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Chapter- I

INTRODUCTION

1.0 Introduction

1.1 Department of Chemicals and Petrochemicals (DCPC) aims:

i. To formulate and implement policy and programmes for achieving growth and development of the chemical and petrochemical sectors in the country; and

ii. To foster the spirit of public-private partnership for overall development of above-mentioned sectors of industry.

1.2 The Department has the mandate to deal with the following broad subject matters:

i. Insecticides excluding the administration of The Insecticides Act, 1968 (46 of 1968);

ii. Molasses;

iii. Alcohol – Industrial and Potable from the molasses route;

iv. Dyestuffs and Dye Intermediates;

v. All organic and inorganic chemicals, not specifically allotted to any other Ministry or Department;

vi. Planning, Development and control of, and assistance to, all industries being dealt with by the Department;

vii. Bhopal Gas Leak Disaster-Special Laws relating thereto;

viii. Petrochemicals;

ix. Industries relating to production of non-Cellulose Synthetic Fibers (Nylons, Polyesters, Acrylic etc);

x. Synthetic Rubber; and

xi. Plastics including fabrications of plastic and moulded goods.

1.3 The Department has two functional divisions viz. Chemicals, and Petrochemicals. There are two PSUs in the chemical sector namely Hindustan Organic Chemicals Ltd. (HOCL) and Hindustan Insecticide Ltd. (HIL) and one PSU in the Petrochemical sector viz. Brahmaputra Cracker and Polymer Ltd (BCPL). The autonomous institutes under this Department are Central Institute

of Plastic Engineering and Technology (CIPET) and Institute of Pesticides Formulation and Technology (IPFT), which are sanctioned financial grants by this Department.

1.4 Shri M.K.Alagiri and Shri Srikant Kumar Jena are the Minister of Chemicals and Fertilizers and Minister of State for Chemicals and Fertilizers, respectively. Shri K. Jose Cyriac has been Secretary of the Department since 29.06.2011.

Chapter- II

AN OVERVIEW OF THE CHEMICAL AND PETROCHEMICAL INDUSTRY

An Overview of the Chemical Industry

2.1 The chemical industry, which includes basic chemicals and its products, petrochemicals, fertilizers, paints & varnishes, gases, soaps, perfumes & toiletries and pharmaceuticals is one of the most diversified of all industrial sectors covering thousands of commercial products. It plays an important role in the overall development of the Indian economy. It contributes about 3% in the GDP of the country.

2.2 The chemical and petrochemical sector in India presently constitutes 14% of the domestic industrial activity. The growth of petrochemicals and chemicals is projected at 12.6% and 8% respectively in 11th Five Year Plan. According to the United Nations Industrial Development Organisation (UNIDO), in terms of value added at constant 2000 prices, the Indian chemical Industry was the 6th largest in the world and 3rd largest in Asia in the year 2008. As per the latest available information from industry associations, the size of the Indian Chemical Industry in the year 2010 was US $ 108.4 Billion.

Chemical Sector- Production Trends

2.3 Chemical Industry is one of the oldest industries in India, which contributes significantly towards industrial and economic growth of the nation. The Indian Chemical Industry is the 6th largest in the world and 3rd largest in Asia. It provides valuable chemicals for various end products such as textiles, paper, paints and varnishes, leather etc., which are required in almost all walks of life. The Indian Chemical Industry forms the backbone of the industrial and agricultural development of India and provides building blocks for downstream industries.

2.4 The Indian Chemical Industry comprises both small and large-scale units. The fiscal concessions granted to the small-scale sector in mid-eighties led to establishment of a large number of units in the Small Scale Industries (SSI) sector. Currently, the Indian Chemical industry is in the midst of a phase of major restructuring and consolidation. With the shift in emphasis on product innovation, brand building and environmental friendliness, this industry is increasingly moving towards greater customer orientation. Even though India enjoys an abundant supply of basic raw materials, it will have to build upon technical services and marketing capabilities to face global competition and increase its share of exports.

2.5 As the Indian economy was a protected economy till the early nineties, very limited large-scale R&D was undertaken by the Chemical industry to create intellectual property. The product patent regime came into force w.e.f. January 2005. Accordingly, the units have to be more innovative with state of the art R&D Establishments. This will help in development of newer molecules. With a number of scientific institutions, the country's strength lies in its large pool of highly trained scientific manpower.

2.6 India also produces a large number of fine and specialty chemicals, which have very specific uses and find wide usage as food additives, pigments, polymer additives, anti-oxidants in the rubber industry, etc.

2.7 In the Chemical Sector, 100 percent FDI is permissible. Manufacture of most chemical products inter-alia covering organic/ inorganic, dyestuffs and pesticides is delicensed. The entrepreneurs need to submit only IEM with the Department of Industrial Policy and Promotion, provided no locational angle is applicable. Only the following items are covered in the compulsory licensing list because of their hazardous nature:

- Hydrocyanic acid & its derivatives
- Phosgene & its derivatives
- Isocynates & di-isocynates of hydrocarbons.

2.8 The Dyestuff sector is one of the important segments of the chemical industry in India, having forward and backward linkages with a variety of sectors like textiles, leather, paper, plastics, printing inks and foodstuffs. The textile industry accounts for the largest consumption of dyestuffs at nearly 70 percent. From being importers and distributors in the 1950s, it has now emerged as a very strong industry and a major foreign exchange earner. India has emerged as a global supplier of dyestuffs and dye intermediates, particularly for reactive, acid, vat and direct dyes. India accounts for approximately 7 percent of the world production.

2.9 Apart from chemical fertilizers, pesticides played an important role in the "Green Revolution" during the 1960s and 1970s. Indian exports of agrochemicals have shown an impressive growth over the last five years. The key export destination markets are USA, U.K., France, Netherlands, Belgium, Spain, South Africa, Bangladesh, Malaysia and Singapore. India is one of the most dynamic generic pesticide manufacturers in the world with more than 60 technical grade pesticides being manufactured indigenously by 125 producers consisting of large and medium scale enterprises (including about 10 multinational companies) and more than 500 pesticide formulators spread over the country.

2.10 DCPC set up a Task Force on Chemicals under the chairmanship of Shri Arun Maira, Member Planning Commission vide Resolution dated 25.8.2010 to study various facets of the chemical industry, examine major policy issues and make recommendations for enhancing investment, global competitiveness and accelerated and sustainable development of the chemical sector as a major building block of the Indian economy. The members of the Task Force were drawn from various Ministries / Departments and from industry associations.

2.11 The Task Force held two meetings on 18.10.2010 and 8.2.2011. In the meantime, the Planning Commission constituted a Working Group on Chemicals and Petrochemicals to prepare the strategy and road map for the growth of the chemical sector during the 12th Five Year Plan. Looking into the fact that there were many commonalities in the Terms of Reference of the Working Group and the Task Force, it was decided to merge the Task Force with the Working Group on Chemicals constituted by the Planning Commission. The Working Group under the chairmanship of Secretary(C&PC) has submitted the strategic plan for the sustainable growth of the chemical sector to the Planning Commission, which is in consonance with the deliberations of the Task Force.

2.12 The actual production of major chemicals during the years 2005-06 to 2010-11 and up to September for the year 2011-12 is exhibited in Table-I

Table- I: Production of selected major chemicals

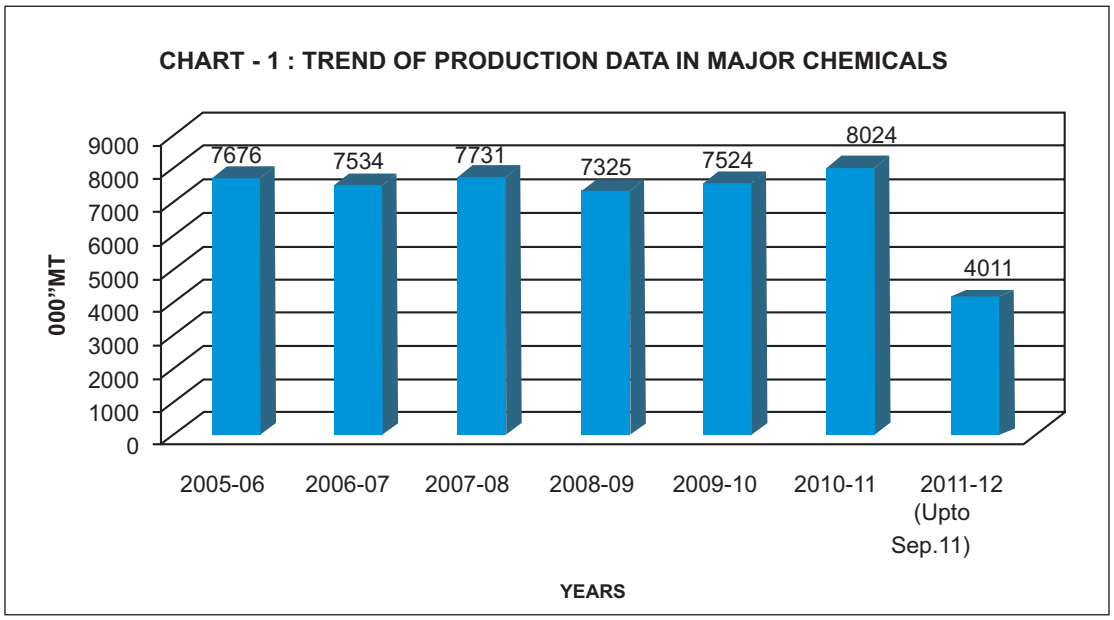
(Figures in '000MT)

Sector	*PRODUCTION*							Growth (%)	
	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12 (Upto Sep. 11)	2010-11/ 009-10	*Carg. 10-11 / 05-06*
Alkali Chemicals	5475	5269	5443	5442	5602	5981	2970	6.77	*1.78*
Inorganic Chemicals	544	602	609	512	518	572	310	10.42	*1.01*
Organic Chemicals	1545	1545	1552	1254	1280	1342	672	4.84	*-2.78*
Pesticides (Tech.)	82	85	83	85	82	82	37	0.00	*0*
Dyes & Dyestuffs	30	33	44	32	42	47	22	11.90	*9.39*
Total Major Chemicals	**7676**	**7534**	**7731**	**7325**	**7524**	**8024**	**4011**	**6.65**	***0.89***

CARG: Compound Annual rate of Growth

Product- wise and Group wise details of installed capacity and production are at **Annexure - I.**

2.13 The trend in production of major chemicals has been depicted in **Chart-I**



Petrochemical Sector- Production Trends

2.14 The petrochemical industry mainly comprises synthetic fibres, polymers, elastomers, synthetic detergents intermediates and performance plastics. The main sources of feedstock and fuel for petrochemicals are natural gas and naphtha. Today, petrochemical products permeate the entire spectrum of items of daily use, ranging from clothing, housing, construction, furniture, automobiles, household items, toys, agriculture, horticulture, irrigation and packaging to medical appliances.

2.15 There are three naphtha based and an equal number of gas based cracker complexes in the country with a combined annual ethylene capacity of 2.9 million MT. During the year 2011-12, Indian Oil Corporation's Naptha Cracker at Panipat commenced commercial production with an annual Ethylene capacity of 0.85 Million MT. Besides, there are four aromatic complexes also with a combined Xylene capacity of 2.9 million MT. The actual production of major petrochemicals during the years 2005-06 to 2010-11 and up to September for the year 2011-12 is exhibited in Table-II

Table-II: Production Of Selected Major Petrochemicals

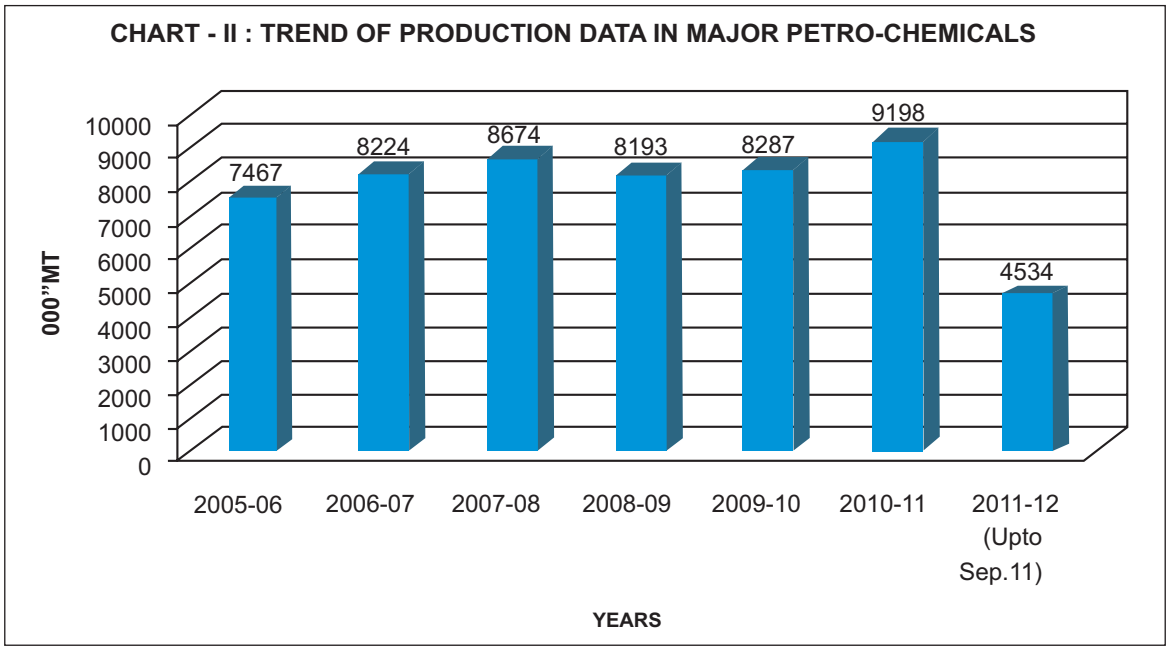
(Figures In 000' MT)

Sub-group	PRODUCTION							Growth (%)	
	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12 (Upto Sep. 11)	2010-11/ 2009-10	*Carg/ 10-11/ 05-06*
Synthetic Fibers	1906	2250	2524	2343	2601	2791	1323	7.30	*7.93*
Polymers	4768	5183	5304	5060	4791	5292	2780	10.46	*2.11*
Elastomers (S.Rubber)	110	101	106	96	106	95	44	-10.38	*-2.89*
Synth. Detergent Intermediates	556	556	585	552	618	638	303	3.24	*2.79*
Performance Plastics	127	133	157	141	172	191	84	11.05	*8.50*
Total Major Petrochemicals	**7467**	**8224**	**8674**	**8193**	**8287**	**9007**	**4534**	**8.69**	*3.82*

CARG: Compound Annual rate of Growth

Product- wise and Group wise details of installed capacity and Production are given in **Annexure II.**

2.16 The trend in the production of major petrochemicals has been exhibited in **Chart - II**:



2.17 From Table II it may be seen that the production of polymers account for more than 60% of the total production of major petrochemicals. Till 2010- 11, the production of petrochemicals grew at the rate of 3.82% annually over 2005-06. This industry could not escape the impact of global meltdown and during the year 2010-1, the annual growth decelerated to 3.82% since 2005-06. Trends in production of petrochemicals are expected to improve by the end of 2011-12.

Index of Industrial Production

2.18 The Index of Industrial Production (IIP) with base 2004-05 for the month of August, 2011 released by the Central Statistical Organization show that the General Index stands at 162.4 which is at 4.1% higher as compared in the level in the month of August. 2010. The cumulative growth for the period April-August, 2011-12 stands at 5.6% over the previous year in respect of general IIP.

