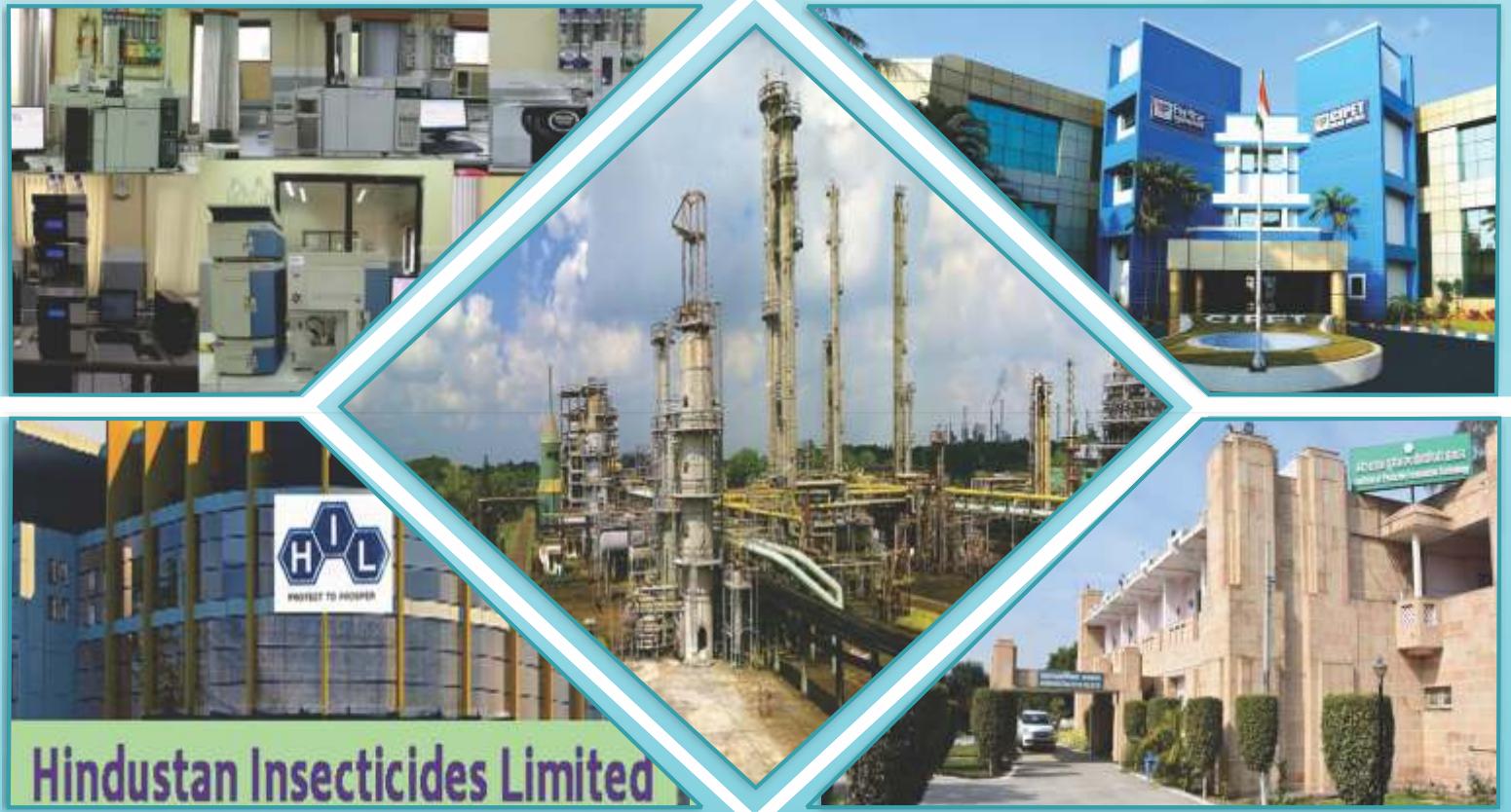




# ANNUAL REPORT

## 2019-20



**Government of India**

**Ministry of Chemicals & Fertilizers**

**Department of Chemicals and Petrochemicals**

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**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 the 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. Dye-stuffs and Dye-Intermediates;
  - iii. All organic and inorganic chemicals, not specifically allotted to any other Ministry or Department;
  - iv. Planning, development and control of, and assistance to, all industries dealt with by the Department;
  - v. Bhopal Gas Leak Disaster-Special Laws relating thereto;
  - vi. Petrochemicals;
  - vii. Industries relating to production of non-cellulosic synthetic fibers (Nylon Polyesters, Acrylic etc.);
  - viii. Synthetic Rubber; and
  - ix. Plastics including fabrication of plastic and moulded goods.
- 1.3** The Department has five major divisions viz. Chemicals, Petrochemicals, Administration, Statistics & Monitoring (S&M) and Economic Division. The Integrated Finance Division is common to the three Departments in the Ministry of Chemicals and Fertilizers.
- 1.4** There are three Central Public Sector Undertakings (CPSU) in the chemical sector namely Hindustan Organic Chemicals Ltd. (HOCL), HIL (India) Limited and Hindustan Fluorocarbons Limited (HFL), which is a subsidiary of HOCL and one CPSU in the petrochemical sector viz. Brahmaputra Cracker and Polymer Ltd. (BCPL). The autonomous institutes under this Department are Central Institute of Plastics Engineering & Technology (CIPET) and Institute of Pesticides Formulation Technology (IPFT).
- 1.5** Shri D.V. Sadananda Gowda is the Minister for Chemicals and Fertilizers with effect from 13.11.2018. Shri Mansukh Mandviya is the Minister of State for Chemicals and Fertilizers. Shri P. Raghavendra Rao is the Secretary of the Department.

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**Chapter - 2****AN OVERVIEW OF CHEMICAL AND PETROCHEMICAL INDUSTRY****Vision Statement 2024, Department of Chemicals and Petrochemicals**

- 2.1 To seize the opportunity to establish India as a leading chemicals & petrochemicals manufacturing hub,
- With a thrust on reduction in import dependency,
  - By attracting investments for manufacturing quality products
  - Using cutting-edge technologies,
  - In specified clusters,
  - With focus on sustainability
- ...contribute \$200 Bn to Manufacturing sector (\$1 Trn) of \$ 5 Trn Indian Economy

**Chemical and Petrochemical Industry**

- 2.2 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.
- 2.3 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**

<b>Class</b>	<b>Description</b>
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*

- 2.4** According to National Accounts Statistics 2019, brought out by the Central Statistics Office (CSO), chemical and chemical products sector (industry division 20 of NIC 2008) accounted for 1.69% of the GVA for all economic activities (at 2011-12 prices) in 2017-18, compared to 1.07% in 2016-17. The share of this sector in the GVA of manufacturing sector at 2011-12 prices was 9.40% during 2017-18 as compared to 5.88% in 2016-17. Share of Chemical and Chemical products sector including pharmaceutical sector (industry division 20 and 21 of NIC 2008) accounted for 2.90% of the GVA for all economic activities (at 2011-12 prices) in 2017-18, compared to 2.27% in 2016-17. The share of this sector in the GVA of manufacturing sector at 2011-12 prices was 16.13% during 2017-18 as compared to 12.53% in 2016-17. The CAGR based on average annual index of Industrial Production (IIP) for the Chemicals and Chemicals product (Industry Division 20: NIC 2008) during the period 2014-15 to 2018-19 is 2.13%. The size of the Indian Chemical industry (industry division 20 of NIC 2008) in terms of value of output in the year 2016-17 was Rs. 6,83,538 crore while size of the Indian Chemical industry including Pharmaceutical (industry division 20 and 21 of NIC 2008) in terms of value of output in the year 2016-17 was Rs. 10,81,265 crore.
- 2.5** The production of selected Major Chemicals and Petrochemicals during the years 2014-15 to 2019-20 (upto September 2019) is given in Table-II. The production of Total Major Chemicals and Petrochemicals in 2019-20 (upto September 2019) was 13,871 thousand MT. CAGR in production of Total Chemicals and Petrochemicals during the period 2014-15 to 2018-19 is 4.78%.

