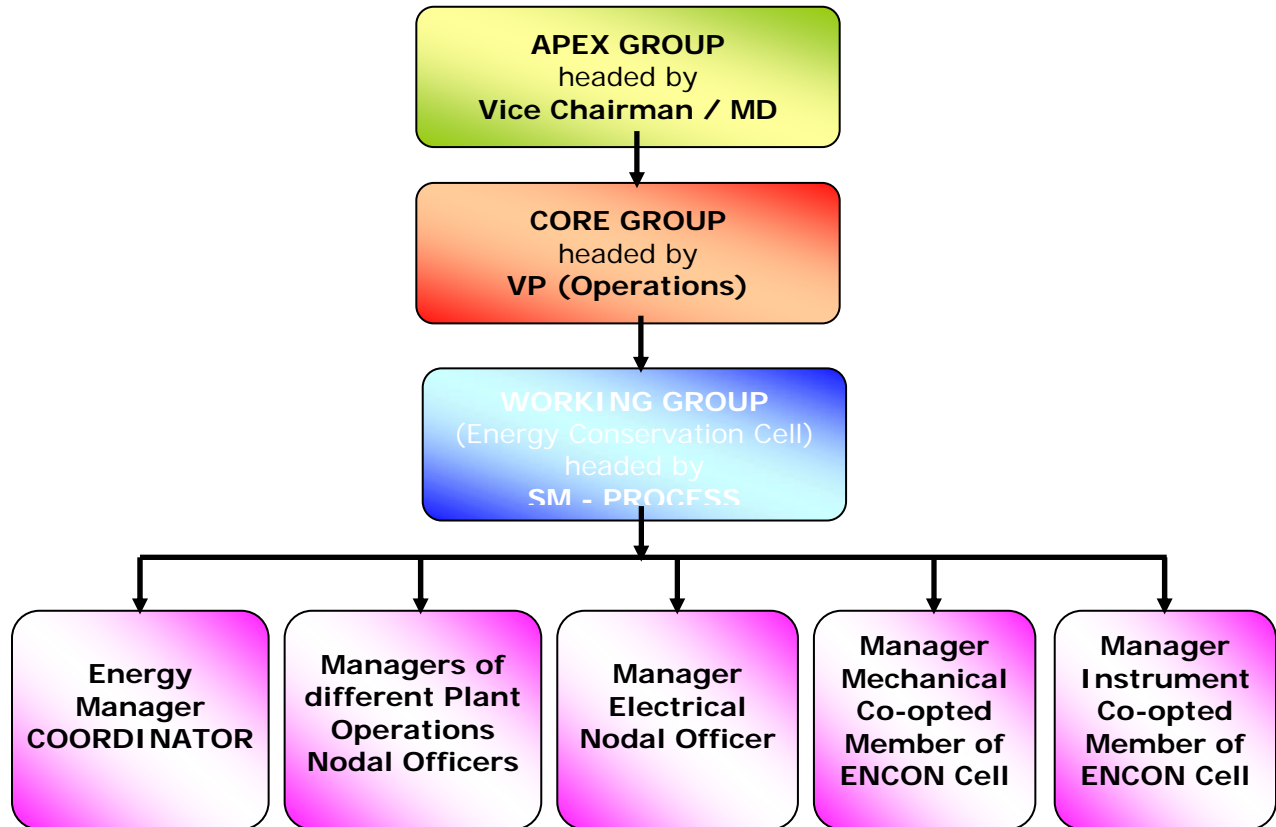
OUR ULTIMATE OBJECTIVE

- ❖ To become "Energy Leader" in comparison to similar Fertiliser Plants in India.

Date : 18th February 2004


(VINOD MEHRA)
Vice President - Operations

ENERGY MANAGEMENT SET-UP



ENERGY CONSERVATION ACHIEVEMENTS (during the year 2004)

During the period 2004-2005, following major energy saving schemes were implemented:

1. NG Preheater in Steam & Power generation Plant

Existing

Presently we are using NG at ambient temperature for boiler & HRSG fuel. NG is available at around 40 ata from GAIL terminal. Pressure reduction to 18 Kg/cm² is carried on gas skid. The temperature after expansion is normally 20⁰C.