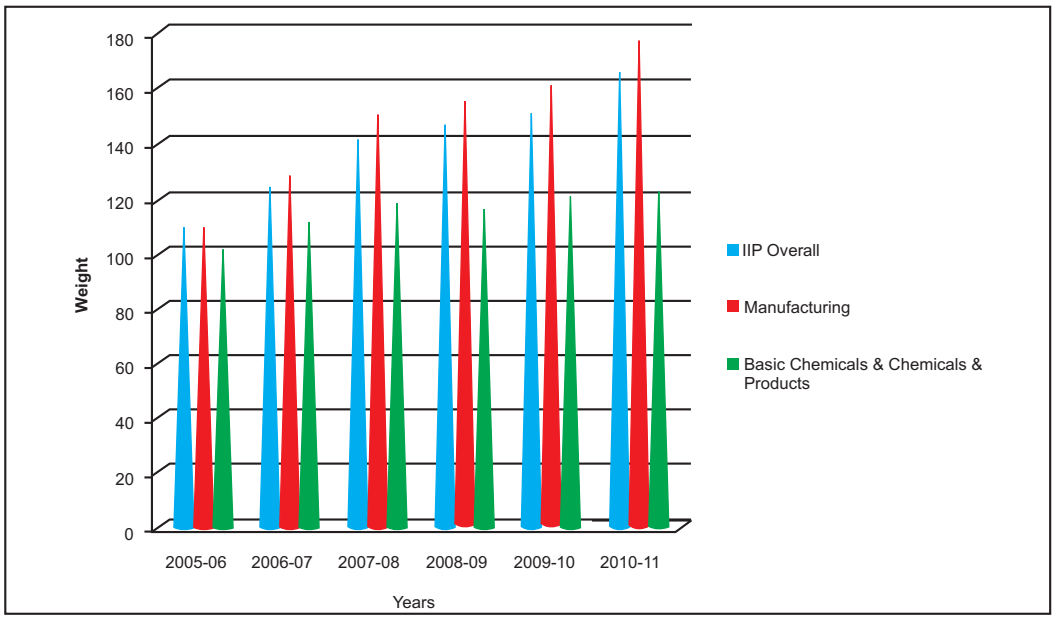
Table-III: Month-wise Index of Industrial Production (2004-05=100) during 2010-11 and 2011-12)

Year / Month / Period	IIP (Overall)	Manufacturing	Basic Chemicals & Chemical Products included in Manufacturing
April,10-11	157.8	166.6	114.2
May, 10	156.5	164.2	120.7
June, 10	156.6	165.5	124.7
July, 10	161.3	172.1	127.7
August, 10	156.1	165.2	124.5
September, 10	160.3	172.1	125.0
October, 10	166.6	176.4	121.7
November, 10	158.0	166.8	121.3
December, 10	175.6	187.3	124.8
January,11	175.9	186.5	125.8
February,11	168.0	179.4	120.6
March,11	193.1	206.2	126.3
April,11	166.2	176.1	123.5
May, 11	166.2	174.5	126.1
June, 11	170.4	182.6	123.4
July, 11	167.5	177.5	125.3
August, 11	162.4	172.6	126.7

Source : Ministry of Statistics and Programme Implementation

2.19 The behavior of IIP of Chemicals and Chemical products vis-à-vis overall IIP and IIP in respect of manufacturing during 2005-06 -2010-11 has been depicted in Chart-III

CHART-III : Index of Industrial Production (Base : 2004-05=100)



Whole Sale Price Index

2.20 The Indices released by the Office of the Economic Adviser, show that the inflation in Wholesale Price Index of Chemicals & Chemical Products during the month of March 2011 was at 129.3 % as against 149.5 % in All Commodities, 135.6 % in Manufacturing and 179 % in Food Articles.

TableIV: Monthly Inflation of Selected Commodities during 2009-10 (Based on Wholesale Price Index) (%)

Months	All Commodities	Food Articles	Manufact. Products	Chemicals & Chemical Products	Basic Heavy Inorganic Chemicals	Basic Heavy organic Chemicals	Soda Ash	Dyes & Dyestuff
April,10	138.6	168.8	127.9	122.6	124.9	122.7	128.2	113.8
May,10	139.1	172.1	127.9	122.6	125.2	123.5	130.8	114.4
June,10	139.8	175.4	127.8	122.4	125.8	122.9	130.9	114.3
July,10	141.0	178.2	128.1	122.1	125.3	121.6	125.7	113.9
August, 10	141.1	176.7	128.3	122.6	125.0	122.1	124.2	114.4
Sept. 10	142.0	179.9	128.7	122.8	124.9	121.5	123.9	115.1
October ,10	142.9	180.9	129.2	123.0	125.8	122.5	125.5	117.9
Novemb er,10	143.8	181.4	129.8	123.3	125.5	123.2	125.3	116.2
Decemb er,10	146.0	189.4	130.9	124.2	126.8	124.8	130.1	116.1
January ,11	148.0	192.4	132.6	125.9	127.4	126.9	134.5	117.7

Months	All Commodities	Food Articles	Manufact. Products	Chemicals & Chemical Products	Basic Heavy Inorganic Chemicals	Basic Heavy organic Chemicals	Soda Ash	Dyes & Dyestuff
February,11	148.1	181.3	134.0	127.7	128.3	129.3	136.4	117.2
March,11	149.5	179.0	135.6	129.3	130.2	131.7	138.4	119.0
April,11	152.1	186.8	136.6	131.0	132.8	133.9	142.5	118.5
May,11	152.4	186.3	137.4	131.8	135.2	135.5	145.5	119.1
June,11	153.1	188.8	137.9	132.2	137.2	135.0	144.9	119.7
July,11	154.2	192.8	138.0	132.7	138.6	134.9	149.2	120.7
August, 11	154.9	193.7	138.8	133.0	138.2	136.1	148.0	120.4
Sept. 11	155.8	196.5	138.6	133.5	137.0	134.9	149.1	120.1

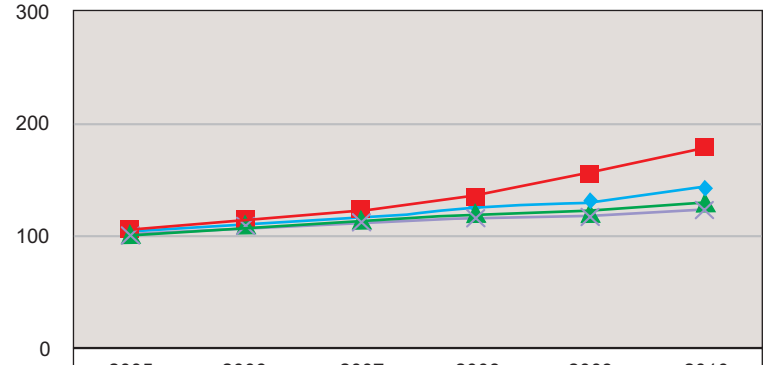
Source: Office of the Economic Adviser, Min. of Commerce & Industry

2.21 Table-V and Chart IV below show the WPI of chemicals & chemical products vis-a-vis all commodities and manufactured products during the years 2005-06 to 2011-12.-

Table V: WPI of Chemicals & Chemical Products

Particulars	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
All Commodities	104.47	111.35	116.63	126.02	130.81	143.32
Food Articles	105.38	115.52	123.57	134.8	155.39	179.63
Manufacturing Products	102.42	108.22	113.39	120.38	123.05	130.07
Chemicals & Chemical Products	103.79	108.94	112.83	118.07	117.76	124.04

Chart IV : Wholesale Price Index of chemicals & Chemical Products vis-a-vis Other Commodities



	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
All Commodities	104.47	111.35	116.63	126.02	130.81	143.32
Food Articles	105.38	115.52	123.57	134.8	155.39	179.63
Manufacturing Products	102.42	108.22	113.39	120.38	123.05	130.07
Chemicals & Chemical Products	103.79	108.94	112.83	118.07	117.76	124.04

INTERNATIONAL TRADE

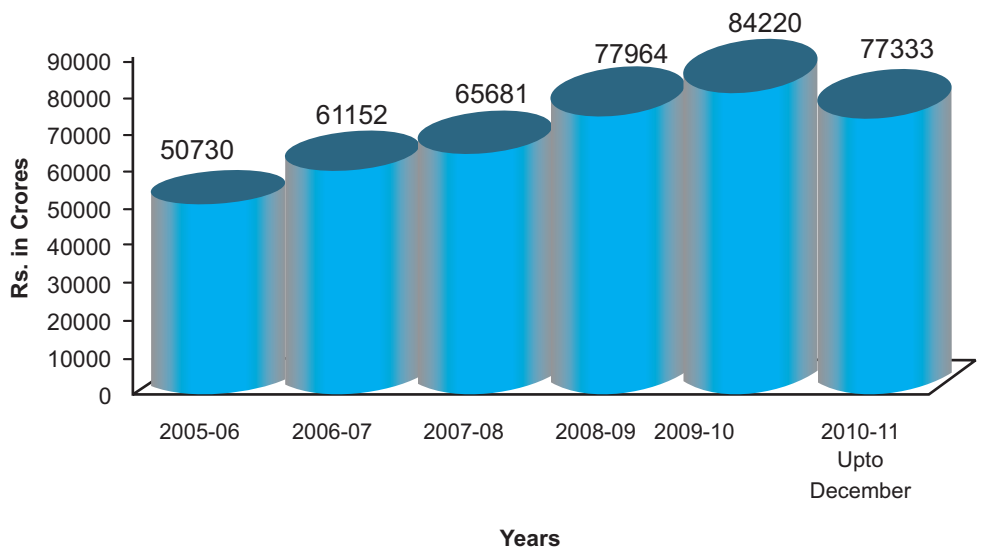
2.22 Trends in exports and imports of chemicals and petrochemicals during 2005-06 to 2011-12 (upto December 2011) are given in **Table VI & Charts V and VI**

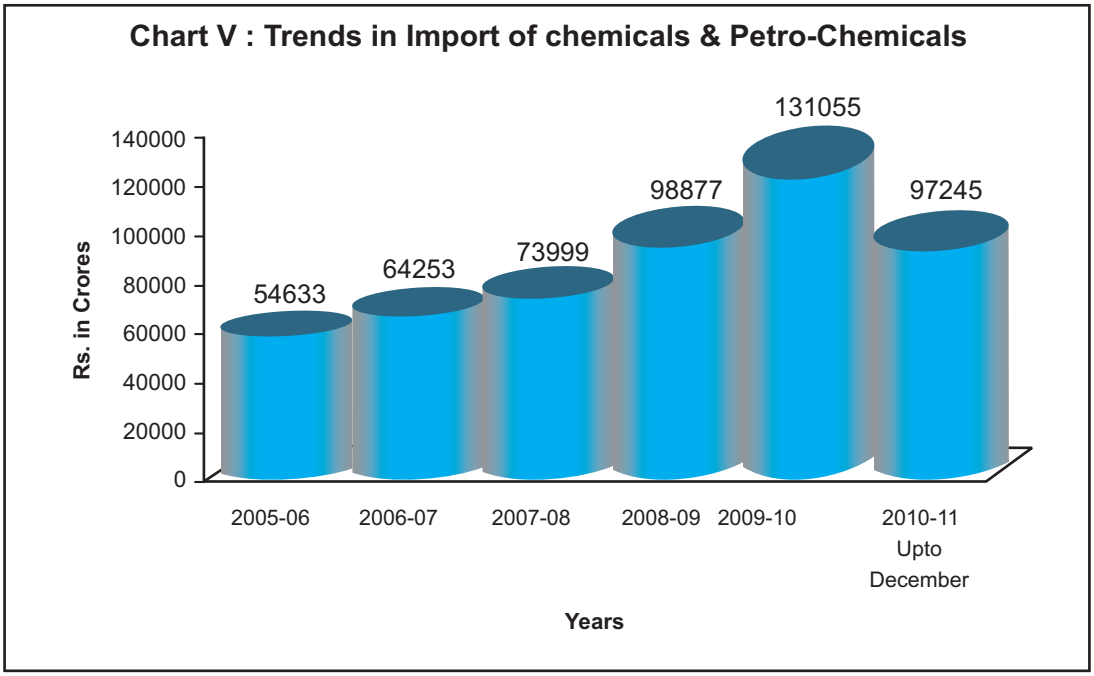
Table-VI: Exports and Imports–Chemicals and Petrochemicals

(Figures in ₹ Crore)

Items/Years	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11 Upto December
A: Total National Exports	456418	571779	655864	840755	845534	781178
Of Which:						
Chemicals	33462	39351	43482	53738	54948	51425
Petrochemicals	17268	21801	22199	24226	29272	25908
Total Chemicals & Petrochemicals	50730	61152	65681	77964	84220	77333
Share of Total Chem. & Petrochem in Total National Exports (%)	11.11	10.70	10.01	9.27	9.96	6.58
B: Total National Imports	660409	840506	1012312	1374436	1363736	1128165
Of Which:						
Chemicals	40492	47914	54422	74857	100834	67458
Petrochemicals	14141	16339	19577	24020	30221	29787
Total Chemicals & Petrochemicals	54633	64253	73999	98877	131055	97245
Share of Total Chem. & Petrochem in Total National Imports (%)	8.27	7.64	7.31	7.19	9.61	5.98

Chart V : Trends in Export of chemicals & Petro-Chemicals





2.23 The share of Imports of the Chemicals & Petrochemicals in the total National Imports slightly increased from 8.27% to 9.61% during the period 2005-06 to 2009-10 whereas the share of Exports declined from 11.11% to 9.9% corresponding period. (Table-VI).

Plan Schemes

2.24 Keeping in view the promotional, facilitatory and regulatory role of the Department in the development of chemical and petrochemical sectors, the public sector investment proposed through plan schemes is quite limited. A major plan scheme being implemented, besides the releases made to PSUs and autonomous institutions, is the Assam Gas Cracker Project, for which a Capital Subsidy of Rs. 4690 crore on fixed cost basis shall be provided by Department of Chemicals and Petrochemicals. When completed in Decemer 2013, the project is expected to generate substantial employment, both direct as well as indirect and will attract substantial investments in setting up of downstream plastic processing industries. The Plan Schemes of the Department also support the Public Sector Undertakings and Autonomous Bodies attached to the Department.

2.25 Scheme-wise outlays of plan schemes of the Department of Chemicals and Petrochemicals for the XI Plan, 2011-12 (BE and RE) and the outlay for 2012-13 are given in the Table VII: -

Table VII: Scheme-wise Plan Outlay of the Department

(₹ Crore)

Sr. No.	Name of the Scheme	XI Plan (2007-12) Outlay	AP (2011-12) (BE)	AP (2011-12) (RE)	AP (2012-13)
I	**Project Based Support to PSUs**	**139.83**	**21.00**	**0**	**40.00**
1.1	Hindustan Organic Chemicals Ltd. (HOCL)		1.00	0	24.00
1.2	Hindustan Insecticides Ltd. (HIL)		20.00	0	16.00
II	**Support to Autonomous Bodies**	**92.00**	**1.00**	**1.00**	**7.00**
2.1	Central Institute of Plastic Engineering & Technology (CIPET)-OPEC Loan	67.00	0.00	0.00	0.00
2.2	Institute of Pesticides Formulation Technology (IPFT)	25.00	1.00	1.00	7.00
III	**Other Ongoing Schemes**	**212.00**	**684.61**	**880.51**	**1563.80**
3.1	Assam Gas Cracker Project	200.00	675.71	875.44	1552.00
3.2	Chemical Promotion & Development Scheme (CPDS)	7.50	7.50	3.82	10.00
3.3	Chemical Weapons Convention (CWC)	4.00	1.00	0.90	1.50
3.4	IT/Sectt.	0.50	0.40	0.35	0.30
IV	**New Schemes initiated in the XI Plan**	**120.00**	**93.39**	**48.49**	**146.20**
4.1	New Schemes of CIPET	70.00	43.79	43.79	110.00
4.2	Other New Schemes of Petrochemicals	50.00	49.60	4.70	36.20
	Total	**563.83**	**800.00**	**930**	**1757.00**

2.26 During the period of Annual Report, there was significant increase in the allocation of funds for the effective implementation of the schemes of the Department. During the current year, i. e. 2011-12 the fourth year of the XIth Five Year Plan, the original BE allocation of Rs.595.71 crore was enhanced considerably in Assam Gas Cracker Project by way of additional funds to the

tune of Rs. 199.73 crore (Plan) through Supplementary Grant. On the Non-Plan side, Supplementary Grants of Rs.410.73 crore was received for payment of exgratia to the victims of Bhopal Gas. The following tables present Plan and Non-Plan Revised Estimates of Budget during 2011-12 and Actuals 2010-11.

