सत्यमेव जयते

ANNUAL REPORT 2015-16

Government of India
Ministry of Chemicals & Fertilizers
Department of Chemicals and Petrochemicals

CONTENTS

ANNEXURES

Chapter - 1

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 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 four major divisions viz. Chemicals, Petrochemicals, Planning & Evaluation (P&E) and Statistics & Monitoring (S&M). The Internal Finance Division is common to the three Departments in the Ministry of Chemicals and Fertilizers. There are three PSUs in the chemical sector namely Hindustan Organic Chemicals Ltd. (HOCL), Hindustan Insecticides Ltd. (HIL) and Hindustan Fluorocarbons Limited (HFL), which is a subsidiary of HOCL, and one PSU in the petrochemical sector viz. Brahmaputra Cracker and Polymer Ltd. (BCPL). The autonomous institutes under this Department are Central Institute

of Plastics Engineering and Technology (CIPET) and Institute of Pesticides Formulation and Technology (IPFT).

1.4 Shri Ananth Kumar is the Minister of Chemicals and Fertilizers and Shri Hansraj Gangaram Ahir is the Minister of State. Shri Surjit Kumar Chaudhary, Secretary retired on 31st December, 2015. Shri Vijay Shankar Pandey assumed the charge of Secretary of the Department w.e.f. 1st January, 2016.

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Chapter - 2

AN OVERVIEW OF CHEMICAL AND PETROCHEMICAL INDUSTRY

Chemical and Petrochemical Industry:

2.1 The chemical industry is a knowledge intensive as well as capital intensive industry. It is an integral constituent of the growing Indian Industry. It includes basic chemicals and its products, petrochemicals, fertilizers, paints, varnishes, gases, soaps, perfumes and toiletry and pharmaceuticals. The diversification within the chemical industry is large and covers more than eighty thousand commercial products. This Industry occupies a pivotal position in meeting basic needs and improving quality of life. The industry is the main stay of industrial and agricultural development of the country and provides building blocks for several downstream industries, such as textiles, papers, paints, varnishes, soaps, detergents, pharmaceuticals, etc.

2.2 As per National Industrial Classification (NIC) 2008, Chemical & Chemical products are covered under the industry division 20. The description of product groups at 4-digit level under this division is given below:

Table I: Description of Product Groups

Class	Description
2011	Manufacture of basic chemicals
2012	Manufacture of fertilizers and nitrogen compounds
2013	Manufacture of plastics and synthetic rubber in primary forms
2021	Manufacture of pesticides and other agrochemical products
2022	Manufacture of paints, varnishes and similar coatings, printing ink and mastics
2023	Manufacture of soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations
2029	Manufacture of other chemical products n.e.c.
2030	Manufacture of man-made fibres

The industry division 24 of NIC 2004 is equivalent of industry division 20 (manufacture of chemical & chemical products), 21(manufacture of

pharmaceuticals, medicinal chemicals and botanical products) and 268 (manufacture of magnetic and optical media) of NIC 2008.

2.3 According to National Accounts Statistics 2015, brought out by the Central Statistics Office (CSO), chemical and chemical products sector (industry division 20 and 21 of NIC 2008) accounted for 2.50% of the Gross Value Added (at 2011-12 prices) in 2013-14, compared to 2.45% in 2012-13. The share of this sector in the GVA of manufacturing sector at 2011-12 prices was 13.84% during 2013-14 as compared to 13.38% in 2012-13. As per quick estimates of Index of Industrial Production (released by the CSO on 12th January 2016), the cumulative growth in the chemicals and chemical products (Industry Division 24 of NIC 2004) during April-November 2015-16 over the corresponding period of 2014-15 has been 5.2 % as compared to 3.9% in the Manufacturing sector. The size of the Indian Chemical industry (industry division 20 and 21 of NIC 2008) in terms of value of output in the year 2013-14 was Rs. 839,460 crore.

2.4 The production of selected major chemicals and petrochemicals during the years 2011-12 to 2015-16 (up to September 2015) is given in Table-II. The production of major chemicals and petrochemicals in 2015-16 (up to September, 2015) was 11193 thousand MT, compared to 10522 thousand MT in 2014-15 (up to September, 2014) implying growth of 6.4%.

Table II: Production of selected major chemicals and petrochemicals

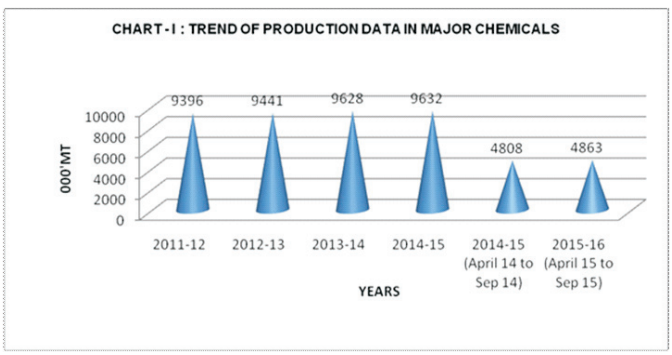
Group	Production / Growth Rate	2011-12	2012-13	2013-14	2014-15	2014-15 (April 14 to Sep 14)	2015-16 (April 15 to Sep 15)
Alkali Chemicals	Production	6478	6487	6481	6619	3278	3322
	Growth Rate (%)	3.3	0.1	-0.1	2.1		1.3
Inorganic Chemicals	Production	881	873	892	922	457	482
	Growth Rate (%)	-1.9	-0.9	2.2	3.4		5.5
Organic Chemicals	Production	1640	1686	1792	1619	833	811
	Growth Rate (%)	5.8	2.8	6.3	-9.7		-2.6
Pesticides (Technical)	Production	156	155	179	187	92	100
	Growth Rate (%)	8.5	-0.5	15.4	4.2		8.2
Dyes& Pigments	Production	241	240	284	285	148	148
	Growth Rate (%)	-1.6	-0.6	18.4	0.6		0.2
Total Major chemicals	Production	9396	9441	9628	9632	4808	4863
	Growth Rate (%)	3.2	0.5	2.0	0.0		1.1

Group	Production / Growth Rate	2011-12	2012-13	2013-14	2014-15	2014-15 (April 14 to Sep 14)	2015-16 (April 15 to Sep 15)
Synthetic Fibers	Production	3105	3124	3144	3527	1770	1767
	Growth Rate (%)	-0.6	0.6	0.6	12.2		-0.1
Polymers	Production	6211	6424	6784	6533	3182	3751
	Growth Rate (%)	17.4	3.4	5.6	-3.7		17.9
Elastomers (S. Rubber)	Production	100	96	105	172	77	132
	Growth Rate (%)	-4.7	-4.2	8.7	64.1		70.2
Synth. Detergent Intermediates	Production	623	627	597	596	311	276
	Growth Rate (%)	-2.4	0.7	-4.8	-0.1		-11.3
Performance Plastics	Production	969	945	783	766	374	405
	Growth Rate (%)	-0.7	-2.5	-17.1	-2.1		8.3
Total Basic Major Petrochemicals	Production	11008	11216	11412	11594	5713	6330
	Growth Rate (%)	8.6	1.9	1.8	1.6		10.8
Total Major Chemicals and Petrochemicals	Production	20404	20657	21041	21226	10522	11193
	Growth Rate (%)	6.0	1.2	1.9	0.9		6.4

Note: Production is aggregated based on Monthly Production Returns from manufacturers under large and medium scale. Product- wise and Group wise details of installed capacity and production for major chemicals and major petrochemicals are given in Annexure-I & Annexure-II respectively.

Chemical Sector- Production Trends

2.5 It may be seen from Table II that the production of Alkali Chemicals accounts for around 69% of the total production of major chemicals. The production of major chemicals in 2015-16 (up to September 2015) was 4863 thousand MT, compared to 4808 thousand MT during the same period in 2014-15 (up to September 2014) implying a growth of 1.1%. The trend in the production of selected major chemicals is depicted in Chart I.

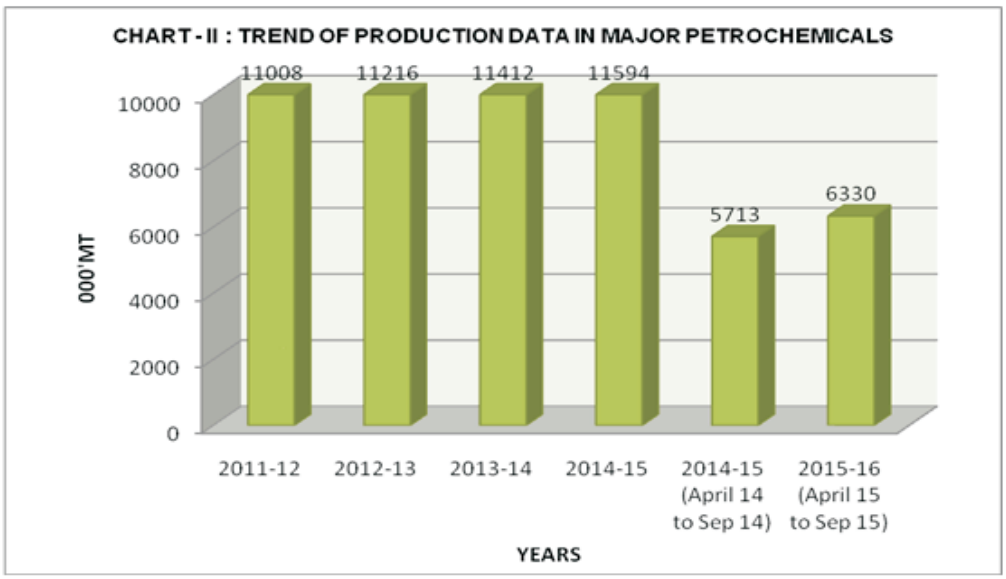


Petrochemical Sector- Production Trends

2.6 Petrochemicals, which comprise plastic and host of other chemicals, are downstream hydrocarbons derived from crude oil and natural gas. The value additions in the petrochemicals chain offer immense possibilities and cater to the need of textiles and clothing, agriculture, packaging, infrastructure, healthcare, furniture, automobiles, information technology, power, electronics and telecommunication, irrigation, drinking water, construction and a host of other articles of daily and specialized usage amidst other emerging areas.

2.7 There are four naphtha based and four gas based cracker complexes in the country with a combined annual ethylene capacity of 4.00 million MT. Besides, there are six aromatic complexes also with a combined Xylene capacity of 4.45 million MT.

2.8 From Table II, it may be seen that the production of polymers account for around 57% of the total production of basic major petrochemicals. The production of basic major petrochemicals in 2015-16 (up to September 2015) was 6330 thousand MT, compared to 5713 thousand MT in 2014-15 (up to September 2014) implying a growth of 10.8%.The trend in the production of selected major petrochemicals has been depicted in Chart II.



Index of Industrial Production

2.9 The weight of chemical and chemical products (industry division 24 of NIC 2004) is 100.59 out of 1000 in the Index of Industrial Production (Base Year:

2004-05). The General Index for the month of September, 2015 stands at 178.4, which is 3.8% higher as compared to the level in the month of September, 2014. The cumulative growth for the period April-September 2015-16 over the corresponding period of the previous year stands at 4.02%. The Index of Industrial Production for the Manufacturing sector for the month of September 2015 stands at 187.2, which is 2.9% higher as compared to the level in the month of September, 2014, whereas the Index of Industrial Production for the Chemicals and Chemical products for the month of September, 2015 stands at 147.6 which is 3.8% higher as compared to the level in the month of September, 2014. The cumulative growth in manufacturing sector during April-September, 2015-16 over the corresponding period of 2014-15 has been 4.22%, as against the growth 4.63% in respect of Chemical & Chemical products. The month wise Index of Industrial production during 2014-15 and 2015-16 (up to November 2015) is depicted in Table III.

Table III: Index of Industrial Production

(Base: 2004-05 =100)

Period	Chemicals and chemical products	Manufacturing	General
Weight	100.59	755.27	1000
Apr'14	127.9	181.4	172.7
May'14	140.0	183.5	175.3
Jun'14	140.7	180.1	172.0
Jul'14	145.7	182.2	173.0
Aug'14	136.2	173.4	166.2
Sep'14	134.3	181.9	171.8
Oct'14	125.1	170.0	165.1
Nov'14	139.4	179.9	172.1
Dec'14	144.6	196.8	185.9
Jan'15	143.0	200.7	189.2
Feb'15	136.0	192.7	181.0
Mar'15	145.2	210.3	198.1
Apr'15	138.6	188.5	177.9
May'15	144.4	187.3	179.7
Jun'15	145.2	189.5	179.3
Jul'15	145.2	190.9	180.5
Aug'15	142.0	184.8	176.6
Sep'15	147.6	187.2	178.4
Oct'15	144.8	188.1	181.4
Nov'15	138.3	171.9	166.6

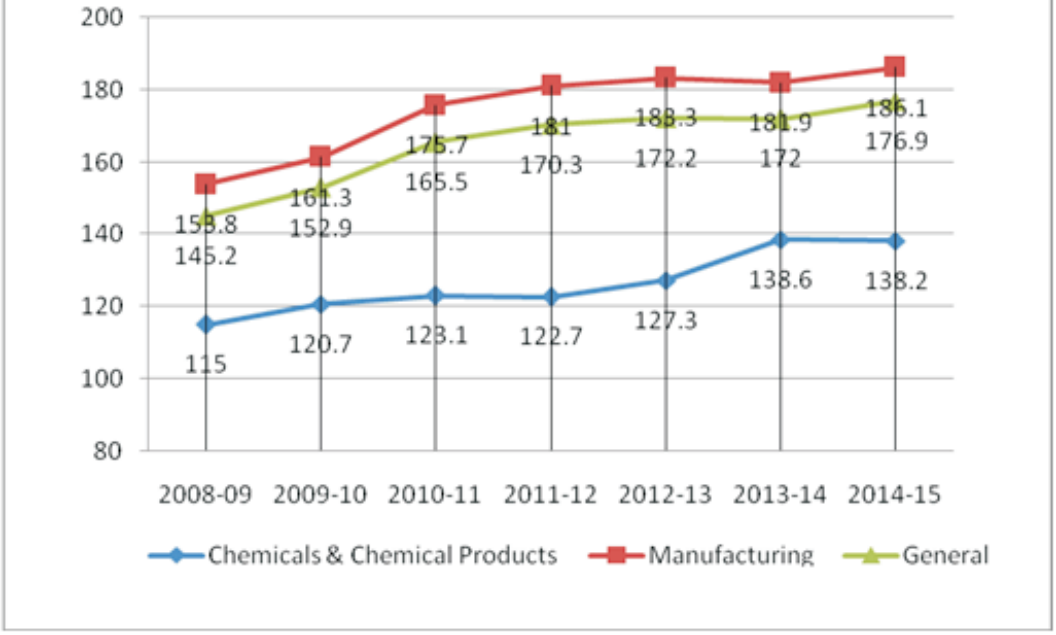
2.10 The behavior of IIP of chemicals and chemical products vis-à-vis General IIP and IIP in respect of manufacturing from 2008-09 to 2014-15 is depicted in Table IV and Chart III.

Table IV: Annual Average (April – March) Indices of Industrial Production

(Base: 2004-05 =100)

Particulars	**Weight**	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Chemicals & Chemical Products	**100.59**	115.0	120.7	123.1	122.7	127.3	138.6	138.2
Manufacturing	**755.27**	153.8	161.3	175.7	181.0	183.3	181.9	186.1
General	**1000**	145.2	152.9	165.5	170.3	172.2	172.0	176.9

Chart - III: Annual Average Indices of Industrial Production



Source: Ministry of Statistics and Programme Implementation. Data accessed from http://mospi.nic.in/Mospi_New/upload/iip/IIP_timeseries_2004_05.htm as on 13.1.2016.

Whole Sale Price Index (WPI)

2.11. The annual rate of inflation based on monthly WPI (Base Year: 2004-05) released by the Office of the Economic Advisor, for 'all commodities' stood at (-)1.99% for the month of November, 2015 over November, 2014. The index for 'Food Articles' group rose by 5.20%, for 'Manufactured Products' by (-)1.42 % and for 'Chemicals & Chemical products' by (-)1.70% during the same period. The weight of Chemicals & Chemical products in the WPI is 12.02 out of all commodities weight of 100. The month-wise Index of WPI from April, 2014 to November, 2015 is given in Table V.

