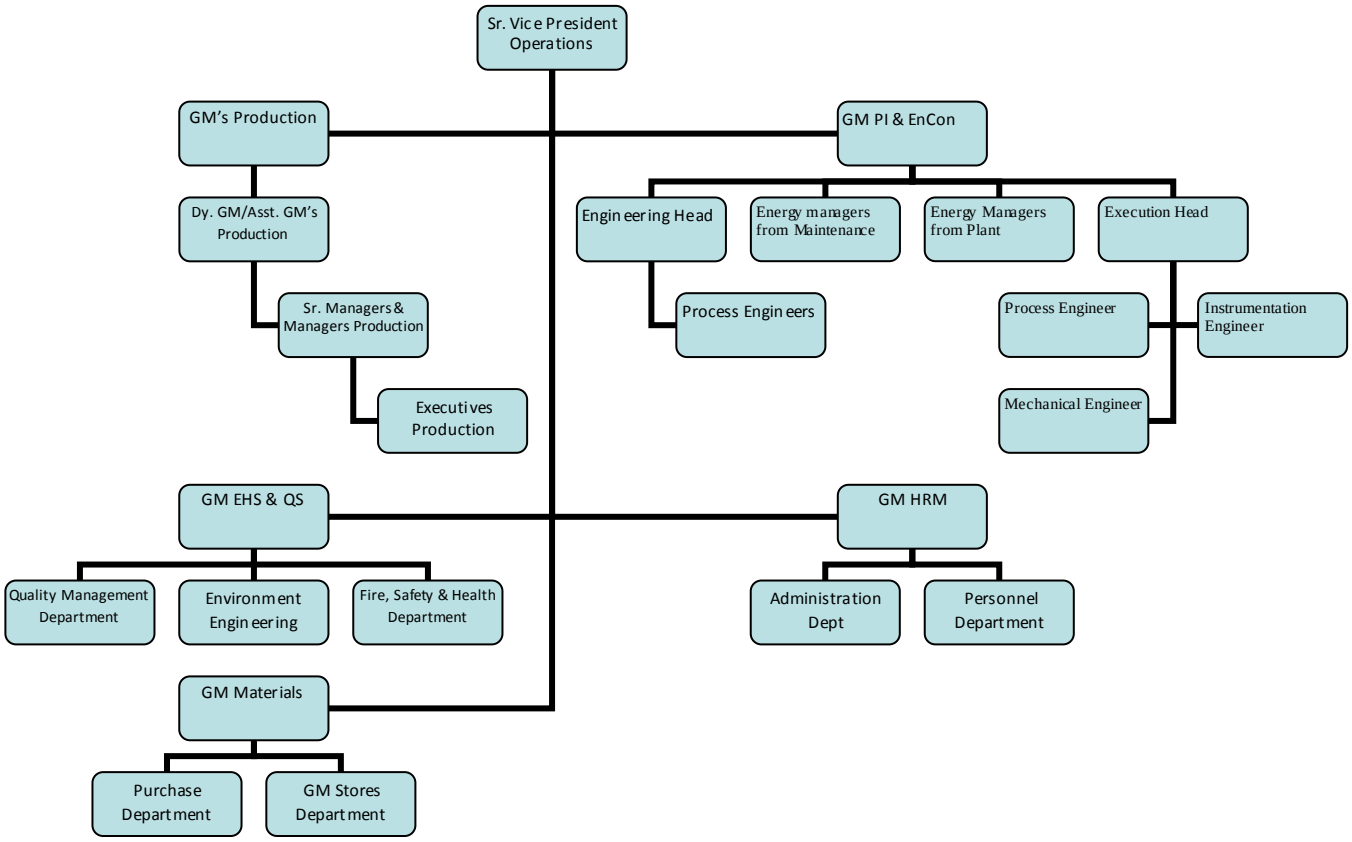
Company Profile:

