

COROMANDEL FERTILISERS LIMITED
 VISAKHAPATNAM, A.P,
 Unit Profile:

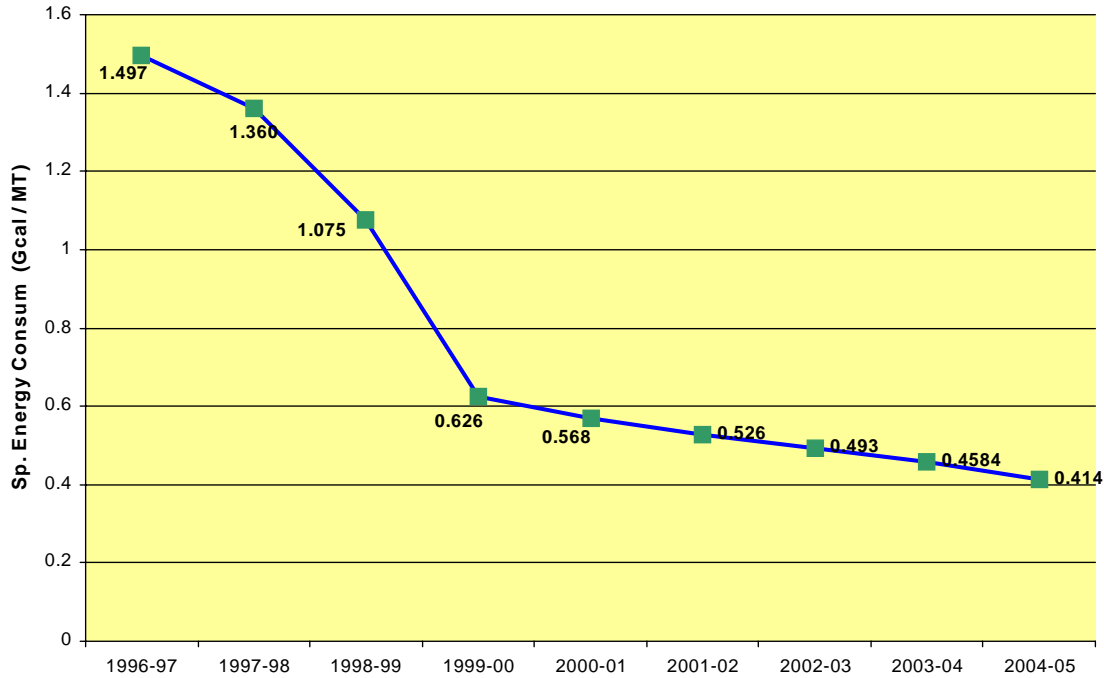
Coromandel fertilizers limited is a leading phosphatic fertilizer company in India and has commenced its operation in 1967 . It is currently a part of Murugappa Group a leading business house in India with a turn over of about Rs5000 crores per year. The production facilities comprise of 3 nos granulation trains for producing high nutrient analysis NPK grades and has an installed capacity of 6.0 lakhs per annum. Besides CFL operates intermediate plants for production of phosphoric acid & sulfuric acid and the supporting facilities which mainly comprise of Ammonia import & handling facilities ,Molten sulfur import & handling facilities and other utility systems like water,Compressed air, Steam generation systems etc. CFL operates its own berth at Port Jetty & imports all the required raw materials through ships. Originally the plant installed capacity of 2.5 million tones in 1967.Over years the production capacity was gradually increased to 6.0 lakh mT thru revamps & debottlenecking programmes in years 1976,1987,1994& the year 2000 taking advantage of latest developments in technology from time to time. On the energy front too CFL never spared efforts and have continually implemented several measures over years. In the last 3 years The company has consistently performed and maintained high level of productivity against all odds that was facing phosphatic fertilizer industry in the country following decontrol & liberalization & stiff competition from with in the country & abroad.

CFL Visakha has implemented management system to achieve organizational excellence through promotion of continual improvement of Product & Process Quality, Environmental performance and safety performance. Received DNV certification for ISO 9001, ISO 14001, & OHSAS 18001. In addition a unique system by name PSMS based on OSHA standard is successfully running from 2000.Presently CFL is implementing Total Productivity Maintenance (TPM).