Actions taken

A scheme was developed by utilizing low-grade heat from blow down and heating NG fuel for HRSG & Auxiliary boilers from 17⁰C to 60⁰C.

Investment/Savings

Total Investment of the scheme - 6.30 Rs / Lacs
Total savings - 3.90 Rs / Lacs /Year

2. Other energy saving schemes implemented in 2004-05

(a) Replacement of GLS lamps to CFL in Hostel Building in township.

Investment/Savings

Total Investment of the scheme - 0.1 Rs / Lacs
Total savings - 0.37 Rs / Lacs /Year

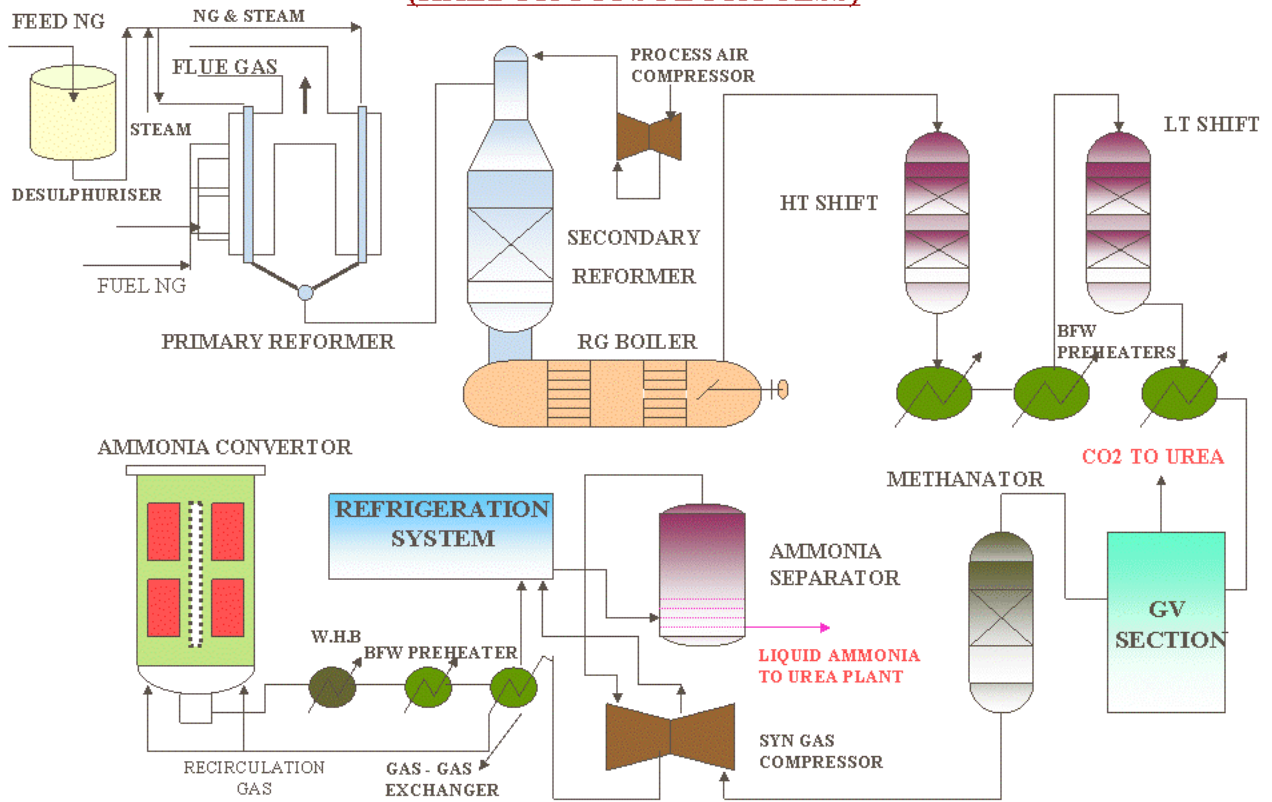
ENERGY CONSERVATION PLANS AND TARGETS

CFCL is committed to further improve upon its energy performance and would like to sustain the reducing trend in next incoming years also. The following energy conservation measures are planned for future:

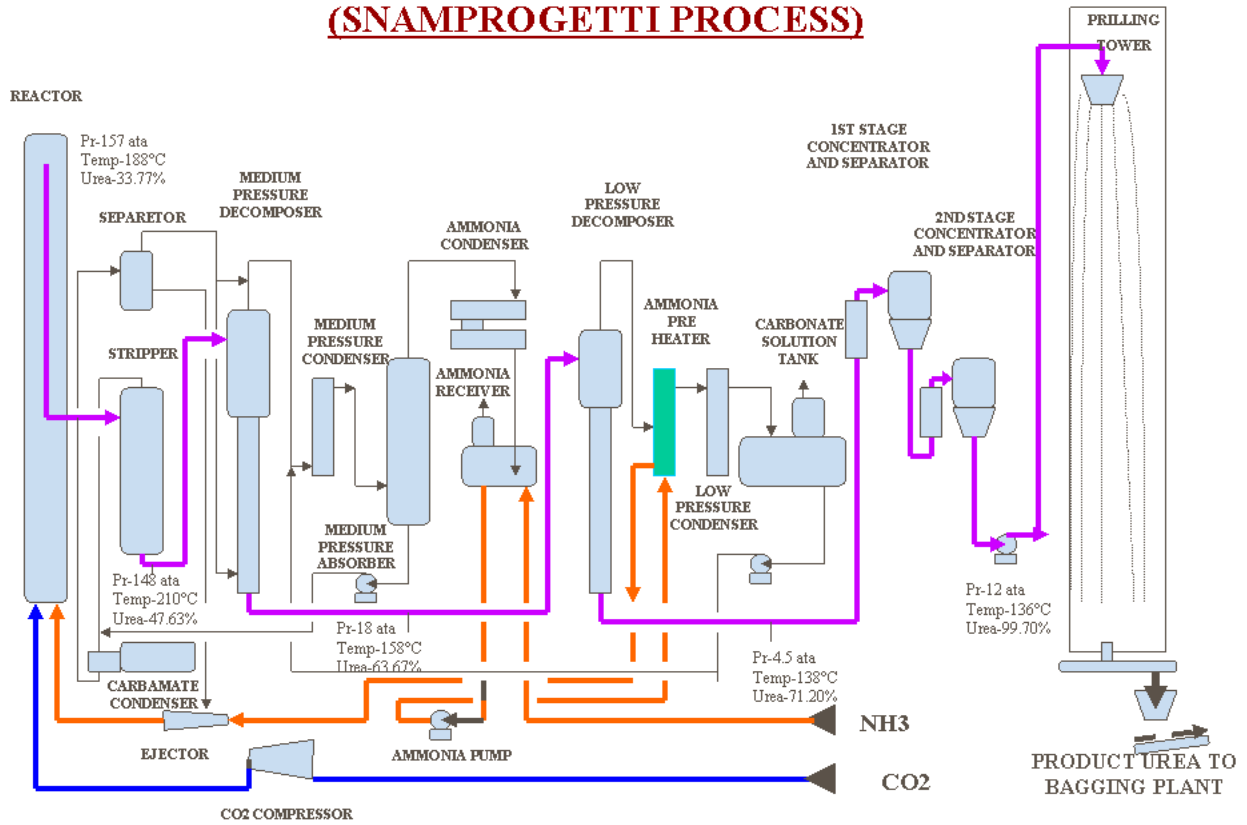
1. Inlet Air Cooling of Gas Turbine.
2. Replacement of Gland packing with Split type Mechanical seal in Cooling Water pumps.
3. Variable frequency drives in identified pumps/Fans.
4. Blow down heat recovery for Natural gas heating in Ammonia Plant.
5. Installation of Solar water Geysers in Guesthouse, Canteen & Fire barracks & Solar lights in Remote areas.
6. Provision of energy efficient lights in Control room as well as Administration buildings.
7. Using low-pressure drop filters in Air compressor in Ammonia plant.

AMMONIA-1 PROCESS FLOW BLOCK DIAGRAM

(HALDOR TOPSOE PROCESS)



UREA-I PROCESS FLOW BLOCK DIAGRAM (SNAMPROGETTI PROCESS)



UREA-II PROCESS FLOW BLOCK DIAGRAM (TEC'S ACES PROCESS)