Table V: Whole Sale Price Index

(Base Year: 2004-05 =100)

Month	All commodities	Food Articles	Manufactured Products	Chemicals & Chemical products
April-14	180.80	239.00	154.60	153.20
May-14	182.00	244.60	155.10	153.10
June-14	183.00	250.10	155.40	153.30
July-14	185.00	258.70	156.00	154.00
August-14	185.90	265.30	156.10	154.10
September-14	185.00	262.20	156.00	153.60
October-14	183.70	258.60	155.90	153.40
November-14	181.20	257.60	155.20	153.20
December-14	178.70	252.10	154.70	152.40
January-15	177.30	252.40	154.50	151.50
February-15	175.60	250.70	154.00	150.60
March-15	176.10	249.30	153.90	150.90
April-15	176.40	253.10	153.90	151.10
May-15	178.00	251.30	154.30	151.30
June-15	179.10	257.90	154.20	151.50
July-15	177.60	255.60	153.60	151.40
August-15	176.50	262.60	153.00	151.20
September-15	176.50	264.40	153.30	150.70
October-15	176.70	264.90	153.30	150.80
November-15	177.60	271.00	153.00	150.60

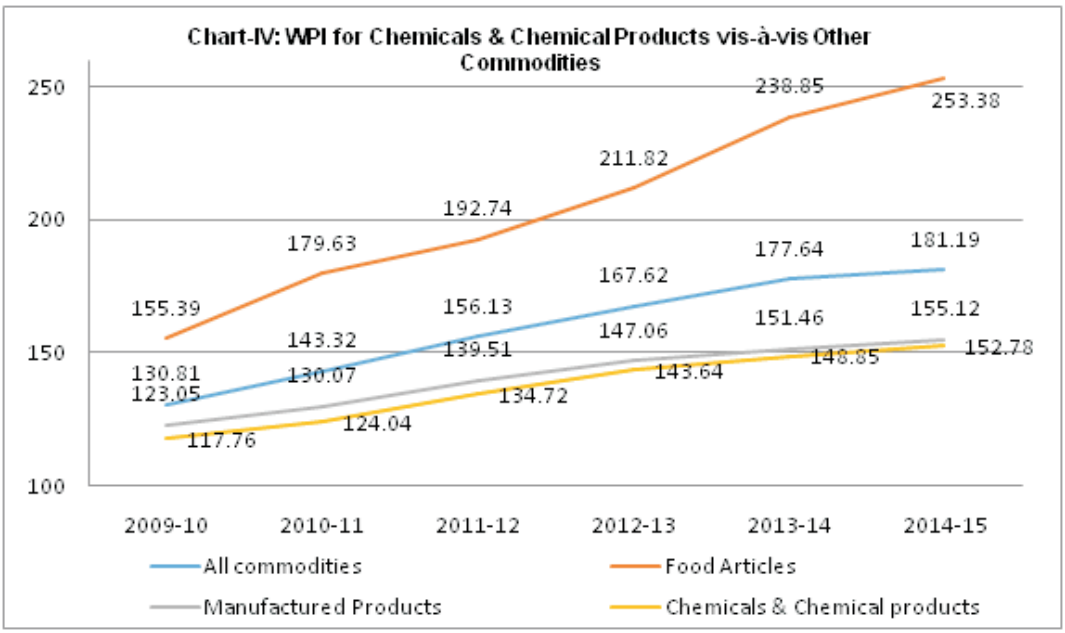
Source: Office of the Economic Advisor, Ministry of Commerce & Industry, Data accessed on 13th January, 2016 from http://www.eaindustry.nic.in/

2.12 Table VI and Chart IV below show the WPI for chemicals & chemical products vis-à-vis all commodities, food articles and manufactured products during the years 2009-10 to 2014-15.

Table VI: Annual Average (April - March) Indices of Wholesale Price

(Base Year: 2004-05 = 100)

Description	Weight	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
All commodities	**100.00**	130.81	143.32	156.13	167.62	177.64	181.19
Food Articles	**14.34**	155.39	179.63	192.74	211.82	238.85	253.38
Manufactured Products	**64.97**	123.05	130.07	139.51	147.06	151.46	155.12
Chemicals & Chemical products	**12.02**	117.76	124.04	134.72	143.64	148.85	152.78



2.13 Table VII shows WPI of different commodity groups within Chemicals & Chemical products group during the years 2009-10 to 2014-15.

Table VII: WPI of Chemicals & Chemical Products

Description	WEIGHT	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Chemicals & Chemical Products	12.02	117.76	124.04	134.72	143.64	148.85	152.78
Basic Inorganic Chemicals	1.19	125.00	126.26	138.24	147.78	150.63	156.13
Basic Organic Chemicals	1.95	115.68	124.39	135.04	140.27	147.46	150.86
Fertilizers	2.66	108.15	116.80	132.58	149.01	152.28	154.91
Pesticides	0.48	110.61	113.62	114.85	121.16	125.94	135.73
Paints, Varnishes & Lacquers	0.53	117.54	122.64	128.48	143.59	147.63	149.92
Dyestuffs & Indigo	0.56	111.86	116.34	122.47	126.92	132.59	144.78
Drugs & Medicines	0.46	112.72	115.40	119.64	124.24	126.82	129.31
Perfumes, Cosmetics, Toiletries Etc	1.13	134.76	138.52	145.34	151.94	157.27	160.67
Turpentine, Plastic Chemicals	0.59	117.38	123.43	136.06	140.02	147.59	156.40
Polymers Including Synthetic Rubber	0.97	116.32	123.37	130.38	135.33	142.82	152.32
Petrochemical Intermediates	0.87	127.70	137.37	156.19	164.24	170.41	161.97
Matches, Explosives & Other Chemicals	0.63	123.83	128.72	135.45	142.60	149.84	153.49

Source: Office of the Economic Advisor, Ministry of Commerce & Industry, Data accessed on 14th January, 2016 from http://www.eaindustry.nic.in/

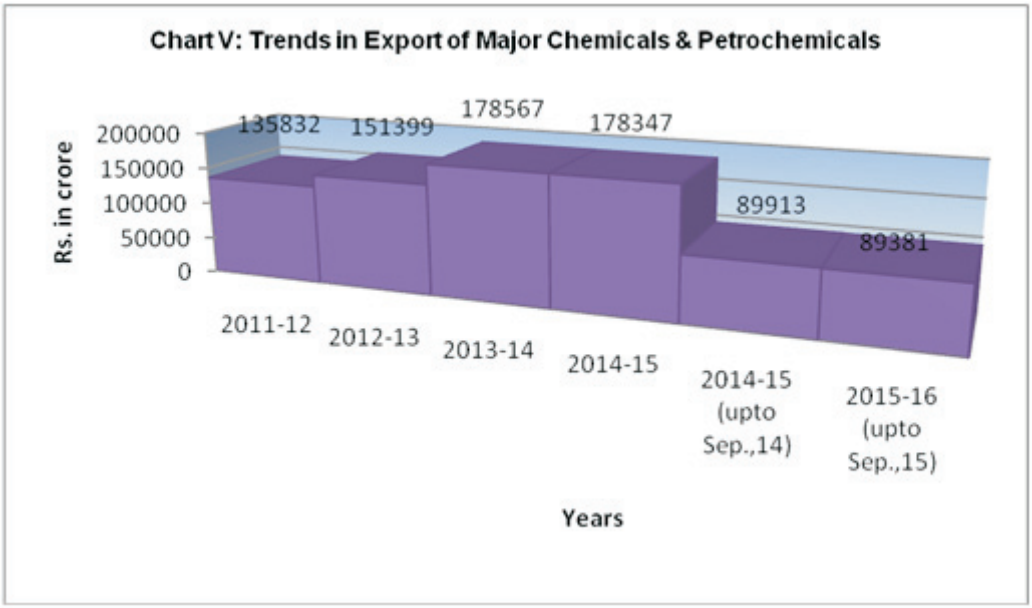
INTERNATIONAL TRADE

2.14 Trends in exports and imports of Chemicals and Chemical Products (excluding Pharmaceutical Products and Fertilizers) during 2011-12 to 2015-16 (up to September 2015) are given in Table VIII and Chart V and Chart VI.

Table VIII: Exports and Imports– Chemicals and Chemical Products (excluding Pharmaceutical Products and Fertilizers)

A. Exports (In Rs. crore)

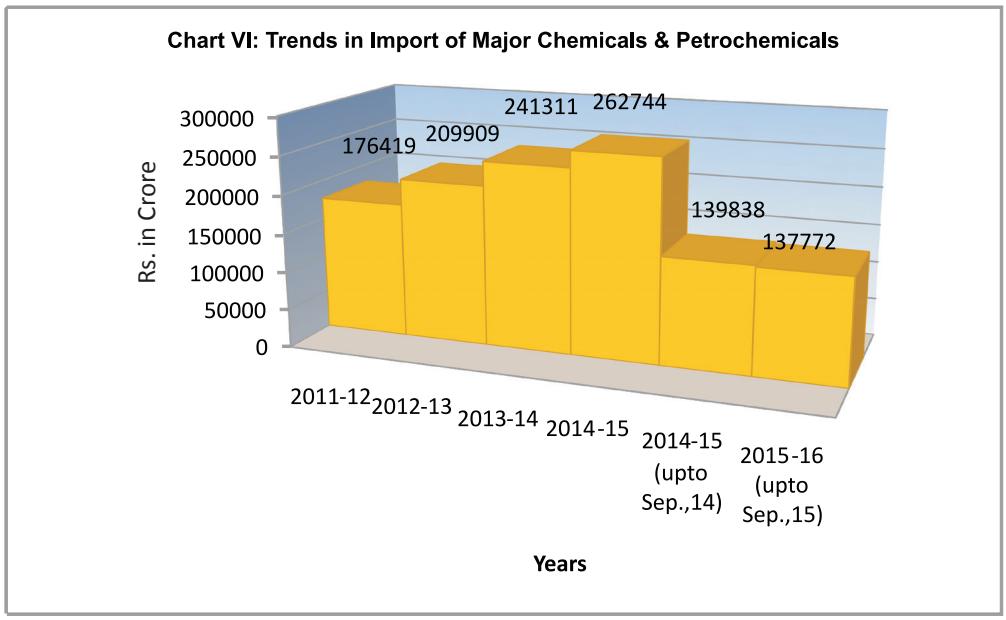
HS Code	Commodity	2011-12	2012-13	2013-14	2014-15	2014-15 (upto Sep.,14)	2015-16 (upto Sep.,15)
	Total National Exports	**1465959**	**1634319**	**1905011**	**1896348**	**971716**	**848831**
28	Inorganic Chemicals	8689	7176	8258	8749	4247	3685
29	Organic Chemicals	56659	66435	73565	73603	36240	37810
32	Tanning or Dyeing	9336	11372	15455	17206	9331	8018
38	Miscellaneous Chemical Products.	12485	15545	18694	19432	9578	8959
39	Plastic and Articles thereof.	25312	28012	34154	31022	16550	16634
4002	Synthetic Rubber and Factice	286	181	245	379	173	251
54	Man-Made Filaments.	12466	12112	15575	14621	7412	7343
55	Man-Made Staple Fibres.	10599	10565	12621	13334	6382	6681
A:Total Chemicals and Chemical Products		135832	151399	178567	178347	89913	89381
% share in total export		9.3	9.3	9.4	9.4	9.3	10.5



B. Imports

(In Rs. crore)

HS Code	Commodity	2011-12	2012-13	2013-14	2014-15	2014-15 (upto Sep.,14)	2015-16 (upto Sep.,15)
	Total National Imports of which	**2345463**	**2669162**	**2715434**	**2737087**	**1410029**	**1279924**
28	Inorganic Chemicals	27792	28770	29063	31407	15131	16651
29	Organic Chemicals	69144	85439	103157	108351	59121	55287
32	Tanning or Dyeing	7097	8004	9254	9821	5171	5239
38	Miscellaneous Chemical Products	17855	20650	23107	25493	14014	14336
39	Plastic and Articles thereof	40578	52283	61072	71396	37644	38567
4002	Synthetic Rubber And Factice	7731	7562	7339	6697	3701	2862
54	Man-Made Filaments	3725	4149	4597	5042	2543	2477
55	Man-Made Staple Fibres.	2498	3052	3722	4539	2514	2352
B: Total Chemicals and Chemical Products		176419	209909	241311	262744	139838	137772
% share in total import		7.5	7.9	8.9	9.6	9.9	10.8



2.15 The imports of chemicals and products (excluding Pharmaceutical Products and Fertilizers) contributed 10.8% of total imports in 2015-16 (upto September, 2015) compared to 9.9% in 2014-15 (upto September, 2014) whereas the exports contributed 10.5% of total exports in 2015-16 (upto September, 2015), compared to 9.3% in 2014-15 (upto September, 2014).

Chapter – 3

PLAN SCHEMES

3.1 Public sector investment through Plan schemes in this department is gradually increasing in keeping with the enabler role of the Department in facilitating the growth of Chemical and Petrochemical industries. Both Plan allocation and expenditure for Schemes for the promotion of Chemical and Petrochemical industries is on the rise. Allocation for Schemes such as Chemical Promotion & Development Scheme (CPDS), Plastic Parks and for Central Institute of Plastic Engineering & Technology (CIPET) which is engaged in Academic, Technology support, Research and Skill development activities has gone up many fold since the beginning of the 12th Five Year Plan.

The Assam Gas Cracker Project (AGCP) is being implemented by M/s Brahmaputra Cracker and Polymer Limited to produce about 2.8 lakh MT polymers per annum. The last approved revised cost of the project by the Cabinet Committee on Economic Affairs (CCEA) in 2011 is Rs. 8,920 crore, comprising capital subsidy of Rs. 4,690 crore, debt of Rs. 2,961 crore and equity of Rs. 1,269 crore. The project has been commissioned on 2nd January, 2016. The project has been commissioned on 2nd January, 2016.

In view of time overruns due to delay in mechanical completion, problems in a number of equipment being rectified by OEMs, foreign exchange fluctuations, price escalation, and increase in statutory levies etc., the Board of BCPL has approved to submit a proposal for revised project cost of Rs. 9,965 crore as against the approved project cost of Rs.8,920 crore. The revised project cost has been estimated based on timelines for overall commissioning by December, 2015. The estimated increase in project cost of Rs. 1045 crore is proposed to be funded by capital subsidy of Rs. 549.45 crore, equity of Rs. 148.67 crore and debt of Rs. 346.88 crore.

Further, in order to make the project economically viable, BCPL has also proposed in-principle approval for Feedstock Subsidy on natural gas with an annual review for 15 years of plant operation for maintaining a minimum Internal Rate of Return (IRR) of 10% and Revenue Subsidy of Rs. 26 crore to fund the cash deficit during initial one year.

3.2 Scheme-wise Plan Outlay (BE/RE for 2015-16), Expenditure for 2014-15 and 2015-16 (Plan) are given in Tables-IX and X respectively below:

Table – IX: Scheme-wise Plan Outlay

(Rs. crore)

Sr. No.	Name of Scheme	BE 2015-16	RE 2015-16	BE 2016-17
I	**Project Based Support to PSUs**	**32.00**	**15.00**	**40.00**
1.1	Hindustan Organic Chemicals Ltd. (HOCL)	17.00	0.00	25.00
1.2	Hindustan Insecticides Ltd. (HIL)	10.00	10.00	15.00
1.3	Hindustan Fluorocarbons Ltd. (HFL)	5.00	5.00	0.00
II	**Support to Autonomous Bodies**	**93.68**	**108.68**	**65.99**
2.1	Central Institute of Plastic Engineering & Technology (CIPET)	92.68	107.68	57.67
2.2	Institute of Pesticides Formulation Technology (IPFT)	1.00	1.00	8.32
III	**Other Ongoing Schemes**	**62.32**	**18.21**	**54.01**
3.1	Assam Gas Cracker Project	0.01	0.01	0.01
3.2	Chemical Promotion & Development Scheme (CPDS)	1.90	3.90	5.00
3.3	Chemical Weapons Convention (CWC)	1.00	1.00	1.00
3.4	IT/Sectt.	1.00	0.80	0.00
3.5	Other New Schemes of Petrochemicals	58.41	12.50	48.00
	Total	**188.00**	**141.89**	**160.00**

Table – X: Expenditure 2014 – 15 and 2015 – 16 (Plan)

(Rs. crore)

Sr. No.	Name of Scheme	BE 2014-15	RE 2014-15	Exp. 2014-15	% of Exp. w.r.t. RE	BE 2015-16	RE 2015-16	Exp. 2015-16 as on 12.02.2016	% of Exp. w.r.t. RE
1.	Secretariat	0.50	0.70	0.48	68.57	1.00	0.80	0.49	61.25
2.	New Schemes of Petrochemicals	57.50	29.04	12.17	41.90	58.41	12.50	8.84	70.72
3.	Assam Gas Cracker Project	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.00
4.	CPDS	4.30	4.00	3.53	88.25	1.90	3.90	2.52	64.61
5.	CWC	1.20	1.20	0.87	72.50	1.00	1.00	1.00	100.00
6.	IPFT	5.00	1.69	1.68	99.41	1.00	1.00	1.00	100.00
7.	CIPET	102.98	100.85	100.85	100.00	92.68	107.68	107.68	100.00
8.	HIL	15.00	15.00	15.00	100.00	10.00	10.00	0.00	0.00
9.	HOCL	0.01	0.01	0.00	0.00	17.00	0.00	0.00	0.00
10.	HFL	20.50	20.50	16.80	81.95	5.00	5.00	0.00	0.00
	Total	**207.00**	**173.00**	**151.38**	**87.50**	**188.00**	**141.89**	**121.53**	**85.65**

Table XI: Expenditure 2014-15, Exp. 2015 -16 & BE 2016-17 (Non-Plan)

Sl.No.	Name of schemes	Exp.2014-15	% of w.r.t RE	Exp. 2015-16 (upto 31.12.2015)	% of Exp. W.r.t. RE	BE 2016-17
1	Secretariat	14.02	93.09	11.38	66.86	16.87
2	CIPET	0.00	0.00	0.00	0.00	0.00
3	Assam Gas Cracker Projects	0.00	0.00	0.00	0.00	0.01
4	Bhopal Gas Leak Disaster	26.69	79.48	15.93	58.61	25.11
5	CWC	0.00	0.00	0.00	0.00	0.01
6	IPFT	3.59	88.21	249.50	61.60	0.01
7	PCL	0.00	0.00	0.00	0.00	0.00
8	HIL	0.00	0.00	0.00	0.00	0.01
9	HOCL	0.00	0.00	24.61	100.00	0.01
10	HFL	0.00	0.00	0.00	0.00	0.01
	Total	44.3	84.01	301.42	74.66	42.04

*BE: Budget Estimates : 2015-16 Total Non-Plan -Rs. 67.18 crore

RE: Revised Estimates : 2015-16 Total Non-Plan -72.88 Rs. Crore

Chapter – 4

PETROLEUM, CHEMICAL AND PETROCHEMICAL INVESTMENT REGIONS (PCPIRS)

Background

4.1. Government of India has approved four Petroleum, Chemical and Petrochemical Investment Regions (PCPIRs) in the States of Andhra Pradesh (Vishakhapatnam), Gujarat (Dahej), Odisha (Paradeep) and Tamil Nadu (Cuddalore and Nagapattinam) to promote investment and industrial development in these sectors. The PCPIR is envisioned to reap the benefits of co-siting, networking and greater efficiencies through use of common infrastructure and support services.