Table VIII: **Actuals 2010-11 & RE 2011-12 (Plan)**

(₹ in Crore)

S.No.	Name of the Schemes	Actuals 2010-11	RE 2011-12
1	Secretariat	0.51	0.35
2	New Schemes of Petrochemicals	4.71	4.70
3	Assam Gas Cracker Project	796.73	775.44
4	CPDS	2.30	3.82
5	CWC	0.92	0.90
6	IPFT	0.58	1.00
7	CIPET-OPEC	74.02	43.79
8	HIL	0.00	0.00
9	HOCL	0.00	0.00
10	NER	0.00	100.00
	Total	**879.77**	**930.00**

Table IX: Actuals 2010-11, RE 2011-12 & BE 2012-13 (Non-Plan)

(₹ in Crore)

S.No.	Name of the Schemes	Actuals 2010-11	RE 2011-12	BE 2012-13
1	Secretariat	11.81	11.85	13.28
2	CIPET	0.53	0.53	0.00
3	Assam Gas Cracker Project	0.00	0.01	0.01
4	Bhopal Gas Leak Disaster	332.81	415.62	27.70
5	CWC	0.05	0.00	0.01
6	IPFT	2.60	3.29	3.50
7	PCL	1.10	1.10	1.10
8	HIL	0.00	0.01	0.01
9	HOCL	0.00	0.01	0.01
	Total	**348.90**	**432.42**	**45.62**

2.27 During the year, special attention was paid to the liquidation of Utilisation Certificates (UCs). An amount of Rs. 193 lakh involved in pending UCs as on 1.4.2011, the amount of covered by pending UCs has been brought down to Rs. 46 lakh as on 30.9.2011.

2.28 Regarding Audit by C&AG, no PAC para is pending. In case of C&AG (Commercial) paras, 4 paras are pending for which efforts are being made to liquidate at the earliest.

2.29 **Petroleum, Chemical Petrochemical Investment Regions (PCPIRs) Policy**

The Policy

i) The PCPIR Policy is a window to ensure the adoption of a holistic approach to promote the petroleum, chemicals and petrochemical sectors in an integrated and environment friendly manner on a large scale. Such integrated PCPIRs would reap the benefits of co-siting, networking and greater efficiency through use of common infrastructure and support services.

ii) The PCPIR is a specifically delineated investment region having an area of about 250 sq kms (with minimum 40% of the designated area earmarked for processing activities). This region will be a combination of production projects, public utilities, logistics, environmental protection, residential areas and administrative services.

iii) The Cabinet Committee on Economic Affairs (CCEA), in its meeting held on 8th March 2007 approved the Policy Resolution for setting up of PCPIRs. As per the PCPIR Policy, Government of India is to ensure availability of external physical infrastructure linkages to the PCPIR including Rail, Road (National Highways), Ports, Airports and Telecom in a time bound manner. This infrastructure will be created/upgraded through Public Private Partnerships to the extent possible and the Central Government will provide necessary viability gap funding (VGF) through existing schemes.

Approval Of PCPIRs & Current Status

iv) PCPIR Proposals of the Governments of Andhra Pradesh (AP), Gujarat and West Bengal were approved by the CCEA in February 2009, while the proposal of Govt of Orissa was approved in December 2010. These PCPIRs

are expected to create infrastructure worth Rs. 57385.7 crore. The industrial investment in these regions is expected to be to the tune of Rs. 7, 63,914 crore while employment generation for about 36 lakh persons is expected over a period of a time.

v) Memorandum of Agreement have been signed between the Government of India represented by Department of Chemicals and Petrochemicals and the Governments of AP, Gujarat and West Bengal. Notification of these three PCPIRs has been completed and Development Boards have been set up. The State Governments are in the process of finalising the Master Plans and obtaining Environmental Clearances. Investments amounting to Rs. 99412 crore have been made in these three PCPIRs since their approval. Memorandum of Agreement with Govt of Orissa was signed in November, 2011.

vi) A committee headed by Secretary (C&PC) has been constituted to monitor the progress of implementation of the approved PCPIRs. The significant achievements in the PCPIRs approved at Haldia, Kakinada and Dahej are as follows:

a) **West Bengal PCPIR**

- Notification of the PCPIR is over.
- Socio Economic Survey carried out in Nayachar Island by Jadavpur University. Report has been subitted and rehabilitation strategy finalized.
- Detailed Project Report submitted by Tata Consulting Engineers in March'11
- Rapid EIA report preparation is in progress.
- IOCL's refinery upgraded to 7.5 MMTPA.
- Constitution of the West Bengal PCPIR Management Board and notification.
- Launch of website www.wbpcpir.com
- Signing of Power Purchase Agreement with the Power Tenant with a committed investment of Rs. 12870 crore

b) **Gujarat PCPIR**

- MoU has been signed between the State Government and the Anchor Tenant viz. OPAL, which has incurred a total expenditure of Rs.4900 crore till May, 2011.

- The PCPIR has been notified under the Special Investment Region (SIR) Act. 92.94 sq. kms. have been acquired. 44.77 sq.kms is under acquisition
- Completion of a detailed study of 18 villages involving rehabilitation.
- Terms of Reference of EIA study have been approved by M/o E&F for approval.
- Rs. 77,119 crore of investment has been attracted in the PCPIR.
- 151 MoUs signed for investment of Rs. 70,506 crore during Vibrant Gujarat 2011.
- Petronet LNG is setting up a 1200 mega watt power plant
- Regional Development Authority constituted by Government of Gujarat on 18.09.2010 under the Special Investment Region Act, 2009 of Govt of Gujarat.
- Detailed Development Plan has been published.
- MoU signed by State Govt with Gujarat Maritime Board for development of marine shipbuilding park in Dahej with investment of Rs. 1000 crore.
- Adani Petronet Port has completed construction of Phase II with port capacity 8 MMTPA
- Govt of Gujarat is upgrading the 4 lane State Highway from Bharuch to Dahej to 6 lane
- Work of 2 RUBs in progress with investment of Rs. 5.8 crore
- Work of ROB at Bharuch Jambusar Road and 4 laning of ROB on main railway line at Chavaj is under progress.
- Bharuch –Dahej rail line conversion to broad gauge likely to be completed by Oct'11.

c) **Andhra Pradesh PCPIR**

- Notification of the PCPIR is completed.
- Feasibility Study for the rail line linking APSEZ to Gangavaram Port has been awarded to RITES Limited.
- Acquisition of additional 4.14 sq.km of the processing land and filing of requisition for acquisition of additional 35.19 sq.kms.

- M/s LEA Associates, South Asia Pvt. Ltd has been appointed as Consultants for the Master Plan.
- Constitution of a Special Development Authority to function as Management Board
- Engaging of EPTRI as consultant for EIA studies. Approval of TOR by M/o E&F is awaited.
- Actual investment of Rs. 9423.82 crore

vii) PCPIR proposal from Govt of Tamil Nadu was recommended to the CCEA by the High Powered Committee chaired by Cabinet Secretary in April'11 subject to resolution of certain issues with Ministry of Road Transport and Highways (MoRTH). MoRTH conveyed its final view in the matter only in January, 2011. The proposal will now be placed before the Cabinet Committee on Economic Affairs.

xi) The Department of Chemicals and Petrochemicals has actively showcased and promoted the PCPIRs in collaboration with the State Governments and industry associations through various investor meets, exhibitions and national and international road shows.

2.30 NATIONAL POLICY ON PETROCHEMICALS

I) The Government approved the National Policy on Petrochemicals on 12.4.2007. The National Policy on Petrochemicals aims to:

a) Increase investments in the sector (both upstream and downstream) and capture a slice of the resurgent Asian demand in polymers and downstream processing through additions in capacity and production by ensuring availability of raw materials at internationally competitive prices, creating quality infrastructure and other facilitation to ensure value addition and increase exports.

b) Increase the domestic demand and per capita consumption of plastics and synthetic fibres from the present level of 4 Kgs and 1.6 Kgs, increase the competitiveness, polymer absorption capacity and value addition in the domestic downstream plastic processing industry through modernization, research and development measures and freeing it from structural constraints

c) Facilitate investment in the emerging areas of petrochemicals

d) Achieve environmentally sustainable growth in the petrochemical sector through innovative methods of plastic waste management, recycling and development of bio-, photodegradable polymers and plastics.

e) Promote Research and Development in Petrochemicals and promote Human Resource Development

ii) In pursuance of National Policy on Petrochemicals, the Department of Chemicals & Petrochemicals is implementing the following 3 schemes, formulated in the year 2010-11, in the 11th Five Year Plan viz:

a) **National award for Technology Innovation** – The Scheme aims at incentivising meritorious innovations and inventions in the petrochemical Sector through National Awards. Central Institute of Plastic Engineering Technology (CIPET) was entrusted with the task of seeking and short listing nominations for the scheme and an amount of ₹ 0.60 crore was released to them for the year 2010-11. After undertaking a detailed process for selection, 7 organizations/individuals were selected for the Awards in 7 areas for the year 2010-11. The award function was held on 28th November, 2011 wherein Minister of States for Chemicals & Fertilizers Shri Srikant Kumar Jena presented the awards to selected organizations and individuals in recognition of their innovations and advancement in the Petrochemical & Polymer sectoss.

Shri Srikant Kumar Jena, MoS, Chemicals & Fertilizers presenting a cheque to one of the winners of the National Award for Technology Innovation in Petrochemicals & Downstream Plastics Processing Industry.

Shri Srikant Kumar Jena, MoS, Chemicals & Fertilizers with winners of the National Award for Technology Innovation in Petrochemicals & Downstream Plastics Processing Industry

The application and evaluation process has been modified so as to facilitate maximum participation in the award scheme in the second year of implementation. The applications for the second year i.e.2011-12 have been invited and the process of selection of nominee is expected to be completed by 15.02.2012.

b) **Setting up of Centre of Excellence -** The Scheme aims at improving the existing petrochemical technology and research in the country and to promote the development of new applications of polymers and plastics. In the year 2010-11, CIPET and National Chemical Laboratory, Pune have been identified for setting up of Centres of Excellence. An amount of Rs. 2 crores each has been released in the year 2010-11. An expert panel set up to review/monitor the progress under the scheme, has taken up the review of NCL, Pune and CIPET, Chennai with regard to the progress made as per MOU signed between Department and the Institution. The second instalment of funds amounting Rs. 2 crore each for the year 2011-12 shall be considered for release after the review.

c) **Setting up of Plastic Parks -** The Scheme aims at setting up need based Plastic Parks and ecosystems with requisite state of the art infrastructure

and enabling common facilities to assist the sector to move up the value chain and contribute to the economy more effectively. The scheme was deliberated upon twice by the Standing Finance Committee headed by Secretary (C&PC) in the year 2010-11 before approval and finalization of scheme guidelines. The Expression of Interest for appointment of Programme Manager was firmed up after detailed deliberations. The Programme Manager for implementation of the scheme viz. Ms. Grant Thornton India has been appointed. All State Governments were requested to send their preliminary proposals. Several State Governments have shown their interest in setting up Plastic Parks. The operational guidelines for the implementation are being firmed up. In principle approval of setting up of 2 plastic parks and release of initial grants in this regard is envisaged during the current year.

2.31 Assam Gas Cracker Project

i) The Assam Gas Cracker Project was initiated in pursuance of the Memorandum of Settlement signed between Central Government and All Assam Students Union (AASU) and All Assam Gana Parishad (AAGP) on 15th August 1985. Cabinet Committee on Economic Affairs (CCEA), in its meeting held on 18th April, 2006, approved the setting up of the Assam Gas Cracker Project at a project cost of Rs. 5460.61 Crores (fixed cost). A joint venture company namely M/s. Brahmaputra Cracker & Polymer Limited (BCPL), incorporated on 8th January 2007 is implementing the project.

ii) The project has witnessed time and cost overruns owing to various reasons such as time escalation, sub optimal size of the plant, increase in infrastructural requirements & utilities and off sites resulting from engineering and operational requirements, increase in construction cost, frequent bandhs, labour unrest, inadequate availability of skilled manpower at the site, prolonged monsoon etc.,.

iii) Accordingly, the Cabinet Committee on Economic Affairs has approved Revised cost estimates (RCE) of Rs. 8920 crore (on "as built basis") for setting up of the Assam Gas Cracker Project by BCPL. The funding pattern envisaged for the project comprises of Capital Subsidy of Rs. 4690.00 crore, Debt amounting to Rs. 2961.00 crore and Equity of Rs. 1269.00 crore. The revised capital subsidy will be sought by the Department of

Chemicals and Petrochemicals from the Ministry of Finance / Planning Commission in 2011-12 and 2012-13 by way of additional budgetary support. The Revised project schedule envisages mechanical completion by July, 2013 and commissioning by December, 2013.

iv) The overall physical progress, as on 15th December, 2011 is 59.1% as against the revised scheduled target of 58.2%. The cumulative expenditure incurred during the year 2011-12, as on 15th December, 2011 is Rs.3512.41 crore including the expenditure of Rs 1336.53 crore in the year 2011-12. Further, as on 15th December, 2011, the total financial commitment to the tune of Rs. 7800.00 crore has been made.

v) The civil and structural works, mechanical and piping works for all the process units viz. Cracker, polyethylene & polypropylene units and gas processing, Gas sweetening & gas de-hydration units are under progress. The delivery of Tertiary compressor for Ethylene Cracker Unit and readiness of utility systems (Raw Water Treatment Plant, De-Mineralisation Plant, Cooling Tower-1&2, Nitrogen 2, Flare) and Captive Power Plant are falling in critical paths of the project schedule. These activities are kept in focus and are being closely followed. All the Critical Material Requisition (MRs) and Critical Tenders have been ordered / awarded. Out of total 672 Material Requisitions (MRs), 667 MRs have been ordered and balance MRs are targeted to be ordered progressively by December, 2011. Out of a total of 108 tenders, 92. have been awarded and the remaining tenders are targeted to be awarded progressively as per project schedule.

vi). The Department of Chemicals and Petrochemicals has released the entire budget outlay of Rs.675.71 crore to BCPL towards Capital Subsidy for the year 2011-12. The civil works are in an advanced stage and most of the payments will have to be made in the next few months. Most supply contracts involve 90% or so payment against despatch of delivery, which have started in full swing. Based on the actual progress, BCPL, as per their revised funding plan for the current year and the revised cost estimates and commissioning schedule, has projected increased requirement of capital subsidy from the Government in the current year. Accordingly, additional funds amounting Rs.1137.33 crore, over and above Rs.675.71 crore

allocated in Budget Estimates was sought in the second batch of supplementary Demand for Grants 2011-12 to support project activities/ progress. An amount of Rs.199.73 crore (approved capital subsidy of Rs.2138 crore minus capital subsidy provided till date i.e. Rs.1938.27crore) has been approved in the second batch of supplementary demand for grants and the same has been released to BCPL.

vii) Based on the recommendation of Public Enterprises Selection Board (PESB) and approval of Appointment Committee of Cabinet (ACC) for appointment, Shri P.N.Prasad Chief Operating Officer, BCPL has been appointed as Managing Director, BCPL. Further, in accordance with the Guidelines on Corporate Governance, the proposal for appointment of 02 independent Non-Official Directors was forwarded to Department of Personnel & Training (DoPT) for approval of Competent Authority. After getting approval of DoPT, Shri P.C.Sharma, former Chief Secretary, Govt of Assam has been appointed as Independent Director. The selection and recruitment process for experienced personnel at all levels in BCPL has also been expedited. Presently, 149 executives / engineers have been recruited in BCPL, of which approx. 70% are from the North East. BCPL has again been directed to expeditiously complete the phase-wise recruitment of sanctioned posts.

viii) The Assam Gas Cracker Project is expected to lead to substantial employment generation, as a result of investments in downstream plastic processing industries and allied activities. The project is considered to be of crucial significance for the state of Assam and the North-Eastern region.

CHEMICAL WEAPONS CONVENTION (CWC)

2.32 CWC is a universal non-discriminatory, multilateral, Disarmament Treaty, which bans the development, production, acquisitions, transfer, use and stockpile of all chemical weapons. India is a party to this Treaty. It has 188 Member States as its members as on 30.09.2011. India has a well-developed chemical industry relevant to the Convention. The Department is also an administrative Department for the CWC Act 2000, which is in force in the country. In terms of the allocation of work in relation to this CWC activity, the Department of C&PC is responsible for chemical industry matters and more specifically

preparation of declarations, facilitation of inspections by OPCW teams and also for creating awareness in the industry about its obligations under the Convention.