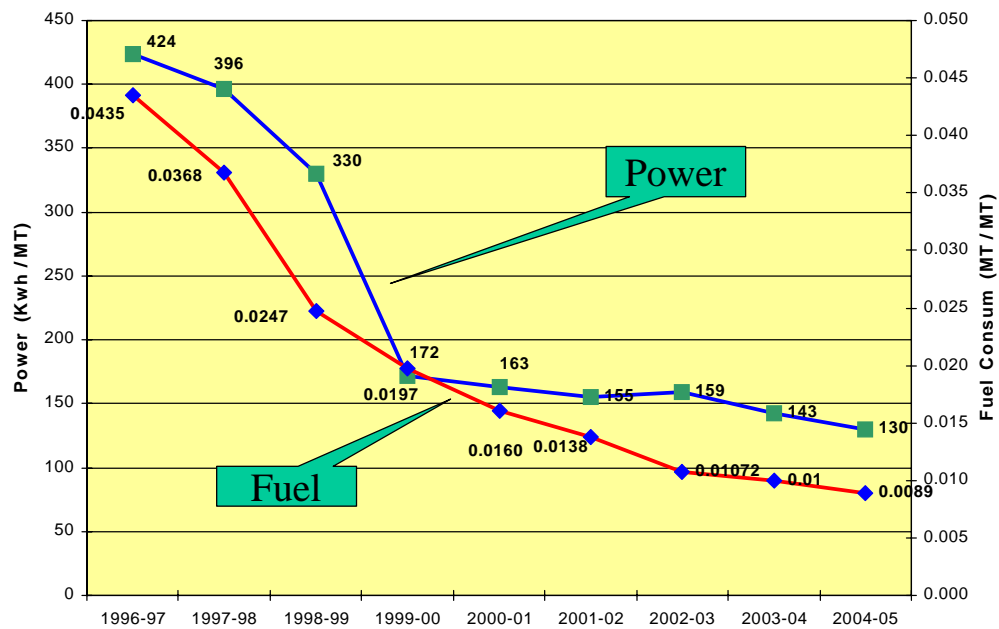
DESCRIPTION	UNIT	2002-03	2003-04	2004-05
Annual complex fert production	Mt	554750	633281	713018
Total electrical energy consumption/annum (Gross)	Lakh kwh	872.49	903.37	923.64
Specific consumption electrical	Kwh/mt	157.27	142.65	129.50
Process fuel cons /annum	Mt	5951	6387	6360
Sp energy cons Electricity	Mkcal /mt	0.3963	0.3594	0.3263
Sp fuel cons	Mkcal/mt	0.1057	0.099	0.0089
Total sp energy cons	Mkcal/mt	0.5020	0.4584	0.414
Total manufacturing cost	Lakh Rs	51480	69417	82540
Total energy cost	Lakh Rs	3525.3	3105	3301.6
Energy cost as % of total manufacturing cost	%	6.1	4.5	4.11

Production Performance has been on increasing trend and CFL expects to reach 7.0 Lakh MT/Annum for first time and have plans to increase production capacity to 1.0 Million Mt in the next 2 years. There has been a steady decrease in energy consumption last 3 years due to high value of production and a number of ENCON schemes implemented.