4.2. The concept of PCPIR is a cluster approach to promote the Petroleum, Chemical and Petrochemical sectors in an integrated and environmental friendly manner on a large scale. Government of India formulated the PCPIR policy in April 2007 to give a boost to this sector.

4.3. Each PCPIR is a specifically delineated investment region having an area of about 250 sq. km (with around 40% of the area earmarked for processing activities). It is not mandatory for the State Government concerned to acquire the entire area comprising the PCPIR, but they have to notify the area under the relevant area planning and zoning law.

4.4. The State Governments concerned carry out Environmental Impact Assessment (EIA) and lead the project implementation. Government of India ensures the availability of external physical infrastructure linkages to the PCPIR including connectivity through Railways, Roads, Ports, Airports and Telecom etc. through Public Private Partnership projects to the extent possible. The Central

Government also provides necessary funding to make such projects viable, called Viability Gap Funding (VGF), as well as budget support for creation of these linkages.

4.5. The policy provides that each PCPIR would have a refinery / petrochemical feedstock company as an Anchor Tenant.

4.6. The State Government concerned plays the lead role in setting up of the PCPIR. A nodal Department or agency is notified for coordinating the linkages. A management body constituted by the State Government for each PCPIR, under the relevant legislation, is responsible for the development and management of the PCPIR.

4.7. At present, PCPIRs are being set up in the four coastal States of Gujarat, Andhra Pradesh, Odisha and Tamil Nadu.

4.8. Once fully established, these PCPIRs are expected to attract investment of Rs. 7,63,234 crore approximately. As on 31.12.2015 investments worth Rs. 1,60,443 crore approximately have been made in these regions. Infrastructure with investment of Rs. 61,154 crore approximately is expected to be created in the PCPIRs, out of which the contribution of Government of India would be Rs. 4,646.30 crore. The four PCPIRs are expected to generate employment for around 33.96 lakh persons. As on 31.12.2015 around 2.23 lakh persons have been employed in direct and indirect activities related to PCPIRs.

4.9. There is a monitoring mechanism in place at the State and Central Government levels to keep track of and expedite the implementation of PCPIRs.

4.10. The PCPIRs have been promoted both at the domestic and international levels along with the State Governments, Anchor Tenants and committed investors through industry interactions, road shows, exhibitions, seminars, conferences etc. The status of implementation and execution of these projects is as follows:

Indicator	Gujarat	Andhra Pradesh	Odisha	Tamil Nadu
Location/ Region	Dahej, Bharuch	Vishakhapatnam – Kakinada	Paradeep	Cuddalore-Nagapattinam
Date of Approval	Feb, 2009	Feb, 2009	Dec, 2010	July, 2012
Date of MoA	07.01.2010	01.10.2009	03.11.2011	20.02.2014
Total Area (Sq. kms.)	453.00	603.58	284.15	256.83
Processing Area (Sq.kms.)	248.00	270.00	123.00	104.00
Anchor Tenant	ONGC Petroleum addition Limited	Hindustan Petroleum Corporation Ltd. (HPCL)	Indian Oil Corporation Ltd. (IOCL)	Nagarjuna Oil Corporation Ltd. (NOCL)
Refinery / Cracker capacity in MMTPA	Cracker: Ethylene: 1.1 Propylene: 0.6	9.3 to 15 (expansion of existing refinery) 15 (Greenfield).	15 (Greenfield refinery).	12 (Refinery).
Anchor Project Status	Expected Commissioning: June 2016	Anchor Tenant for Greenfield project yet to come on board.	Inaugurated by Hon'ble Prime Minister on 7.2.2016.	Construction work, stalled since 2011, yet to restart.
Total amount of infrastructure projects approved (Rs. crore)*	15436	18731	13634.00	13354.00
GoI share in form of VGF (Rs. crore)*	80.50	1206.80	716.00	1143.00 1500 .00 (budgetary support)
Proposed Investment (Rs. Crore)*	50,000	3,43,000	2,77,734	92500
Investment made (Rs. Crore)	70,649	37,010	45,000	8100
Projected employment (number)*	8,00,000	11,98,000	661354	737200
Employment generated (number)	78,000	93,500	38,000	13,950
Status of Master Planning notification	Development Plan sanctioned	Revised Draft final Master Plan, is being submitted to the State Government.	Preparation of Master Plan is in process.	Will be taken up after formation of PCPIR Management Board.
Status of EIA	CRZ Mapping and Land use classification in process. Draft final EIA to be submitted to MoEF.	EMP / EIA study submitted to APPCB for Public hearing.	EIA study is being undertaken by EPTRI	To be taken up after formation of Management Board.

* At approval stage of the projects.

Status of Implementation of PCPIRs

1 Gujarat PCPIR:

Approval of Cabinet Committee on Economic Affairs (CCEA) on setting up of PCPIR in Dahej, Gujarat was accorded in February, 2009. Memorandum of Agreement (MoA) was signed between Department of Chemicals and Petrochemicals, Government of India (GoI) and Government of Gujarat in January 2010 to implement the PCPIR.

- A PCPIR Regional Development Authority was constituted under the Special Industrial Regions Act.
- The Gujarat Infrastructure Development Corporation (GIDC) has spent around Rs. 11,000 crorefor provision of infrastructure in the PCPIR.
- Additional expenditure of Rs. 12,000 crore by State Government is under way on infrastructure development like road, ports, water supply etc.
- The Anchor Tenant, viz. M/s ONGC Petro addition Ltd. (OPaL), has invested around Rs. 22,500 crore in the project.
- Final Environmental Impact Assessment (EIA) report, based on the final Terms of Reference (ToR) for the EIA approved by Expert Appraisal Committee (EAC), has been finalized by NEERI, Nagpur and has been uploaded on the website of Ministry of Environment and Forests on 07thSeptember, 2015 after public hearing and approval of Gujarat State Pollution Control Board. Required details have been sought to get recommendation from Gujarat Coastal Zone Management Authority.
- Standing Committee on Chemicals and Fertilizers undertook a Study visit to PCPIR at Dahej, Gujrat on 06.11.2015.

2 Andhra Pradesh PCPIR:

Setting up of PCPIR in Andhra Pradesh was approved in February, 2009 and a Memorandum of Agreement (MoA) was signed between Government of Andhra

Pradesh and Department of Chemicals and Petrochemicals, Government of India on 1st October, 2009. Special Development Authority (SDA) was formed by Govt. of A.P. in May 2008 to implement the PCPIR.

- AP PCPIR covers 6 existing SEZs. The units have already made investments of around Rs. 35,000 crore appx. Rs. 1850 crore have been invested on infrastructure development.

- As part of the project, Government of India had approved financial support in form of Viability Gap Funding (VGF) of Rs. 1206.80 crore for infrastructure projects in PPP mode. The State Government has initiated the work on preparation of Detailed Project Reports (DPRs) for approval of Government of India.

- Hindustan Petroleum Corporation Limited (HPCL), identified as Anchor Tenant, had proposed an investment of about Rs. 50,000 crore in VK PCPIR for expansion of existing refinery from 9.3 MMTPA to 15 MMTPA and setting up a greenfield refinery-cum-petrochemical complex of 15 MMPTA capacity.

- Road, rail link, water supply, effluent treatment and marine outfall projects are under different stages from study to implementation.

3. Odisha PCPIR:

The Odisha PCPIR was approved by CCEA in December, 2010 and MoA was signed between Government of India and Government of Odisha in November, 2011.

- Detailed Master Plan for the industrial development area of PCPIR shall be prepared by PCPIR Authority. IDCO is in the process of selecting a reputed consultant for preparation of the Master Plan of the region.

- Preparation of Detailed Project Report (DPR) is underway for development of road infrastructure, and will be finalized after Master Plan.

- Anchor Tenant viz. Indian Oil Corporation Limited (IOCL) has invested around Rs. 32,000 crore (including contract awarded and committed) to set up 15 MMTPA refinery and a Polypropylene Unit. The refinery has been dedicated to notion by hon'ble Prime Minister on 7th February, 2016.

- A 1320 MW thermal power plant by SPI Ports (P) Ltd is approved by High Level Clearing Authority (HLCA).

- Preliminary Environmental Assessment Study has been undertaken by IDCO. For detailed EIA & EMP, IDCO is in discussion with Environmental Protection Training and Research Institute (EPTRI), Hyderabad for conducting EIA and preparation of Environmental Management Plan.

4 Tamil Nadu PCPIR:

Tamil Nadu PCPIR was approved by CCEA in July 2012 and a Memorandum of Agreement (MoA) was signed between Government of India and Government of Tamil Nadu on 20th February, 2014 specifying the project details, financing patterns and responsibilities of the parties.

- The date of commissioning of the first phase of the Anchor Tenant, Nagarjuna Oil Corporation Limited (NOCL)project has been extended, due to financial constraints. The capacity of the project is being increased from 6 MMTPA to 12 MMTPA with a corresponding increase in cost.

- Orders have been issued on 18.12.2015 on notifying the delineated TN PCPIR area of about 247 Sq. Kms. in the Cuddalore and Nagapattinam Districts of Tamil Nadu and it has to be notified as the a Local Planning Area under the Tamil Nadu Town and Country Planning Act, 1971.

Chapter – 5

NEW SCHEMES OF PETROCHEMICALS

Department of Chemicals and Petrochemicals is implementing the following three schemes under the National Policy on Petrochemicals:-

(i) National Awards for Technology Innovation in Petrochemical and downstream Plastic Processing Industry
(ii) Setting up of Centres of Excellence in Polymer Technology
(iii) Setting up of Plastic Parks

5.1. National Awards for Technology Innovation in Petrochemical and downstream Plastic Processing Industry

5.1.1. The Department is implementing an Award Scheme to provide incentive for meritorious innovations & inventions in various fields of petrochemicals and downstream plastics processing industry. Central Institute of Plastic Engineering and Technology (CIPET) was entrusted with the task of seeking and short listing nominations for the scheme. The Department has been providing a grant-in-aid of Rs. 1 crore (approx.) to CIPET each year for administering the award scheme.

5.1.2. The National Awards for Technology Innovation are given in eight categories for innovation in areas such as Polymeric Materials, Polymeric Products, Polymer Waste Management and Recycling Technology and related areas. There are three sub-categories of Awards in each category, covering (i) individual/ team (ii) industry, and (iii) R&D institutions. The award money for each category is Rs. 2 lakh. 290 nominations were received for these categories and sub-categories of the scheme for the 5th National Award for Technology Innovation in 2014-15, amongst whom 16 'Winners' and 14 'Runners-up' were selected and the awardees were felicitated by the Minister (C&F) at a function held on 21.02.2015 at Bengaluru. For the 6th National Awards, 264 nominations have been received, and finally 17 nominations have been selected as Winners and 14 nominations as Runners-up for 2015-16.

5.2. Setting up of Centres of Excellence (CoE) in Polymer Technology

5.2.1. The scheme aims at improving the existing petrochemicals technology and research in the country and to promote development of new applications of polymers and plastics. The Department has set up five Centres of Excellence (CoE) within the premises of reputed educational/research institutes:-

(i) National Chemicals Laboratory (NCL), Pune – CoE for Sustainable Polymer Industry through Research, Innovation & Training (CoE-SPIRIT);

(ii) Central Institute of Plastics Engineering & Technology (CIPET), Chennai – CoE for Green Transportation Network (GREET),

(iii) IIT, Delhi – CoE for Advanced Polymeric Materials,

(iv) CIPET, Bhubaneswar- CoE on Sustainable Green Materials and

(v) IIT, Guwahati – CoE for Sustainable Polymers.

5.2.2. The CoE at Pune and CoE at CIPET, Chennai were approved during the 11th Five Year Plan and the remaining three CoEs were approved during the 12th Five Year Plan.

5.2.3. The assets created under CoE-SPIRIT at NCL, Pune have not only resulted in a boost to contemporary research in Polymer science, but also contributed to the training of several members of polymer industry and academia. In case of CoE- GREET at CIPET, Chennai and CoE on Sustainable Green Materials at CIPET, Bhubaneswar, the outputs are in terms of promoting academic, research and educational excellence through partnership between CIPET, India and University of Toronto, Canada and Michigan State University, USA. At IIT, Delhi and IIT, Guwahati, the resources and capabilities are being strengthened for furthering research activities in Advanced Polymeric Materials and Sustainable Polymers, respectively.

5.2.4. Government of India provides financial support to the extent of maximum of 50% of total cost of the project subject to an upper limit of Rs. 6 crore over a period of three years. The GoI grant of Rs. 6 crore has been released to the CoEs at Pune, Chennai and Bhubaneswar. An outlay of Rs. 4 crore has been provided for the scheme in the year 2015-16. Based on the recommendations of the Expert Group, constituted to review the physical and financial performance of the selected CoEs, the 3rd installment of Rs. 2 crore has been sanctioned and released to IIT, Guwahati in November, 2015.

5.3. Setting up of Plastic Parks

5.3.1. The scheme aims at setting up of need based plastic parks, an ecosystem with state-of-the-art infrastructure and enabling common facilities through cluster development approach, to consolidate and synergize the capacities of the domestic downstream Plastic Processing Industry. The larger objective of the scheme is to contribute to the economy by increasing investment, production, export in the sector and also generation of employment.

5.3.2. Under the scheme, Government of India provides grant funding up to 50% of the project cost, subject to a ceiling of Rs. 40 crore per project. The remaining project cost is funded by the State Government or State Industrial Development Corporation or similar agencies of State Government, beneficiary industries and loan from financial institutions.

5.3.3. The Scheme Steering Committee (SSC) had earlier accorded approval to the proposals for establishment of plastic parks received from States of Madhya Pradesh, Odisha and Assam. The Department had released the first installment of Rs.8 crore of the Grant in Aid in the year 2013-14 to Madhya Pradesh Plastic Park Development Corporation Ltd. (MPPPDCL), Paradeep Plastic Park Limited (PPPL) and Assam Industrial Development Corporation (AIDC) for setting up of plastic parks at Madhya Pradesh, Odisha and Assam respectively. The second installment of Rs. 14 crore of the Grant in Aid has also been released to AIDC in 2015. Following the submission of the Detailed Project Report (DPR) by the State Govt. of Tamil Nadu, the SSC has accorded approval on 30.10.2015 for establishment of a Plastic Park in Tamil Nadu.

5.3.4. The Department had moved a proposal to seek additional funding for setting up of 10 plastic parks, including current four plastic parks (approved by SSC) and six additional parks for implementation during 12th and 13th Plan period. The competent authority approved the proposal. Further, considering additional demand being received from States, the Hon'ble Minister (C&F) has given 'in-principle' approval for setting up 8 more Plastic Parks in September, 2015 (which are in addition to 10 Parks already approved). The initiative is expected to boost not only 'Make in India' Programme but also generate huge employment.

Chapter – 6

INTERNATIONAL CONVENTIONS AND TREATIES

Chemical Weapons Convention (CWC)

6.1 India is a signatory and party to the Chemical Weapons Convention (CWC), of the Organization for the Prohibition of Chemical Weapons (OPCW) with Head Quarters at The Hague, Netherlands. The Convention is a universal, non-discriminatory, multi-lateral, disarmament treaty which prohibits the development, production, stock-piling and use of chemical weapons and monitors its elimination in order to secure chemical weapons free world. India signed the treaty at Paris on 14th day of January 1993. India, pursuant to provisions of the Convention enacted the Chemical Weapons Convention Act, 2000. As on date, 192 countries are parties to the Convention. India was the First State Party to secure the distinction of chemical weapon free state Party by destructing all its stockpile of its chemical weapons amongst all State Parties of the Convention. The Department of Chemicals & Petrochemicals is the administrative department of CWC Act, 2000. Department of Chemicals & Petrochemicals (DCPC) is responsible for all matters relating to production, consumption, import and export of Schedule II and Schedule III chemicals producing units, including Other Chemical Producing Facilities (OCPF), that includes preparation and filing of Annual Declaration of Past Activates (ADPA) and Annual Declaration of Anticipated Activates (ADAA).

OPCW Inspections

6.2 India hosts OPCW Inspections as per the provisions of the Convention to ensure that the activities do not violate the provisions of the CWC of the Scheduled Chemicals and OCPF. Till date, India hosted 206 such inspections under CWC, however, the inspection teams did not find even traces of presence of Schedule I chemicals in any one of the above inspections. The DCPC deputes competent technical officers for on sight industrial inspections along with visiting international inspection teams for preparation of pre-inspection briefing and for smooth conduct of inspections.

Annual Declarations

6.3 As per CWC, each State Party is required to file Annual Declarations twice in a year i.e. Annual Declarations of Anticipated Activities (ADAA) and Annual Declaration of Past Activities (ADPA) of Schedule II, Schedule III producing industrial units including OCPFs. DCPC has been inviting on line declarations from the declarable chemical units and filing the error-free declarations within the stipulated time-limits. India has the distinction to become the only Second State Party to collect online declarations from declarable chemical industrial units after USA. It is an important way forward step in promoting e-governance in administration.