2.33 Declarations and verification are the two important aspects for implementation of the convention. Each State Party is required to make annual declarations of the production, import and export of scheduled chemicals and their production facilities. Declarations in respect of a large number of plant sites producing other Organic Chemical Industries (also called OCPF) are also required to be made. India has been making declarations within the prescribed time frame.

2.34 Inspections are routinely conducted by the OPCW to ensure that the activities in scheduled chemicals are in accordance with the provisions of the Convention. India has so far received one hundred seven (107) inspections (as on 25.10.2011). The same include 13 successfully hosted inspections received so far by India during 2011. DCPC deputes escort officers to the industrial units for facilitating advance preparation for hosting inspections as also for its actual undertaking. The Department has also set up Help Desks in PPP mode in association with the Indian Chemical Council (ICC) at various places with a concentration of chemical industry of relevance to CWC for facilitating compliance by the chemical industry in its obligations under CWC. These help desks have the following coverage:

Location	States covered
Hyderabad	Andhra Pradesh, Orrisa and Chattisgarh
Kolkata	Bihar, Jharkhand, West Bengal and Northe Eastern Regions
Delhi	Uttar Pradesh, Himachal Pradesh, Haryana, Punjab, Chandigarh, Uttarakhand & J&K
Mumbai	Maharashtra, Goa, Rajasthan, Madhya Pradesh etc.
Chennai	Tamilnadu, Karnataka and Kerala
Vadodara	Gujarat

2.35 The Help Desks have been set up for undertaking the following activities:-

i. Disseminate information on CWC to all stakeholders giving a clear over-view including details of obligations of the chemical industry under the CWC Act.

ii. Identification of units, which are potential declarants through industry surveys and facilitate them in filing declarations.

iii. Assist the units in filling declarations proforma as stipulated under the CWC Act.

iv. Prepare training material for circulation in consultation with the Deptt. of C&PC.

v. Conduct awareness workshops in the vicinity. 15 Awareness Programmes have been conducted during the period.

vi. Give due publicity to the Chemical Weapons Convention.

vii. Send a monthly report to the Department on the activities conducted by them.

viii. Assist the Department in verification of the correctness of the declarations filed by scheduled units through visits to plants and scrutiny of declaration materials.

ix. Any other work assigned to it relating to the CWC Act.

2.36 In the past, Annual Declarations of Anticipated Activities (ADAA) and Annual Declarations of Past Activities (ADPA) were submitted by the facilities manually. In view of the growing number of declarations and in order to improve the quality of declarations, Department of Chemicals & Petrochemicals, in association with NIC took an initiative to devise a system by which the declarants would file declarations on-line. The software prepared by NIC was launched on 30.9.2011 to facilitate declarants to submit their declarations on-line.

INDIA CHEM GUJARAT 2011

2.37 To promote the growth of the chemical sector, IndiaChem - Gujarat 2011, the second in the series of India Chem Gujarat - an International exhibition & conference covering Specialty, Fine Chemicals, Agrochemicals and Colorants was inaugurated by Shri Narendra Modi, Hon'ble Chief Minister of Gujarat at Mahatma Mandir on 13th of October 2011 at Mahatma Mandir, Gandhinagar, Gujarat. The event was jointly organized by the Department of Chemicals & Petrochemicals, Govt. of India, Govt. of Gujarat, iNDEXTb and Federation of Indian Chambers of Commerce and Industry (FICCI). Chemexcil organized an International Reverse Buyer-Seller meet during the exhibition.

Ms. Neelkamal Darbari, Joint Secretary(Petrochemicals) at the inauguration of the India Chem Gujarat 2011 in the presence of Shri. Narendra Modi, Chief Minister, Gujarat.

2.38 IndiaChem-Gujarat 2011 international exhibition was a huge success with participation of over 150 exhibitors including 15 from abroad. A focussed pavilion covering the dyes sector, with participation of 24 companies was set up by the Gujarat Dyes Manufacturers Association. The exhibition included participants from six countries viz: USA, China, Japan, Germany, Belgium and Singapore. The Exhibition received over 6000 Business Visitors, which is an indication of the interest generated by the event. The event succeeded in showcasing Gujarat State and India's capability in the chemical sector with special focus on segments of the chemical industry covered by the event .

2.39 A conference with the theme "Leveraging Gujarat State Advantage in the Global Chemical Industry" was also organized concurrently with the exhibition. The conference endeavored to highlight the potential of these segments and was found very useful by the industry.

2.40 An international Reverse Buyer Seller meet which was organized on the side lines of the event by CHEMEXCIL (Chemicals Export Promotion Council), was also a huge success. This event attracted buyers from 23 countries especially from Africa, Latin America and CIS - all of which are emerging markets of importance for the Indian Chemical Industry.

Rotterdam Convention on Prior Informed Consent for trade in hazardous Chemicals.

2.41 Rotterdam Convention on Prior Informed Consent Procedures (PIC) is a legally binding instrument, which was adopted on 10th September 1998 by a Conference of Plenipotentiaries in Rotterdam. This Convention has entered into force on 24th February 2004. India acceded to the Convention on 24.5.2006.

2.42 The objectives of this Convention are to promote shared responsibility and cooperative efforts among Parties in the international trade of certain hazardous chemicals in order to protect human health and the environment from potential harm. It also seeks to contribute to the environmentally sound use of these hazardous chemicals, by facilitating information exchange about their characteristics, providing for a national decision making process on their import and export and by disseminating these decisions to the Parties.

MAJOR PROVISIONS

2.43 The Convention covers pesticides and industrial chemicals that have been banned or severely restricted for health or environmental reasons by Parties and which have been notified by Parties for inclusion in the PIC procedure.

2.44 There are 40 chemicals listed in Annex III of the Convention and subject to the PIC procedure, including 25 pesticides, 4 severely hazardous pesticide formulations and 11 industrial chemicals. Parties are required to communicate their import policy for these chemicals to PIC Secretariat.

2.45 Each Party is required to designate a National Authority for performing the administrative functions required under the Convention. Department of Chemicals and Petrochemicals is the Designated National Authority (DNA) for industrial chemicals and Department of Agriculture and Co-operation is the DNA for pesticides.

2.46 The exporting Party has to provide the export notification to the importing Party in respect of banned or severely restricted chemicals in the importing country. The export notifications received from other Parties for industrial chemicals are being examined by Department of Chemicals and Petrochemicals, being the DNA for chemicals, and acknowledgement/reply is sent to the DNA of the exporting country.

Stockholm Convention on Persistent Organic Pollutants (POPs)

2.47 The Stockholm Convention is a global treaty to protect human health and environment from persistent organic pollutants (POPs). POPs are chemicals that remain intact in the environment for long periods, become widely distributed geographically, accumulate in the fatty tissue of living organisms and are toxic to human beings and wildlife. POPs travel globally and can cause damage wherever they travel. The Convention lays down that in its implementation, Governments will take measures to eliminate or reduce the release of POPs into the environment. This Convention entered into force on 17th May 2004. India ratified this Convention on 13.1.2006.

2.48 The Stockholm Convention seeks the elimination or restriction of production and use of all intentionally produced POPs (industrial chemicals and pesticides). The Convention also seeks the continuing minimization and wherever feasible, ultimate elimination of the releases of unintentionally produced POPs such as dioxins and furans. At present, twenty one chemicals are covered under the Stockholm Convention, of which the use of DDT is restricted in India. Use of DDT has been banned for agricultural purposes; it is produced in a restricted manner for use in vector control only. India has obtained exemption for use of DDT for vector control. Further, the chemical Dieldrin, which is also listed under the Stockholm Convention, is used in a restricted manner for locust control.

2.49 Stockpiles and wastes containing POPs must be managed and disposed of in a safe, efficient and environmentally sound manner, taking into account international rules, standards and guidelines. Each country is required to develop a plan for implementing its obligations under the Convention. A Global Environment Facility (GEF) has been set up as an interim financial mechanism, to assist the developing countries in implementation of the Convention.

Registration Evaluation Authorisation of Chemicals (REACH)

2.50 European Union has enacted a legislation entitled REACH under which the industry has been made responsible for the safety of products. The new legislation envisages:

Registration: to provide information on the safe use of chemicals manufactured or imported in quantities more than 1 tonne per annum.

Evalution: the information provided by industry will be assessed for completeness and

Authorisation: Substances of highest concern will require additional assessment of use and may be approved if the controls are adequate or alternatives are unviable. Alternatively, they may be restricted if the measure required to manage the risks are deemed inappropriate.

2.51 REACH legislation enacted by EU came into force w.e.f. 1.6.2007. The process of pre-registration of chemicals with European Chemical Agency (ECHA) closed on 1.12.2008. As of 1st December 2008, 650 companies from India have pre-registered 7500 substances through CHEMEXCIL. There are many other companies, which have pre-registered their products directly with ECHA.

2.52 With the closure of pre-registration phase, the deadline for registration with ECHA is as under:

Substances placed in market in quantities over 1000 MT or substances of very high concern	1-12-2010
Substances placed in market in quantities of 100-1000 MT	1-6-2013
Substances placed in market in quantities up to 100 MT	1-6-2018

2.53 A Help Desk on REACH has been established in CHEMEXCIL for helping the chemical exporters to the EU. The Help Desk guides exporters about the procedures to be followed for meeting the requirements of REACH. It also facilitates the registration of chemicals exported. CHEMEXCIL has taken steps for forming local consortia in respect of substances due to be registered by December'10 with an aim to share and thereby reduce the costs involved. So far 56 such consortia in respect of 150 substances have been formed.

Chapter- III

BHOPAL GAS LEAK DISASTER

3.1 An industrial disaster of unprecedented scale occurred In the night of 2nd/3rd December, 1984 when Methyl Iso-cyanate (MIC), a lethal gas stored in two tanks of Union Carbide India Limited (UCIL)'s pesticide unit at Bhopal, leaked into the atmosphere causing thousands of deaths and injuring a large number of people. The State Government of Madhya Pradesh as well as the Central Government undertook immediate relief and rehabilitation measures, for the victims of the gas leak disaster and their families. Various relief measures are still continuing.

3.2 A large number of civil and criminal cases were filed against UCIL and its management in various Courts by individuals and groups. To ensure proper legal representation of the victims and settlement of their claims, the Government of India enacted the Bhopal Gas Leak Disaster (Processing of Claims) Act, 1985 and a Scheme there under. The Office of the Welfare Commissioner, Bhopal Gas Victims was set up for adjudication of all the claims and disbursement of compensation to the victims under the provisions of this Act.

3.3 The Hon'ble Supreme Court vide its orders and settlement dated 14th & 15th February, 1989 had finally settled the litigation on the compensation amount payable to Bhopal Gas Victims. Under the settlement, the Union Carbide Corporation was directed to pay a compensation of US $ 470 million, which was deposited by the Company with the Registrar of the Supreme Court of India, in February 1989.

Adjudication of Compensation Claims

3.4 Under the provisions of the Bhopal Gas Leak Disaster (Processing of Claims) Act, 1985, the Office of the Welfare Commissioner, Bhopal Gas Victims, Bhopal was set up in 1985 for speedy disbursal of the compensation amount to the survivors and families of the victims of the gas leak disaster. The actual disbursement of the compensation started from November 1992 after the order of the Supreme Court dated 16th October 1992 laid down the modalities for the payment of compensation. By 30.09.2011 approximately Rs. 1548.55 crores had been awarded to 5, 74,376 claimants. The position of original compensation claims as on 31.12.2011 is as follows:

S. No.	Category	Number of cases awarded	Total Amount Awarded (Original) in Rs. crore
1.	Death	5295	54.64
2.	Permanent disability	4902*	25.18
3.	Temporary disability	35,455**	137.66
4.	Utmost severe cases	42	0.41
5.	Minor injuries	5,27,894***	1,328.54
6.	Loss of property/PSU	555	2.01
7.	loss of livestock	233	0.11
TOTAL		5,74,376	1548.55

*, **, *** 10,047 cases claimed under Death category were, after adjudication, considered under the categories of Permanent disability (1,703 cases), Temporary disability (1,783 cases) and the rest as Minor injury (6,561 cases). Thus the total number of cases under various categories are: Permanent disability - 4,902 (3,199 + 1,703), Temporary disability: 35,455 (33,672 + 1,783) and Minor injuries - 5, 27,894 (5, 21,333 + 6,561).

3.5 The Supreme Court vide its order dated 19th July,2004 had directed the Welfare Commissioner to disburse the balance amount of approximately Rs.1500 crores, which was lying unspent with the Reserve Bank of India, on pro-rata basis to the claimants(in the ratio of 1:1 of original compensation). The distribution of pro-rata compensation commenced from 15th November, 2004, as per the directions of the Supreme Court. Till 31.12.2011, a sum of Rs. 1510.40 crore has been disbursed to 5, 62,766 claimants on pro-rata basis. The work of distribution of pro-rata compensation is continuing. The Welfare Commissioner has sought the directions of the Supreme Court on the issue of closure of cases of absentee claimants for pro-rata compensation. The Supreme Court is yet to issue any orders/directions in this regard.

3.6 The Government, on the recommendations of the GoM, has decided to pay ex-gratia to the following categories of gas victims:-

Category	Ex-gratia
Death	₹ 10 lakh (less amount already received)
Permanent disability	₹ 5 lakh (less amount already received)
Injury of utmost severity	₹ 5 lakh (less amount already received)
Cancer cases	₹ 2 lakh (less amount already received)
Total Renal Failure Cases	₹ 2 lakh (less amount already received)
Temporary disability	₹ 1 lakh (less amount already received)

An amount of Rs. 740.28 crore has been approved by the Government for disbursement of ex-gratia amongst the above categories of victims and the same has been released to the Welfare Commissioner for disbursement of ex-gratia to the victims falling in above categories. The Office of the Welfare Commissioner has commenced disbursal of ex-gratia to the Gas victims on 19.12.2010. Upto 31.12.2011, 41,364 cases have been decided and a sum of Rs. 619.22 crore has been disbursed.

Action plan for the Rehabilitation Measures of Bhopal Gas Victims

3.7 As part of the initial relief and rehabilitation measures, the Central Government provided financial assistance to the extent of Rs. 102 crore over a period of 4 years starting from 1985 onwards, for carrying out the rehabilitation related work. Subsequently, the Central Government also approved an Action Plan with an outlay of Rs.163.10 crore for medical, economic, social and environmental rehabilitation of the gas victims, the outlay for which was later revised upwards to Rs. 258 crore. It was decided that the outlay was to be shared between the Central Government and the State Government of Madhya Pradesh in the ratio of 75:25, and accordingly the Central Government released Rs.193.50 crores as its 75% share. For subsequent maintenance and other recurring expenditure involved in respect of all the schemes covered under the Action Plan, the State Government of Madhya Pradesh was advised to make appropriate provisions in its Annual Plan.

3.8 The State Government of Madhya Pradesh had submitted to GoM, in April 2008, a new Memorandum on Plan of Action with an outlay of 982.75 crore for various rehabilitation measures to be taken for Bhopal Gas Victims. The Government, on the recommendations of the GoM, has approved sanction of Rs. 272.75 crore as Additional Central Assistance (ACA), on 75:25 basis to the

State Government, in the first instance, for the various rehabilitation measures to be taken by the State Government of Madhya Pradesh.

Specialty Hospital at Bhopal

3.9 Under the directions of the Supreme Court, a Specialty Hospital named Bhopal Memorial Hospital and Research Centre (BMHRC) has been constructed at Bhopal with super specialty facilities, by the former Union Carbide Corporation. As per the directions of the Supreme Court, a Trust named the 'Bhopal Memorial Hospital Trust' was set up under the Chairmanship of retired Chief Justice of India Shri A.M. Ahmadi in August 1998, to oversee the construction and management of the Specialty Hospital. The Hospital started functioning in July 2000.