**Table II: Production of selected Major Chemicals and Petrochemicals**

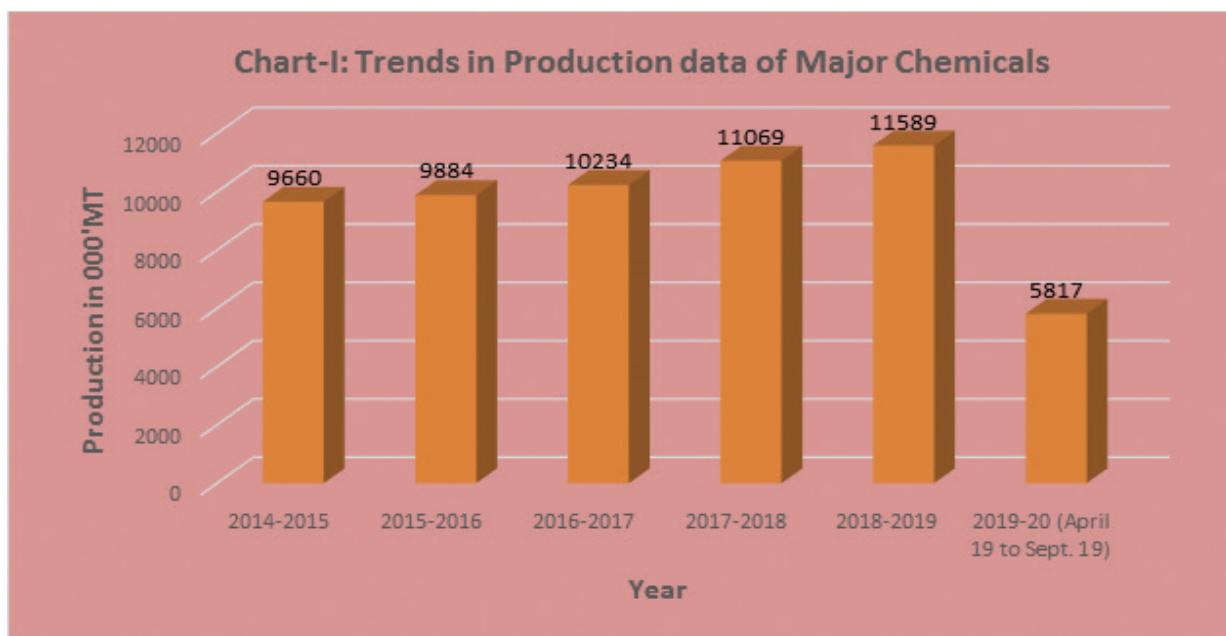
(Figures in 000'MT)

Group	2014-15	2015-16	2016-17	2017-18	2018-19	CAGR	2019-20 (April 19 to Sep.19)
Alkali Chemicals	6625	6802	7009	7631	8043	4.97	4112
Inorganic Chemicals	944	1002	1053	1058	1064	3.03	499
Organic Chemicals	1619	1589	1638	1799	1884	3.87	922
Pesticides	186	188	214	213	217	3.83	93
Dyes & Pigments	285	304	320	367	382	7.54	191
Total Basic Major Chemicals	9660	9884	10234	11069	11589	4.66	5817
Synthetic Fibers	3532	3558	3599	3625	3601	0.49	1933
Polymers	7558	8839	9163	9276	10040	7.36	4785
Elastomers (S.Rubber)	172	242	285	308	351	19.58	178
Synth. Detergent Intermediates	596	566	664	743	687	3.63	337
Performance Plastics	1591	1700	1799	1719	1589	-0.04	821
Total Basic Major Petrochemicals	13448	14905	15510	15670	16269	4.88	8054
Total Basic Major Chemicals and Petrochemicals	23108	24788	25744	26739	27858	4.78	13871

Note: The total basic Chemicals and Petrochemicals 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

- 2.6** It may be seen from Table II that the production of Alkali Chemicals accounts for around 71% of the total production of Major Chemicals for the year 2019-20 (upto September 2019).The production of Major Chemicals in 2019-20 (upto September 2019) is 5,817 thousand MT. The CAGR in production of total basic major Chemicals during the period 2014-15 to 2018-19 is 4.66%. The trend in the production of selected major chemicals is depicted in Chart I.



### Petrochemical Sector- Production Trends

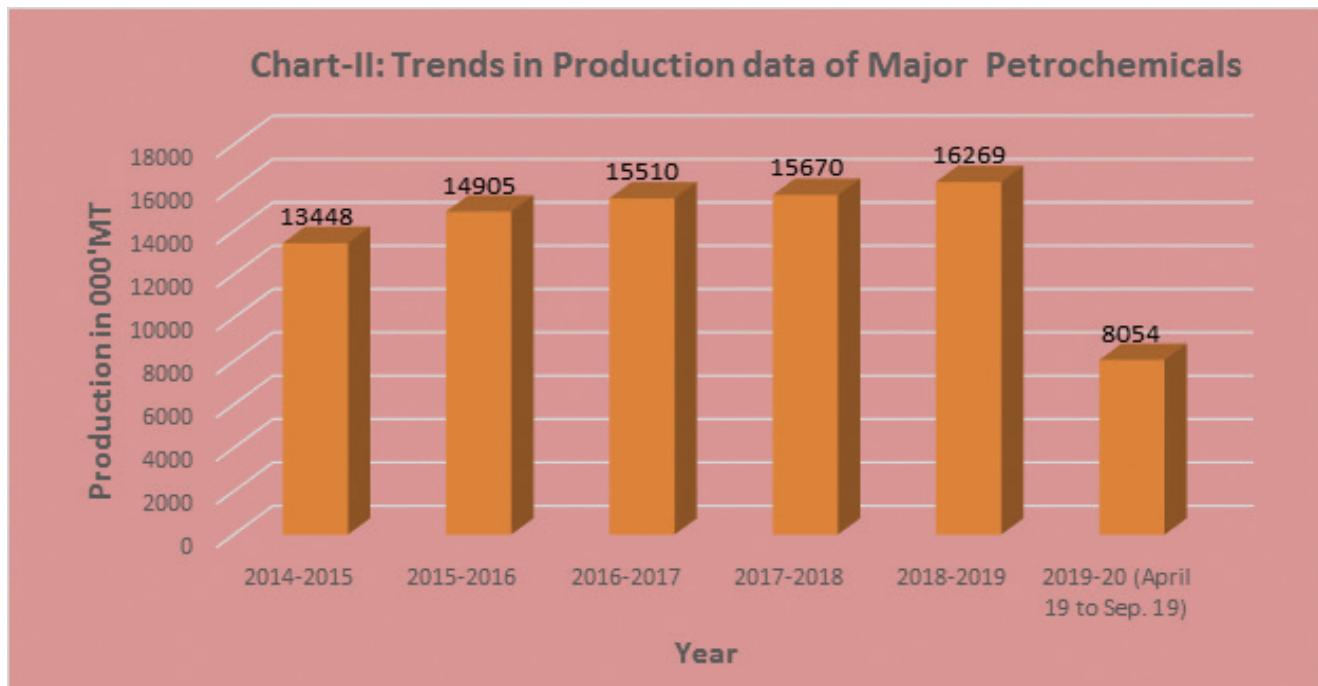
**2.7** Petrochemicals, which comprise of plastic and a host of other chemicals, are downstream hydrocarbons derived from crude oil and natural gas. The value additions in the petrochemicals chain offer immense possibilities and cater to the need of textiles and clothing, agriculture, packaging, infrastructure, 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.

**2.8** There are 11 cracker complexes in operation in the country with a combined annual Ethylene capacity of 7.27 million MT.

S. No.	Owner	No. of Crackers	Feedstock	Total Design Capacity (KTPA Ethylene)
1	GAIL	2	Gas	860
2	HPL	1	Naphtha	700
3	IOCL	1	Naphtha	857
4	RIL	5	Gas + Naphtha	3580
5	BCPL	1	Gas + Naphtha	220
6	OPaL	1	Gas + Naphtha	1060
	Total	11		7277

**2.9** From Table II, it may be seen that the production of polymers account for around 59% of the total production of Basic Major Petrochemicals for the year 2019-20 (upto September 2019).The production of Basic Major Petrochemicals in 2019-20 (upto September 2019) is 8,054 thousand

MT. The CAGR in production of major petrochemicals during the period 2014-15 to 2018-19 is 4.88%. The trend in the production of selected major petrochemicals has been depicted in Chart II.



