

COROMANDEL FERTILIZERS LIMITED Visakhapatnam (Andhra Pradesh)

Unit Profile

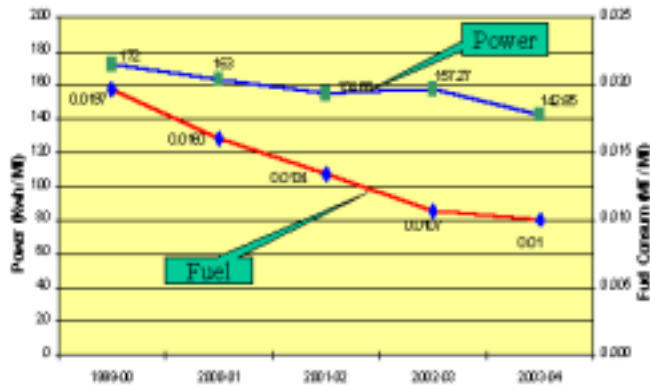
Coromandel fertilizers limited is a leading phosphatic fertilizer company in India and has commenced its operation in 1967 . It is currently a part of Murugappa Group a leading business house in India with a turn over of about Rs5000 crores per year. The production facilities comprise of 3 nos granulation 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 through 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).

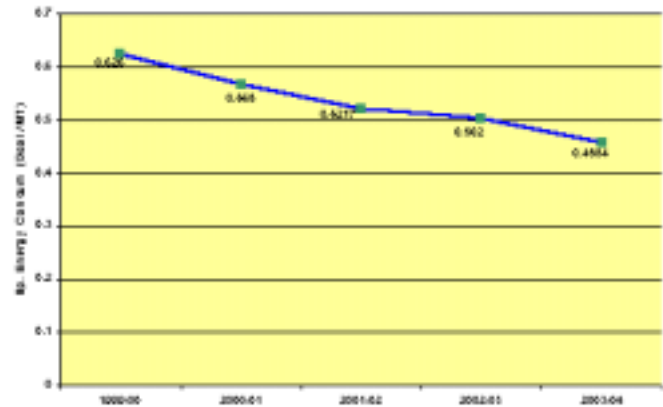
DESCRIPTION	UNIT	2001-02	2002-03	2003-04
Annual complex fert production	Mt	575637	554750	633281
Total electrical energy consumption/annum (Gross)	Lakh kwh	890.33	872.49	903.37
Specific consumption electrical	Kwh/mt	154.66	157.27	142.65
Process fuel cons /annum	Mt	7715	5951	6387
Sp energy cons Electricity	Mkcal /mt	0.3897	0.3963	0.3594
Sp fuel cons	Mkcal/mt	0.132	0.1057	0.099
Total sp energy cons	Mkcal/mt	0.5217	0.5020	0.4584
Total manufacturing cost	Lakh Rs	54623	51480	69417
Total energy cost	Lakh Rs	3324.4	3525.3	3105
Energy cost as % of total manufacturing cost	%	6.08	6.1	4.5

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

Specific Energy Consumption



Total Specific Energy Consumption



Energy Conservation Commitment, Policy and 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.

Energy Conservation Achievements

Major Projects implemented during 2003-04 are listed below:

1. Installation of VFD for Sul.Acid product pump:

Investment	:	1.2 Lakhs
Energy Consumption prior to installation of VFD	:	8.1 KWh
Consumption after installing VFD	:	3.9 KWh
Saving in energy	:	4.2 Kwh
Total savings	:	Rs 1.0 Lakhs

2. VFD for clean condensate pump:

Investment	:	2.0 Lakhs
Energy Consumption prior to installation of VFD	:	11.8 KW
Consumption after installing VFD	:	7.6 Units
Saving in energy	:	4.2 KWh
Total savings	:	4.2 X 8000 X3 = Rs 1.008 Lakhs

3. VFD for T.G condensate pump:

Investment	:	2.0 Lakhs
Energy Consumption prior to installation of VFD	:	11.6 Kwh
Consumption after installing VFD	:	5.0 Kwh
Saving in energy	:	6.6 Kwh
Total savings	:	6.6 X 8000 X3 = Rs 1.6 Lakhs

4. Smaller size impeller for tail gas scrubber pumps for A,B,C trains:

Investment for all 3 impellers	:	Rs 1.2 Lakhs
Energy consumption before (For all 3 pumps put together)	:	293.6 Kwh
Energy consumption after	:	278.4 Kwh
Net reduction in energy consumption	:	15.2 KWh
Annual cost of energy saved	:	Rs 3.3 Lakhs

5. Implementation of pipe reactors in C and A trains:

Total Investment	:	Rs 26.0 Lakhs
L.S.H.S savings realised	:	700.0 Mt
Equivalent in Rupees	:	Rs 91.0 Lakhs/annum

These pipe reactors are designed and developed with in-house expertise in Complex Fertilisers plant. This has reduced LSHS consumption in subsequent operation of drying the product. Since the exothermic heat of reaction is utilized in the pipe reactor to evaporate and dries the moisture out without any need for firing fuels in the dryer for drying the product.

Energy Conservation Measured (Planned)	Anticipated savings in		Approx. investment (Rs. Lakhs)	Project Commencement & Completion year
	Energy value (Specify units)	Rs. Lakhs		
Modified evaporator scrubbing procedure	2000 Mt	48.0	Nil	2004-05
Liquid Ammonia to 'C' train	29600	216	Nil	2004-05
Pipe reactor modification for 'B' Train	200 Mt of FO	26.0	40.0	2004-05
Low lift sea water pump modification	3.6 Lakh Kwh	10.0	20.0	2004-05
Water conservation schemes	1,08,000	3.2	---	2004-05

Environment and Safety

List of major environmental improvements made during 2001– 2004

MEASURE	COST (Rs. Lakhs)
1. Renewal of bag filters in rock grinding station	15
2. Telescopic chute, emulsifier nozzles & bag filter at wharf	22
3. Atmospheric Ammonia storage tanks in place of Horton spheres	3000
4. Pollution control equipment for new C-granulation train	833
5. Revamp of scrubbing systems of A & B granulation trains	1100
6. Additional bag filter at rock grinding unit.	5
7. Continued usage of LSHS instead of furnace oil, to reduce sulphur oxide emissions.	---
8. Greenbelt development	---
9. Energy Conservation schemes	---
10. Bag filter for wharf	15
11. Reverse Osmosis plant for desalination of sea water	100
12. Delay pond for Effluent treatment plant	45
13. Screw unloader for handling Raw material at wharf	1900
14. Replacement of Fume scrubber in Phos acid plant	150
15. Installation of Dedusting system at Rock unloading area	10
16. Installation of New online SO ₂ analyser at SA Plant	8