I	Name of Company	Deepak Fertilisers and Petrochemicals Corp. Ltd
II	Year of Establishment	1979
III	Capital Structure	Equity: Rs. 120 Cr, Debt: Rs. 35 Cr
IV	Principle Manufacturing Units	▪ Anhydrous Liquid Ammonia (390 MTPD) ▪ Methanol (300 MTPD) ▪ Weak Nitric Acid (300× 3 MTPD) ▪ Concentrated Nitric Acid (140 × 2 MTPD) ▪ Liquid Carbon Dioxide (100 MTPD) ▪ Isopropyl Alcohol (210 MTPD) ▪ Complex Fertiliser (23:23:0) (1000 MTPD) ▪ Ammonium Nitrate (300 MTPD)
V	Unit Location	Plot K-1to K-5, K-6 MIDC Industrial Area, Taloja, A.V. 410208 District Raigad, Maharashtra. (India) Tel: 67684000, Fax: 27412413
	Number of Employees	793

VI. Organizational Structure



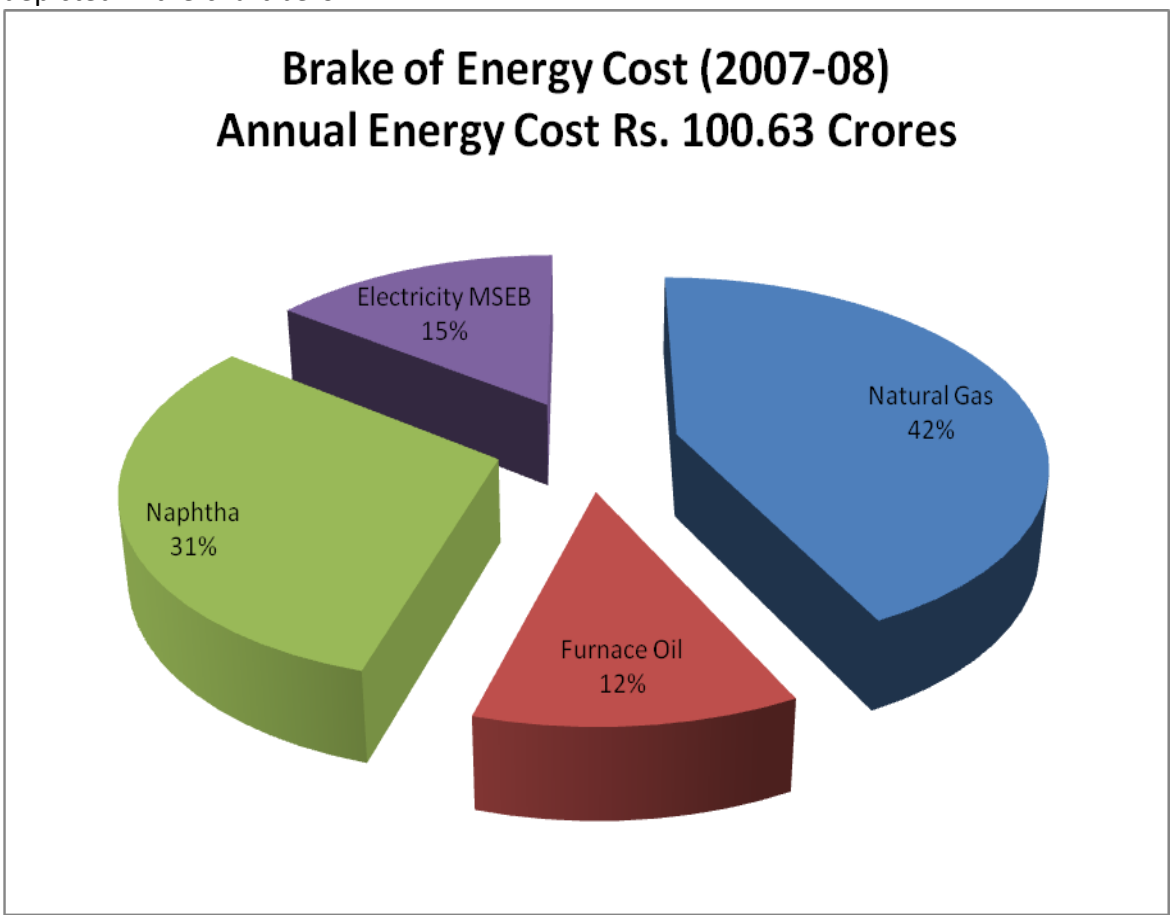
Initially we have the technical service department who look after the plant performance & energy conservation. To become more focused & proactive we have been restructured in the month of June-08 & formed the energy cell named as PI & EnCon. The group has been lead by professional who is in the field for improvement of plant performance & better management of energy more than 15 year. Also the designated as Energy Manager. The group is directly reporting to unit head & Apex committee consists of Chief executive of the organization.