### **Index of Industrial Production**

- 2.10** The weight of chemical and chemical products (Industry Division 20 of NIC 2008) is 7.87 out of 100 in the Index of Industrial Production (Base Year: 2011-12). The General Index for the month of September 2019 stands at 123.30, which is 4.27% lower as compared to the level in the month of September 2018. The cumulative growth of general index for the period October-September 2018-19 over the corresponding period of the previous year 2017-18 stands at 1.93%. The Index of Industrial Production for the manufacturing sector for the month of September 2019 stands at 126.50, which is 3.87% lower as compared to the level in the month of September 2018, whereas the Index of Industrial Production for the Chemicals and Chemical products for the month of September 2019 stands at 118.60 which is 1.41% lower as compared to the level in the month of September 2018. The cumulative growth in manufacturing sector during October-September 2018-19 over the corresponding period of 2017-18 has been 1.71% while cumulative growth in Chemical & Chemical products during October-September 2018-19 over the corresponding period of 2017-18 has been 0.36%. The month-wise Index of Industrial production during 2017-18 and 2018-19 is depicted in Table III.

**Table III: Index of Industrial Production**

Period	Index of Industrial Production			(Base : 2011-12=100)
	Chemicals and chemical products	Manufacturing	General	
Weight	7.87	77.63	100.00	
Oct-17	116.90	123.70	122.50	
Nov-17	119.10	127.70	125.80	
Dec-17	119.00	132.00	130.60	
Jan-18	120.10	133.80	132.30	
Feb-18	110.90	129.70	127.40	
Mar-18	126.90	140.20	140.30	
Apr-18	112.90	123.10	122.60	
May-18	119.90	130.10	129.60	
Jun-18	116.50	128.60	127.70	
Jul-18	116.40	127.60	125.70	
Aug-18	126.00	130.60	128.00	
Sep-18	120.30	131.60	128.80	
Oct-18	118.0	133.90	132.80	
Nov-18	110.90	126.80	126.10	
Dec-18	122.40	135.80	133.90	
Jan-19	123.70	135.50	134.40	
Feb-19	111.60	129.30	127.60	
Mar-19	128.90	144.60	144.10	
Apr-19	116.10	126.20	126.50	
May-19	118.90	135.80	135.40	
June-19	116.00	129.00	129.30	
July-19	124.60	133.40	131.50	
Aug-19	120.30	128.50	126.20	
Sep-19	118.60	126.50	123.30	

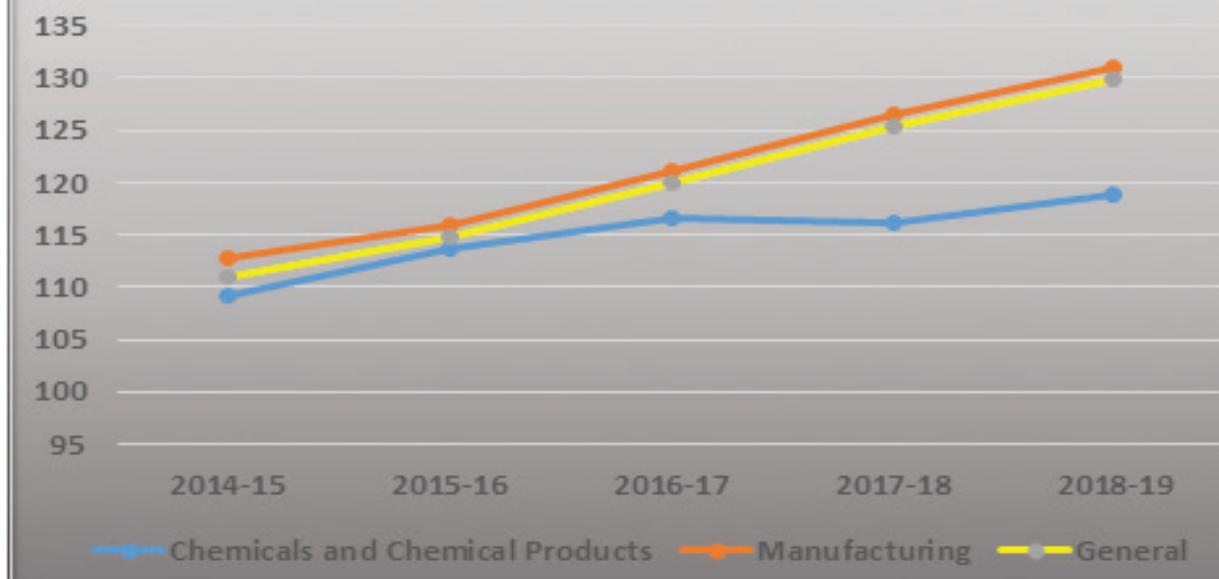
Source: Central Statistics Office (CSO), Ministry of Statistics and Programme Implementation

- 2.11** The behaviour of IIP of chemicals and chemical products vis-à-vis General IIP and IIP of manufacturing from 2014-15 to 2018-19 is depicted in Table IV and Chart III. The Average annual growth rate during the period 2014-15 to 2018-19 in Chemicals and Chemicals Products based on IIP is 2.17% while it is 4.05% for manufacturing sector.

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

(Base: 2011-12 =100)

Particulars	Weight	2014-15	2015-16	2016-17	2017-18	2018-19	CAGR
Chemicals and Chemical Products	<b>7.87</b>	109.20	113.70	116.50	116.10	119.00	2.17
Manufacturing	<b>77.63</b>	112.70	115.90	121.00	126.60	131.50	3.93
General	<b>100.00</b>	111.00	114.70	120.00	125.30	130.10	4.05

*Sources: Website of Ministry of Statistics and Programme Implementation***Chart-III: Annual Average Indices of Industrial Production****Whole Sale Price Index (WPI)**

- 2.12** The annual rate of inflation based on monthly WPI (Base Year: 2011-12) released by the Office of the Economic Advisor, for ‘all commodities’ stood at 0.33% for the month of September 2019 over September 2018. The index for ‘Food Articles’ group increased by 7.47%, decline for ‘Manufactured Products’ by 0.42% and decline for ‘Chemicals & Chemical products’ by 1.42% during the same period. The weight of Chemicals & Chemical products in the WPI is 6.47 out of all commodities weight of 100. The month-wise Index of WPI from October 2017 to September 2019 is given in Table V.

**Table V: Whole Sale Price Index**

(Base Year: 2011-12 =100)

Month	All Commodities	Food Articles	Manufactured Products	Chemicals & Chemical Products
Oct-17	115.6	148.0	113.7	111.9
Nov-17	116.4	151.1	114.0	112.4
Dec-17	115.7	144.1	114.2	113.2
Jan-18	116.0	140.8	114.9	114.1
Feb-18	116.1	137.9	115.5	115.1
Mar-18	116.3	137.3	115.8	115.5
Apr-18	117.3	139.8	116.3	116.3
May-18	118.3	140.3	116.9	117.4
Jun-18	119.1	141.8	117.3	117.6
Jul-18	119.9	144.8	117.7	118.3
Aug-18	120.1	144.8	117.8	118.8
Sep-18	120.9	144.5	118.4	119.6
Oct-18	122.0	145.9	118.9	120.5
Nov-18	121.6	146.2	118.8	121.2
Dec-18	119.7	143.5	118.3	120.0
Jan-19	119.2	144.2	118.1	119.6
Feb-19	119.5	143.7	118.2	119.7
Mar-19	119.9	144.5	118.3	119.6
Apr-19	121.1	148.8	118.5	119.9
May-19	121.6	150.6	118.6	119.8
Jun-19	121.5	152.2	118.5	119
Jul-19	121.3	154.3	118	118.4
Aug-19	121.5	156.1	117.8	118.2
Sep-19	121.3	155.3	117.9	117.9

Source :Office of the Economic Advisor (<http://eaindustry.nic.in>)

- 2.13** Table VI and Chart IV below show the annual WPI for chemicals & chemical products vis-à-vis all commodities, food articles and manufactured products during the years 2014-15 to 2018-19. The Average annual growth rate during the period 2014-15 to 2018-19 in Chemicals and Chemicals Products based on WPI is 0.64% while it is 1.47% for manufactured products.