6.4 A total of 597 ADPA and 81 ADAA declarations have been filed during the calendar year 2015.

CWC Help Desks

6.5 The Department has set up six Help Desks in PPP Mode in association with the Indian Chemical Council at various places having industry presence as indicated in Table.

Sl. No.	Help Desk	States
1.	Hyderabad	Andhra Pradesh, Telangana, Orissa, Chhattisgarh
2.	Kolkata	West Bengal, Bihar, Jharkhand and North Eastern Region
3.	Delhi	Uttar Pradesh, Himachal Pradesh, Haryana, Punjab, Chandigarh, Uttarakhand and Jammu & Kashmir and Delhi
4.	Mumbai	Maharashtra, Goa, Rajasthan, Madhya Pradesh
5.	Chennai	Tamil Nadu, Kerala and Karnataka
6.	Vadodara	Gujarat

6.6 India has the distinction to be the First State Party to set up Help Desks amongst all the State Parties of the Convention. These Help Desks act as an important interface between Government and Chemical Industry, covered under the convention for facilitating compliance with the obligations of the convention. These Help Desks promote awareness guidance and encourage the industrial units and make them understand the necessity under the Convention to file

declarations. Further, the Help Desks organize several training / awareness programmes in their respective jurisdiction for representatives of declarable industrial units. Under CWC Plan Scheme, an amount of Rs.1 Crore have been utilized out of the sanctioned amount of Rs.1 Crore, to conduct various activities of the Help Desks. Apart from the above, the Help Desks undertake the following activities:

6.6.1 Disseminate information on CWC and the obligations of the chemical industry, under the CWC Act.

6.6.2 Identification of new units, which are potential declarants, through industry surveys and facilitate their filing of declarations.

6.6.3 During the year 2015, total 20 awareness programmes have been conducted.

Chapter – 7

BHOPAL GAS LEAK DISASTER

7.1. Bhopal Gas Leak disaster was an industrial disaster occurred in the intervening night of 2nd/3rd December, 1984, when Methyl Iso-cyanate (MIC), a lethal gas stored in two tanks at the pesticide plant site of Union Carbide India Limited (UCIL) at Bhopal, leaked into the atmosphere causing death and injury to a large number of people. Various relief and rehabilitation measures were initiated immediately after the disaster. Some of these are still continuing.

Adjudication and disbursement of Compensation

7.2. On directions of the Hon'bleSupreme Court issued vide orders dated 14thand 15thFebruary, 1989, Union Carbide Corporation, USA deposited a compensation amount of US$ 470 million, with the Registrar of the Supreme Court of India in February, 1989. Government of India had earlier enacted the Bhopal Gas Leak Disaster (Processing of Claims) Act, 1985 and a Scheme there under for ensuring proper legal representation of the victims and settlement of their claims. Under this Act, the Office of the Welfare Commissioner, Bhopal Gas Victims, was set up by the Government of India for speedy adjudication and award/disbursement of compensation to the survivors and families of the victims of the gas leak disaster.

7.3. The process of adjudication and disbursement of the compensation was commenced in 1992. The office of Welfare Commissioner has awarded / disbursed Rs. 1548.59 crore as compensation in settled cases of 5,74,386 claimants belonging to the categories of death, permanent disability, temporary disability, injury of utmost severity cases, minor injury, loss of property/PSU and loss of livestock.

7.4. It was brought to notice in the year 2004 that an amount of approximately Rs. 1500 crore, had accumulated with the Reserve Bank of India on account of accrual of interest and exchange rate variation. The Supreme Court vide order dated 19thJuly, 2004 had directed the Welfare Commissioner to disburse the said amount, on pro-rata basis (in the ratio of 1:1 of original compensation) to the claimants whose cases had been settled. A sum of Rs. 1511.21 crore as pro-

rata compensation has been awarded in 5,63,028 cases till 31.12.2015. The work of disbursal of pro-rata compensation is continuing. As very few claimants were appearing for pro-rata compensation, the Welfare Commissioner sought the directions of the Supreme Court on the issue of closure of cases of absentee claimants for pro-rata compensation. The Supreme Court of India has directed to amend the Bhopal Gas Leak Disaster (Processing of Claims) Act, 1985 and Scheme there under with the approval of the Parliament and see that these claims be transferred to Judicial or Quasi-Judicial authority for further action in the pending claims.

Disbursement of Ex-gratia

7.5. After the reconstitution of the Group of Ministers (GoM) on Bhopal Gas Leak Disaster on 26.05.2010, the Government took certain decisions to provide further relief and rehabilitation to the gas victims. One major decision taken by the Government was to pay ex-gratia to the following categories of gas victims:

Categories of ex-gratia payments to gas victims

Category	Ex-gratia
Death	Rs. 10 lakh (less amount of original and pro-rata compensation already received)
Permanent disability	Rs. 5 lakh (less amount of original and pro-rata compensation already received)
Injury of utmost severity	Rs. 5 lakh (less amount of original and pro-rata compensation already received)
Cancer	Rs. 2 lakh (less amount of original and pro-rata compensation already received)
Total Renal Failure	Rs. 2 lakh (less amount of original and pro-rata compensation already received))
Temporary disability	Rs. 1 lakh (less amount of original and pro-rata compensation already received)

An amount of Rs. 874.28 crore has been approved by the Government for making payment of ex-gratia by the Welfare Commissioner to an estimated 62,448 Gas Victims falling in the above mentioned categories. The disbursement of Ex-gratia commenced on 19.12.2010. A sum of Rs. 764.48 crore has been sanctioned/ disbursed in 56,690 cases till 31.12.2015.

Action plan for Rehabilitation of Bhopal Gas Victims

7.6. Immediately after the disaster, the Central Government provided financial assistance of Rs. 102 crore over a period of 4 years starting from 1985 for carrying out the rehabilitation related work. Subsequently, the Central Government approved an Action Plan with an outlay of Rs. 163.10 crore, later revised to Rs. 258 crore, for medical, economic, social and environmental rehabilitation of the gas victims. The outlay was to be shared between the Central Government and State Government of Madhya Pradesh (GoMP) in the ratio of 75:25. The Action Plan was implemented from 1990 to 1999. The major component of the Action Plan was medical rehabilitation which included establishment of six full-fledged Gas Relief hospitals and also dispensaries for free treatment of gas victims. Further, Rs. 14.18 crore was provided by Government of India under Jawaharlal Nehru National Urban Renewal Mission (JNNURM), in April, 2006 for supply of piped drinking water to 14 localities around UCIL plant site where the ground water is not potable.

7.7. Based on another Plan of Action for taking up further rehabilitation measures for Bhopal Gas Victims submitted by the Government of M.P. in 2008, Government of India sanctioned a plan with an outlay of Rs. 272.75 crore on 75:25 basis to the State Government for medical, economic and social rehabilitation, and also provision for safe drinking water. An amount of Rs. 204.56 crore, being the grant component of Additional Central Assistance, was sanctioned on 08.07.2010.

7.8. The Government of Madhya Pradesh is in the process of implementation of various rehabilitation schemes as approved in the New Plan of Action. The State Government has apprised that till December, 2015, an amount of Rs. 141.64 crore has been spent / Administrative approvals issued, out of allocated sum of Rs. 272.75 crore.

7.9. **Social Rehabilitation:** An estimated 5000 Widows of Gas Victims are to be paid pension of Rs. 1000 p.m. for a period of five years, for which Rs. 30 crore has been allocated. Till December, 2015, an amount of Rs. 21.78 crore has been released as pension to 4,837 beneficiaries. A sum of Rs. 40 crore was allocated for construction of free houses for 2500 families of gas victims residing around the UCIL factory. The State Government has acquired 14 acres of land for this purpose. BGTR&R Department of Govt. of Madhya Pradesh in consultation

with other Departments is preparing schemes for construction of houses with the fund provided under New Action Plan and also marginal money being proposed to be collected from the beneficiaries.

7.10. **Medical Rehabilitation:** Construction of new buildings/renovations of the six Gas Relief Hospitals, earlier set up under the First Plan of Action for free treatment of gas victims, have been undertaken. New equipments for these hospitals are being purchased.

7.11. **Economic Rehabilitation:** For ensuring employment to gas victims, the State Government has launched an entrepreneurship training Programme scheme with built-in employment opportunity. The State Government selected, through a transparent procedure, 21 Institutes for providing training in different trades to the gas victims. 12155 beneficiaries were selected for training in different fields and trained. The selected institutions have reported 9300 placements, of which 4411 placements of 17 institutions are under verification. Expenditure incurred on this account till December, 2015 is Rs. 18.13 crore. As the scheme is not attractive, the Government of Madhya Pradesh is actively considering a new proposal in the place of entrepreneurship training Programme scheme for the approval of the Government of India.

7.12. **Clean Drinking Water:** Out of Rs. 50 crore allocated for providing clean drinking water to the gas victims, Government of MP has utilized Rs. 42.28 crore till December, 2015 for provision of clean drinking water to the residents of gas affected wards of Bhopal.

Bhopal Memorial Hospital and Research Centre (BMHRC)

7.13. On directions of the Hon'bleSupreme Court, a Specialty Hospital named Bhopal Memorial Hospital and Research Centre (BMHRC) was established at Bhopal with money provided by Union Carbide Company, for free treatment of gas victims. The Hospital with super specialty facilities started functioning in July, 2000. The Hospital has 330 beds with facilities in 12 disciplines like Cardio Thoracic Surgery, Nephrology, Urology, Neurology, Neuro Surgery, Ophthalmology, Pulmonary Medicine, Psychiatry etc,. 8 mini units of the Hospital have been set up in various gas-affected wards in Bhopal for the gas victims.

7.14. Initially, management of the hospital was overseen by a Trust named the Bhopal Memorial Hospital Trust (BMHT) under the Chairmanship of retired Chief Justice of India Shri A. M. Ahmadi. On the recommendations of the GoM and as decided by the Government, the administration of BMHRC has been taken over by the Government of India in the year 2010 and the Hospital is now being administered by the Department of Health Research, Ministry of Health and Family Welfare.

Indian Council Medical Research (ICMR)- 31st Research Center

7.15. After the gas leak, Indian Council Medical Research (ICMR) had established a research center in Bhopal in 1984, and conducted epidemiological research and clinical studies. After publication of research papers in 1987 and 1994, ICMR stopped its research work on 31.12.1994 and handed over the research center (Center for Rehabilitation Studies) to the GoMP. The Government, based on recommendation of the GoM, decided that ICMR may resume its research on gas victims by establishing a full-fledged Research Centre in Bhopal. Accordingly, ICMR has established its 31st Research Center namely "National Institute for Research in Environmental Health (NIREH)" at Bhopal, on 11th October, 2010, for conducting research studies in identified areas including respiratory diseases, cancer, total renal failure, genetic disorders, second generation children related medical issues. ICMR as well as NIREH have been carrying out the research work on the health problems of the gas victims with exactitude and expeditiousness and ensuring disbursement of its benefit to the gas victims.

Environmental Remediation of the UCIL Plant site

7.16. As per the decision of the Government in the year 2010, an Oversight Committee has been constituted in the Ministry of Environment, Forest & Climate Change under the Chairmanship of Minister, Ministry of Environment, Forest & Climate Change and Co-chairmanship of Minister-in-charge of BGTR&R Department, Government of Madhya Pradesh with members of concerned Departments/ Agencies to provide oversight and support to remediation actions relating to UCIL plant site to be taken by Govt. of Madhya Pradesh. Government of Madhya Pradesh would be responsible for disposal of hazardous waste from the site of UCIL in Bhopal as well as for remediation of the site. The disposal of his toxic waste is being overseen and monitored by Hon'ble Supreme Court

of India. A trial disposal was carried out through incineration by the Central Pollution Control Board in August, 2015. It was successful.

Curative Petition

7.17. On the direction of the Cabinet, a Curative Petition No. 345-347 was filed in December 2010 by Union of India V/s Union Carbide Corporation (UCC), USA, Dow Chemicals, USA and Others claiming enhanced compensation from UCC and/ or successor companies of UCC, by seeking a review of the Court's earlier judgment of 1989, settling the compensation amount at US $470 million. The compensation claimed in the Curative Petition is due to the difference between the number of cases assumed by the Hon'ble Supreme Court at the time of passing the orders for settlement in 1989 and the actual number of cases awarded by the Office of the Welfare Commissioner, Bhopal Gas victim, Bhopal. In addition to increase in the amount of compensation settled with UCC in 1989, the petition also claims reimbursement of costs incurred by the Government for various rehabilitation measures for victims and also the amount required for environmental remediation. The Curative Petition is pending before the Supreme Court.

Chapter -8

PUBLIC SECTOR UNDERTAKINGS

Assam Gas Cracker Project (Brahmaputra Cracker and Polymer Limited)

8.1 The Assam Gas Cracker Project (AGCP) was initiated in pursuance of the Memorandum of Settlement signed between Central Government and All Assam Students Union (AASU) and All Assam Gana Sangram Parishad (AAGP) on 15th August, 1985. This Project is of economic significance for the States of Assam and North East Region. Cabinet Committee on Economic Affairs (CCEA), in its meeting held on 18th April, 2006, approved the setting up of the Assam Gas Cracker Project (AGCP) at a project cost of Rs. 5460.61 crore (fixed cost). A joint venture company namely M/s Brahmaputra Cracker and Polymer Limited (BCPL), is implementing the project. Owing to various reasons, the project has witnessed time and cost overruns. The revised cost estimate of Rs. 8920 Crore (on "as built basis") was approved by the CCEA on 16th November, 2011 with mechanical completion by July, 2013 and commissioning by December, 2013.

8.2 There had been further delay in commissioning of AGCP. All efforts were being made to commission the Project by September, 2015, however, on 09.09.2015, due to heavy leakage observed from the top of the Cold Box Package, all the ongoing commissioning activities in ECU had to be stopped for attending to the leakage. Rectification of the leakage in the cold box has been carried-out by the concerned agencies.

8.3 The Project has been commissioned on 2nd January, 2016. As of December, 2015, the actual expenditure incurred, excluding outstanding liabilities, was Rs. 8718 crore, as against the approved cost of Rs.8920 crore.

8.4 In view of time overrun, foreign exchange fluctuations, price escalation, increase in statutory levies etc., further cost and time escalation has occurred and therefore, BCPL has proposed revised project cost of Rs. 9965 crore as against the approved project cost of Rs.8920 crore. The revised project cost has been estimated based on timelines for overall commissioning by December, 2015. The estimated increase in project cost of Rs. 1045 crore is proposed to be funded by capital subsidy of Rs. 549.45 crore, equity of Rs. 148.67 crore

and debt of Rs. 346.88 crore.

8.5 Further, in order to make the project economically viable, BCPL has also proposed in-principle approval for feedstock subsidy on natural gas with an annual review for 15 years of plant operation for maintaining a minimum Internal Rate of Return (IRR) of 10% and revenue subsidy of Rs. 26 crore to fund the cash deficit during initial one year.

HINDUSTAN ORGANIC CHEMCIALS LIMITED (HOCL)

8.6. Hindustan Organic Chemicals Limited (HOCL) was incorporated on 12th December, 1960 as a Government company with the objective of setting up manufacturing capacities for chemicals / intermediates required for production of dyes, dyes – intermediates, rubber chemicals, pesticides, drugs and pharmaceuticals, laminates, etc. The company has two manufacturing units located at Rasayani (Maharashtra) and Kochi (Kerala). The Rasayani unit (Chemical Complex) started production from 1970-71 and the Kochi Unit (Phenol Complex) commenced production from 1987-88. Main products manufactured by HOCL include phenol, acetone and hydrogen peroxide at Kochi unit and aniline, nitrobenzene, formaldehyde, concentrated nitric acid and di-nitrogen tetroxide (N_2O_4) at Rasayani unit. HOCL is the sole manufacturer of N_2O_4 in India which is supplied to ISRO for satellites launching programme.

8.7. HOCL also has a subsidiary company M/s Hindustan Fluorocarbons Limited (HFL) located at Rudraram, Telangana, which manufactures Poly tetra fluro ethylene (PTFE), a high tech engineering plastic, and chloro di-fluoro methane (CFM-22), a refrigerant gas and feedstock for PTFE.

8.8 The company's authorised and paid up share capital is Rs.370 crore and Rs.337.27 crore [comprising of Rs.67.27 crore equity and Rs.270 crore preference shares] respectively. 58.78% of the equity of the company (excluding preference shares) is held by the Govt. of India. HOCL is listed both on the Bombay Stock Exchange (BSE) and National Stock Exchange (NSE).

8.9 Following globalization and liberalization of the Indian economy in the early 1990's resulting in competition from international players, HOCL incurred losses for the first time in 1997-98. Due to continued losses leading to negative net worth by 2003-04, the company was referred to Board for

Industrial and Financial Reconstruction (BIFR) in February, 2005. Based on the recommendations of Board for Reconstruction of Public Sector Enterprises (BRPSE), Govt. approved a revival package for the company on 9th March, 2006 providing (i) cash infusion of Rs.270 crore by way of preference share capital (redeemable) for repayment of high interest bonds, bank loans and implementation of VRS and (ii) continuation of Govt. of India guarantee of Rs.100 crore for full term of 10 years to be utilised to liquidate high cost debt. Following implementation of the package, the company made nominal profits during 2006-07 and 2007-08 and came out of BIFR.