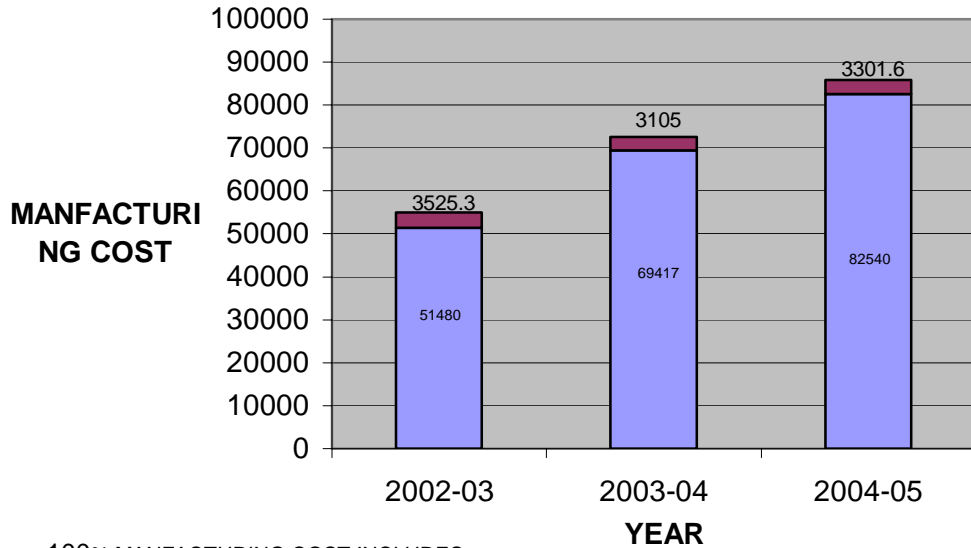
Total Specific Energy Consumption



Specific Energy Consumption

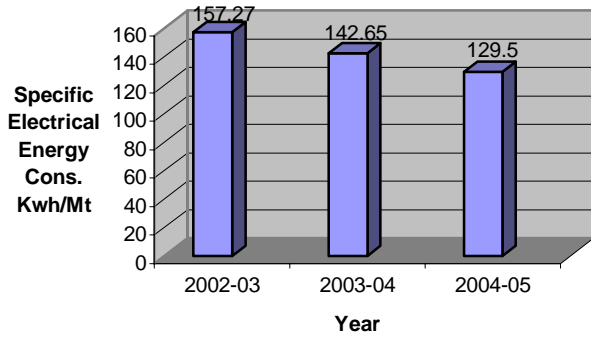


MANUFACTURING COST VS ENERGY COST

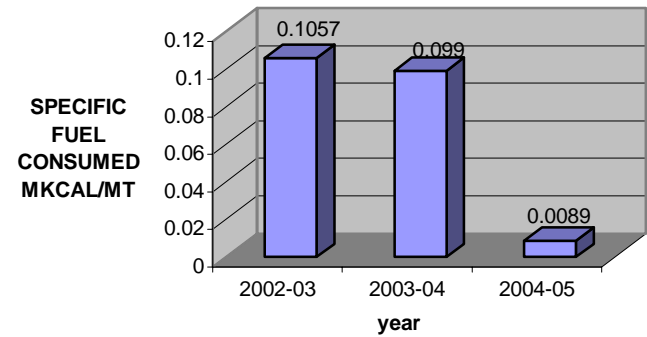


100% MANUFACTURING COST INCLUDES
4% ENERGY COST

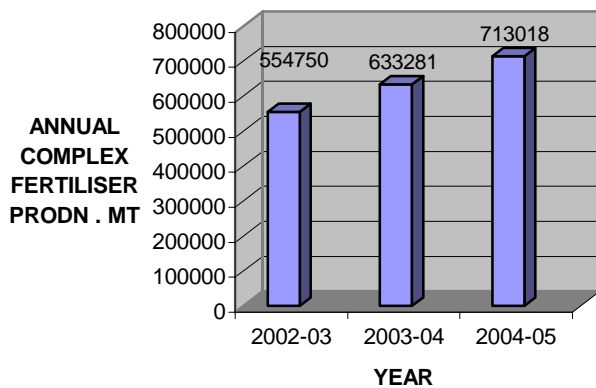
SPECIFIC ELECTRICAL ENERGY CONS



SPECIFIC FUEL CONSUMPTION



ANNUAL COMPLEX FERTILISER PRODUCTION



Energy Conservation Commitment, Policy & set up:

The company's main objective is to operate a modern, cost effective, energy efficient and environment friendly production plant. Keeping the above objectives company has defined an Energy policy and follows this process rigorously.

Technical services manager is given the prime responsibility for coordination of energy conservation measures and leasing with consultants conducting periodic meetings. He is designated as Energy Manager.

Day to day basis energy optimization is taken up in the production meeting under the leadership of DGM operations where all technical managers are present.