3.10 The hospital has 330 beds with facilities in 12 disciplines viz., Cardio Thoracic Surgery, Nephrology, Urology, Neurology, Neuro Surgery, Opthalmology, Pulmonary Medicine, and Psychiatry etc. 8 Mini Units of the Hospital have been set up in various gas- affected wards in Bhopal, for the gas victims. Free medical treatment to in-door gas patients and free medicines to gas victims visiting the mini units and the main BMHRC (OPD Center) are being provided since the commissioning of the Hospital and its mini units. The Hospital also bears the expenditure incurred on surgical facilities provided to gas victims and even provides expensive treatment to cardiac patients and patients with other serious ailments.

3.11 The Central Government had, in June, 2010, on the recommendations of the GoM, decided to take over BMHRC through the Department of Atomic Energy and Department of Bio-technology. The Supreme Court endorsed the decision on 19.07.10. The administration of BMHRC is now being overseen by Tata Memorial Centre. The Committee of Secretaries in September, 2011, has approved a proposal moved by Department of Atomic Energy that BMHRC be appropriately taken over and administered by Department of Health Research and the same has been approved by the Cabinet in its meeting held on 04.01.2012.

Environmental Remediation of the UCIL plant site

3.12 The High Court of M.P. while hearing a Public Interest Litigation 2802/2004 filed on environmental remediation of the UCIL plant site, had constituted a Task Force in 2005 under the Chairmanship of the Secretary, Department of Chemicals and Petrochemicals for co-coordinating the overall

environmental remediation of the plant site at Bhopal. The Government of M.P. in consultation with the M.P. Pollution Control Board prepared a three-phase road map for removal/disposal of the toxic wastes lying in and around the plant site at Bhopal, which was approved by the High Court. The Task Force has been co-coordinating the tasks under the road-map, which include removal/disposal of stored toxic wastes lying at the plant site, complete remediation of the contaminated soil, ground-water of the area in and around the plant site and dismantling and de-commissioning of the plant. The High Court of M.P. through the Task Force has been monitoring the environmental remediation work.

3.13 Out of the 390 MT of stored toxic wastes lying at UCIL plant, 40 MT of lime sludge has been disposed off in the Treatment, Storage, Disposal Facility (TSDF) at Pithampur in June, 2008. The directions of the High Court that the remaining 350 MT of toxic wastes be incinerated in the BEIL incinerator at Ankleshwar, Gujarat was contested by the Govt. of Gujarat in the Supreme Court. The Supreme Court, after a series of hearings, disposed off the SLP vide order dated 28th January, 2010 and endorsed the decision of the Task Force that the new incinerator at Pithampur, MP will be operationalized at the earliest after which the wastes can be incinerated in that incinerator. Accordingly after the necessary permissions were accorded by State Government of MP, the trial run of the incinerator at Pithampur started in May, 2010. After the trial run with non-UCIL waste is completed successfully and the incinerator is stabilized, trial run with UCIL waste was to be taken up.

3.14 As per the decision of the Government, on the basis of recommendations of the GoM, an Oversight Committee has been constituted under the Chairmanship of Minister of State (I/c) Ministry of Environment and Forests, Co-chairmanship of Minister in charge of BGTR&R Department, Govt. of MP to provide oversight and support to remediation actions to be taken by Govt. of M.P. The Government has also decided to bear the cost of remediation, presently estimated as Rs.310 crore, pending restitution claim from the polluter. The matter with regard to fixing of the liability on the polluter is pending in the High Court of M.P.

Group of Ministers on Bhopal Gas Leak Disaster

3.15 The present Group of Ministers (GoM) was reconstituted on 26th May, 2010 to examine all the issues relating to Bhopal remediation measures and to

make appropriate recommendations regarding relief and rehabilitation of Bhopal Gas Victims and their families. The GoM met continuously for four days from 18.6.2010 to 21.6.2010 and considered all issues concerning the tragedy including compensation, extradition of Warren Anderson, legal matters, Bhopal Memorial Hospital and Research Centre, health related issues, environment related issues and the new Plan of Action submitted by the Govt. of MP. The recommendations of the GoM were considered by the Cabinet and certain decisions taken with strict time lines for implementation. In keeping with the decisions of Cabinet, a sum of Rs. 272.75 crore has been provided on 75:25 sharing basis to State Government of M.P. for various rehabilitation measures for the victims; Rs. 740.28 crore have been provided for disbursement of ex-gratia to specified categories of victims; CBI has filed the revision application and appeal in the sessions court against order dated 7.6.2010 of CJM, Bhopal. CBI has filed Curative Petition against order dated 13.9.1996 of Supreme Court; which has been dismissed by the Court in May,2011; Ministry of External Affairs is pursuing the matter of extradition of Warren Anderson in consultation with the CBI and the Ministry of Law, a fresh request for extradition of Warren Anderson has been sent to the concerned authorities of the US Government by Ministry of External Affairs in April,2011; Supreme Court has endorsed taking over of BMHT by the Central Government; ICMR has set up its 31st research centre at Bhopal; the Department of Chemicals & Petrochemicals has filed a Curative Petition in the Supreme Court on 03.12.2010 against its judgements of 1989 and 1991 settling the compensation amount at US $ 470 million and asking for its enhancement; a transfer petition has also been filed for transferring the W.P. No. 2802/2004 from Madhya Pradesh High Court to Supreme Court.

3.16 The GoM has also recommended that the issue relating to incineration of 350 MT of toxic waste in the TSDF at Pithampur will be examined further by the Oversight Committee based on the final recommendations of the Peer Review Committee about the process/technology to be used and the site for its disposal. The Peer Review Committee was constituted to review the Reports of NEERI, NGRI and IICT for environmental remediation of plant site and surrounding areas. The final report of the Peer Review Committee has been submitted to the Oversight Committee by the Ministry of Science and Technology. The issue of disposal of 350 MT of toxic waste was considered by the Oversight Committee in its meetings held on 24th March, 2011 and 25th May, 2011 in view of

Government of Madhya Pradesh expressing their inability to incinerate the said waste at Pithampur. The Oversight Committee considered the option of disposal of the toxic waste by the Defence Research and Development Organization (DRDO) in their incinerator facility at Nagpur, Maharashtra. A PIL filed by private parties against entry and disposal of this toxic waste at Nagpur, was disposed off on 21st July, 2011 by Bombay High Court directing Government of Maharashtra and Maharashtra Pollution Control Board (MPCB) to approach High Court of Madhya Pradesh at Jabalpur as the case was pending with that Court. The High Court of Madhya Pradesh vide orders dated 28.07.11 and 11.08.11 had suspended the transfer of waste to Nagpur and directed the MPCB to analyse the samples and inspect the DRDO facility at Nagpur to ensure incineration at DRDO facility will not cause any hazards to nearby people. MPCB expressed its inability to analyse the likelihood of hazard from disposal of toxic waste and submitted to Court on 09.12.11 that statutory permission to DRDO could not be granted because of non-compliance with statutory provisions by DRDO.

3.17 The Court on 19.12.11 has directed the Central Government to get the test of incineration of waste material and analysis of the fumes and residue carried out in the selected laboratory and to submit the report. Ministry of Environment and Forests is submitting regular status reports in the High court of Madhya Pradesh as per its directions for disposal of toxic waste.

Chapter- IV

PUBLIC SECTOR UNDERTAKINGS

HINDUSTAN ORGANIC CHEMICALS LIMITED

4.1 Hindustan Organic Chemicals Limited (HOCL) was incorporated on 12th December 1960; for setting up manufacturing capacities for chemicals/ intermediates which are required for production of Dyes, Dye-intermediates, Rubber chemicals, Pesticides, Drugs and pharmaceuticals, laminates, etc. It was expected that indigenous manufacture of these chemicals and intermediates would give impetus to downstream industry resulting in setting up of chemical units and achieving self-sufficiency for the country in this area. The objective behind setting up of HOCL has been achieved as over the years, more than 500 units based on HOCL's products have been set up all over the country which have not only helped in achieving self sufficiency but have also entered the international market by exporting chemicals, dyes and drugs for over the last many years.

4.2 The products manufactured by HOCL include phenol, acetone, formaldehyde, nitrobenzene, aniline, nitro toluene, sulphuric acid/ oleum, acetanilide and Hydrogen Peroxide. The raw materials used by HOCL are Benzene, Toluene, LPG, Methanol, naphtha and Sulphur, most of which come from Petroleum Refineries.

4.3 HOCL has two units at Rasayani (Maharashtra) and Kochi (Kerala). It also has a subsidiary company, M/s Hindustan Fluorocarbons Limited located at Rudraram (Andhra Pradesh) for manufacture of poly-tetra-fluoro-ethylene (PTFE), a high- technology engineering plastic.

4.4 The Kochi Unit has been achieving more than 100% capacity utilization due to the measures taken for continuous supply of raw materials through pipeline network established between BPCL-KR and HOC Plant, which has helped the company to streamline the production without any interruption. It has also helped the Company to reduce overheads and expenditure for sampling and totally eliminate the handling losses that occurred when the raw material was received by tanker lorries, thus improving the efficiency of operation and safety.

4.5 The following are details of the physical and financial performance of the Company for the last five years:

Year	Production (MT)	Turnover (Rs. Crore)	Net Profit/ Loss (Rs₹. Crore)
2006-07	207110	591.25	(+) 17.04
2007-08	242013	666.59	(+) 13.61
2008-09	245192	620.90	(-) 25.27
2009-10	221249	520.71	(-) 83.07
2010-11	238684	738.03	(+)25.71

4.6 New Proposals and Projects

i) To improve the operational efficiency of the Rasayani plant, the changeover of feed stock from Naptha to CNG for Hydrogen plant and furnace oil to CNG in the Boiler for steam production is completed. This has helped the company to reduce the cost of production for hydrogen gas which is an important raw material for the production of Aniline and Nitro toluene through cheaper process steam.

ii) Gainful utilization of surplus land available in Rasayani and Panvel by associating with reputed PSUs like RCF and JNPT is under consideration.

iii) Refurbishment of C.N.A, plant alongwith expansion of N2O4 facility from 300 TPA to 500 TPA with the financial assistance of Rs. 27 crore from ISRO is under implementation.

M/S HINDUSTAN FLUOROCARBONS LIMITED

4.7 M/s Hindustan Fluorocarbons Ltd. (HFL) is a subsidiary company of Hindustan Organic Chemicals Limited. HFL was incorporated on 14.7.1983. The Regd. office of the company is located at No.1402, Babukhan Estate, Bashir Bagh, Hyderabad. The company is engaged in the manufacture of Poly Tetra-Fluoro Ethylene (PTFE) and Chloro-Di-Fluoro Methane (CFM-22). PTFE is extensively used in chemical, mechanical, electrical and electronic industries and has strategic applications in the defence and aeronautical sectors. The factory is located at Rudraram, Dist. Medak, Andhra Pradesh.

4.8 The company is under BIFR. The Rehabilitation package under the operating agency M/s. IDBI is approved by BIFR on 03/12/2007. Implementation of the same is already undertaken by HOCL management. The rehabilitation proposal largely consists of Thermal Oxidation of CFM-23 produced during process of production of CFM-22 which is entitled for Clean Development Mechanism (CDM) benefits. The company has obtained the host country approval from the Ministry of Environment and Forest (MOEF) and the

project is registered by United Nations Framework Conventions On Climate Change (UNFCCC) Board on 14th of Nov. 2008. With the implementation of CDM, the company is expected to have positive net worth by 2013-14. The expected revenue out of CDM project is around Rs. 20 Crore. The company has sold 2, 10,000 Certified Emission Reductions (CERs), earning a revenue of Rs. 17 crore in the year 2011-12. The Company expects to earn about Rs. 10-15 crore per annum from the sale of CERs regularly.

HINDUSTAN INSECTICIDES LIMITED

4.9 Hindustan Insecticides Limited (HIL) was incorporated in 1954 and set up its factory in Delhi for manufacturing DDT to meet the demand of National Malaria Eradication Programme (NMEP) presently known as National Vector Borne Disease Control Programme (NVBDCP) launched by Govt. of India. This plant went into production in April 1955. In 1957, the company set up their second factory at Udyogamandal, near Cochin for the manufacture of DDT. The company set up a plant at Rasayani, Maharashtra in 1977 for the manufacture of Malathion, an insecticide used in public health. Another DDT plant was set up at Rasayani in 1983. DDT is even today the most effective tool to fight dreaded diseases like Malaria, Dengue, Kala Azar, and Japanese Encephalitis etc. The company has contributed a lot in keeping these diseases under check in India. Today, HIL is the largest producer of DDT in the world and the only other producer is in China.

4.10 With a view to make quality pesticides available to farmers as part of the Green Revolution, HIL has put up manufacturing facilities for various agro pesticides at Udyogamandal, Kerala and Rasayani, Maharashtra. The company manufactures technicals such as Endosulfan, Dicofol, Malathion Butachlor, DDVP, Monocrotophos, Mancozeb etc. and around 27 agro formulations at its plants at Udyogamandal (Kerala), Rasayani (Maharashtra) and Bhatinda (Punjab). The company has a well-equipped Central R&D Complex at Udyog Vihar, Gurgaon, Haryana along with an experimental farm.

4.11 In an effort to achieve international standard for its products and systems, all the Units of the company took an initiative and successfully received ISO 9001:2000 certificate. Rasayani Unit has also been accredited with ISO: 14000 and ISO 18001:2007.

4.12 The company also has a marketing tie up with M/s. Rashtriya Chemicals & Fertilizers Limited and M/s. Brahmaputra Valley Fertilizer Corporation Limited for increasing sales turnover.

4.13 The Company achieved an export turnover of Rs.28.96 crores (previous year Rs.14.29 crores). HIL has ventured into alternate methods of vector borne disease control like manufacture of synthetic pyrethroids etc. apart from looking at other emerging options, so that the company can maintain itself as a key supplier to the public health segments not only in India but also abroad. During the year 2010-11, HIL improved its performance and posted operating profits for yet another year. HIL has been continuously improving its turnover and has now posted profits for 6 years in succession. HIL is one among 11 PSUs out of a total of 36 restructured PSUs that have posted profits continuously and have been able to get the turnaround award from Govt. of India. The Company achieved an all time record turnover of Rs.271.04 crore (Previous year Rs.243.88 crore) and recorded a gross profit of Rs.8.02 crore (Previous Year Rs.9.20 crore) before providing for depreciation, interest and tax. The net profit before tax (PBT) for the year after providing for depreciation and interest was at Rs.3.33 crores (Previous year Rs.3.16 crores). The company got "Very Good" MOU rating in the year 2009-10 and 2010-11 as well.

4.14 Performance of the company for the last five years is as follows: -

(₹ In crores)

YEAR	Production (MT)	Sales Turnover	Net Profit/Loss
2006-07	20852	200.57	(+)05.66
2007-08	19845	210.19	(+)06.52
2008-09	16415	215.35	(+)02.71
2009-10	18253	243.88	(+)03.06
2010-11	17473	271.04	(+)01.58

4.15 HIL has drawn up plans to widen its product profile by venturing into manufacture of a range of agrochemicals. Acephate plant, which is a retrofitting of the existing Malathion facility is mechanically complete and commercial production is going on. The plant to manufacture Imidacloprid, Acetamiprid, Buprofezin, Chloropyriphos Triazophos are at various stages of implementation. The company is also implementing an Enterprise Resource Planning (ERP)

package to further streamline the Production, Marketing and Financial System etc.

BRAHMAPUTRA CRACKER & POLYMER LIMITED (BCPL)

4.16 BCPL was incorporated on 8th January 2007. It is implementing the Assam Gas Project, the details of which are outlined in Section 2.31 of this Report.

Chapter- V

AUTONOMOUS INSTITUTIONS

Central Institute of Plastics Engineering and Technology (CIPET)

5.1 CIPET is an ISO 9001:2008 QMS, NABL, ISO/IEC 17020 accredited premier Institution devoted to Academic, Technology Support & Research (ATR) activities for the growth of Plastics & allied industries in the country. CIPET operates at 22 locations spread across the country. CIPET has 15 centres at Ahmedabad, Amritsar, Aurangabad, Bhopal, Bhubaneswar, Chennai, Guwahati, Hyderabad, Hajipur, Haldia, Jaipur, Imphal, Lucknow, Mysore and Panipat. All the CIPET centres have state of art infrastructural facilities in the areas of Design, CAD/CAM/CAE, Tooling & Mould Manufacturing, Plastics processing, Testing and Quality control to cater to the needs of plastics & allied industries in the country.