Efforts for Energy Conservation

At Deepak Fertilisers & Petrochemicals Corporation Limited, Taloja, the major products manufactured are Ammonia, Methanol, Liquid Carbon Dioxide (Food Grade), Isopropyl Alcohol, Various Grades of Nitric Acid, Low Density Prilled Ammonium Nitrate, Ammonium Nitrate Melt, Ammonium Nitrate Phosphate (23:23:0).

The annual turnover of the manufacturing activities in the complex in 2007 - 08 was Rs. 680 Crores. The annual energy cost at DFPCL complex during the same period (2007 – 08) was Rs. 100.63 Crores. Energy cost therefore accounted for about 16% of manufacturing cost.

The major energy sources of the complex are Electricity (from MSEB & CPP), Natural gas, and Naphtha and Furnace oil. In 2007 – 08 the annual energy bill was Rs. 100.63 Crores. The contribution of the different energy sources in the total energy cost is depicted in the chart below.



The following table indicates the energy indices for last three years for each plant at Taloja unit:

Plant	Energy Source	Energy Consumption per Ton of Production		
		2005-06	2006-07	2007-08
Ammonia	Electricity (KW/MT)	71.666	71.347	89.199
	Energy Consumption (MM Kcal/MT)	8.8440344	8.930428	9.2513264
Methanol	Electricity (KW/MT)	73.471	82.534	104.935
	Energy Consumption (MM Kcal/MT)	8.2776812	8.299503	8.9746714
Liq. CO2	Electricity (KW/MT)	222.478	236.851	257.147
Nitric Acid - I	Electricity (KW/MT)	8.622	11.271	9.728
	Energy Consumption (MM Kcal/MT)	-0.01296	-0.03888	-0.00756
Nitric Acid - II	Electricity (KW/MT)	7.956	6.145	7.952
	Energy Consumption (MM Kcal/MT)	-0.07182	-0.10206	-0.07074
Nitric Acid - III	Electricity (KW/MT)	65.641	74.391	70.496
	Energy Consumption (MM Kcal/MT)	0.29052	0.2457	0.13824
Ammonium Nitrate	Electricity (KW/MT)	42.666	41.916	37.913
	Energy Consumption (MM Kcal/MT)	0.11988	0.13068	0.13068
Nitrophosphate	Electricity (KW/MT)	48.026	38.78	60.139
	Energy Consumption (MM Kcal/MT)	0.13986	0.19116	0.15498
IPA	Electricity (KW/MT)	-	494.271	332.67
	Energy Consumption (MM Kcal/MT)		4.59594	3.3804
Boilers A,B & C (Steam Generation)	Power	2.199	2.34	2.466
	Energy Consumption (MM Kcal/MT)	0.77448	0.76752	0.76068
Boilers D (Steam Generation)	Power	-	7.978	8.147
	Energy Consumption (MM Kcal/MT)	-	0.84152	0.83968

The management is highly energy conscious and has implemented several measures to reduce the overall energy consumption and cost within the complex. The specific energy consumption for producing ammonia has reportedly been brought down from 10.4 Gcal/Ton of Ammonia in 1983 to 8.34 Gcal/Ton of Ammonia in 2007 through major energy retrofits.

The major energy retrofits that were carried out to bring about this drastic reduction in energy consumption include:

- Installation of S-200 reactor with heat recovery in synthesis loop.
- Switching over to MDEA from MEA for CO2 removal
- Use of micro-alloy for reformer tubes, modifying steam system/utilization pattern in ammonia plant.
- Installation of condensate stripper/saturator for natural gas and heat recovery from reformer flue through BFW pre-heat.

Apart from the above modifications also have been implemented for energy conservation & cost reduction schemes which are indicated below.

a. Installation of Gas Turbine Co-generation system
b. Installation of Waste Heat Boilers in CES engines of Ammonia plant
c. Operational changes of steam driven equipments
d. Maintaining very good system power factor at 0.99
e. Installation of FRP blades in cooling tower fans
f. Installation of 2 speed drives for select cooling tower fan motors
g. Installation of electronic chokes in select areas
h. Direct supply of product Ammonia to user plant
i. Unloading and supply of import ammonia through bullet to fertiliser plant

The following are some of the Energy saving schemes implemented in last three years.