8.10. However, the company again suffered losses in 2008-09 and 2009-10 mainly due to recessionary trend in the market as an effect of global meltdown. Though it earned profit during 2010-11, the situation worsened thereafter with losses during 2011-12 and 2012-13 following withdrawal of anti-dumping duties on its main products phenol and acetone. As the financial position of HOCL became precarious and in order to enable the company to tide over its liquidity problems, the Govt. on 1st August, 2013 approved postponement of redemption of Rs.270 crore preference shares issued to the Govt. of India (date of allotment 24.01.2008), which was due for redemption from 2011-12 onwards, to 2015-16 onwards. The Govt. Guarantee of Rs.100 crore was also further extended up to August, 2017.

8.11. Further, Govt. guarantee of Rs.150 crore was provided to HOCL in July, 2014 for issue of bonds by the company for meeting its working capital requirement and payment of liabilities towards raw material suppliers, employee dues etc. Funds of Rs.150 crore were raised by HOCL in October, 2014 against the Govt. guarantee which enabled the company to restore manufacturing operations at Kochi Unit and restore operations of Nitrobenzene plant and N_2O_4 plant at Rasayani Unit. However, the global fall in the prices of petroleum products caused severe crash in the prices of Phenol and Acetone and the company faced difficulties in selling the products at profitable rates and generating adequate working capital. This has led to frequent shutting down of operations at both Kochi and Rasayani units thereby further aggravating the financial crisis of the company.

Financial Performance

8.12. Financial performance of HOCL in terms of turnover and net profit / loss for

the last 5 years and net worth as on 31.3.2015 are given below:

(Rs. in crore)

Year	Turnover	Net Profit / (Loss)
2010-11	738.04	25.72
2011-12	606.37	(78.07)
2012-13	624.19	(137.99)
2013-14	236.80	(176.85)
2014-15	167.19	(215.49)
	Net worth as on 31.3.2015: **(-)Rs.534.16 crore**	

8.13 During 2015-16 (up to December, 2015), the company achieved a turnover of Rs.97.39 crore and loss of Rs.133.70 crore, as per the provisional unaudited results. The low turnover and loss is due to the fact that most of the plants / operations of the company have generally remained shut down for the last several months due to acute shortage of working capital.

Revival / restructuring plan for HOCL

8.14. With accumulated losses resulting in eroding of company's net worth to (-) Rs.128.50 crore in 2012-13, HOCL again made a reference to BIFR in November, 2013 for registration as a sick company. In the hearing held on 22.7.2015, BIFR declared HOCL as a sick company.

8.15. With a view to address the persistent financial problems of the company, HOCL had earlier in January, 2014 appointed M/s FEDO (FACT Engineering and Design Organization) as a consultant for conducting a revival study. However, the FEDO report was not accepted by the Board of Directors of HOCL on the ground that that the report did not take into account the scenario prevailing in the domestic and international market, crashing crude prices and drastic downfall in the prices of phenol and acetone. Therefore, the Board of Directors in January, 2015 decided to appoint a new consultant for preparing a fresh revival plan.

8.16. A revival plan for HOCL prepared by the new consultant (M/s JPS Associates) has been approved the Board of Directors of HOCL. Based on the information contained in the revival plan report, a revival / restructuring plan for HOCL is presently under consideration of the Department.

HINDUSTAN INSECTICIDES LIMITED (HIL)

8.17. Hindustan Insecticide Limited (HIL) was incorporated in March, 1954 for manufacture and supply of DDT (dichlorodiphenyltrichloroethane). In 1957, the company set up a factory at Udyogmandal, Kerala, for manufacture of DDT and in 1977 at Rasayani, Maharashtra, for manufacture of Malathion, an insecticide. The third unit of HIL was set up at Bhatinda, Punjab, in 2003. Rasayani and Udyogmandal Plants have both DDT manufacturing and agrochemical manufacturing facilities while Bathinda has only formulations manufacturing and packaging facility. All the units of HIL are today holding the Integrated Management System certification (i.e. combination of all the ISO Certificates). The company has 7 Regional Sales Offices across India and a wide network of dealers for marketing and distribution of its products.

8.18 The authorised and paid up share capital of HIL is Rs.100 crore and Rs.91.33 crore respectively. 100% of its shares are held by the Govt. of India.

8.19. DDT accounts for almost 50 % of the turnover of the company. HIL is the sole supplier of DDT to the National Vector Borne Disease Control Programme (NVBDCP) of the Ministry of Health and Family Welfare, Govt. of India. The company also exports DDT to some African countries.

8.20. HIL diversified into agrochemicals in the late 1970s to ensure supply of quality pesticides at reasonable prices to the agricultural sector. Today it has a range of technical and formulation grade pesticides to meet the varied requirements of the farming community. To further consolidate its position, HIL in the year 2012-13 ventured into the seed production and marketing business. The company has been recognized as a nodal agency by Ministry of Agriculture for production and marketing of certified seeds for crops and vegetables. The company is participating in Seed Minikit Programme of Ministry of Agriculture & Farmers Welfare to popularize the latest high yielding varieties among the farmers.

8.21. HIL has also identified a new thrust area of fertilizers business. It has been recently inducted by the Department of Fertilizers as an agency to import fertilizers. Further, Bathinda plant of the company is planned to be utilized for producing water soluble fertilizers. This diversification will enable the company to become a one stop shop for the farming community by providing all the three critical agricultural inputs viz. seeds, pesticides and fertilizers.

Financial Performance

8.22. The company has been continuously posting profits since the last 10 years. Financial performance in terms of turnover and net profit / loss for the last 5 years and net worth as on 31.3.2015 are given below:

(Rs. in crore)

Year	Turnover	Net Profit / (Loss)
2010-11	271.04	1.58
2011-12	279.82	1.60
2012-13	301.11	2.92
2013-14	330.35	1.84
2014-15	339.90	1.60
	Net worth as on 31.3.2015: **Rs.92.56 crore**	

8.23. During 2015-16 (up to December, 2015), the company has achieved a turnover of Rs.132.78 crore and net profit of Rs.0.25 crore, as per the provisional unaudited results.

Exports

8.24. HIL achieved exports of Rs.26.99 crore in 2014-15 as against exports of Rs.8.73 crore during 2013-14. The company exported DDT to African countries likely Zimbabwe, Mozambique, South Africa etc. for the malaria control programme in these countries. It exported agrochemicals to countries like Mexico, Costa Rica, Russia, Peru, Israel, Spain and Myanmar.

New initiatives, projects and proposals of HIL

8.25. With a view to widen the product profile and further reduce the company's dependence on DDT revenue, new initiatives and projects taken up by HIL to diversify its operations are:

(i) It has set up a facility for manufacturing Glyphosate (Tech.), a broad- spectrum systematic herbicide used to kill weeds, by retrofitting its Endosulfan plant at Kochi unit. The plant has been commissioned and trial runs started. Capacity enhancement of Manczeb facility from 1000 to 2000 MT has also been commissioned successfully at the Kochi unit.

(ii) The company has taken an initiative to diversify into fertilizers business. The Govt. has approved induction of HIL into the nutrient based subsidy policy for decontrolled phosphatic and potassic fertilizers. The company is planning to enter into marketing tie ups with various fertilizer companies as per its marketing requirement.

(iii) To develop alternative vector control methods, the company in association with a renowned University is developing a new product to be used for Indoor Residual Spray (IRS) as an alternative for DDT. The lab scale molecule has been isolated and work on pilot scale designing is in progress. HIL has also developed Long Lasting Insecticidal Net (LN) Technology in collaboration with CIPET, Chennai. Product is under process for CIB registration and WHOPES approval.

(iv) With the Plan loan of Rs.11 crore provided by the Govt. of India in 2014-15, HIL is setting up a plant at its Kochi unit to manufacture Pendimethalin, a herbicide mainly used to control annual grasses and certain broadleaf weeds which interfere with yield and quality of agricultural and horticultural crops. The company has finalized the tender and applications have been submitted for getting statutory clearances.

(v) The company further proposes to set up a multiproduct plant facility at a cost of Rs.11 crore to manufacture Hexaconazole and Tebuconazole (fungicides used to control many type of fungal infection on crops and have versatile application on crops) at its Rasayani unit. Plan loan provision of Rs.10 crore for this project is provided in the Department's budget and the same is being processed for release to the company.

HINDUSTAN FLUOROCARBONS LTD. (HFL)

8.26. Hindustan Fluorocarbons Ltd. (HFL), a subsidiary company of Hindustan Organic Chemicals Ltd. (HOCL), was incorporated on 14.07.1983. It is located at Rudraram, District Medak, Telangana. The company started production in the year 1987 and is engaged in the manufacture of Poly Tetra Fluoro Ethylene (PTFE) and of Chloro Di Fluoro Methane (CFM-22). PTFE is extensively used in chemical, mechanical, electrical and electronic industries and has strategic applications in defence and aerospace sectors. CFM-22 is used as a refrigerant gas and also as feedstock for production of PTFE.

8.27. The company's authorised and paid up share capital is Rs.21 crore and Rs.19.61 crore respectively. HOCL (promoter company) holds 56.40% of the equity share capital and balance is held by the public (39.11%) and Andhra Pradesh Industrial Development Corporation (4.43%). HFL is listed on the Bombay Stock Exchange (BSE).

8.28. HFL started making losses from its inception in 1987-88 resulting in erosion of its net worth and reference to BIFR in 1994. A rehabilitation package for HFL under the operating agency M/s IDBI was approved by BIFR on 03.12.2007. Total cost of rehabilitation package was Rs.19.28 crore and did not involve infusion of any Govt. funds. Following implementation of the rehabilitation package, HFL made marginal profits from 2007-08 to 2012-13. However, the company suffered losses in 2013-14 (Rs.24.82 crore) mainly on account of provisioning for wage arrears and in 2014-15 (Rs.3.77 crore) due to reduced sales realization of its main product PTFE. HFL continues to be registered with BIFR as a sick company since the net worth of the company is negative.

Financial Performance

8.29. Financial performance of HFL in terms of turnover and net profit/loss for the last 5 years and net worth as on 31.3.2015 are given below:

(Rs. in crore)

Year	Turnover	Net Profit / (Loss)
2010-11	33.52	2.23
2011-12	50.33	2.52
2012-13	44.48	0.95
2013-14	31.34	(-)24.82
2014-15	32.75	(-)3.77
	Net worth as on 31.3.2015: **(-)Rs.52.55 crore**	

8.30 During 2015-16 (up to December, 2015), the company has achieved a turnover of Rs.25.40 crore and loss of Rs.7.00 crore, as per the provisional unaudited results. This is mainly due to plant shut down for refurbishment / revamping activities.

New initiatives and projects of HFL

8.31. For revival and growth of HFL, the company has diversified into profitable

business of fluoro specialty chemicals (which has higher profit margins than the existing grades of PTFE) and adopted the strategy of switching over from single product to multi product facility to reduce dependency on PTFE. It has developed superior grades of PTFE (modified PTFE or MPTFE) and started exporting the same. HFL has also developed fluoro specialty chemicals like TFE-Ether and has completed successful trials for development of other fluoro speciality chemicals like Telomers. Revenue generation from these products are expected to help HFL to turnaround and earn profits in the near future.

8.32. Plan loan of Rs.3.60 crore was provided to the company in 2014-15 for development of modified PTFE project. Additional Plan loan of Rs. 13.20 crore was also provided in 2014-15 for plant refurbishment and new schemes. In 2015-16, Plan loan provision of Rs.5.00 crore has been kept in the Department's budget for the plan schemes / projects of HFL. A proposal for setting up 800 kW solar power plant with the above Plan loan provision has been submitted by the company and is under consideration of the Department.

8.33. Further, for long term and sustainable growth of the company, a revival / restructuring plan for HFL is also under consideration of the Department.

Chapter – 9

Autonomous Institutions

Central Institute of Plastics Engineering & Technology (CIPET)

9.1. CIPET is an ISO 9001:2008 QMS, NABL, ISO/IEC 17020 accredited premier national institution under the aegis of Department of Chemicals & Petrochemicals Ministry of Chemicals & Fertilizers, Govt. of India. CIPET's activities involve Skill Development, Technology Support, Academic and Research (STAR) for the growth of polymer & allied industries in the country. CIPET operates at 28 locations spread across the country with its Head Office at Chennai. These are:

High Learning Centres(HLCs) Chennai Ahmadabad Bhubaneswar Lucknow Kochi	**Diploma Centres** Amritsar Aurangabad Bhopal Guwahati Hyderabad Hajipur Haldia Jaipur Imphal Mysore Murthal Raipur
R&D wings Advanced Research School for Technology and Product Simulation (ARSTPS) at Chennai. Laboratory for Advanced Research in Polymeric Materials (LARPM) at Bhubaneswar.	
Specialized Centres Advanced Tooling and Plastics Product Development Centre (ATPDC), Madurai. Advanced Plastics Processing Technology Centre (APPTC), Balasore.	**Plastic Waste Management Centre** at Guwahati
Vocational Training Centre MCTI Campus,Bhubaneswar, Vijayawada (Andhra Pradesh), Baddi (Himachal Pradesh), Bhopal (Madhya Pradesh), Dharampur (Gujarat)	**Polymer Data Service Centre**, Gurgaon

CIPET centres have state-of-the-art infrastructure facilities for Design, CAD/CAM/CAE, Tooling &Mould Manufacturing, Plastics Processing, Testing and Quality Control to cater to the needs of plastics and allied industries.

Government of India has approved setting up 05 Centres of CIPET at Dharampur (Gujarat), Baddi (HP), Bhopal (MP), Vijayawada (AP) and Raipur (Chattisgarh) during 2015-16. Training activities have been started at these centres from May 2015 onwards.

9.2. ACADEMIC PROGRAMS AND SKILL DEVELOPMENT PROGRAMS

9.2.1. Long Term Programs:-

CIPET conducts 13 different long term training programs viz. Diploma, Post Diploma, Post Graduate Diploma, Undergraduate, Post Graduate and Ph.D. programs with varying levels of entry qualification. In the current academic session 2015-16, CIPET has introduced one more professional long term course "Post Graduate Diploma in Plastics Testing and Quality Management (PGD-PTQM)". The long term programs offered by the institute are as follows:

- *Diploma in Plastics Technology (DPT) (3 years)*
- *Diploma in Plastics Mould Technology (DPMT) (3 years)*
- *Post Diploma in Plastics Mould Design with CAD/CAM (PD-PMD)(1 ½ years)*
- *Post Graduate Diploma in Plastics Processing &Testing (PGD-PPT) (1 ½ years)*
- *Post Graduate Diploma in Plastics Testing & Quality Management (PGD-PTQM)*
- *B.Tech. (Plastics Engineering/Technology) (4 years)*
- *B.E./B.Tech. (Manufacturing Engineering/Technology) (4 years)*
- *M.Tech. (Plastics Engineering/Technology) (2 years)*
- *M.Tech. (Polymer Nanotechnology) (2 years)*
- *M.E. (CAD/CAM) (2 years)*
- *M.Sc.(Bio Polymer Science) (2 years)*
- *M.Sc.(Polymer Science) (2 years)*
- *M.Sc. (Tech.) in Material Science Engineering (5 years)*

The Undergraduate, Postgraduate & Doctoral programs are offered at five High Learning Centres (HLCs) in affiliation/collaboration with respective State Universities.

In the year 2015-16, 13376 students have been enrolled for the long term programs against 12629 students enrolled in the previous year 2014-15.

9.2.2. Short Term Vocational Training Programs

The institute also conducts highly specialized and customized short term programs in the field of Polymer Science & Technology to inculcate, update and improve the skill competency of technical manpower. During 2015-16 (upto December, 2015), CIPET has trained 34786 persons under these training programmes. The details of persons trained under these programmes are as under:

- 3928 persons trained in the Short Term courses conducted by CIPET at its centres.
- 3217 persons trained in Tailor Made/customized courses.
- 6694 persons trained in various skill development training programs of 6 months duration, sponsored by Govt. Departments / agencies such as Ministry of DONER, Ministry of Social Justice & Empowerment, SC/ST Welfare Department, Minorities Department etc.
- 20947 persons trained in in-plant Training conducted by CIPET.

CIPET has been given a target to train 80, 000 persons under Skill Development Training Programs during 2015-16 against 43,000 persons trained during 2014-15.

9.2.3. Online Education (E-Learning) Program at CIPET Centres:

CIPET has initiated Online Education (E-Learning) programs for skill development training and has created exclusive website for this purpose. The online education programs help the personnel working in plastics & allied industries to get formal education in their field. The online courses have commenced from December 2015 and 40 participants have registered for the course.

9.2.4. UDAAN Scheme

Ministry of Home Affairs (MHA) has approved Skill Development Training Programme for 240 unemployed youth of Jammu & Kashmir, to be conducted by CIPET at its centres, under UDAAN scheme during 2015-16. Under this

Scheme, six months training is being provided through two identified courses at Jaipur, Bhopal and Amritsar centres of CIPET viz. “CNC Milling Machine Programming Techniques & Machining Operations” and “Plastic Testing and Quality Control for Plastics Materials & Products”.

A team of CIPET participated in mega mobilization drives during 22nd July -18th August, 2015 at Akhnoor, Hiranagar, Srinagar and Kathua in J&K. As a result, Skill Development Training for 1st batch of 40 youth of J&K from different parts of the state was started at CIPET Jaipur centres on 28.08.2015 for ‘CNC Milling Machine Programming Techniques & Machining Operations” program. As on December, 2015, 102 participant from the state of J&K have been enrolled for the training under the scheme. The first batch has completed the training on 24th February, 2016 placement was in progress.