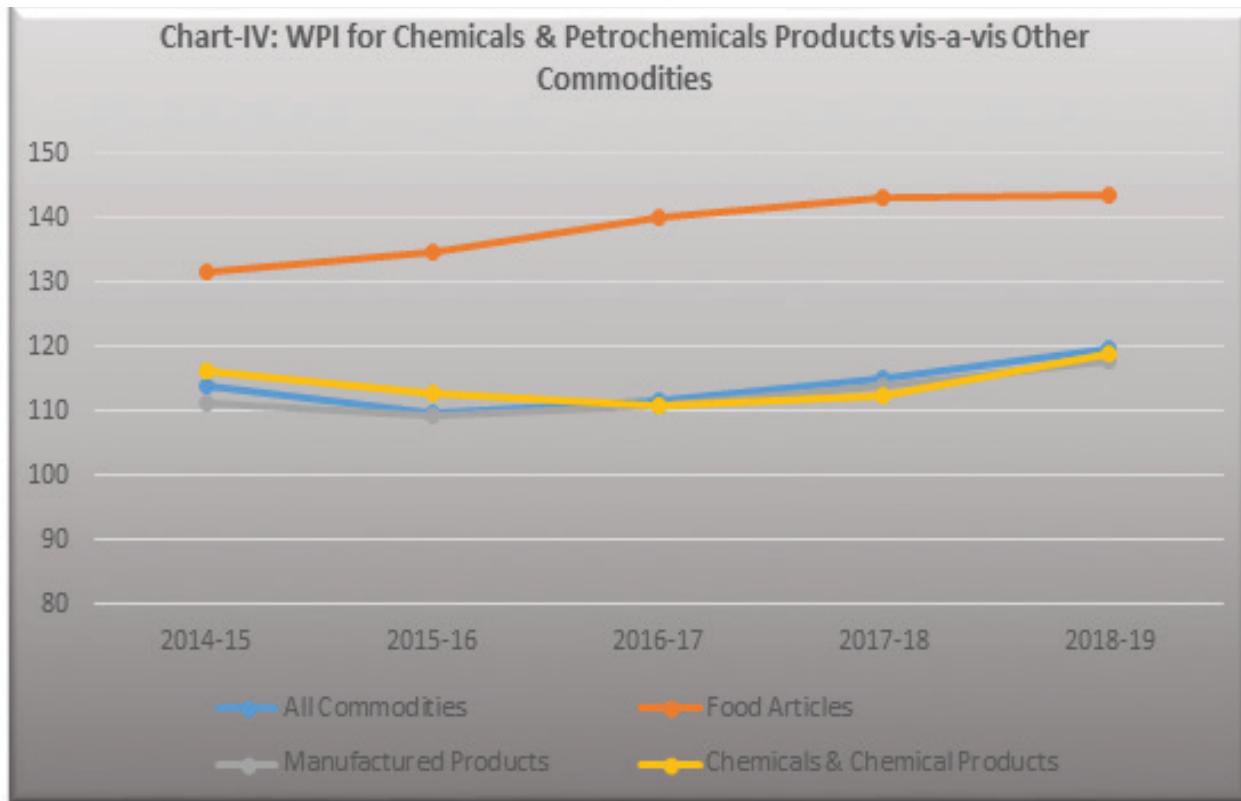
**Table VI: Annual Average (April - March) Indices of Wholesale Price**

(Base Year: 2011-12 = 100)

Description	Weight	2014-15	2015-16	2016-17	2017-18	2018-19	CAGR (%)
All Commodities	100.00	113.90	109.70	111.60	114.90	119.80	1.27
Food Articles	15.26	131.50	134.90	140.30	143.20	143.70	2.24
Manufactured Products	64.23	111.20	109.20	110.70	113.80	117.90	1.47
Chemicals & Chemical Products	6.47	116.10	112.60	111.00	112.50	119.10	0.64

Source :Office of the Economic Advisor (<http://eaindustry.nic.in>)

- 2.14** Table VII shows WPI of different commodity groups within Chemicals & Chemical products group during the years 2014-15 to 2018-19.



**Table VII: WPI of Chemicals & Chemical Products**

(Base year: 2011-12=100)

<b>DESCRIPTION</b>	<b>WEIGHT</b>	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Chemicals and Chemical Products	6.47	116.10	112.60	111.00	112.50	119.10
Basic Chemicals	1.43	114.10	105.80	104.70	111.20	125.00
Fertilizers and Nitrogen Compounds	1.48	118.90	121.40	118.70	117.10	121.10
Plastic and synthetic rubber in primary form	1.00	124.40	115.30	113.70	113.00	117.60
Pesticides and Other Agrochemical Products	0.45	120.70	122.60	116.80	115.30	120.20
Paints, Varnishes and Similar Coatings, Printing Ink and Mastics	0.49	111.90	109.80	108.50	108.60	112.70
Soap and Detergents, Cleaning and Polishing Preparations, Perfumes and Toilet Preparations	0.61	112.40	112.30	113.70	115.20	116.70
Other Chemical Products	0.69	111.80	108.40	106.50	110.10	116.60
Man-Made Fibres	0.30	100.90	93.30	94.10	97.50	104.00

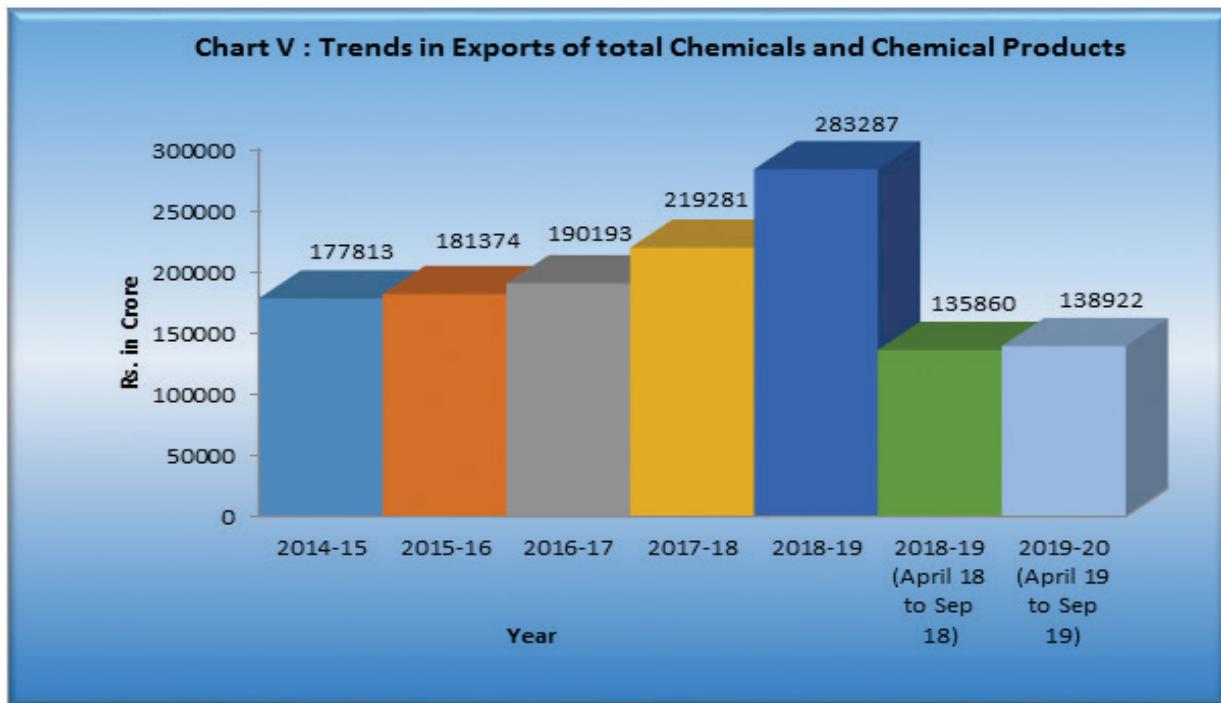
Source :Office of the Economic Advisor (<http://eaindustry.nic.in>)**INTERNATIONAL TRADE**

- 2.15** Trends in exports and imports of Chemicals and Chemical Products (excluding Pharmaceutical Products and Fertilizers) during 2014-15 to 2018-19 are given in Table VIII (A & B) and Chart V and Chart VI.