5.2 To provide qualified Human Resource to the industry, CIPET offers a blend of specialized academic Programs in the field of Plastics Engineering & Technology, be it Doctoral, Post Graduate, Undergraduate, Post Diploma or Diploma. Every year, CIPET trains students through long-term and short-term Programs with hands-on experience with the most sophisticated facilities in Design, CAD/CAM, Tool Room, Plastics Processing and Plastics Testing & Quality Control. With a strong Alumni base of 50,000 professionals across the world "CIPET" is indeed a recognized qualifying brand for supervisory and managerial human resource for the plastics industries.

5.3 CIPET renders Technology Support Services in Design, Tooling, Plastics Processing, and Testing & Quality Assurance both in India and abroad. The biodegradable testing facility of CIPET, the first of its kind in the country works jointly with European Bioplastics & International Biodegradable products Institute.

5.4 Envisioned to be a Global R&D Hub, CIPET has established two exclusive R & D wings at Chennai and Bhubaneswar. The Advanced Research School for Technology & Product Simulation - ARSTPS at Chennai focuses on Innovative Product Design for Automobile, Aerospace, Medical and Packaging Industries, product and Tool Design Conceptualization, E- Manufacturing of Prototypes, Rapid Prototyping for Lead Time Reduction, Reverse Engineering for Metal Substitution with Aesthetic and Ergonomical Approach. The Laboratory

for Advanced Research in Polymeric Materials (LARPM) at Bhubaneswar concentrates on Bio polymers, E Waste Recycling, Polymer Composites & Nanocomposites, Characterization of Blends, Alloys, and Fuel Cells. The Main Objectives of the R & D wings are to jointly collaborate R&D projects with the industry and with Indian and Foreign Universities to develop working Prototypes, to find Solutions to Engineering Problems and to conduct Micro-analysis on behavior of Materials, Structures and Mechanical Systems.

5.5 CIPET has signed Memorandum of Agreement with several leading International Universities for faculty & student exchange Programs, bilateral R & D initiatives and collaborative research projects. CIPET has established very good interaction with Regional & National Plastics Associations in India & it is a founder member of Plast India Foundation. Through the funding support from the administrative Ministry, OPEC, UNIDO and World Bank, CIPET is constantly updating its civil and technical infrastructure facilities & capabilities aimed at continual process improvement, enhancing the knowledge & competency level of employees and providing dedicated services to valued customers.

Academic programmes

Long term programmes

5.6 CIPET is conducting 10 different long-term training programs viz. Diploma, Post Diploma, Post Graduate Diploma, Undergraduate, Post Graduate and Ph.D. programs with varying levels of qualification for entry. As against 8853 students enrolled for the long term courses in 2009-10, 9523 students have been admitted during 2011-12 - 8% more than the previous year.

Short-term programmes

5.7 Apart from the regular courses, the Institute also offers highly specialized and customized Short - Term Programs in the field of Plastics Engineering & Technology to update and improve the skill competency of technical manpower in the plastics and allied industries. In the year 2010 - 11, 19553 participants attended various Short term courses. CIPET is committed to impart Short term courses for 21600 participants by the end of 2011-12, a 10% increase from the previous year.

i) Tailor made Short Term Courses were offered to foreign nationals. 10 students from CIATEQ Advanced Technology Centre, Mexico and 9 students from Srilanka Export Development Council, Sri Lanka have

attended programs ranging for a duration of 2-18 weeks at Chennai & Bhubaneswar.

ii) Training Program on "Plastic Industries for Unemployed Youths of North Eastern Region" sponsored by the Ministry of Development of North Eastern Region (M-DONER) was organized at Guwahati & Imphal in the areas of Plastics Processing & CAD/CAM/CAE. During 2011-12, 1300 students participated in these training programs as against 775 students during 2010-11.

Conference/Seminar/Exhibition

5.9 A Five Member CIPET Team had visited PlastPack East Africa 2011(4th International Exhibition for Plastics, Rubber and Packaging Industry) held at Nairobi, Kenya to promote CIPET's Academic, Technology & Research activities. The team also visited Ethiopia for conducting training programs in the areas of Plastics Engineering & Technology.

5.10 14 Industries from India visited China for Chinaplast - 2011 held between 18-23 May, 2011 at Guangzohu, China along with a delegation from UNIDO, CIPET, Ministry of DIPP, Ministry of Commerce & Industry, Govt. of India in order to enable business tie-ups with Chinese companies and interaction with technical experts identified by UNIDO.Twelve Officials of CIPET visited ChinaPlas 2011 - Asia's No.1 Plastics & Rubber Trade Fair from 17th to 20th May, 2011 at China.

5.11 A Four Member team visited Plastopol - 15th International Fair of Plastics & Rubber Processing from 24th - 27th May, 2011 at Krakow, Poland.

Staff Development Programme

5.12 NABL Assessors' Training Program was organized by NABL between 26th and 30th September, 2011 at IPFT Campus, Gurgaon consisting of 15 participants.

5.13 A training programme on "Six Sigma Green Belt & 5S" organized by M/s. TQM International Pvt. Ltd., New Delhi in collaboration with Processing Management LLC, USA at CIPET Head Office from 18th to 22th October 2011 was attended by 20 participants.

5.14 10 participants took part in the ISO 9001:2008 Quality Management Systems Lead Auditors programme organized at IPFT Campus, Gurgaon between 31st October and 4th November, 2011.

Technology Support/Services

5.15 CIPET has been entrusted with prestigious assignments to provide Technology support services. During the reporting period, the major Technology Support Services undertaken are: -

i) CIPET has been awarded the Contract for Testing & Evaluation of Contraceptive Devices - condoms, copper-T and tubal rings from 13.09.2011 to 12.09.2013 by the Ministry of Health & Family welfare, Government of India.

ii) CIPET's expertise as third party Inspection Agency for plastics products is recognized by various Central & State Governments organizations for plastics & allied products. During 2011-12, CIPET undertook 1180 assignments from reputed industries across the country on behalf of various State Government and its undertakings.

iii) M/s Ordnance Factory, Dum Dum has placed an order with CIPET for Design & Development of Hot Runner Moulds for 20 Round Magazine Assembly.

iv) CIPET has been accredited as a Type-A Inspection Body for 23 products under scope of accreditation for its pre-delivery Inspection, which would enhance the opportunity for generating internal resources.

Research and Development Activities

5.16 During the reporting period, the following R&D activities have been carried out through the R&D wings (LARPM & ARSTPS) of CIPET:

i) 11 sponsored R & D projects from various funding agencies like DST, DIT, CSIR, OIDB, DCPC & Dept. of Bio-technology, etc. have been carried out.

ii) 05 students have registered for Ph.D Program in the field of Polymer Science & Engineering; 02 faculties have submitted Ph.D. Thesis.

iii) 25 Research papers have either been published in various International Journals of high impact or presented in international conferences.

iv) 34 M.Tech. Theses work had been carried out.

v) Department of Chemicals & Petrochemicals, Govt of India had identified CIPET for Setting up of 'Centre of Excellence for Green Transportation Network (CoE-GREET)" to be implemented within a period of three years.

Global Interaction

5.17 MoUs have also been signed with the following renowned institutions/universities:

i) MoU was signed between CIPET & M/s CIATEQ, Mexico at Chennai for collaborative research projects

ii) MoU was signed with M/s. Kyung Hee University, Korea; M/s. Hannam University, Korea for collaborative research projects in the area of Polymer Science & Technology & Bio-polymers.

Signing of MoUs with Kyung Hee University, Korea and Hannam University, Korea by Shri. K. Jose Cyriac, IAS, Secretary, Department of Chemicals and Petrochemicals.

National Interaction

5.18 MoU was signed with Govt. of Orissa for extending the lease period of Master Craftsman Training Institute (MCTI) for CIPET Campus II at Bhubaneswar from 20 years to 99 years;

5.19 Special Assignments such as National Awards for Technology Innovation - 2011 supported by the administrative Ministry were undertaken;

5.20 CIPET has taken possession of an old building at IPFT Gurgaon and renovated the same for organizing CAD/CAM/CAE programs, Faculty Development Programs, etc., CIPET has started offering CAD/CAM/CAE courses, Quality Management Program. 150 students / participants have successfully completed the training program.

UNIDO Mission

5.21 Awareness Program on Intellectual Properties (IPR) was conducted at Delhi, Ahmedabad, Chennai & Bhubaneswar.

5.22 Steering Committee Meeting of UNIDO-ICAMT was held on 25th August 2011 at Head Quarters Bangalore under the leadership of DIPP, Ministry of Commerce & Industry. Action plan for next six months has been evolved.

Plastics Waste Management

5.23 Shri S. Sugumar, Chief Manager (Technical), CIPET Head Office participated in the Delegate Program at Japan during November 2011. The main objective of the visit was to study Plastics Waste Management at Japan and adopt the same technology in India.

Important Events

5.24 National Workshop on "Plastics Waste Management" was inaugurated by Shri M K Alagiri - Hon'ble Union Minister of Chemicals & Fertilizers at Madurai on 22 January, 2011.

Inauguration of the National Workshop by Hon'ble Minister (Chemicals & Fertilizers), Shri. M.K.Alagiri

5.25 Inspection of Official Language was carried out at CIPET Mysore on 07.05.2011 by the First Sub-Committee of Parliamentary Committee on Official Language.

5.26 The 2nd series of the International Conference - APM 2011- Innovations in Materials and Product Development was inaugurated by former Secretary, (C&PC), Shri M Raman, I.A.S., Secretary (C&PC), at Chennai on March 25, 2011.

5.27 A new initiative in the form of an International Exhibition & Conference on "Advanced Application of Polymers & Plastics" POLY INDIA 2011 was jointly organized by CIPET, with FICCI, and active support of Govt. of Andhra Pradesh, Deptt. of Chemicals & Petrochemicals, Govt. of India between 9th and 11th November, 2011 at Hyderabad.

5.28 Video Conference Facility was launched at CIPET Head Office by Shri. K. Jose Cyriac, Secretary (C&PC), DCPC, Govt. of India on 15th November, 2011 for faculty/students interaction at CIPET centres.

Inauguration of video conferencing facility by Shri. K. Jose Cyriac, Secretary (Chemicals & Petrochemicals)

Institute of Pesticide Formulation Technology (IPFT)

5.29 Institute of Pesticide Formulation Technology (IPFT) was Established in May, 1991 under the Department of Chemicals & Petrochemicals, Ministry of

Chemicals & Fertilizers as an autonomous institution. IPFT has established a healthy rapport with the pesticides industries and has been able to successfully transfer technology for safer, efficient and environment friendly formulations. IPFT consists of three major Divisions and a Pilot plant. The Institute carries out both in-house and external projects. The Institute also functions as a Technical Coordinator Unit (TCU) on User and Environment friendly pesticide formulation technology and quality control of RENPAP, one of the largest networks of UNDP/UNIDO comprising of 15 countries of Asia.

Objectives of the Institute

5.30 The main objectives of IPFT as given in the Memorandum of Association of the Society are:

i) Development and production of state-of-the-art user and environment friendly pesticide formulation technology.

ii) Promotion of efficient application technologies suiting the existing requirements of the newer formulations.

iii) Information dissemination of safe manufacturing practices, quality assurances, raw material specification and sources.

iv) Analytical and consultancy services.

v) Fostering the improvement in the qualification and usefulness of pesticide scientists working in the agrochemical area.

vi) Continuing education through specialized training for pesticide personnel.

Achievements during the year 2011 -12

5.31 IPFT has been participating in Organization for the Prohibition of Chemical Weapons (OPCW) Profiency tests and seeking the status of a "Designated Lab" by the. Recently, the lab participated in 29th OPCW Proficiency Test held in April, 2011 and performed well (Grade 'A') and got the status of a Designated Lab by the OPCW. This is an International Recognition and IPFT has entered into the elite club of one of the few "OPCW Designated Labs" world over.

5.32 M/s Entosav, Istanbul, Turkey has given the following Two Sponsored Projects to IPFT: (i) Development of Lambda Cyhalothrin 25% Capsule Suspension (CS) Formulation (ii) Development of Deltamethrin 12.5% +

Piperonoyl Butoxide 12.5% Water Dispersible Tablets (WT) Formulation at a total cost of US$ 24,000 (Rs. 11.0 lakhs).

5.33 DRDO Sponsored Projects: Defence Research & Development Establishment (DRDE), DRDO, Ministry of Defence, Gwalior has sanctioned a Task Project at a cost of Rs. 9.63 lakhs to IPFT for "Studies on safer and Eco-friendly Mosquito Repellent formulations for Armed Forces". Another Task Project entitled "Development of Synthetic Pyrethroid Formulations for Long term Impregnation" at a cost of Rs. 8.50 lakhs has been sanctioned to IPFT by the Defence Research Laboratory Tezpur (DRLT), Assam.

5.34 A day long Interactive Seminar with Agrochemical Industries was held on April 09, 2011 with the help and cooperation of PMFI at Mumbai which was attended by seventy representatives from various industries. As a result of this interactive seminar, IPFT has received an overwhelming response and a number of industry sponsored projects are coming IPFT's way.

5.35 IPFT has entered into MOUs with Directorate of maize research (DMR), IARI, New Delhi and National Centre for Integrated pest Management (NCIPM), IARI, New Delhi for undertaking collaborative projects.

5.36 IPFT continues to be a Laboratory accredited by National Accreditation Board for Testing & Calibration Laboratories (NABL) as per ISO - 17025 (2005) for the analysis of Pesticides and CWC related chemicals. The Desktop Audit of the Lab was held in October, 2011.

5.37 IPFT has been successful in getting BIS Recognition/Certification in June, 2011. This will result in increased revenue generation as IPFT has qualified to receive samples for testing from BIS.

5.38 Research Assistants and Junior & Senior Research Fellows have been recruited at IPFT to strengthen and support research activities in the mandated work domain. In addition, 04 posts in various disciplines have been filled and action has been initiated to fill up remaining vacancies.

5.39 Procurement of Equipment: Various sophisticated equipment / instrument, inter-alia, including Automatic weather station, Water Distillation Unit, Orbital Shaking Incubator, Nano Micro size Analyser and Super Speed centrifuge & Refrigerated centrifuge have been procured by IPFT for automation of various research activities.

Chapter- VI

GENERAL ADMINISTRATION

ORGANISATION SET UP OF THE DEPARTMENT

6.1 The main activities of the Department are policy making, sectoral planning and promotion and development of chemical, petrochemical industries. The administrative and managerial control of Public Sector Undertakings engaged in the manufacture of various chemicals and petrochemical items, as well as Autonomous Bodies is a major function of the Department.

6.2. The Department is headed by a Secretary to the Government of India who is assisted by a Financial Adviser, two Joint Secretaries, one Economic Adviser and two Deputy Directors General. There is a separate section dealing with work relating to Bhopal Gas Leak Disaster and the Special Act relating thereto.

EMPLOYMENT OF SCHEDULED CASTES/SCHEDULED TRIBES/PHYSICALLY HANDICAPPED IN THE MAIN SECRETARIAT OF THE DEPARTMENT OF CHEMICALS AND PETROCHEMICALS

6.3. The status of the employment of Scheduled Castes/Scheduled Tribes/Physically handicapped in the main Secretariat of the Department of Chemicals & Petrochemicals, as on 31.12.2011 is as under:

Group	Total No. of posts	Scheduled Castes	Scheduled Tribes	Physically Handicapped
A	40	3	-	-
B	63	7	-	1
C	88	18	4	1
TOTAL	**191**	**28**	**4**	**2**

6.4 Officers in Group A include officers belonging to Central Secretariat Service besides officers on deputation from All India Services, Central Services and other Departments/ Undertakings. Appointment to posts in Group B and C is mostly done on the basis of nominations made by the Department of Personnel & Training.