9.3. TECHNOLOGY SUPPORT SERVICES

Industrial Assignment:

CIPET provides Technology Support Services (TSS) to plastics and allied industries through collaboration and undertaking various assignments. During the year 2015-16 (up to December 2015), 39194 Technical Support assignments were undertaken by CIPET centers which include job works, mould orders, testing assignments and consultancy services. Some of the important assignments undertaken by ARSTPS, Chennai are:

- Production Technology for Precision Plastic Bi-Aspheric Lenses for Indirect Ophthalmoscope for Department of Science and Technology.
- Non Magnetic, Non Metallic Gantry for Hoisting The Cryostat for IGCAR, Kalpakkam.
- Sensor Array Helmet for 90 Channel Whole Cortex Magetoencephalography for GCAR, Kalpakkam.
- Medical Tablet PC for Cadioonline, Chennai
- Medical devices- Asthma Inhalers, mouthpiece components for M/s J K Medicals, Chennai.
- Two Cavity Split automatic injection mould for Fuze Container for Ordnance Factory, Dum Dum, Kolkata.
- Automatic Injection Mould for Plastic Light Body, Plastic Light Reflector, Plastic Light Body Assembly-Round, Plastic Light Body Assembly-

Rectangular, Plastic Light Body Rectangular-Double Light and Plastic Light Reflector-Triple Light for M/s. Maiestas Technologies Pvt. Ltd, Bhubaneswar

During this period, 1500 Pre-delivery Inspection (PDI) assignments were undertaken from industries across the country on behalf of Government organizations.

Memorandum of Understandings (MoU) were signed with following organizations during 2015-16:

- Bharat Heavy Electronics Ltd., (BHEL), Hyderabad for development of FRP Composite Torque Tube for high Temperature Superconducting (HTS) machine applications on 04.03.2015.
- IDMC, Gujarat for development of Multilayer Film for Milk Packaging to be used in Dairy Industry on 08.06.2015.
- ITC, Bengaluru for development of Biaxially Oriented Polylactic Acid (BOPLA) Based Biodegradable Film for Packaging Applications.
- Boeing India, Bengaluru for development of Polyimide Material for aerospace Aviation on 29.04.2015.

9.4. Polymer Data Services (PDS):

CIPET has established "Polymer Data Service (PDS)" with sole objective of enhancing the growth of polymer industries by providing interlinking through database. The important activities undertaken by PDS during, 2015-16 (up to December, 2015) are as under:

- Around 5000 industries have been registered with the PDS taking the total number of registered companies to around 10,000.
- A monthly e-news journal "POLeNEWS" has been introduced in May 2015 which contains information about recent developments in plastics/polymer industries, manpower requirement, tender information, up-coming events/ exhibitions and about CIPET programmes.

9.5. RESEARCH & DEVELOPMENT ACTIVITIES:

R&D wings of CIPET viz., (i) Advanced Research School for Technology & Product Simulation (ARSTPS) at Chennai and (ii) Laboratory for Advanced Research

in Polymeric Materials (LARPM) at Bhubaneswar have carried out following activities during 2015-16 (up to December 2015):

- 01 Patent was filed and Book chapter thereof has been published through international publishers.
- 41 research papers have been published in leading International Journals.
- 12 Papers have been presented in International Conferences.

9.6. CONFERENCE AND SEMINAR

- The 6th edition of IPLEX – 2015 was organized by CIPET in association with APPMA, TAPMA, KPMA, and KSPA during 25-27th September, 2015 at Bengaluru. Secretary, Department of Chemicals & Petrochemicals inaugurated the event. Around 50,000 visitors visited the event.

- CIPET, with the support of Department of Chemicals and Petrochemicals organized a Technical Seminar on "Positive attributes of Plastics and its Waste Management" at Varanasi on December 18, 2015 to create awareness on Plastic Waste Management.

- International Conference on "Advancements in Polymeric Materials" (APM 2016), 7th in the series, was hosted by Laboratory for Advanced Research in Polymeric Materials (LARPM), R&D wing of CIPET, with the theme focused on "Marching Towards Technological Developments", from February 12-14, 2016, in the premises of CIPET Ahmedabad. The APM – 2016 was inaugurated jointly by Shri Hansraj Gangaram Ahir, Minister of State for Chemicals and Fertilizers and Shri Saurabh Patel, Hon'ble Finance Minister, Government of Gujarat. This symposium highlighted the diverse innovations covering multidisciplinary research in the area of Polymer Nanocomposites, Polymer Blends & Alloys, Biopolymers, Smart materials, Reinforced Composites, Recycling Technology, Conductive Polymers, Fuel Cells, CNTs and their Synthesis & Characterization etc.

- The event was attended by around 700 scientists, academicians, industrialists and researchers from India and abroad. The event would help in bridging the gap between academia and industry through exchange of new ideas and technology transfer. Eminent Scientists, Renowned Academicians, Distinguished Industrialists and Young Researchers from around 90 Universities, Academic Institutions, R&D laboratories from India and overseas participated in the mega event. Also, 22 international delegates from 12 foreign countries like Mexico, Germany, Brazil, Switzerland, USA, South Africa, P.R. China, Japan, Malaysia, UAE, Turkey and Canada shared their research expertise during the conference. More than 350 Research papers in different themes were deliberated during the conference. 13 Plenary Talks, 56 Invited Lectures, 145 Oral Presentations and 70 Poster Presentations were deliberated during the conference.

Shri Hansram Gangaram Ahir, Minister of State for Chemicals and Fertilezers and Shri Saurabh Patel, Hon'ble Finance Minister, Government of Gujarat inaugurating jointly APM-2016 and releasing proceedings of the Conference.

9.7. FINANCIAL PERFORMANCE (UN-AUDITED)

During the financial year 2015-16, CIPET has achieved an income of Rs.120.69 crore (up to November 2015) against the budgeted income of Rs.210.00 crore (un-audited). During the same period, CIPET has incurred a revenue expenditure of Rs.160.03 crore against the budgeted revenue expenditure of Rs.187.12 crore (un-audited).

9.8. INTERACTION WITH INTERNATIONAL INSTITUTIONS:

KENYA PLAST 2015: A delegation of Department of Chemicals and Petrochemicals and CIPET visited Nairobi, Kenya and participated in Kenya Plast 2015 during June 8 – 12, 2015. The delegation held meetings with officials of Govt. of Kenya along with Indian High Commission at Kenya.

CHINAPLAS 2015: A delegation of CIPET visited "Chinaplas 2015" exhibition held between May 20-23, 2015 at China Import & Export Fair Complex, Pazhou, Guangzhou, PR, China.

9.9. MAJOR EVENTS

- The construction activities of Specialized Centre – Advaned Tooling & Plastics Product Development Centre (ATPDC) at Madurai (Tamilnadu) – a unit of CIPET-Chennai has been completed and the Centre started functioning in the new premises from June 2015 onwards.

- Construction of hostel facilities for around 7,400 students at 10 CIPET Centres viz., Haldia, Jaipur, Chennai, Ahmedabad, Murthal, Bhubaneswar, Hyderabad, Lucknow, Aurangabad and Imphal under the XII Plan scheme has been undergoing and completed in case of some of the Centres.

- During 2015-16, Academic and Hostel buildings at Imphal, Aurangabad and Jaipur were inaugurated.

Shri Ananth Kumar, Minister for Chemicals & Fertilizers, Government of India and Shri OkramIbobi Singh, Chief Minister, Manipur jointly inaugurated the Academic and Hostel buildings at CIPET Centre, Imphal on 12th June, 2015.

Shri Hansraj Gangaram Ahir, Minister of State for Chemicals & Fertilizers inaugurated the Hostel Building at CIPET Centre, Aurangabad on 10th July, 2015.

Shri Ananth Kumar, Minister for Chemicals & Fertilizers inaugurated the Hostel Building at CIPET Centre, Jaipur on 19th November. 2015.

Shri Ananth Kumar, Minister for Chemicals & Fertilizers along with Shri Hansraj Gangaram Ahir, Mister of State for Chemicals & Fertilizers releasing the Proceedings of 6th National Award on 20.01.2016.

Institute of Pesticide Formulation Technology (IPFT)

9.10. Introduction:

Institute of Pesticide Formulation Technology (IPFT) located at Gurgaon, Haryana, is a registered Society under the Societies Registration Act–1860 under the Department of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, Government of India. IPFT is the only Institute of its kind devoted to the development of state-of-the-art user and environment friendly new generation pesticide formulation technology. The Institute has established a healthy rapport with the Indian agrochemical industries and has been able to successfully transfer technology for safer, efficient and environment friendly formulations. IPFT is also helping the industries in data generation as per CIB/RC guidelines for bioefficacy, phytotoxicity and pesticide residue analysis for both agriculture and household formulations. IPFT undertakes both in-house and external R & D projects.

9.11. Aims and Objectives:

- Development and production of the state-of-the-art user and environment friendly new generation pesticide formulation technology.
- Promotion of efficient application technologies suiting the existing requirements of the newer formulations.
- Information dissemination of safe manufacturing practices, quality assurances, raw material specification and sources.
- Analytical and consultancy services.
- Fostering the improvement in the qualification and usefulness of pesticide scientists working in the agrochemical area.
- Continuing education through specialized training for pesticide personnel.

9.12. Major Activities during the Year:

- IPFT continues to be accredited Laboratory by National Accreditation Board for Testing & Calibration Laboratories (NABL) as per ISO/IEC – 17025 (2005) for the analysis of pesticides and their formulations, pesticide residues in food matrices and CWC related chemicals.

- IPFT received record number of Industry sponsored projects for data generation on Bioefficacy, Phytotoxicity, Residue Analysis and Stability Studies.

- IPFT signed MoU with Higher School of Agriculture, University of Lome, Togo for collaborative Research Work.

- IPFT signed MoUs and CDA with Krish Biotech, Kalyani and Biotech International.

- IPFT has become an IGNOU Programmme Study Centre for "Post Graduate Diploma in Analytical Chemistry (PGDAC)" with effect from January, 2015 and it continued in the year 2015 - 16.

- IPFT has successfully developed Solid WDG formulation of liquid insecticide Chlorpyriphos. The patent has been filed.

- IPFT has developed water based micro-emulsion combination formulation of two herbicides. The patent filing work is in progress.

- IPFT has developed nano formulations from plant extract which may minimize use of synthetic pesticides.

- Development of standard homogenous population of Helicoverpaarmigera and Spodoptera collected from field and transfer under lab conditions.

- IPFT has successfully developed nano–encapsulated sprayable formulation for impregnation of insecticide in soldiers dress.

- IPFT has been certified by Central Insecticide Board Registration Committee (CIB/RC) for the data generation on Bioefficacy, Phytotoxicity and pesticide residue analysis.

- IPFT presented a country paper entitled "Plant protection strategy and Biopesticides in India" at Regional Network on Pesticide for Asia and the Pacific (RENPAP) held at Kathmandu, Nepal.

- IPFT has brought out leaflets for promotion of safe and adequate use of pesticides at Farmer's field level and distributed the same to farmers.

9.13. R & D Activities:

- IPFT has been working on the following R & D projects:
- Development of User & Environment Friendly Water Dispersible Granule Formulations of Highly Toxic, Broad Spectrum & effective Pesticides to reduce their Toxicity for Continuation of Use and Prevention from Ban.
- Development of Mass Production Technique and Formulation for Baculoviruses.
- Management of Termite by Integrated Approach and Indigenous Technologies.
- Magnetic core-shell nano particles based extraction coupled with Gas/Liquid Chromatography – Tandem Mass Spectrometry for trace level analysis of pesticides.
- Pesticide formulation from Plant Extract and their Bio-efficacy studies.
- Evaluation, Efficacy Enhancement and Data Generation of Neem Based Pesticides & Fertilizers for Commercial Use.
- Development of recyclable catalytic systems based on nano-particles and nano-particulate assemblies for the treatment of toxic effluent generated from Indian pesticide industries.
- Monitoring of Pesticide Residue in various crops.
- Development and evaluation of Nano-technology based pesticide formulations for impregnating in Military uniforms and paints.

9.14. Training Courses:

- IPFT imparted training to two Technical Officers from Sri Lanka on QA/QC of pesticides and their formulations and pesticide residue analysis.
- IPFT imparted training to four trainees from India on Formulation Technology.
- IPFT imparted training to three trainees on Pesticide Quality Control and Residue Analysis.

9.15.	**Papers Published in National / International Journals**	:	15
9.16.	**Papers in Conferences**	:	11
9.17.	**Invited Talks/Lectures by IPFT Scientists**	:	10
9.18.	**Training Courses Attended by IPFT Scientists**	:	05
9.19.	**Training Given by IPFT**	:	10

9.20. Revenue Generation:

IPFT earned revenue of Rs. 92.00 Lakh during the current year up to 30.11.2015.

Chapter – 10

Promotional Activities & Major Events

10.1. 'INDIA – CHEM GUJRAT 2015'

To promote the Indian Chemical Industry, the Government of India, Department of Chemicals & Petrochemicals, Government of Gujarat & Federation of Indian Chambers of commerce and Industry (FICCI) have jointly been organizing the "India Chem" series of events.

'INDIA CHEM GUJARAT 2015', 4th International Exhibition & Conference was held from October 28th to 30th at Mahatma Mandir, Gandhinagar, Gujarat with the theme "Chemicals - A way of life". The event was inaugurated by the Hon'ble Chief Minister for Gujarat State Smt. Anandiben Patel on October, 28 2015, at Mahatma Mandir, Gandhinagar, Gujarat in the presence of Shri Hansraj Gangaram Ahir, Minister of State for Chemicals & Fertilizers, Government of India, Shri Surjit K Chaudhary, Secretary, Department of Chemicals and Petrochemicals, Ministry of Chemicals & Fertilizers and over 400 industry representatives.

Total 124 exhibitors, 6572 Business Visitors from 25 countries participated in the exhibition. There were various pavilions such as DIPP (Make in India), Gujarat Dyestuff Manufactures Association (GDMA), Pumps & Valves, Gujarat Pollution Control Board (GPCB), Government of Odisha, Industries Department.

(Hon'ble Chief Minister for Gujarat State Smt. Anandiben Patel inaugurated the 4th edition of India-Chem Gujarat, 2015 on October 28, 2015, at Mahatma Mandir, Gandhinagar, Gujarat in the presence of Shri Hansraj Gangaram Ahir, Minister of State for Chemicals & Fertilizers,)

10.2. Business Platforms at India Chem Gujarat 2015

- Around 728 buyers have participated at the Buyer Seller Meet on 29th October 2015.

- Buyers participated from the industrial hubs of Gujarat viz. Vapi, Ankleshwar, Vadodara, Panoli and Nandesari, Coimbatore, Mumbai, Ludhiana and other parts of the country.

- Business Match Making: Buyers addressed their requirements at the forum and similarly exhibitors mentioned their products and services.

10.3. Conference

India Chem Gujarat 2015 included a two day International conference which was held on October 28-29, 2015. The theme of the conference was "Chemicals a Way of life. This conference gave a special focus to issues being faced by the Indian Chemical industry in realizing its true potential.

The International conference also included a Symposium on Chemical Safety & Security organized jointly with University of Georgia. This was held on 29.10.2015. The same was inaugurated by Shri Samir K Biswas, Joint Secretary (Chemicals), Govt. of India. Presentations were made by representatives from University of Georgia (USA) are representatives of Indian Chemical Industry.

A Knowledge and Strategy Paper on "Specialty Chemicals prepared by FICCI and TSMG was released by Hon'ble Chief Minister at the inaugural of India Chem Gujarat 2015. A Report on Strategic Trade Management in India-& Critical issues in SCOMET Compliance was also released. On first day of the conference FICCI Chemicals and Petrochemicals Awards 2015 was held which had 28 award categories. The awards were presented to the winner companies for their concerned category.

10.4. “INDIA CHEM MUMBAI 2016”

To promote the Indian Chemical Industry, the Government of India, Department of Chemicals and Petrochemical and Federation of Indian Chambers of Commerce and Industry (FICCI) will be organizing the 9th edition of “INDIA

CHEM" series i.e. 'INDIA CHEM 2016' from 01-03 September, 2016 at Bombay Exhibition Center, Mumbai. 'INDIA CHEM 2016' is the "must exhibit" event for the Chemical Sector.

The Indian chemical industry is at the threshold of rapid growth with the Govt. of India providing an atmosphere of support and encouragement. India's vibrant chemicals and petrochemicals industry plays a significant role in the economic development of our country.

- Global Chemical market size expected to grow at 4 - 5% per annum and expected to be $ 5.8 trillion by 2021

- Indian Chemical Industry is the 6th largest in the world and 3rd largest in Asia with the size worth around $ 108.4 billion which accounts for ~3% of the global chemical industry

The most important objective behind organizing the India Chem series is to highlight the investment possibilities in the country's chemical industry and give a fillip to make in India initiative of the Government of India. Leading companies from all over the world predominantly from China, Japan, Russia, Spain, USA, Germany, Italy, Brazil and South East Asian countries are expected to participate both as exhibitors, delegates and visitors.

10.5. HIGHLIGHTS: INDIA CHEM 2016:

- International participation from China, Japan, Iran, Germany, Turkey, USA are expected

- Partner states – Andhra Pradesh, Gujarat, West Bengal & Orissa (more expected)

- Buyers delegation from South America, USA, CIS, West Europe, Middle East and South East Asian countries and many more to join

- Over 20,000 Business visitors from India and abroad are expected

- Over 300 Indian and International exhibitors are expected

- Buyer-Seller meet by Basic Chemicals, Pharmaceuticals and Cosmetics Export Promotion Council (CHEMEXCIL)

- Over 30 top CXO's from India and abroad will be deliberating at International Conference

- 20,000 sqm of exhibition area

10.6. BUSINESS OPPORTUNITIES:

- Transfer of technology, investment, joint ventures, research and development

- Supply of plant, machinery, process control equipment, projects and services, etc.