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

<b>A. Exports</b> <i>(Value In Rs. crore)</i>									
HS Code	Commodity	2014-15	2015-16	2016-17	2017-18	2018-19	CAGR (%)	2018-19 (April 18 to Sep 18)	2019-20 (April 19 to Sep 19)
	Total National Exports	1896445	1716384	1849434	1956515	2307726	5.03	1121475	1114603
28	INORGANIC CHEMICALS	8749	7913	9138	11175	14056	12.58	6980	6046
29	ORGANIC CHEMICALS	73069	75295	78386	95381	127567	14.95	60932	63377
32	TANNING OR DYEING	17206	16165	17189	18951	23124	7.67	11232	12288
38	MIS-CELLANEous CHEMICAL PRODUCTS.	19432	20083	21792	25080	32397	13.63	14588	17459
39	PLASTIC AND ARTICLES THEREOF.	31022	34381	35502	40928	56079	15.95	27101	25517
4002	SYNTHETIC RUBBER AND FACTICE	379	452	480	571	739	18.13	383	369
54	MAN-MADE FILAMENTS.	14621	13460	13334	13984	16018	2.31	7912	7934
55	MAN-MADE STAPLE FIBRES.	13334	13625	14373	13212	13308	-0.05	6733	5932
<b>A:Total Chemicals and Petrochemical Products</b>		<b>177813</b>	<b>181374</b>	<b>190193</b>	<b>219281</b>	<b>283287</b>	<b>12.35</b>	<b>135860</b>	<b>138922</b>
<b>% share in total export</b>		9.4	10.6	10.3	11.2	12.3		12.1	12.5

Source: Directorate General of Commercial Intelligence and Statistics (DGCIS) Kolkata.



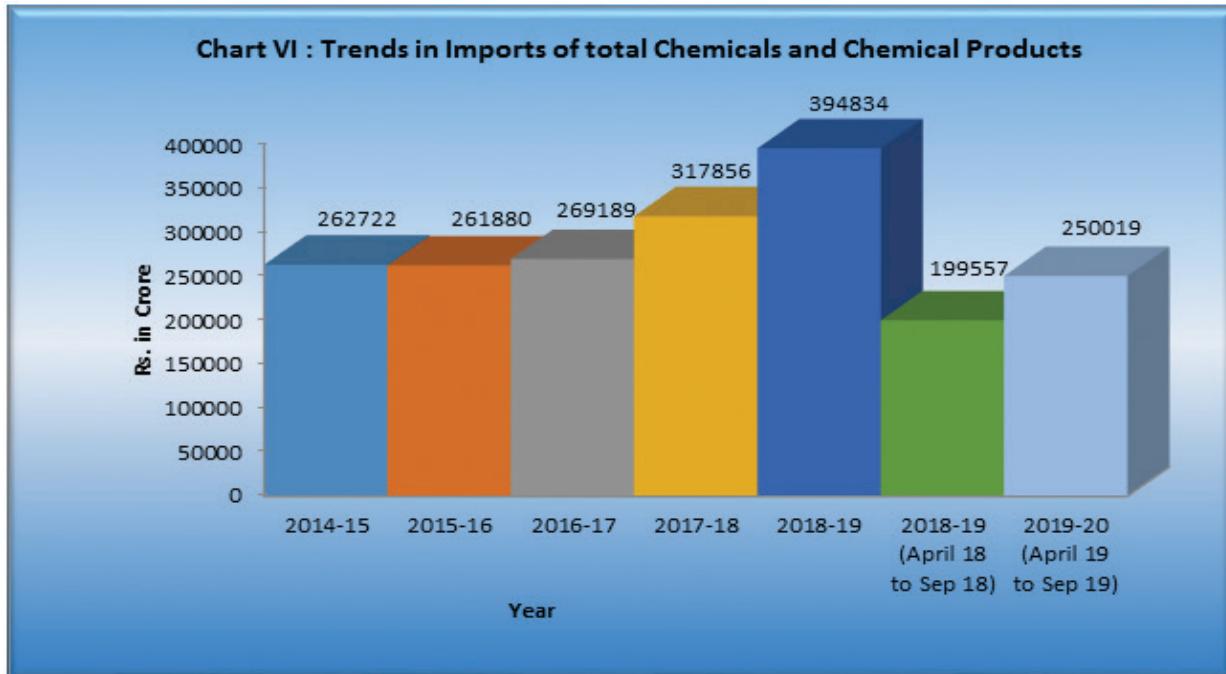
## B. Imports

( Value in Rs. crore)

HS Code	Commodity	2014-15	2015-16	2016-17	2017-18	2018-19	CAGR (%)	2018-19 (April 18 to Sep 18)	2019-20 (April 19 to Sep 19)
	Total National Imports of which	2737087	2490306	2577675	3001033	3594675	7.05	1794884	1734903
28	INORGANIC CHEMICALS	31413	33170	31654	38927	53237	14.10	27054	23512
29	ORGANIC CHEMICALS	108320	101986	103798	123761	156552	9.64	79718	75943
32	TANNING OR DYEING	9821	10467	11186	12995	15460	12.01	7745	7769
38	MISC-ELLANEous CHEMICAL PRODUCTS.	25494	27207	30642	35521	41748	13.12	20714	21972
39	PLASTIC AND ARTICLES THEREOF.	71398	74566	77573	89768	106591	10.54	53592	52849
4002	SYNTHETIC RUBBER AND FACTICE	6697	5205	5654	6687	7896	4.20	4020	3255
54	MAN-MADE FILAMENTS.	5042	4879	4856	5538	6843	7.94	3241	3963
55	MAN-MADE STAPLE FIBRES.	4539	4401	3826	4658	6508	9.43	3472	3670
<b>B: Total Chemicals and Petrochemical Products</b>		<b>262722</b>	<b>261880</b>	<b>269189</b>	<b>317856</b>	<b>394834</b>	<b>6.56</b>	<b>199557</b>	<b>250019</b>
	% share in total import	9.6	10.5	10.4	10.6	11.0		11.1	14.4

Source: Directorate General of Commercial Intelligence and Statistics (DGCIS) Kolkata.

2.16



As per export and import figures for the years 2018-19 and 2019-20 (upto september 2019), exports of chemical and chemical products (excluding pharmaceutical products and fertilizers) contributed 12.5% of total export in the year 2019-20 (upto September 2019) compared to 12.1% in the year 2018-19 during the corresponding period. Imports contributed 14.4% of total imports in 2019-20 (upto September 2019) which was 11.1% in the year 2018-19 during the corresponding period. CAGR in export of total chemicals and chemicals products (excluding pharmaceutical & fertilizer products) during the period 2014-15 to 2018-19 is 12.35% while CAGR of total national export is 5.03%. CAGR in import of total chemicals and chemicals products (excluding pharmaceutical & fertilizer products) during the period 2014-15 to 2018-19 is 6.56% while CAGR of total national import is 7.05%.