Year	**2005-06**		
1	BFW heater was replaced with improved design Heat Exchanger	Power	165 kW/hr
2	Refrigeration with help of low grade heat from cooling water of CES engine	Energy	0.06 Gcal/MT
3	Use of Translucent Lamps and timers for it's ON/OFF	Power	9500 units/month
Year	**2006-07**		
1	Cooling Water Pump Impellers in Methanol, WNA I, II, III, AN & ANP coated with special material.	Power, Steam	
2	Use of LP Steam in Deareator of CPP instead of HP Steam	Steam	1 MT/hr
3	Collection of Condensate from various plants and production of flash steam from it.	Steam	1 MT/hr
4	Recovery of condensate from all steam traps in Ammonia Plant	Condensate	0.3 M^3/hr
5	Improved ejector system for Air compressor turbine in WNA-III	Steam	0.3 MT/hr
Year	**2007-08**		
1	One of the Motor driven FD fans and BFW Pumps converted to turbine drive	Power	240 kW/hr
2	Providing additional NG heater using methanator exit gas	Energy	0.23 Gcal/hr
Planned Energy Conservation schemes for Energy Saving in Year 2008-09.			
1	Provision of Generator to use let down of HP steam in IPA Plant	Power	≈ 1200 kW
2	Provision of LP Flash column in CO2 removal system and change of solvent in Ammonia Plant	Energy	1.2 T/hr steam
3	Recovery of Waste Heat from HRSG stack	Energy	2750 Gcal/year
4	Connecting the BFW turbine exist to De-aerator	Steam	0.5 T/hr Steam
5	Ammonia super heater condensate recovery in WNA Plants	Condensate	0.6 T/hr Condensate

Environment and Safety

DFPCL is committed to preserve its environment and safety of it's employees. Following facilities are available in the factory premises for the same.

1) Water Effluent:

   The company has set up an Effluent Treatment Plant with an investment of Rs.3.5 crores and liquid effluent generated in various plant is treated in the ETP in the following steps :

   (a) Physio-chemical precipitation of phosphate with lime.

   (b) Physical stripping of the ammonium compounds as free ammonia.

   (c) Biological Denitrification (Anoxic) to convert all nitrates to free nitrogen.

   ETP has been designed to treat effluent flow of 120 m^3/hr. ETP is manned by two operators and one officer in each shift to monitor and control the plant parameters. The analysis of the effluent is done at each stage in ETP Laboratory and central laboratory.

   Safety & Environment Dept monitors the quality / quantity of incoming effluent as well as treated effluent and feed back is given to the concerned Departments to take corrective actions, if necessary.

2) Air:

   Ammonia Plant has been provided two flares. One for plant and other for Ammonia storage tank. The gases from plant vessels and equipments released due to deviations in pressure, temperature, etc., or at the time of shut down / start up are collected in a header which is connected to flare for burning the same. The second flare is a dedicated flare for Ammonia storage tank which can burn ammonia if pressure in ammonia tank goes high due to failure of refrigerator compressors, etc.,

   Boilers are run on naphtha and or natural gas. Analysis of the Boiler stacks also indicates low level of pollutants in stack.

   In WNA-I and II plants high efficiency absorbers are installed in addition to choosing of high pressure absorption for achieving NOx emission within the MPCB norms. For Weak Nitric Acid Plant - III, NOx unit has been provided, since the absorber efficiency is low due to low pressure operations. All the three stacks are monitored through continuous NOx analysers

3) Solid Waste:

   Non-hazardous solid waste generated in the company is as under:

Sr.No.	Type of waste	Disposal
1.	Oil drums / carboys	Sale
2.	Papers	Controlled burning
3.	Metallic scrap	Sale
4.	Plastic bags	Sale
5.	ANP / LDAN spillage	Reused in process
6.	ETP phosphate sludge	Sale

Hazardous Wastes:

Catalyst and spent oil are only hazardous waste generated in the factory and they are disposed off by sale to MPCB designated outside parties.