- Logistics , warehousing & supply chain in Chemicals

- Sourcing requirements from India

- Showcase the latest products, machinery, equipments& developments in the industry for generating business and test marketing

- Technology adaptation and up-gradation

- Joint venture partners and project collaborators

- Business Tie-Ups and collaborations

- Contract Research & Manufacturing

Chapter – 11

GENERAL ADMINISTRATION

ORGANISATIONAL SET UP OF THE DEPARTMENT

11.1 The main activities of the Department are policy making, sectoral planning, promotion and development of chemical and petrochemical industries. The administrative and managerial oversight of Public Sector Undertakings engaged in the manufacture of various chemicals and petrochemical items, as well as Autonomous Bodies engaged in this area are some of the other major functions of the Department.

11.2 The Department is headed by a Secretary to the Government of India who is assisted by a Special Secretary & Financial Adviser, two Joint Secretaries, one Economic Adviser, one Chief Controller of Accounts and one Deputy Director General (organization chart at Annexure IV).

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

11.3 The status of employment of Scheduled Castes/Scheduled Tribes/Physically handicapped in the main Secretariat of the Department, as on 30.12.2015 is as under:-

Group	Total No. of posts	Scheduled Castes	Scheduled Tribes	Physically Handicapped
A	44	7	-	1
B	76	7	4	1
C	87	21	3	1
TOTAL	**207**	**35**	**7**	**3**

11.4 Officers in Group 'A' include officers belonging to Central Secretariat Service, officers on deputation from All India Services, Central Services and Technical posts of the Department. Appointment to posts in Group B and C is mostly done on the basis of nominations made by the Department of Personnel & Training, Department of Official Language and Ministry of Statistics &Programme Implementation.

RECORD MANAGEMENT

11.5 The Parliament has enacted "The Public Records Act, 1993" to regulate the management, administration and preservation of public records of the Central Government. The Central Government has also made rules to carry out the provisions of the Act. In terms of the provisions contained in Section 6(1) of the Act, the Under Secretary in-charge of General Administration has been nominated as Records Officer in the Department. A modernized Record Room of the Department is located in Udyog Bhawan.

USE OF HINDI IN OFFICIAL WORK

11.6 To ensure compliance with the statutory provisions and Presidential Orders on the Official Language Policy of the Government in the Department and also in its' attached and subordinate offices, there is a Hindi Section. The work of the Hindi Section is supervised by Assistant Director (OL) and Joint Director (OL) under the overall guidance of Economic Adviser.

11.7 Hindi Fortnight was organized in the Department from 15th to 30th September 2015. During this period, seven competitions of Hindi Typing, Hindi Stenography, Hindi Essay Noting and Drafting, Translation, Hindi Poetry and Hindi Essay exclusively for MTS were held. 28 participators have been awarded during the Hindi Fortnight. In which 3000-/ rupees has been awarded for first prize, 2000-/ rupees has been awarded for second prize, 1600-/ rupees has been awarded for third prize and 1000-/ rupees has been awarded for incentive prize respectively among the candidates. The total amount expended was Rupees 53,200-/ (fifty three thousand two hundred only).

11.8 Three meetings of the Departmental Official Language Implementation Committee under the Chairmanship of Economic Adviser were held on 25 March, 2015, 10 June, 2015 and 9 September, 2015. The progress made in the use of Hindi was reviewed in these meetings and suggestions for further improvement were adopted for compliance.

11.9 During the year 2015-16, the First Sub Committee of Parliament on Official Languages inspected the Central Institute of Plastics Engineering and Technology, Imphal office on 15.04.2015 and Central Institute of Plastics Engineering and Technology, Jaipur on 06.02.2015.

11.10 Most of the documents like Annual Report, Performance Budget, Demand-for-Grants, Parliament Questions & Assurances, Papers relating to standing committee and report of Comptroller and Auditor General, Cabinet notes,

papers of updating the departmental website were issued in bilingual form as per the section(3) of the Official Language Act, 1963. All letters received in Hindi were replied in Hindi itself as per the 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 of the Department of Official Language.

11.11 During the year, Quarterly Progress Reports for each quarter 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 database. Reports received from attached and subordinate offices were reviewed and deficiencies found therein were suggested for rectification.

Activities of the Vigilance Set up

11.12 The Department has a Chief Vigilance Officer (CVO) of the rank of Joint Secretary to look into the complaints against the employees of the Department as well as Board Level Officers of the Public Sector Undertakings (PSUs) and organizations under its administrative control. The CVO is assisted by a Deputy Secretary, Under Secretary and a Vigilance Section.

11.13 'Vigilance Awareness Week' was organized during the period 26th October, 2015 to 31st October, 2015. All the PSUs and autonomous bodies under the administrative control of the Department also organized 'Vigilance Awareness Week'.

GRIEVANCE CELL

11.14 A Grievance Cell is functioning in the Department of Chemicals and Petrochemicals which monitors all grievances related to this Department.

11.15 The online Grievance Redressal Mechanism, namely Public Grievance Redressal and Monitoring System (PGRAMS) is in operation w.e.f. 1st August 2005. A link has been provided on the home page of the Department's website to access PGRAMS as well as on the websites of the Institutions/Organizations under the Department of Chemicals & Petrochemicals. The Grievance Cell plays a vital role in the redressal of grievances of the common citizen. Information is regularly uploaded on the website of the Department of Chemicals & Petrochemicals and also on the websites of the Institution/Organizations falling under the purview of Department of Chemicals & Petrochemicals.

GENDER EQUALITY

11.16 In compliance with the Supreme Court judgment laying down certain guidelines to be followed for prevention of sexual harassment of women employees at work place, the Department has constituted Complaints Committee for redressal of complaints relating to sexual harassment of women. The Committee is functional since June 2002. The present Committee is headed by Economic Advisor.

RIGHTS OF PERSONS WITH DISABILITIES

11.17 Department of Chemicals & Petrochemicals follows the guidelines issued by the Government of India from time to time regarding rights of persons with disabilities. Efforts are made to fill up posts suitable for persons with disabilities as per guidelines of Ministry of Social Justice & Empowerment.

11.18 Department of Chemicals & Petrochemicals is the cadre controlling authority in respect of 06 technical posts in Group 'A', 5 posts of Staff Car Driver, 2 posts of Sr. Gestetnor Operator, 1 post of Dispatch Rider and 48 posts of Multi Tasking Staff (MTS) in Group 'C'.

11.19 All efforts are made 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 the Department are always available to attend to the problems of persons with disabilities, if approached, in this regard.

RIGHT TO INFORMATION

11.20 As per the provisions of the Right to Information Act, 2005, all relevant information relating to the Department has been made available on the web site and it is updated regularly to keep it easily accessible and comprehensible to the public. Central Public Information Officers (CPIOs) have been nominated in the Department to provide information to the public and information seekers. In addition, officers of the rank of Deputy Secretary/ Director and above have been designated as First Appellate Authority for the subjects they are dealing with. The online RTI portal is functional to facilitate information seekers to file RTI applications online.

Annexure – I

PRODUCT-WISE INSTALLED CAPACITY & PRODUCTION MAJOR CHEMICALS

(In thousand MT)

Major Groups / Products	Installed Capacity			Production					Percentage growth	
	2012-13	2013-14	2014-15	2010-11	2011-12	2012-13	2013-14	2014-15	2013-14	2014-15
1	2	3	4	5	6	7	8	9	10	11
ALKALI CHEMICALS										
Soda Ash	2951.00	2951.00	2951.00	2298.76	2410.82	2437.79	2392.17	2462.00	-1.87	2.92
Caustic Soda	2948.25	2948.25	2938.89	2334.45	2408.73	2375.83	2391.66	2439.50	0.67	2.00
Liquid Chlorine	1983.00	1983.00	1970.00	1637.62	1658.08	1673.25	1697.33	1717.97	1.44	1.22
Total	**7882.25**	**7882.25**	**7859.89**	**6270.82**	**6477.63**	**6486.88**	**6481.15**	**6619.47**	**-0.09**	**2.13**
INORGANIC CHEMICALS										
Aluminum Fluoride	25.60	143.92	25.60	9.80	7.31	6.70	5.40	6.73	-19.47	24.71
Calcium Carbide	112.00	112.00	112.00	44.70	66.39	70.98	78.78	87.18	10.98	10.67
Carbon Black	559.00	559.00	578.00	452.44	447.67	404.02	406.41	444.35	0.59	9.34
Potassium Chlorate	3.00	3.00	3.00	0.61	0.34	0.59	0.68	0.45	14.97	-33.88
Titanium Dioxide	76.05	76.05	82.50	64.02	52.14	50.14	52.78	47.88	5.25	-9.28
Red Phosphorus	1.68	1.68	1.68	0.48	0.56	0.69	0.75	0.89	8.68	17.84
Hydrogen Peroxide	137.95	137.95	137.95	116.43	89.40	107.45	113.79	97.25	5.91	-14.54
Calcium Carbonate	292.35	282.35	282.35	209.65	217.20	232.18	233.12	236.88	0.40	1.61
Total	**1207.63**	**1315.95**	**1223.08**	**898.12**	**881.01**	**872.75**	**891.70**	**921.60**	**2.17**	**3.35**
ORGANIC CHEMICALS										
Acetic Acid	192.28	192.28	177.43	156.48	160.73	160.56	157.17	159.61	-2.11	1.55
Acetic Anhydride	100.92	100.92	148.30	52.91	53.28	87.15	80.85	93.84	-7.24	16.07
Acetone	47.82	47.82	49.46	50.54	42.80	37.05	28.58	25.98	-22.87	-9.09
Phenol	77.13	77.13	79.68	79.81	65.93	59.92	46.39	42.26	-22.58	-8.89
Methanol	474.30	474.30	474.30	374.53	359.93	254.91	307.26	209.83	20.54	-31.71
Formaldehyde	413.25	413.25	411.30	266.61	263.80	275.36	268.29	255.95	-2.57	-4.60

(In thousand MT)

Major Groups / Products	Installed Capacity			Production					Percentage growth	
	2012-13	2013-14	2014-15	2010-11	2011-12	2012-13	2013-14	2014-15	2013-14	2014-15
1	2	3	4	5	6	7	8	9	10	11
Nitrobenzene	103.80	103.80	103.80	72.41	74.46	83.70	76.51	69.72	-8.59	-8.87
Maleic Anhydride	23.15	23.15	24.15	2.76	2.63	2.48	2.92	3.20	17.35	9.91
Pentaerythritol	15.40	15.40	16.72	11.73	11.40	11.49	12.18	13.46	5.94	10.55
Aniline	60.10	60.10	60.10	41.05	40.09	48.23	40.62	34.47	-15.77	-15.14
ChloroMethanes	211.75	211.75	216.75	161.35	188.55	197.74	214.03	220.71	8.24	3.12
Isobutylbenzene	3.75	3.75	3.75	2.27	1.94	6.63	6.08	4.30	-8.35	-29.18
ONCB	30.00	30.00	30.00	16.69	13.74	15.41	16.82	16.13	9.12	-4.11
PNCB	30.00	30.00	30.00	24.87	22.14	24.40	27.06	26.96	10.91	-0.37
MEK	5.00	5.00	5.00	0.00	2.19	2.49	3.72	4.02	49.12	8.12
Acetaldehyde	183.51	183.51	172.01	32.26	65.39	76.27	79.66	67.77	4.45	-14.92
Ethanolamines	10.00	10.00	10.00	3.45	8.73	7.05	11.20	13.76	58.77	22.95
Ethyl Acetate	389.63	439.63	479.83	170.48	235.36	305.26	382.39	327.94	25.27	-14.24
Menthol	33.05	33.65	33.65	15.74	15.80	19.70	18.34	17.45	-6.93	-4.85
Ortho Nitro Toluene	16.40	16.40	16.40	14.20	11.14	10.68	12.31	11.74	15.29	-4.67
Total	**2421.25**	**2471.84**	**2542.63**	**1550.12**	**1640.03**	**1686.48**	**1792.34**	**1619.11**	**6.28**	**-9.67**
PESTICIDES AND INSECTICIDES										
D.D.T.	6.34	6.34	3.60	3.19	3.64	3.87	2.79	3.63	-28.02	30.14
Malathion	3.80	3.80	2.60	3.05	2.55	1.71	2.04	2.24	19.26	10.01
Dimethoate	5.65	5.65	5.65	1.17	0.73	0.81	1.36	1.43	69.11	5.14
D.D.V.P.	3.68	10.68	13.92	3.48	4.64	4.41	5.52	6.66	25.20	20.71
Quinalphos	2.80	2.80	2.80	1.01	1.00	1.35	1.74	1.88	29.35	8.04
Monocrotophos	12.84	12.24	13.18	9.93	9.59	8.25	4.27	6.97	-48.24	63.24
Phosphamidon	3.20	3.20	3.20	0.29	0.06	0.02	0.05	0.13	200.00	184.44
Phorate	10.63	11.63	11.63	7.67	7.01	5.75	6.85	6.62	19.15	-3.37

(In thousand MT)

Major Groups / Products	Installed Capacity			Production					Percentage growth	
	2012-13	2013-14	2014-15	2010-11	2011-12	2012-13	2013-14	2014-15	2013-14	2014-15
1	2	3	4	5	6	7	8	9	10	11
Ethion	4.02	4.02	4.02	1.92	1.33	0.94	1.51	1.60	61.75	5.94
Endosulphan	0.00	0.00	0.00	11.49	1.35	0.00	0.00	0.00		
Fenvalerate	2.10	2.10	2.10	0.81	0.55	0.48	0.75	0.51	56.78	-31.82
Cypermethrin	14.49	15.69	15.69	7.21	10.41	7.78	9.26	8.59	19.09	-7.29
Acephate	11.86	16.58	18.25	16.49	17.11	15.76	14.51	17.97	-7.95	23.85
Chlorpyriphos	34.10	34.20	36.36	8.72	6.05	7.52	9.54	9.88	26.93	3.53
Triazophos	3.90	3.90	3.90	1.75	0.78	0.93	0.99	1.00	6.77	0.60
Lindane	0.33	0.33	0.33	0.00	0.00	0.00	0.00	0.00		
Temephos	0.50	0.25	0.25	0.12	0.13	0.20	0.25	0.00	23.15	-100.00
Deltamethrin	0.58	0.63	0.63	0.68	0.47	0.52	0.52	0.51	0.00	-0.97
Alphamethrin	0.33	0.35	0.51	0.55	0.57	0.54	0.56	0.75	3.31	32.74
Profenofos Technical	12.85	14.60	14.90	4.60	6.41	5.01	7.18	7.64	43.29	6.44
Pretilachlor Technical	1.40	2.84	2.56	1.18	1.65	1.93	2.22	1.88	14.94	-15.34
Lambda Cyhalothrin	0.00	0.60	0.60	0.21	0.29	0.43	0.55	0.47	27.93	-13.21
Phenthoate	0.90	0.90	0.90	0.59	0.59	0.96	1.24	1.40	29.11	12.72
Permethrin Tech	2.04	1.80	1.80	0.65	1.41	1.04	1.39	1.70	33.40	22.01
Imidacaloprid Tech	2.63	2.63	2.78	0.13	0.39	0.23	0.94	0.56	315.42	-40.62
Captan&Captafol	4.73	4.73	3.85	0.72	0.92	0.56	1.12	2.38	100.00	112.50
Ziram(ThioBarbamate)	0.65	0.65	0.70	0.66	0.73	0.55	0.60	0.58	9.34	-3.18
Carbendzim(Bavistin)	0.98	0.98	0.98	0.59	0.43	0.34	0.31	0.36	-9.71	15.64
Mancozab	69.76	71.56	71.56	26.05	43.46	45.30	57.82	61.40	27.66	6.19
Hexaconazole	0.50	0.50	0.50	0.43	0.47	0.44	0.58	0.59	30.61	2.95
Metconazole	0.75	0.75	0.75	0.36	0.50	0.63	0.70	0.61	12.32	-13.53
2, 4-D	22.00	22.00	22.00	12.60	15.03	15.44	17.90	11.62	15.98	-35.07

(In thousand MT)