RECORD MANAGEMENT

6.5 The Parliament has enacted "The Public Records Act 1993" to regulate the management, administration and preservation of Public Records of the Central Government, Union Territory Administrations, Public Sector Undertakings, statutory bodies and corporations etc. The Central Government

has also made rules to carry out the provisions of the Act. In terms of the provisions and terms contained in Section 5(1) of the Act, the Under Secretary in-charge of General Administration has been nominated as the Records Officer in the Department. A modernized Record Room has been set up in the Department under the Plan Scheme run by Department of AR&PG. Requisite reports and returns are being sent to National Archives of India (NAI) regularly.

USE OF HINDI IN OFFICIAL WORK

6.6 In order to ensure compliance of the statutory provisions and Presidential Orders on the Official Language Policy of the Government, there is a Hindi Section in the Department and also in its Attached and Subordinate Offices. Assistant Director (OL) and Joint Director (OL) supervise the work of the Hindi Section under the overall guidance of a Joint Secretary.

6.7 All documents like Annual Report, Performance Budget, Demand for Grants, Parliament Questions and Assurances, Material for Standing committee, C& AG Reports, Cabinet Notes, Updation of Departmental website, the documents falling under Section 3 (3) of the Official Language Act, 1963 were issued in bilingual form. All letters received in Hindi were replied to in Hindi as per Rule 5 of the Official Language Rules, 1976. Efforts were made to progressively increase the use of Hindi in day-to-day official work as set out in the Annual Programme formulated by the Department of Official Language.

6.8 Hindi fortnight was organized in the Department from 15th to 30th September 2011. During this period, five competitions in Hindi Typing, Hindi Shorthand, Hindi Essay, Noting and Drafting and Translation were held. A competition on Hindi Essay exclusively for Group 'D' employees was also held. Separate prizes were earmarked for non-Hindi speaking officers and staff. Meritorious participants were given cash prizes.

6.9 The Department has an Official Language Implementation Committee under the Chairpersonship of Joint Secretary and its' meetings were held regularly. The progress made in the use of Hindi was reviewed and suggestions for further improvement were adopted for compliance.

6.10 Quarterly progress Reports for each quarter during the year were compiled on the basis of inputs received from different Sections of the Department and sent to the Department of Official language for inclusion in the data base. Reports received from Attached and Subordinate Offices were

reviewed and deficiencies found therein were suggested for rectification. Follow up action on the observations of the Department of Official Language on the Annual Assessment Report was initiated in the Department and necessary instructions were issued.

6.11 In order to impart working knowledge of Hindi, officers and employees not possessing such knowledge, are sent for in-service training as per the programme formulated by the Hindi Teaching Scheme, Department of Official Language. Staff members are also sent for Hindi stenography and typing training under the same scheme. On successful completion of such training, they are given advance annual increments and cash awards depending on their performance ratings.

6.12 There is an annual cash award scheme under which officers/employees doing their official work in Hindi are required to maintain their daily work sheet for the entire year and submit it for evaluation by the screening committee constituted in the Department.

ACTIVITIES AND ACHIEVEMENTS OF THE VIGILANCE SET UP

6.13 The Department has a Chief Vigilance Officer (CVO) of the rank of Joint Secretary to look into complaints against the employees of the Department as well as Board Level Officers of the Public Sector Undertakings and Organizations under its administrative control. A Director/Deputy Secretary and an Under Secretary along with a Vigilance Section assist the CVO.

6.14 A number of complaints were received during the year 2011-12. These complaints were investigated and appropriate action was taken thereon.

6.15 Vigilance Awareness Week" was organized during the period 31st October to 5th November, 2011. All the PSUs and Autonomous Bodies under the administrative control of the Department of Chemicals and Petrochemicals were also advised to organize 'Vigilance Awareness Week' as per guidelines of CVC. A pledge was administered to the staff and officers of the Department.

GRIEVANCE CELL

6.16 A Grievance Cell was established in the Office of Minister Chemicals and Fertilizers, Department of Chemicals and Petrochemicals in the month of July 2004. This Cell is monitoring grievances related to all chemicals and petrochemicals viz. their Availability, Quality, Pricing, Policy Matters etc.

6.17 Publicity about the setting up of this Grievance Cell was given through the National daily newspapers of Hindi and English. The online Grievance Redressal Mechanism, Public Grievance Redressal and Monitoring System (PGRAMS) has been brought into operation w.e.f 1st August 2005. For giving wide publicity to the Grievance Cell, information has been uploaded on the website of Department of Chemicals & Petrochemicals and also on the websites of the Institutions / Organizations falling under the purview of Department of Chemicals & Petrochemicals. A link has been provided on the home page of Department of Chemicals and Petrochemicals to access PGRAMS with the websites of the Institutions/Organizations under Department of Chemicals & Petrochemicals. The Grievance Cell plays a vital role in the redressal of grievances of the common citizen.

GENDER EQUALITY

6.18 In compliance with the Supreme Court judgment laying down certain guidelines to be followed for prevention of sexual harassment of female employees at work places, the Department has constituted a Complaint Committee. The Committee is functional since June 2002

RIGHTS OF PERSONS WITH DISABILITIES

6.19 Department of Chemicals & Petrochemicals follows the guidelines issued by Government of India from time to time regarding rights of the persons with disabilities.

6.20 Department of Chemicals & Petrochemicals is the cadre controlling authority in respect of 12 technical posts in Group 'A', 5 posts of Staff Car Drivers, 2 posts of Sr. Gestetnor Operator and 1 post of Dispatch Rider in Group 'C' and 48 Group 'D' posts. The Department has identified two posts for physically handicapped persons [one for Hearing Handicapped (HH) and one for Orthopaedically Handicapped (OH)] in Group 'D' posts. Point No.1 in the reservation roster has been earmarked for an orthopaedically handicapped person. The next point will arise only at the time of filling up of 34th vacancy. An orthopaedically handicapped person has filled up the post identified for OH. The identified post for hearing handicapped will be filled up on availability of vacancy.

6.21 It is ensured that persons with disabilities have easy access to the physical environment and other facilities and services. The Information and Facilitation Centre of the Department has been set up specifically on the ground

floor in Shastri Bhawan enabling easy and obstacle free accessibility for such persons. Senior officers of this Department are always available to listen to the problems, if any, of persons with disabilities.

RIGHT TO INFORMATION

6.22 The Right to Information Act-2005 was published in the Gazette of India on 21st June 2005 with the mandate to promote transparency and accountability in the working of every public authority. As per the provisions of the Act, all relevant information relating to the Department have been made available on the Web site and is being updated regularly in a manner which is easily accessible and comprehensible to the public. Seven (7) Central Public Information Officers (CPIO) have been nominated in the Department to provide information to the public and information seekers. In addition, four (4) senior officers of the rank of Joint Secretary and above have been designated as Appellate Authority for the particular subjects they are concerned with.

ANNEXURE - I

PRODUCT-WISE INSTALLED CAPACITY & PRODUCTION OF MAJOR CHEMICALS

(000' MT , %)

Major Groups / Products	Installed Capacity			Production									Growth in Prodn. (%)	
	2002-03	2008-09	2009-10	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	CARG col 12/col.5	col.12/col.11
1	2	3	4	5	6	7	8	9	10	11	12		13	14
I : ALKALI CHEMICALS														
SODA ASH	2500.00	2952.00	2952.00	2057.12	2167.08	2287.24	2298.24	2078.06	2005.51	1989.05	2058.34	2298.75	1.40	11.68
CAUSTIC SODA	2379.00	2647.00	2647.00	1662.04	1749.26	1795.88	1882.57	1914.22	2050.69	2050.03	2103.75	2178.45	3.44	3.55
LIQUID CHLORINE	1377.00	1891.00	1891.00	1073.18	1154.03	1188.55	1293.80	1276.71	1387.13	1402.84	1439.92	1503.99	4.31	4.45
Total	**6256.00**	**7490.00**	7490.00	**4792.35**	**5070.37**	**5271.68**	**5474.61**	**5268.99**	**5443.32**	**5441.92**	**5602.00**	**5981.19**	2.81	6.77
II : INORGANIC CHEMICALS														
ALUMINIUM FLOURIDE	17.60	27.00	27.00	14.82	16.22	13.88	20.08	20.30	19.43	15.07	11.55	9.80	-5.04	-15.16
CALCIUM CARBIDE	71.60	145.00	145.00	49.02	47.95	52.73	64.64	91.95	97.41	66.55	22.02	44.70	-1.15	102.98
CARBON BLACK	315.70	455.00	455.00	291.79	323.75	381.26	395.10	422.47	426.96	371.40	419.43	452.44	5.64	7.87
POTASSIUM CHLORATE	11.60	11.60	11.60	2.15	2.30	2.26	3.39	4.13	5.36	5.79	2.60	0.61	-14.57	-76.55
TITANIUM DIOXIDE	66.50	76.00	76.00	45.46	49.84	57.56	60.29	62.92	59.15	53.24	61.32	64.01	4.37	4.38
RED PHOSPHORUS	1.70	1.70	1.70	0.59	0.55	0.47	0.46	0.54	0.54	0.46	0.58	0.48	-2.55	-17.24
Total	**484.70**	**716.30**	**716.30**	**403.83**	**440.61**	**508.16**	**543.97**	**602.31**	**608.86**	**512.51**	**517.51**	**572.04**	4.45	10.54
III : ORGANIC CHEMICALS														
ACETIC ACID	241.30	351.00	351.00	251.68	308.08	287.90	305.91	287.85	316.01	203.34	146.09	156.48	-5.77	7.11
ACETIC ANHYDRIDE	50.40	59.00	59.00	23.19	28.48	26.71	28.63	30.60	29.32	36.14	43.42	43.90	8.30	1.10
ACETONE	46.00	46.00	46.00	44.13	46.72	51.68	36.79	44.22	47.19	46.83	44.25	50.50	1.70	14.12
PHENOL	66.50	74.00	74.00	76.22	75.15	84.14	58.21	71.27	74.94	75.75	71.59	79.81	0.58	11.48
METHANOL	319.00	385.00	385.00	362.17	389.40	392.20	386.76	396.23	351.73	237.66	330.83	370.02	0.27	11.85
FORMALDEHYDE	192.20	315.00	315.00	181.85	199.13	196.01	249.39	234.82	242.76	231.84	259.67	266.60	4.90	2.67
NITROBENZENE	52.00	54.00	54.00	25.70	27.92	26.51	23.59	14.73	13.11	13.93	12.34	9.94	-11.19	-19.45
MALEIC ANHYDRIDE	14.30	23.00	23.00	11.89	14.44	13.40	12.75	12.95	4.25	2.97	2.55	2.80	-16.53	9.67
PENTA-ERITHRITOL	12.80	18.60	18.60	14.04	15.25	14.48	15.18	13.73	14.95	13.82	11.21	11.72	-2.23	4.59
ANILINE	28.70	48.70	48.70	47.29	45.04	49.60	48.11	47.37	44.98	29.67	39.38	30.76	-5.23	-21.90
CHLORO METHANES	81.10	90.00	90.00	79.13	89.57	92.49	93.80	92.19	85.86	96.22	91.12	110.78	4.30	21.58
ISOBUTYLE	3.50	3.50	3.50	1.95	1.68	1.68	2.31	2.52	3.33	3.34	4.07	2.26	1.86	-44.44
ONCB	32.80	32.80	32.80	15.17	12.24	15.60	14.75	12.82	13.81	15.71	15.44	16.69	1.20	8.11
PNCB	42.00	42.00	42.00	24.51	18.53	24.67	22.23	18.46	20.92	25.25	23.57	24.86	0.18	5.49
MEK	4.00	9.00	9.00	8.74	7.64	7.27	1.36	0.10	0.00	0.00	0.00	0.00	-100.00	0.00
ACETALDEHYDE	127.20	236.00	236.00	126.15	127.45	139.73	159.11	163.87	182.48	108.07	59.25	32.25	-15.68	-45.57

ANNEXURE - I

PRODUCT-WISE INSTALLED CAPACITY & PRODUCTION OF MAJOR CHEMICALS

(000' MT , %)

Major Groups / Products	Installed Capacity			Production									Growth in Prodn. (%)	
	2002-03	2008-09	2009-10	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	CARG col 12/col.5	col.12/col.11
1	2	3	4	5	6	7	8	9	10	11	12		13	14
ETHANOLAMINES	10.00	10.00	10.00	11.00	6.54	9.34	8.65	7.27	9.86	12.31	7.00	3.45	-13.49	-50.72
ETHYL ACETATE	55.10	132.00	132.00	40.12	53.81	66.26	70.29	87.67	90.84	93.22	103.96	114.74	14.04	10.37
ORTHO NITRO TOLUENE	6.10	10.00	10.00	4.42	6.81	6.23	7.45	6.80	5.72	8.10	13.80	14.20	15.72	2.91
Total	**1385.00**	**1939.60**	**1939.60**	**1352.65**	**1473.86**	**1505.90**	**1545.26**	**1545.44**	**1552.05**	**1254.17**	**1279.55**	**1341.76**	-0.10	4.86
IV : PESTICIDES AND INSECTICIDES														
D.D.T.	6.30	6.30	6.30	2.94	4.47	4.04	4.43	4.50	3.44	3.31	3.61	3.09	0.64	-14.38
MALATHION	9.50	8.80	8.80	4.25	3.95	4.71	2.74	4.30	3.97	2.00	0.62	0.64	-21.07	3.39
PARATHION (METHYL)	4.00	4.00	4.00	2.04	1.31	0.98	0.46	0.00	0.00	0.00	0.00	0.00	-100.00	0.00
DIMETHOATE	3.20	3.20	3.20	0.76	0.92	0.90	0.83	0.97	0.87	0.56	0.96	1.12	5.00	17.03
D.D.V.P.	3.90	5.40	5.40	2.51	3.46	4.98	3.84	3.89	3.29	2.73	3.12	3.13	2.79	0.29
QUINALPHOS	5.60	4.00	4.00	1.77	1.84	0.87	0.86	0.82	0.52	0.89	0.99	1.01	-6.77	2.12
MONOCROTOPHOS	16.20	14.00	14.00	6.52	8.12	9.51	4.90	4.91	5.12	4.57	5.74	8.60	3.52	49.88
PHOSPHAMIDON	5.70	3.90	3.90	0.84	0.36	0.39	0.54	0.37	0.71	0.85	1.00	0.03	-34.58	-97.20
PHORATE	7.50	8.20	8.20	3.16	5.08	3.64	6.22	5.71	3.23	2.03	2.00	2.63	-2.25	31.30
ETHION	5.10	5.60	5.60	1.68	2.83	1.79	1.51	1.80	0.77	0.16	0.43	0.65	-11.19	52.94
ENDOSULPHAN	10.10	9.90	9.90	3.66	3.60	3.05	2.94	3.90	3.96	4.26	2.80	1.73	-8.95	-38.15
FENVALERATE	2.10	2.60	2.60	0.52	0.82	0.63	0.57	0.52	0.72	0.49	0.53	0.08	-20.78	-84.80
CYPERMETHRIN	4.60	6.90	6.90	5.08	5.17	6.52	6.48	5.06	4.66	4.03	6.23	4.95	-0.32	-20.48
ANILOPHOS	1.20	1.10	1.10	0.35	0.47	0.36	0.20	0.02	0.00	0.00	0.00	0.00	-100.00	0.00
ACEPHATE	4.80	9.20	9.20	4.84	3.99	6.14	8.48	8.33	10.06	9.65	10.83	12.84	12.98	18.53
CHLORPYRIPHOS	10.30	9.10	9.10	6.40	8.11	9.13	4.94	4.72	4.54	3.89	2.90	3.35	-7.77	15.64
PHOSALONE	1.00	1.00	1.00	0.44	0.49	0.54	0.27	0.25	0.50	0.00	0.00	0.00	-100.00	0.00
METASYSTOX	*	*	*	0.51	0.50	0.56	0.32	0.63	0.00	0.00	0.00	0.00	-100.00	0.00
FENTHION	*	*	*	0.91	0.22	0.18	0.33	0.12	0.00	0.00	0.00	0.00	-100.00	0.00
TRIAZOPHOS	*	*	*	1.15	2.11	2.94	2.85	1.84	1.84	2.06	1.00	1.58	4.04	58.00
LINDANE	1.30	0.70	0.70	0.33	0.41	0.38	0.18	0.25	0.08	0.00	0.00	0.00	-100.00	0.00
TEMEPHOS	0.20	0.20	0.20	0.12	0.09	0.25	0.03	0.10	0.08	0.13	0.00	0.00	-100.00	0.00
DELTAMETHRIN	0.30	0.50	0.50	0.21	0.18	0.39	0.31	0.34	0.26	0.03	0.02	0.00	-100.00	-100.00
ALPHAMETHRIN	0.40	1.50	1.50	0.19	0.21	0.33	0.25	0.17	0.21	0.02	0.00	0.51	12.84	0.00
CAPTAN & CAPTAFOL	1.80	1.80	1.80	0.78	0.84	0.85	0.01	0.19	0.00	0.00	0.00	0.00	-100.00	0.00