- 2.17** India ranks 6<sup>th</sup> in the world and 4<sup>th</sup> in Asia In chemicals & petrochemicals sector. The market size of the chemical sector in India for the year 2018-19 is estimated to be US\$ 178 billion, which is expected to reach US\$ 304 billion by 2024-25 at annual growth rate of 9.3%. (Source: FICCI & Cefic Report)

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**Chapter – 3****SCHEMES AND OUTLAYS OF THE DEPARTMENT**

- 3.1** The Department of Chemicals and Petrochemicals has been implementing three Central Sector Schemes viz New Schemes of Petrochemicals (Plastic Parks Scheme & Scheme of Centres of Excellence) and Chemical Promotion & Development Schemes (CPDS) and the Assam Gas Cracker Project (AGCP). In addition, the Department is also implementing other schemes for funding its Secretariat expenses; support to Central Institute of Plastic Engineering & Technology (CIPET), which is engaged in academic, technology support, research and skill development activities; Institute of Pesticides Formulation Technology (IPFT) and Bhopal Gas Leak Disaster (BGLD).
- 3.2** The Assam Gas Cracker Project (AGCP) has been implemented by M/s Brahmaputra Cracker and Polymer Limited (BCPL), to produce about 2.8 lakh MT polymers per annum. The final revised cost of the project approved by the Hon'ble Minister (C&F) in July, 2016, was Rs. 9965 crore comprising capital subsidy of Rs. 5,239.45 crore, debt of Rs. 3,307.88 crore and equity of Rs. 1,417.67 crore. Out of total capital subsidy of Rs. 5,239.45 crore, Rs. 5,090.00 crore has been released till November, 2019. Balance capital subsidy has been sought in supplementary Demands for Grants during 2019-20. The Plant/Project has been commissioned on 2<sup>nd</sup> January, 2016 and dedicated to the nation on 05.02.2016 by Hon'ble Prime Minister. The Department has been closely monitoring the Plant operations. A Coordination Committee of stakeholders, co-chaired by Secretary (Chemicals and Petrochemicals) and Secretary (Petroleum and Natural Gas), was constituted on the recommendations of Standing Committee on Chemicals and Fertilizers to resolve any operational issues faced by BCPL, which has met thrice so far. Recently, the administrative control of BCPL has been transferred to Ministry of Petroleum and Natural Gas as per approval of CCEA vide OM No. 45012/10/2014-PC-I (FTS:6169) dated 01.01.2020.
- 3.3** The larger objective of the Plastic Parks scheme is to contribute to the economy by increasing investment, production, exports in the Petrochemicals sector alongwith generation of employment.
- 3.4** Schemes of Centres of Excellence provides Grant-in-aid to identified research institute(s), with the aim of improving the existing petrochemicals technology and research in the country and to promote development of new applications of polymers and plastics.
- 3.5** Under the Chemicals Promotion Development Scheme (CPDS), the Department provides Grant-in-aid to various organizations/industry associations, etc. to organise workshops, seminars and for conducting studies/ surveys for the creation and dissemination of knowledge for the development of chemical and petrochemical sectors.

- 3.6** The Department provides budgetary support to CIPET for strengthening its civil and technical infrastructure, research and development capacities and academic and training initiatives and also for construction of hostels and setting up new CIPET centres.
- 3.7** IPFT, located at Gurugram is an autonomous body under the Department of Chemicals and Petrochemicals with mandate to develop environment and user friendly pesticides formulation technologies for a safer environment and also develop methods for the detection and analysis of pesticides and their residues.
- 3.8** Office of the Welfare Commissioner of Bhopal is entrusted with the work of disbursement of compensation as well as ex-gratia to Bhopal Gas victims. Budget is provided for settlement of ex-gratia cases.
- 3.9** Expenditure under the Secretariat head is of contingent nature for payment of salaries and office expenses etc. of the Department.

**Table No. IX: Scheme-wise Outlay**

(Value in Rs. crore)

Sr. No.	Schemes	BE 2019-20	RE 2019-20	BE 2020-21
<b>I</b>	<b>Central Sector Schemes</b>			
1.	Assam Gas Cracker Project (AGCP)	100.00	200.00	0.01
2.	New Schemes of Petrochemicals	31.65	31.65	53.79
3.	Chemical Promotion & Development Schemes (CPDS)	3.00	3.00	3.50
	<b>Total of I</b>	<b>134.65</b>	<b>234.65</b>	<b>57.30</b>
<b>II</b>	<b>Other Central Expenditure (Sectt./BGLD/ ABs/ PSUs)</b>			
1.	Secretariat	19.58	18.08	19.99
2.	Bhopal Gas Lead Disaster (BGLD)	21.42	27.95	31.80
3.	Central Institute of Plastics Engineering & Technology (CIPET)	80.00	81.50	98.25
4.	Institute of Pesticides Formulation Technology (IPFT)	8.00	8.00	11.00
	<b>Total of II</b>	<b>129.00</b>	<b>135.53</b>	<b>161.04</b>
	<b>Grand Total (I+II)</b>	<b>263.65</b>	<b>370.18</b>	<b>218.34</b>

**Table X: Expenditure 2018-19 & 2019-20**

(Rs. in crore)

Sr. No.	Name of Scheme	BE 2018-19	RE 2018-19	Exp. 2018-19	% of Exp. w.r.t. RE 2018-19	BE 2019-20	RE 2019-20	Exp as on 31.12.2019	% of Exp. w.r.t. BE 2019-20
I	<b>Central Sector Schemes</b>								
1.	Assam Gas Cracker Project (AGCP)	0.01	200.00	200.00	100.00	100.00	200.00	100.00	100.00
2.	New Schemes of Petrochemicals	55.50	19.00	19.00	100.00	31.65	31.65	23.01	72.70
3.	Chemical Promotion & Development Schemes (CPDS)	3.00	2.50	2.39	95.60	3.00	3.00	1.93	64.33
	<b>Total of I</b>					<b>134.65</b>	<b>234.65</b>	<b>124.94</b>	<b>92.79</b>
II	<b>Other Central Expenditure (Sectt/ BG LD/ABs/PSUs)</b>								
1.	Secretariat	21.68	18.69	18.00	96.31	19.58	18.08	13.95	71.25
2.	Bhopal Gas Lead Disaster (BG LD)	28.32	21.30	20.98	98.50	21.42	27.95	14.99	69.98
3.	Central Institute of Plastics Engineering & Technology (CIPET)	83.64	72.00	72.00	100.00	80.00	81.50	80.00	100.00
4.	Institute of Pesticides Formulation Technology (IPFT)	7.50	7.50	7.50	100.00	8.00	8.00	7.49	93.62
	<b>Total of II</b>					<b>129.00</b>	<b>135.53</b>	<b>116.43</b>	<b>90.26</b>
	<b>Grand Total (I+II)</b>					<b>263.65</b>	<b>370.18</b>	<b>241.37</b>	<b>91.55</b>

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**Chapter – 4**

## **PETROLEUM, CHEMICAL AND PETROCHEMICAL INVESTMENT REGIONS (PCPIRs)**

### **Background**

- 4.1** Four Petroleum, Chemical and Petrochemical Investment Regions (PCPIRs) are being implemented 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.
- 4.2** The PCPIRs were conceptualized in a cluster approach to promote Petroleum, Chemical and Petrochemical sectors in an integrated and environment 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, in the form of Viability Gap Funding (VGF), as well as budget support for creation of these linkages wherever required.
- 4.5** The policy provides that each PCPIR would have a refinery / petrochemical feedstock company as an Anchor Tenant.
- 4.6** The State Government notifies a nodal Department or agency for coordinating the linkages. A Management Body constituted by the State Government for each PCPIR, under relevant legislation, is responsible for the development and management of the PCPIR.

- 4.7** Once fully established, these four PCPIRs are expected to attract investment of around Rs. 7.63 lakh crore. As per data available from State Governments, investments worth Rs. 2.12 lakh crore approximately have been made / committed in these regions. The four PCPIRs are expected to generate employment for around 33.83 lakh persons. Around 3.50 lakh persons have been employed in direct and indirect activities related to PCPIRs.
- 4.8** Department of Chemicals and Petrochemicals (DCPC) initiated work on preparation of a Perspective Plan for the petrochemical industry. In this regard, a Committee co-chaired by Secretary, Ministry of Petroleum & Natural Gas and Secretary, Department of Chemicals and Petrochemicals has been constituted to examine the whole issue of petrochemical demand & supply over next 15 to 20 years.
- 4.9** A Committee has also been constituted in November, 2019 under the Chairmanship of Principal Secretary (Industries) Govt. of Andhra Pradesh along with the members of Govt. of Odisha, Govt. of Gujarat, Govt. of Tamil Nadu and representatives from FICCI, CII, ICC, AIPMA and CIPET to recommend the amendments in PCPIR Policy, 2007.
- 4.10** A “Summit on Global Chemicals & Petrochemicals Manufacturing Hubs in India” was held on 11-12 November, 2019 at Mumbai with an objective to highlight the opportunities in the newly developing growth regions and promote the Indian PCPIRs to enable them to emerge and establish themselves as World’s next manufacturing hubs.