Major Groups / Products	Installed Capacity			Production					Percentage growth	
	2012-13	2013-14	2014-15	2010-11	2011-12	2012-13	2013-14	2014-15	2013-14	2014-15
1	2	3	4	5	6	7	8	9	10	11
Butachlor	0.50	0.50	0.50	0.29	0.20	0.18	0.04	0.00	-78.69	-100.00
Ethofumesate Technical	1.65	1.25	1.65	0.82	1.14	1.22	1.01	0.62	-16.68	-38.95
Thiamethoxam Technical	3.00	3.00	3.10	1.49	1.63	3.12	3.31	1.66	6.19	-49.89
Pendimethalin	2.00	2.00	2.00	0.00	0.00	1.03	1.71	2.26	65.09	32.34
Metribuzin	0.75	0.75	0.75	0.00	0.00	0.24	0.74	0.52	204.10	-30.05
Triclopyr Acid Tech	0.30	0.30	0.30	0.30	0.10	0.21	0.20	0.19	-2.91	-4.50
Isoproturon	6.25	6.25	6.25	3.68	2.53	4.05	2.35	2.43	-42.13	3.45
Glyphosate	9.26	9.26	9.26	4.86	5.25	6.12	8.48	9.81	38.53	15.69
Diuron	0.05	0.05	0.33	0.23	0.31	0.14	0.07	0.12	-49.26	76.81
Atrazin	0.50	0.50	0.50	0.25	0.66	0.65	1.24	1.20	89.72	-3.15
Zinc Phosphide	1.10	1.32	1.32	0.86	0.89	0.60	0.65	1.31	7.12	101.70
Aluminium Phosphide	3.90	3.90	3.90	2.82	3.14	4.16	4.47	5.07	7.40	13.52
Dicofol	0.15	0.15	0.09	0.05	0.08	0.05	0.07	0.11	60.87	44.59
Total	**269.74**	**288.15**	**292.44**	**143.92**	**156.17**	**155.42**	**179.38**	**186.83**	**15.41**	**4.15**
DYES AND PIGMENTS										
Azo Dyes	20.06	20.30	20.30	13.96	12.10	12.72	13.46	10.59	5.89	-21.32
Acid Direct Dyes (Other Than Azo)	45.08	45.08	44.90	20.36	19.00	17.58	19.00	17.23	8.13	-9.35
Disperse Dyes	55.21	55.21	55.21	28.72	29.44	28.26	29.21	29.56	3.35	1.21
Fast Colour Bases	0.50	0.50	0.50	0.09	0.04	0.02	0.01	0.01	-26.32	-42.86
Ingrain Dyes	1.61	1.61	1.61	0.69	0.98	0.58	0.51	0.44	-10.94	-14.42
Oil Soluble (Solvent Dyes)	3.77	3.77	3.77	2.02	2.64	2.31	2.26	1.80	-2.21	-20.21
Optical Whitening Agents	37.30	37.30	37.30	15.02	14.14	18.17	23.74	22.94	30.62	-3.33
Organic Pigment	64.16	74.28	79.83	56.35	51.77	44.46	68.67	76.89	54.46	11.98
Pigment Emulsion	5.53	5.53	5.53	5.89	5.22	6.48	7.34	9.64	13.30	31.42

(In thousand MT)

Major Groups / Products	Installed Capacity			Production					Percentage growth	
	2012-13	2013-14	2014-15	2010-11	2011-12	2012-13	2013-14	2014-15	2013-14	2014-15
1	2	3	4	5	6	7	8	9	10	11
Reactive Dyes	159.57	159.57	180.82	76.88	83.38	87.60	95.42	89.47	8.92	-6.24
Sulphur Dyes (Sulphur Black)	3.00	3.00	3.00	8.58	7.02	6.58	7.57	9.38	14.97	24.03
Vat Dyes	2.98	2.98	2.98	1.94	1.69	1.38	1.60	1.77	15.98	10.71
Solubilised Vat Dyes	0.13	0.13	0.13	0.04	0.03	0.03	0.02	0.03	-18.52	45.45
Food Colours	1.13	1.13	1.13	0.36	0.36	0.25	0.62	0.66	146.43	5.96
Napthols	0.90	0.90	0.90	0.07	0.04	0.00	0.00	0.00	0.00	
Inorganic Pigments	16.302	17.682	18.054	13.93	13.06	13.14	14.18	14.82	7.87	4.53
Total	**417.22**	**428.96**	**455.95**	**244.87**	**240.88**	**239.53**	**283.60**	**285.23**	**18.40**	**0.58**
Total Major Chemicals (I toV)	**12357.65**	**12546.72**	**12554.81**	**9107.85**	**9395.71**	**9441.07**	**9628.17**	**9632.23**	**1.98**	**0.04**

Note:-Some Pesticides producing units supply combined installed Capacity.

Annexure – II

PRODUCT-WISE INSTALLED CAPACITY & PRODUCTION OF MAJOR PETROCHEMICALS

(In thousand MT)

Major Groups / Products	Installed Capacity			Production					Percentage growth	
	2012-13	2013-14	2014-15	2010-11	2011-12	2012-13	2013-14	2014-15	2013-14	2014-15
1	2	3	4	5	6	7	8	9	10	11
A : BASIC MAJOR PETROCHEMICALS										
I : SYNTHETIC FIBRES / YARN										
1. Polyester Filament Yarn (PFY) **($)**	2363	2354	2791	1804	1874	1878	1811	2179	-3.53	20.29
2. Nylon Filament Yarn (NFY) **($$)**	20	20	20	33	30	22	24	32	10.85	33.40
3. Nylon Industrial Yarn (NIY) **($$)**	61	61	61	97	97	95	104	101	9.21	-3.18
4. Polypropylene Filament Yarn (PPFY)**($$)**	8	8	8	6	7	6	6	5	-8.15	-12.96
Sub Total Yarn (1+2+3+4)	**2451**	**2443**	**2880**	**1941**	**2008**	**2001**	**1945**	**2317**	**-2.78**	**19.10**
5. Acrylic Fibre (Inc. Dry Spun) (AF)	107	107	107	76	76	75	94	90	25.89	-5.04
6. Polyester Staple Fibre (PSF)	1209	1170	1170	1037	953	974	1010	1021	3.70	1.11
7. Polypropylene Staple Fibre (PPSF)	31	31	32	4	4	8	23	25	185.61	10.51
8. Polyester Staple Fibrefil (PSFF)	72	81	87	53	49	51	56	57	10.50	1.49
9. Polyester Industrial Yarn (PIY)	22	22	22	13	14	15	15	17	-3.23	12.38
Total Synth. Fibre / Yarn	**3892**	**3854**	**4298**	**3123**	**3105**	**3124**	**3144**	**3527**	**0.63**	**12.18**
II : POLYMERS										
1. Linear Low Density Polyethylene (LLDPE)	No separate Capacity			897	1033	1012	1037	910	2.45	-12.19
2. High Density Polyethylene (HDPE)	No separate Capacity			887	1119	1177	1195	1156	1.54	-3.28
LLDPE/HDPE (Combined) ($$$)	**2735**	**2735**	**2735**	**1784**	**2152**	**2189**	**2232**	**2066**	1.96	-7.42
3. Low Density Polyethylene (LDPE)	160	160	160	179	194	187	190	184	1.84	-2.95
4. Polyestyrene(PS)	462	462	462	296	288	290	270	281	-6.73	4.01
5. Polypropylene(PP)	3116	3116	3116	1684	2209	2421	2648	2590	9.37	-2.18
6. Poly Vinyl Chloride(PVC)	1279	1423	1423	1278	1296	1257	1367	1330	8.78	-2.67
7. Expandable Polystyrene (EX-PS)	108	108	109	71	72	81	77	81	-4.27	4.31
Total Polymers	**7861**	**8005**	**8005**	**5292**	**6211**	**6424**	**6784**	**6533**	**5.61**	**-3.70**

(In thousand MT)

Major Groups / Products	Installed Capacity			Production					Percentage growth	
	2012-13	2013-14	2014-15	2010-11	2011-12	2012-13	2013-14	2014-15	2013-14	2014-15
1	2	3	4	5	6	7	8	9	10	11
III : SYNTHETIC RUBBER										
1. Styrene Butadiene Rubber (SBR)	10	130	271	12	9	8	12	57	46.26	379.13
2. Poly Butadiene Rubber (PBR)	74	74	114	76	79	77	81	108	4.68	32.98
3. Nitrile Butadiene Rubber (NBR)	25	25	25	6	0	0	1	0	415.00	-26.21
4. Ethyl Vinyl Acetate (EVA)	15	15	15	11	12	11	11	6	5.02	-42.72
Total Synthetic Rubber	**124**	**244**	**425**	**105**	**100**	**96**	**105**	**172**	**8.67**	**64.13**
IV : SYNTHETIC DETERGENT INTERMEDIATES										
1. Linear Alkyl Benzene (LAB)	547	547	547	475	454	455	406	411	-10.83	1.21
2. Ethylene Oxide (EO)	140	140	140	164	169	172	191	185	11.08	-2.92
Total Synth. Detergent Intermediates	**687**	**687**	**687**	**638**	**623**	**627**	**597**	**596**	**-4.82**	**-0.11**
V : PERFORMANCE PLASTICS										
1. ABS Resin	128	128	128	90	89	91	102	107	12.88	4.98
2. Nylon-6 & Nylon 66	20	23	23	21	18	19	20	21	5.72	1.46
3. Polymethyl Methacrylate (PMMA)	4	4	4	3	3	3	2	1	-2.32	-57.80
4. Styrene Acrylonitrile (SAN)	96	96	136	82	77	80	88	89	9.31	1.33
5. PET Chips/Polyester Chips	1133	1133	1118	774	773	747	564	547	-24.43	-3.13
6. PTFE (TEFLON)	20	20	20	6	9	6	6	2	6.15	-66.64
Total Performance Plastics	**1401**	**1403**	**1428**	**976**	**969**	**945**	**783**	**766**	**-17.13**	**-2.10**
TOTAL BASIC MAJOR PETROCHEMICALS										
(I+II+III+IV+V)	**13965**	**14193**	**14843**	**10135**	**11008**	**11216**	**11412**	**11594**	**1.75**	**1.59**
B : INTERMEDIATES										
I : FIBRE INTERMEDIATES										
1. Acrylonitrile (ACN)	41	41	41	38	38	33	37	34	12.25	-9.02
2. Caprolactum	120	120	120	123	118	99	85	87	-14.05	2.59

(In thousand MT)

Major Groups / Products	Installed Capacity			Production					Percentage growth	
	2012-13	2013-14	2014-15	2010-11	2011-12	2012-13	2013-14	2014-15	2013-14	2014-15
1	2	3	4	5	6	7	8	9	10	11
3. Mono Ethylene Glycol (MEG)	1120	1153	1153	746	997	1061	1069	1001	0.76	-6.37
4. Purified Terephthalic Acid (PTA)	3753	3753	3753	3191	3308	3494	3477	3755	-0.50	8.02
Total Fibre Intermediates	**5034**	**5067**	**5067**	**4097**	**4461**	**4687**	**4668**	**4877**	**-0.41**	**4.49**
II : BUILDING BLOCKS										
OLEFINS										
1. Ethylene	3783	3783	3783	2665	3320	3315	3346	3192	0.96	-4.62
2. Propylene	3326	3368	3368	1930	2528	2655	2897	2845	9.08	-1.78
3. Butadiene	295	433	433	242	250	235	236	239	0.16	1.66
Total Olefins	**7404**	**7584**	**7584**	**4837**	**6097**	**6205**	**6478**	**6276**	**4.41**	**-3.12**
AROMATICS										
1. Benzene	1283	1283	1566	945	1002	1048	1031	1094	-1.68	6.17
2. Toluene	258	258	258	128	132	108	120	108	11.09	-10.16
3. Mixed Xylene	891	898	898	125	207	200	248	215	23.79	-13.15
4. Ortho-xylene	420	420	420	400	390	444	412	462	-7.21	12.14
5. Paraxylene	2218	2218	3132	2137	2394	2360	2264	2758	-4.07	21.83
Total Aromatics	**5070**	**5077**	**6274**	**3736**	**4125**	**4161**	**4075**	**4638**	**-2.07**	**13.82**
C : OTHER PETRO-BASED CHEMICALS										
1. Butanol	26	26	26	18	22	14	5	4	-61.94	-23.36
2. C4-Raffinate	262	262	292	71	209	395	393	365	-0.64	-7.14
3. Di-Ethylene Glycol	80	85	85	73	99	103	107	101	3.66	-5.33
4. Diacetone Alcohol	9	9	10	4	5	3	0	0	-100.00	
5. Ethylene Dichloride (By Product)	593	593	593	454	435	316	278	285	-12.14	2.61
6. 2-Ethyl Hexanol**	55	55	55	29	49	50	20	14	-59.44	-31.20
7. Epichlorohydrine	10	0	0	8	9	11	0	0	-100.00	

(In thousand MT)

Major Groups / Products	Installed Capacity			Production					Percentage growth	
	2012-13	2013-14	2014-15	2010-11	2011-12	2012-13	2013-14	2014-15	2013-14	2014-15
1	2	3	4	5	6	7	8	9	10	11
8. Iso-Butanol	3	3	3	3	2	2	1	1	-67.02	-14.52
9. Isopropanol (IPA)	70	70	70	67	71	70	76	75	7.93	-1.21
10. Methyl Methacrylate (MMA)	4	4	4	5	4	3	3	3	3.63	7.56
11. Phthalic Anhydride (PAN)	309	362	349	253	250	254	264	292	3.65	10.53
12. Propylene Oxide (PO)	27	27	36	32	35	30	33	37	12.05	9.51
13. Propylene Glycol (PG)	15	15	20	17	19	15	14	16	-7.10	15.74
14. Polyvinyl Acetate Resin	17	17	17	2	0	0	0	0		
15. Vinyl Acetate Monomer (VAM)	30	30	30	0	0	0	0	0		
16. Vinyl Chloride Monomer (VCM) (By Product)	541	541	541	672	689	669	735	718	9.95	-2.39
17. Polyol	70	70	114	31	41	42	40	52	-4.96	29.08
Total Other Petro-based Chemicals	**2121**	**2169**	**2244**	**1739**	**1940**	**1979**	**1970**	**1962**	**-0.46**	**-0.38**

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

($$) : 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.

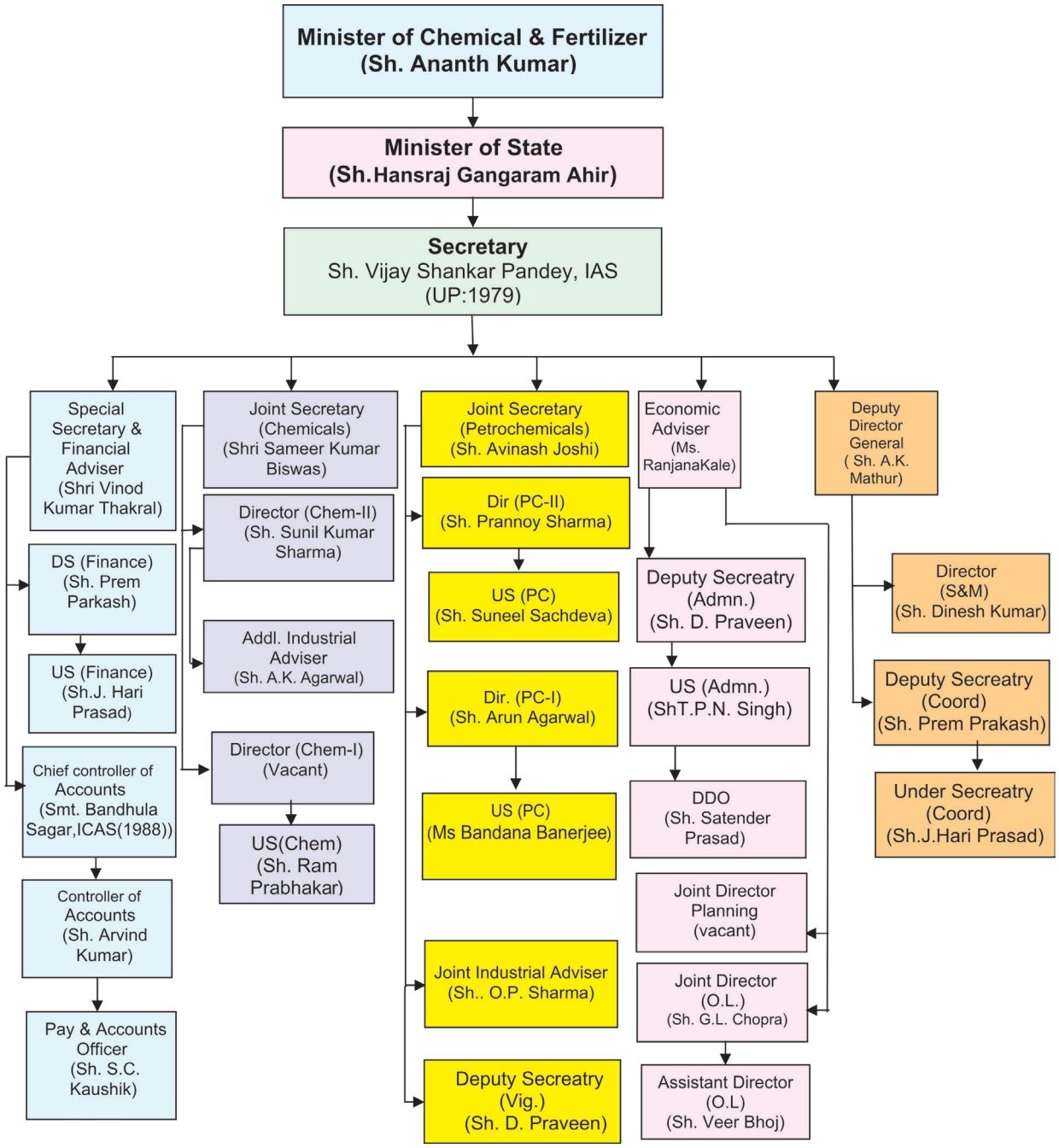
($$$) : Combined capacity to produce both LLDPE and HDPE and hence capacity utilisation can not be worked out. However production is independent.

(** : Combined capacity of 2-EH, Butanol & IsoButanol is given under 2 - EH)

Annexure-III

ORGANISATIONAL CHART OF DEPARTMENT OF CHEMICALS & PETROCHEMICALS

(As on 01.01.2016)



Chem : Chemicals; PC : Petrochemicals; Vig: Vigilance; O.L.: Official Language; Coord : Coordination; S&M : Statistics & Monitoring

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