ANNEXURE - I

PRODUCT-WISE INSTALLED CAPACITY & PRODUCTION OF MAJOR CHEMICALS

(000' MT , %)

Major Groups / Products	Installed Capacity			Production									Growth in Prodn. (%)	
	2002-03	2008-09	2009-10	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	CARG col 12/col.5	col.12/col.11
1	2	3	4	5	6	7	8	9	10	11	12		13	14
ZIRAM(THIO BARBAMATE)	0.40	0.50	0.50	0.00	0.28	0.29	0.11	0.24	0.19	0.07	0.00	0.00	0.00	0.00
CARBENDZIM(BAVISTIN)	1.80	1.50	1.50	1.26	0.84	0.73	0.43	0.14	0.07	0.19	0.19	0.26	-17.93	37.57
CALIXIN	0.20	0.20	0.20	0.05	0.05	0.07	0.04	0.03	0.00	0.00	0.00	0.00	-100.00	0.00
MANCOZAB	11.00	20.70	20.70	10.19	17.25	20.80	18.86	22.88	27.12	35.34	31.49	26.05	12.45	-17.27
COPPER-OXYCHLORIDE	1.50	1.50	1.50	0.24	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-100.00	0.00
2, 4-D	2.90	1.20	1.20	0.00	0.19	0.13	0.33	0.00	0.27	0.21	0.00	0.00	#DIV/0!	0.00
BUTACHLOR	0.90	0.50	0.50	0.24	0.33	0.26	0.25	0.18	0.03	0.12	0.24	0.09	-11.72	-62.34
ISOPROTURON	8.50	5.40	5.40	2.66	4.41	4.66	4.30	3.15	2.96	2.98	2.91	3.90	4.91	34.02
GLYPHOSATE	2.00	2.60	2.60	0.11	0.31	1.02	1.52	2.10	1.52	2.33	1.70	2.28	46.58	34.35
DIURON	0.04	0.10	0.10	0.05	0.06	0.00	0.00	0.00	0.08	0.01	0.13	0.20	19.53	58.73
ATRAZIN	0.04	0.50	0.50	0.20	0.06	0.04	0.00	0.09	0.22	0.26	0.26	0.24	2.31	-8.75
FLUCHLORALIN	0.30	0.20	0.20	0.19	0.16	0.17	0.12	0.10	0.00	0.00	0.00	0.00	-100.00	0.00
ZINC PHOSPHIDE	0.90	0.90	0.90	0.24	0.23	0.31	0.25	0.81	0.46	0.38	0.33	0.42	7.53	28.44
ALUMINIUM	2.30	2.30	2.30	1.99	1.17	1.36	1.52	1.53	1.62	1.72	2.16	1.80	-1.25	-16.74
DICOFOL	0.20	0.20	0.20	0.10	0.09	0.07	0.04	0.05	0.09	0.09	0.02	0.04	-11.04	100.00
Total	**138.08**	**146.20**	**146.20**	**69.57**	**85.12**	**93.97**	**82.24**	**85.00**	**83.42**	**85.34**	**82.19**	**81.22**	1.95	-1.18
V : DYES AND DYESTUFFS														
AZO DYES	7.90	8.70	8.70	4.10	3.95	4.12	3.91	3.53	5.31	2.90	2.70	2.80	-4.64	3.55
DISPERSE DYES	4.30	6.50	6.50	1.29	1.23	1.12	1.13	1.00	0.65	0.55	0.42	0.53	-10.51	26.19
FAST COLOUR BASES	0.60	0.60	0.60	0.00	0.01	0.00	0.00	0.01	0.04	0.04	0.05	0.09	0.00	83.67
INGRAIN DYES	0.30	0.50	0.50	0.03	0.16	0.18	0.42	0.57	1.20	1.09	0.93	0.70	48.88	-24.41
OPTICAL WHITENING AGENTS	1.10	3.40	3.40	0.41	0.30	0.27	0.37	0.45	1.58	1.73	2.21	3.04	28.66	37.56
ORGANIC PIGMENT COLOURS	9.00	11.00	11.00	10.93	11.27	13.55	13.57	16.45	25.66	13.97	18.24	21.83	9.03	19.70
PIGMENT EMULSION	6.30	6.30	6.30	2.02	2.37	2.27	2.22	1.82	1.90	3.39	4.79	5.63	13.70	17.56
REACTIVE DYES	7.90	7.90	7.90	2.98	2.28	2.65	2.87	1.16	1.31	1.30	2.80	2.40	-2.69	-14.29
SULPHUR DYES (SULPHUR BLACK)	3.30	3.30	3.30	2.26	2.90	2.56	3.00	5.72	4.24	5.64	8.69	8.60	18.18	-1.05
VAT DYES	2.30	3.00	3.00	1.45	0.99	1.23	1.60	1.49	1.60	1.22	1.45	1.60	1.28	10.04
SOLUBILISED VAT DYES	0.10	0.10	0.10	0.04	0.01	0.02	0.02	0.02	0.04	0.03	0.03	0.04	1.33	29.03
NAPTHOLS	1.20	3.60	3.60	0.37	0.48	0.54	0.44	0.32	0.14	0.15	0.08	0.07	-18.79	-9.09
Total	**44.30**	**54.90**	**54.90**	**26.20**	**25.94**	**28.50**	**29.54**	**32.55**	**43.64**	**32.00**	**42.39**	**47.33**	7.67	11.66
TOTAL MAJOR CHEMICALS (I TO V)	**8308.08**	**10347.00**	**10347.00**	**6644.59**	**7095.90**	**7408.19**	**7675.62**	**7534.29**	**7731.30**	**7325.94**	**7523.64**	**8023.54**	2.39	6.64

ANNEXURE - II

PRODUCT-WISE INSTALLED CAPACITY & PRODUCTION OF MAJOR PETROCHEMICALS

(000' MT , %)

Major Groups / Products	Installed Capacity			Production								Growth in Prodn. (%)	
	2008-09	2009-10	2010-11	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	CARG col 12/col.5	col.12/col. 11
1	2	3	4	5	6	7	8	9	10	11	12	13	14
I : SYNTHETIC FIBRES / YARN													
1. Polyester Filament Yarn (PFY) **(i)**	1848	1899	1730	1003	970	1015	1194	1350	1262	1345	1496	5.88	11.26
2. Nylon Filament Yarn (NFY) **(ii)**	36	36	36	31	37	40	32	28	28	30	33	0.92	8.89
3. Nylon Industrial Yarn (NIY) **(ii)**	77	77	77	56	48	55	72	84	69	88	86	6.36	-2.37
4. Polypropylene Filament Yarn (PPFY)**(ii)**	16	15	12	15	11	9	10	10	9	9	6	-12.55	-30.30
Sub Total Yarn (1+2+3+4)	**1977**	**2027**	**1855**	**1105**	**1066**	**1119**	**1307**	**1471**	**1368**	**1472**	**1621**	**5.62**	**10.15**
5. Acrylic Fibre (Inc. Dry Spun) (AF)	143	143	95	117	128	114	107	85	78	91	76	-5.99	-16.66
6. Polyester Staple Fibre (PSF)	1266	1266	1266	604	639	623	785	919	843	980	1036	8.02	5.68
7. Polypropylene Staple Fibre (PPSF)	8	8	8	3	3	3	4	3	3	3	4	5.39	19.33
8. Polyester Staple Fibrefil (PSFF)	67	67	67	39	40	47	47	45	51	54	53	4.54	-2.39
Total Synth. Fibre / Yarn	**3461**	**3511**	**3291**	**1868**	**1875**	**1906**	**2250**	**2524**	**2343**	**2601**	**2790**	**5.90**	**7.28**
II : POLYMERS													
1. Linear Low Density Polyethylene (LLDPE)	No separate Capacity			606	650	689	772	837	817	683	897	5.76	31.38
2. High Density Polyethylene (HDPE)	No separate Capacity			958	1035	1035	958	974	942	856	887	-1.10	3.59
LLDPE/HDPE (Combined) iii	**1865**	**2085**	**2735**	**1564**	**1685**	**1723**	**1730**	**1811**	**1758**	**1539**	**1784**	**1.89**	**15.91**
3. Low Density Polyethylene (LDPE)	200	200	160	184	205	201	195	198	191	193	179	-0.38	-7.06
4. Polyestyrene (PS)	462	462	462	274	275	311	285	274	240	270	296	1.11	9.81
5. Polypropylene (PP)	2035	2076	2076	1567	1690	1541	2001	1978	1771	1617	1684	1.03	4.16
6. Poly Vinyl Chloride (PVC)	1105	1279	1279	878	885	953	926	998	1051	1110	1278	5.50	15.18
7. Expandable Polystyrene (EX-PS)	53	68	94	31	36	39	46	44	49	63	71	12.35	12.47
Total Polymers	**5720**	**6170**	**6806**	**4499**	**4776**	**4768**	**5183**	**5304**	**5060**	**4791**	**5292**	**2.35**	**10.47**
III : ELASTOMERS													
1. Styrene Butadiene Rubber (SBR)	62	62	62	19	16	15	13	17	13	19	12	-6.27	-38.30
2. Poly Butadiene Rubber (PBR)	74	74	74	56	64	67	72	74	72	73	76	4.53	4.15
3. Nitrile Butadiene Rubber (NBR)	27	27	25	7	9	9	10	13	11	13	6	-2.78	-54.92
4. Ethyl Propylene Dimers (EPDM)	10	10	10	5	4	4	4	1	0	0	0	0.00	0.00
5. Ethyl Vinyl Acetate (EVA)	13	13	13	0	4	14	3	0	0	0	0	0.00	0.00
Total Elastomers	**186**	**186**	**184**	**87**	**97**	**110**	**101**	**106**	**96**	**106**	**94**	**1.05**	-11.09
IV : SYNTHETIC DETERGENT INTERMEDIATES													
1. Linear Alkyl Benzene (LAB)	472	497	497	382	409	468	460	471	434	464	475	3.16	2.40
2. Ethylene Oxide (EO)	120	140	84	71	79	88	96	114	117	154	164	12.61	6.36
Total Synth. Detergent Intermediates	**592**	**637**	**581**	**453**	**488**	**555**	**556**	**585**	**552**	**618**	**639**	**5.02**	**3.39**
V : PERFORMANCE PLASTICS													
1. ABS Resin	86	86	107	48	62	76	74	78	68	84	90	9.26	6.98
2. Nylon-6 & Nylon 66	16	16	16	11	13	13	15	14	12	13	16	5.27	20.80
3. Polymethyl Methacrylate (PMMA)	4	4	4	3	2	2	3	3	2	3	3	1.75	14.72
4. Styrene Acrylonitrile (SAN)	96	96	96	37	36	36	41	61	58	72	83	12.23	16.05
Total Performance Plastics	**202**	**202**	**223**	**99**	**113**	**127**	**133**	**157**	**141**	**172**	**192**	**9.88**	**11.95**
TOTAL MAJOR PETROCHEMICALS (I+II+III+IV+V)	**10222**	**10706**	**11085**	**7007**	**7349**	**7467**	**8224**	**8674**	**8193**	**8287**	**9007**	**3.65**	**8.69**

ANNEXURE - II

(000' MT , %)

Major Groups / Products	Installed Capacity			Production								Growth in Prodn. (%)	
	2008-09	2009-10	2010-11	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	CARG col 12/col.5	col.12/col. 11
1	2	3	4	5	6	7	8	9	10	11	12	13	14
B : INTERMEDIATES													
I : FIBRE INTERMEDIATES													
1. Acrylonitrile (ACN)	41	41	41	36	39	33	37	39	30	39	38	0.62	-3.70
2. Caprolactum	120	120	120	110	122	117	121	86	84	123	123	1.57	-0.13
3. Dimethyl Terephthalate (DMT)	300	300	300	217	239	197	28	4	0	0	0	0.00	0.00
4. Mono Ethylene Glycol (MEG)	820	820	1040	652	714	881	872	923	783	738	746	1.94	1.04
5. Purified Terephthalic Acid (PTA)	3073	3873	2718	1676	1738	1734	2379	2059	2154	2985	3191	9.64	6.89
Total Fibre Intermediates	**4354**	**5154**	**4219**	**2691**	**2851**	**2963**	**3437**	**3111**	**3052**	**3886**	**4098**	**6.19**	5.45
II : BUILDING BLOCKS													
OLEFINS													
1. Ethylene	2841	3021	3840	2421	2645	2719	2683	2810	2639	2515	2665	1.38	5.94
2. Propylene	2270	2387	2387	1746	1892	1745	2089	2157	1887	1859	1930	1.44	3.83
3. Butadiene	276	295	295	114	131	207	223	244	214	205	242	11.34	17.80
Total Olefins	**5387**	**5703**	**6522**	**4282**	**4668**	**4671**	**4995**	**5211**	**4740**	**4580**	**4837**	**1.76**	**5.62**
AROMATICS													
1. Benzene	1111	1158	1149	608	640	686	886	867	880	823	945	6.50	14.86
2. Toluene	281	281	281	166	177	159	147	142	139	137	128	-3.61	-6.31
3. Mixed Xylene	165	165	165	56	63	56	58	74	78	55	44	-3.28	-19.44
4. Ortho-xylene	474	474	420	207	146	242	431	269	224	358	400	9.90	11.74
5. Paraxylene	2296	2296	2296	1389	1425	1394	1925	2137	2155	2223	2137	6.35	-3.87
Total Aromatics	**4327**	**4374**	**4311**	**2425**	**2451**	**2537**	**3447**	**3488**	**3475**	**3595**	**3654**	**6.03**	**1.64**
C : Other Petro-based Chemicals													
1. Butanol	16	16	16	12	13	15	14	14	11	8	18	5.65	130.41
2. C4-Raffinate	225	225	261	164	121	105	76	77	55	65	71	-11.24	9.60
3. Di-Ethylene Glycol	52	58	50	46	48	58	60	68	58	69	73	6.87	5.62
4. Diacetone Alcohol	9	9	9	9	9	9	9	9	8	9	4	-10.46	-54.50
6. 2-Ethyl Hexanol	25	25	25	26	27	24	24	27	23	16	29	1.77	82.15
7. Epichlorohydrine	10	10	10	9	11	11	10	9	8	7	8	-2.30	10.41
9. Methyl Methacrylate (MMA)	4	4	4	4	5	4	4	4	3	5	5	2.88	8.70
11. Phthalic Anhydride (PAN)	298	298	298	181	183	192	223	244	207	232	253	4.88	9.28
12. Propylene Oxide (PO)	27	27	27	25	25	27	28	28	29	32	32	3.66	1.15
13. Propylene Glycol (PG)	15	15	15	13	14	16	16	17	16	19	17	3.41	-9.26
14. POLYVINYL ACETATE RESIN	20	20	20	0	10	12	10	11	10	4	2	0.00	-50.06
15. Vinyl Acetate Monomer (VAM)	48	48	48	26	29	26	24	23	24	0	0	0.00	0.00

(i) : Includes capacity of all the units producing PFY, NFY, NIY and PPFY under broadbanding as Synthetic Filament Yarn

(ii) : Independent capacity of units producing only NFY, NIY and PPFY.
As the capacities of these products are also included in Synthetic Filament yarn, capacity utilisation can not be worked out.

(iii) : Combined capacity to produce both LLDPE and HDPE and hence capacity utilisation can not be worked out. However production is independent.

ANNEXURE - III

ORGANISATIONAL CHART