Summit on Global Chemicals & Petrochemicals Manufacturing Hubs in India

#### 4.11 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	640.00	284.15	256.83
Processing Area (Sq.kms.)	248.00	270.00	123.00	104.00
Anchor Tenant	ONGC Petro Additions Limited (OPaL)	Yet to be finalized	Indian Oil Corporation Ltd. (IOCL)	TIDCO is awaiting the revival of proposed Anchor Tenant of Nagarjuna Oil Corporation Limited / new project to be set up in this location.
Refinery / Cracker capacity in MMTPA	Cracker: Ethylene: 1.1 Propylene: 0.6	Yet to be finalized	15 (Greenfield refinery).	
Anchor Project Status	Commissioned	Yet to be finalized	Commissioned in February, 2016.	
Amount of approved infra. Projects (Rs. crore)*	NA	18,731.00	13,634.00	13,354.00
Gol share in form of VGF (Rs. crore)	80.50	1206.80	716.00	1143.00 budgetary support-1500)
Total proposed investments (Rs. crore)	50,000.00	3,43,000.00	2,77,734.00	92,500.00
Investments made (Rs. Crore)	1,12,082.00	46,729.38- Committed & 13845.04 – Actual made so far	45,000.00	8,100.00
Projected employment (No.)*	8,00,000	11,98,000	6,48,000	7,37,200
Employment generated (No.)	1,80,000	1,18,675	38,260	13,950
Status of Master Plan notification	Development Plan sanctioned.	Field Studies, village level consultations completed. Once the Anchor unit finalizes location, configuration and capacity of the Cracker Complex etc., Master Plan will be finalized.	Preparation of Master Plan is in process.	Will be taken up after formation of PCPIR Management Board.
Status of EIA	Environmental Clearance & Coastal Region Zone (CRZ) clearance received.	Environmental Clearances, EIA Studies, Collection of Baseline Data etc completed. Once the Master Plan finalized based on location, configuration and capacity of the Cracker Complex the public hearing will be conducted and will be processed for Environmental Clearance.	To be received from MoEFF&CC. EIA Study is in process.	Will be taken up after formation of PCPIR Management Board.

\* At the approval stage of the projects.

# Data as on 18.12.2018

### Status of Implementation of PCPIRs

#### 4.12 Gujarat PCPIR

- Gujarat PCPIR has been notified under the Gujarat Special Investment Region (GSIR) Act, 2009. It is strategically positioned to the east of Delhi-Mumbai Industrial Corridor (DMIC) and near the western coastline of India.
- The Gujarat Infrastructure Development Corporation (GIDC) has made an investment of around Rs. 16,959 crore for infrastructure development in the PCPIR.
- The Anchor Tenant, viz. M/s ONGC Petro additions Ltd. (OPaL), has spent around Rs. 27,700 crore on the project. The project has been commissioned in 1<sup>st</sup> week of March, 2017.
- Ministry of Environment, Forest and Climate Change (MoEF&CC) has granted Environment and Coastal Region Zone (CRZ) clearance on 14.09.2017 for an area of 44445.18 hectare for development of Gujarat PCPIR. Environmental Clearances & Coastal Region Zone have been received from MoEF&CC.

#### 4.13 Andhra Pradesh PCPIR (data as on 18.12.2018)

- Special Development Authority (SDA) was formed by Government of Andhra Pradesh in May, 2008 to implement the PCPIR.
- AP PCPIR covers 06 existing SEZs. The committed investment in AP PCPIR is around Rs. 46729.38 crore. Investment of Rs. 1919.13 crore appx. have been made on infrastructure development.
- Hindustan Petroleum Corporation Limited (HPCL) and GAIL have conducted pre-feasibility study. Discussions are going on between Government of Andhra Pradesh and M/s HPCL & GAIL on Viability Gap Funding and other support / incentives.
- Road, rail link, water supply, effluent treatment and marine outfall projects are under different stages.

#### 4.14 Odisha PCPIR

- Detailed Master Plan for industrial development of PCPIR area shall be prepared by PCPIR Authority. Industrial Development Corporation of Odisha (IDCO) has selected a consultant for preparation of Master Plan of the region. Draft detailed Master Plan has already been completed.
- Indian Oil Corporation's 15 MMTPA Refinery at Paradeep was commissioned in February, 2016. IOCL has commissioned 730 Kilo Tonne per Annum (KTA) Polypropylene Unit which can be utilized in the proposed Plastic Park at the same PCPIR location. IOCL has also planned to set up Mono-ethyle Glycol, Paraxylene-PTA & Petcoke gasification units for availability of raw materials in time bound and cost effective manner in Paradeep PCPIR.
- Detailed Environmental Impact Assessment (EIA) is being undertaken by Environmental

Protection Training and Research Institute (EPTRI), Hyderabad. This study will ascertain the actual number of displacement. Accordingly, rehabilitation will be taken up as per Odisha Resettlement and Rehabilitation Policy, 2006. Terms of Reference (ToR) have been received from Ministry of Environment, Forest and Climate Change (MoEF&CC). Detailed studies are underway by the consultant on points raised by MoEF&CC.

#### **4.15 Tamil Nadu PCPIR**

- An area of about 246.90 Sq. Kms in Cuddalore and Nagapattinam district have been notified as PCPIR under the Tamil Nadu Town and Country Planning Act 1971 in January, 2016. Government of Tamil Nadu in its order dated 20.06.2017 has notified the PCPIR area as a Local Planning Area under the Tamil Nadu Town and Country Planning Act, 1971.
- In-principle approval was obtained from the Govt. of Tamil Nadu on 15.02.2018 for formation of management board.
- Tamil Nadu Industrial Development Corporation Limited (TIDCO) is awaiting the revival of proposed Anchor Tenant of Nagarjuna Oil Corporation Limited /new project to be set up in this location.
- Master Plan and EIA study will be taken up after formation of TN PCPIR Management Board.

#### **4.16 PCPIR Projects for National Infrastructure Pipeline (NIP)**

- Ministry of Finance, Department of Economic Affairs (DEA) has set up the Task Force to draw up the National Infrastructure Pipeline (NIP) from FY 2019-20 to FY 2024-25. The Task Force has a mandate to identify the technically feasible & financially/economically viable infrastructure projects that can be initiated in F.Y. 2019-20 onwards. Accordingly, all 4 PCPIRs were asked to submit the said information on projects to be included in the National Infrastructure Pipeline in their prescribed format. The Projects information received from State of Odisha and Gujarat are as follows:

1. The Odisha PCPIR has submitted the information for 14 projects to be included in NIP. The total estimated cost for these 14 projects is around Rs.18,843 crore and it covers the areas of Road, Airport, Water supply, Electricity Distribution etc.
2. The Gujarat PCPIR has submitted the information for 05 projects to be included in NIP. The total estimated cost for these 05 projects is around Rs. 3758 crore and it covers the areas of Road, Bridges, Water supply, Effluent treatment/disposal etc.

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**Chapter – 5**

## **NEW SCHEMES OF PETROCHEMICALS**

The Department of Chemicals and Petrochemicals is implementing the following 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

### **National Awards for Technology Innovation in Petrochemical and downstream Plastic Processing Industry**

**5.1** 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 Plastics Engineering and Technology (CIPET) is entrusted with the task of seeking and short-listing nominations for the scheme. The Department has been providing a grant-in-aid to CIPET each year for administering the award scheme. Presently, the Scheme is being operated as sub-scheme of the Chemicals Promotion and Development Scheme.

**5.2** The National Awards for Technology Innovation are given in various categories for innovation in areas such as Polymeric Materials, Polymeric Products, Polymer Waste Management and Recycling Technology and related areas. In a ceremony held on 24<sup>th</sup> January, 2019 at Chennai, the Hon'ble Vice-President presented the 8<sup>th</sup> National Awards. The Awards covered six categories of New Polymers, New Applications of Polymer in various fields, viz., New Polymer Processing Machines including Energy Efficiency, Innovation in Polymer Waste Management and Recycling, Green/ Bio-degradable Polymer, Innovation in Packaging covering 22 sub-categories.

### **Setting up of Centres of Excellence (CoE) in Polymer Technology**

**5.3** 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. In phase-I of the Scheme implemented up to the year 2017, the Government of India provided financial support to the extent of maximum of 50% of the total cost of the project subject to an upper limit of Rs. 6 Crore over a period of 3 years. The Scheme was extended upto year 2020 with modified guidelines in 2016-17, which aim at promoting applied research and technology transfer from Lab to Industry and funding of Rs 5 crore per CoE.