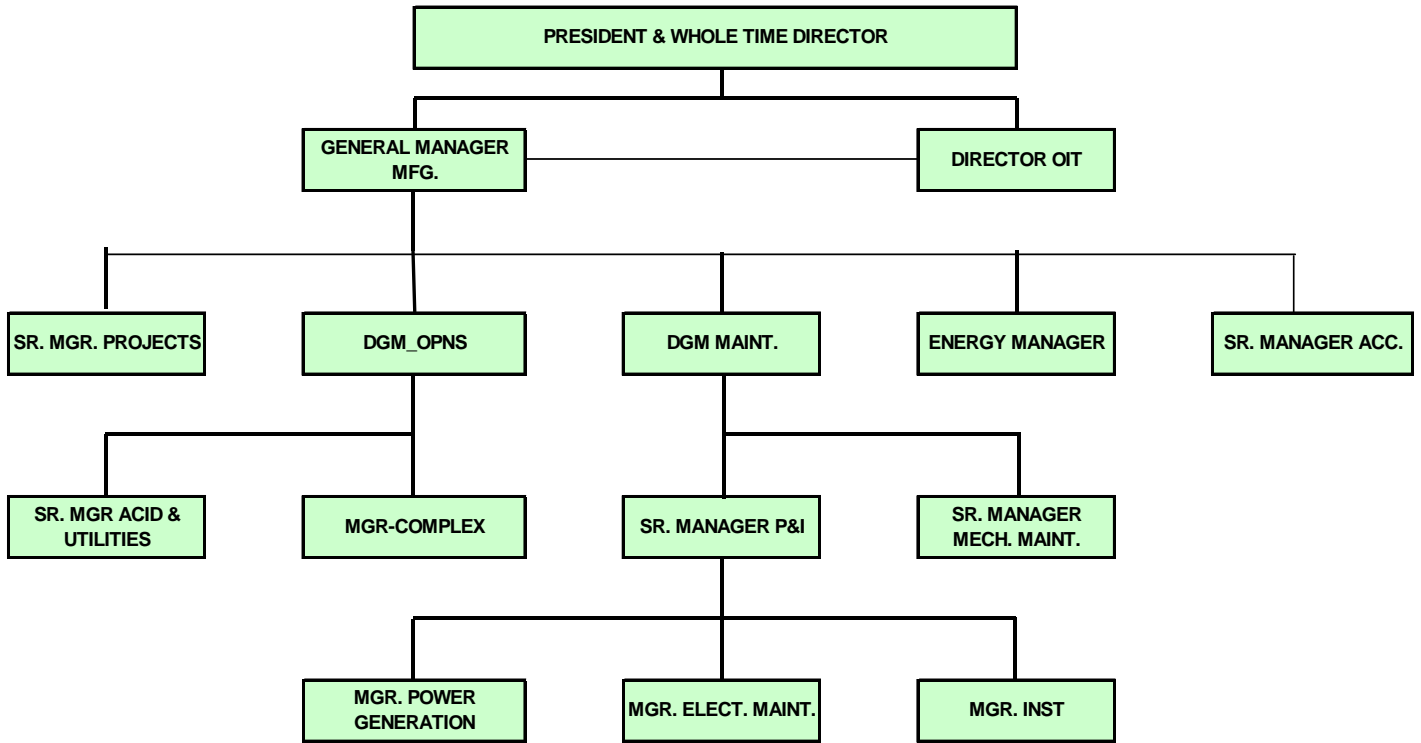
Periodic energy audits are conducted through internal audits and also at times with the help of external consultants. The findings and recommendation of audits are reviewed in a meeting chaired by General manager with all technical departmental heads & section heads.

Short term measures having lower investment are taken up thru revenue budget or taking special approval of President & Managing Director and implemented.

Such measures requiring higher capital investment, absorption of energy efficient technologies & revamps are handled through project department. The implementation of the project is reviewed at periodical intervals by General manager also in the Management Review committee meeting attended by all vice presidents & Managing Director himself.

After the implementation Internal audit (finance) independently conducts a management audit and establishes the facts and realized savings.

OPERATIONAL & ENERGY MANAGEMENT TEAM



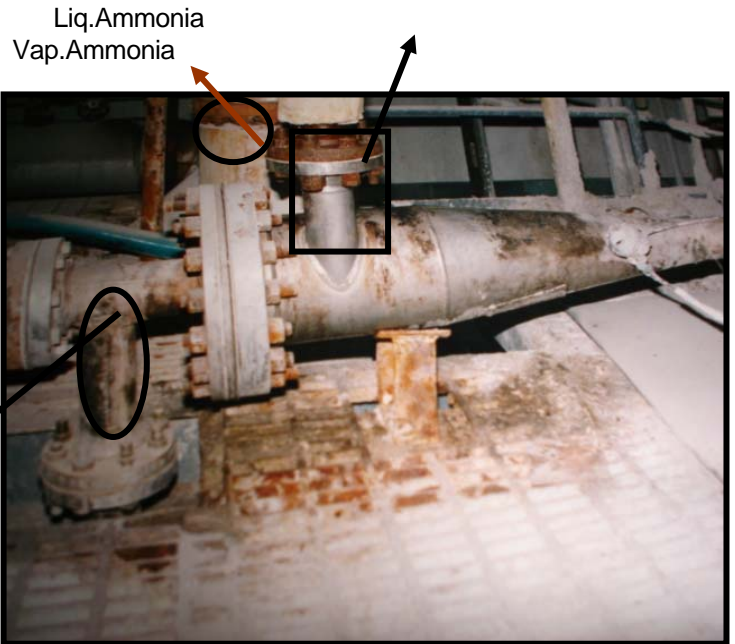
Major Projects implemented during 2004-05 are listed below:

1. Liq. Ammonia in place of Vapour Ammonia to 'C' Train in Pipe reactor:

Originally the system was designed based on the Vapour phase reaction of Ammonia. Phos. Acid and Sulphuric acid. Based on internal studies we have decided to feed Liq. ammonia directly to Pipe reactor bypassing the vaporizer. Because of this 4 MT of steam was saved which resulted in savings of 675 MT of LSHS in D.G.sets.

Investment : 1.0 Lakhs
Saving in energy : 0.675 Kwh
Total savings : Rs90.0 Lakhs/annum
Acid

Phosphoric

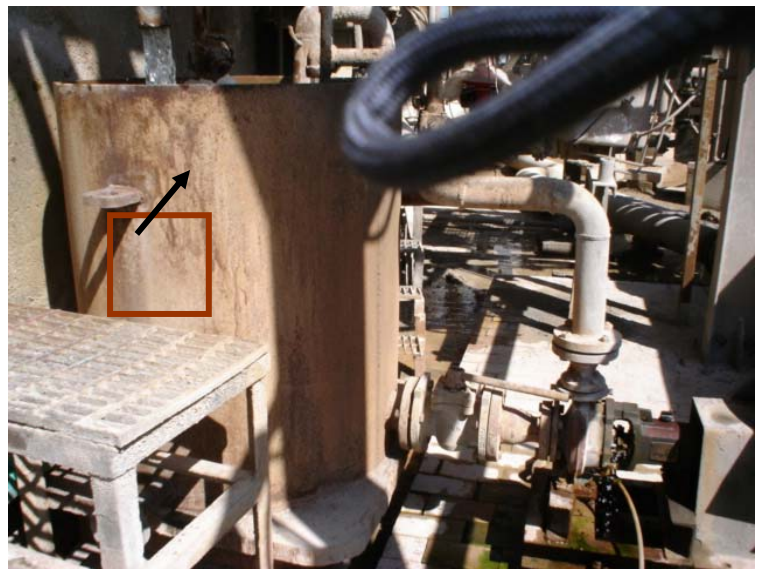


PIPE REACTOR

2. Stoppage of R.G. water Pump :

The water used in rock grinding is recovered and pumped directly to the plant fresh water header . Based on the survey we estimated that the pressure drops are found to be sufficient for directly sending the water to Fore cooler sump. Hence we stopped rock grinding pump and routed this water to plant directly by gravity and effected savings in power consumption.

Investment : 1 Lakhs
Consumption after installing VFD : 0.1 units
Saving in energy : 1 KWh
Total savings



ROCK GRINDING SUMP

FORE COOLER SUMP

Pump stopped



Rock Grinding water by gravity

3. Trimminng of low lift pump:

Our Low lift sea water pumps are designed for a capacity of 40,000 U.S. GPM. But with closure of certain plants , Sea water usage was reduced to about U.S.GPM. Hence we considered alternative like installing a new Pump Vs. Trimming the impeller of the existing pump .Between this two we have chosen second alternative as a first step and trimmed the impeller size by about 2"φ.

Investment	: 2Lakhs
Consumption after installing VFD	: 0.33Kwh
Saving in energy	: 1Kwh
Total savings	: Rs. 1Lakh

LOW LIFT PUMP



TRIMMED IMPELLER



DM water booster Pump :

DM Water used for Sulphuric acid dilution in Phos. Acid & Sulphuric acid plants. Since these plants are far off DM water pressure is boosted through a separate pump and feed to this plants. Over the years the capacity of both the plants have increased also DM water consumption. This has caused higher pressure drop in the 3" ϕ line resulted in a need to continuously run DM booster pump. We have replaced this line with 6" ϕ line and have stopped booster pump.

Investment : 1Lakhs
Energy consumption before : 1.0 Kwh
Net reduction in energy consumption : 0.8 KWh
Annual cost of energy saved : 2 Lakhs



Modified 6"line

**DM WATER
BOOSTER PUMP**

ENCON SCHEME	LSHS SAVINGS (MT/YR)	EQUIVALENT CO₂ REDUCTION	YEAR
AIR PRE HEATERS IN GRANULATION PLANT	4000	12467	SEP.05 TO SEP. 06