- 5.4** So far eight Centres of Excellence (CoE) within the premises of reputed educational/research institutes approved and established as per following details:-

S.No	Name of the institute where Centre of Excellence (CoE) has been established	Title of Centre of Excellence	Total Project Cost (Rs in crore)	Govt grant-in-aid approved (Rs in crore)
1	National Chemical Laboratory, Pune	Sustainable Polymer Industry to research & innovation	12.00	6.00
2.	Central Institute of Plastics Engineering & Technology, Chennai	Green Transport Network (GREET)	18.98	6.00
3.	Central Institute of Plastics Engineering & Technology, Bhubaneswar	Sustainable Green Materials	15.045	6.00
4.	Indian Institute of Technology, Delhi	Advanced Polymeric Materials	12.00	6.00
5.	Indian Institute of Technology, Guwahati	Sustainable Polymers (Sus-Pol)	14.74	6.00
6.	Indian Institute of Technology, Roorkee	Process Development, Wastewater Management in Petrochemical Industries	13.13	4.40
7.	Central Institute of Plastics Engineering & Technology, Bhubaneswar	Bio-engineered Sustainable Polymeric Systems	10.01	5.00
8.	National Chemical Laboratory, Pune	Specialty Polymers for Customized, Additive Manufacturing	5.60	2.80

### Setting up of Plastic Parks

- 5.5** 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.
- 5.6** Under the scheme, the 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.

- 5.7** Under the Scheme, 6 Plastic Parks have been approved in the States of Madhya Pradesh (two), Odisha, Jharkhand, Tamil Nadu and Assam. These parks are under various stages of implementation as per following details:

Location of Plastic park	Final Approval	Land area (Acre)	Total Project Cost (Rs cr)	Total GoI grant-in-aid approved for project (Rs cr)
Tamot, Madhya Pradesh	09.10.2013	122	108.00	40.00
Jagatsinghpur, Odisha	09.10.2013	120	106.78	40.00
Tinsukia, Assam	21. 02.2014	173	93.65	40.00
Deoghar, Jharkhand	20.12.2018	93	67.33	33.67
Bilua, Madhya Pradesh	20.12.2018	93	68.72	34.36
Thiruvallur, Tamil Nadu	05-09-2019	257	216.92	40.00

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**Chapter – 6****INTERNATIONAL CONVENTIONS AND TREATIES****Chemical Weapons Convention (CWC)**

- 6.1** India is a signatory and party to the Chemical Weapons Convention (CWC), 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 14<sup>th</sup> day of January 1993. India, pursuant to provisions of the Convention enacted the Chemical Weapons Convention Act, 2000. As on date, 193 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.

**Rotterdam Convention**

- 6.2** Rotterdam Convention on Prior Informed Consent Procedures (PIC) that entered into force on 24<sup>th</sup> February, 2004, is a legally binding instrument, which was adopted on 10<sup>th</sup> September 1998 by a Conference of Plenipotentiaries in Rotterdam. India acceded to the Convention on 24.05.2006.
- 6.3** The Convention seeks to promote shared responsibility and cooperative efforts among State Parties in the international trade of certain hazardous chemicals in order to protect human health and the environment from potential harm. It also seeks to contribute to the environmentally sound use of these hazardous chemicals by facilitating information exchange about their characteristics, providing for a national decision making process on their import and export, and by disseminating these decisions to the Parties.
- 6.4** Each Party is required to designate a National Authority for performing the administrative functions required under the Convention. Department of Chemicals and Petrochemicals is the Designated National Authority (DNA) for industrial chemicals and Department of Agriculture and Co-operation is the DNA for pesticides.
- 6.5** There are a total of 52 chemicals listed in Annexure III, 35 pesticides (including 3 severely hazardous pesticide formulations), 16 industrial chemicals, and 1 chemical in both the pesticide and the industrial chemical categories. The parties are required to communicate their import policy for these chemicals to the PIC Secretariat. The exporting Party has to provide the export

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

### Stockholm Convention

- 6.6** The Stockholm Convention, ratified by India on 13.01.2006, is a global treaty to protect human health and environment from Persistent Organic Pollutants (POPs). POPs are chemicals that remain intact in the environment for long periods, become widely distributed geographically, accumulate in the fatty tissue of living organisms and are toxic to human beings and wildlife. POPs travel globally and can cause damage wherever they travel. The Convention that entered into force of 17<sup>th</sup> May, 2004, lays down that in its implementation, Governments will take measures to eliminate or reduce the release of POPs into the environment.
- 6.7** The Stockholm Convention seeks the elimination or restriction of production and use of all intentionally produced POPs (industrial chemicals and pesticides). The Convention also seeks the continuing minimization and wherever feasible, ultimate elimination of the releases of unintentionally produced POPs such as dioxins and furans. At present, 33 chemicals are covered under the Stockholm Convention, of which use of DDT is restricted in India. Use of DDT is banned for agricultural purposes; it is produced in a restricted manner for use in vector control only, as India has obtained exemption for use of DDT for vector control.
- 6.8** Stockpiles and wastes containing POPs must be managed and disposed of in a safe, efficient and environmentally sound manner, taking into account international rules, standards and guidelines. Each country is required to develop a plan for implementing its obligations under the Convention. A Global Environment Facility (GEF) has been set up as an interim financial mechanism, to assist the developing countries in implementation of the Convention.

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**Chapter – 7****BHOPAL GAS LEAK DISASTER**

- 7.1** On the intervening night of 2<sup>nd</sup> /3<sup>rd</sup> December, 1984, “Methyl Iso Cynate” (MIC) a lethal gas stored in two tanks of the Union Carbide Pesticide Factory at Bhopal leaked in the atmosphere resulting in industrial mass disaster unparalleled in its magnitude and causing serious injuries to a large number of populations of Bhopal city, also resulting in immediate death toll of thousands of human lives. Various relief and rehabilitation measures initiated immediately after the disaster are still continuing.
- 7.2** Several suits were filed for compensation and damage in different courts in India. Prosecution had also been launched. Government of India enacted an act known as The Bhopal Gas Leak Disaster (processing of Claims) Act, 1985. The Act came into force on 20<sup>th</sup> February, 1985. It empowered the Union of India to take over the conduct of all litigation in regard to claims arising out of gas disaster and to award compensation to the victims and affected persons. Under this Act, the Government has framed a scheme known as the Bhopal Gas Leak Disaster (Registration and Processing of Claims) Scheme, 1985 for registration, processing, determination of compensation to each claim and appeals, if any, arising there from. 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** Looking to the magnitude of the human suffering that occurred due to BGCL, Hon'ble Supreme Court of India passed a settlement order dated 14<sup>th</sup> and 15<sup>th</sup> February, 1989 directing the Union Carbide Corporation to pay a sum of US \$ 470 million, which was deposited by the Company with the Registrar of the Supreme Court of India, in 1989.
- 7.4** The actual disbursement of the compensation started from 1992 and the Office of the Welfare Commissioner awarded/disbursed Rs.1549.32 crore as compensation in settled cases of 5,74,393 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 till December, 2019.
- 7.5** The Supreme Court vide order dated 19<sup>th</sup> July, 2004 had directed the Welfare Commissioner to disburse the balance amount of approximately Rs.1500 crore, which accumulated with the Reserve Bank of India on account of accrual of interest and exchange rate variation, on pro-rata basis (in the ratio of 1:1 of original compensation) to the claimants whose cases had been settled.

The distribution of pro-rata compensation started from November, 2004. A sum of Rs.1517.84 crore as pro-rata compensation has been awarded in 5,63,113 cases till December, 2019. The work of disbursal of pro-rata compensation is continuing.

- 7.6** On the recommendations of the Group of Ministers (GoM) constituted on Bhopal Gas Leak Disaster, the Government took certain decisions to provide further relief and rehabilitation to the gas victims in the year 2010. One of the major decisions 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	Scale of Ex-gratia
Death	Rs.10 lakh (less amount already received)
Permanent disability	Rs. 5 lakh (less amount already received)
Injury of utmost severity	Rs. 5 lakh (less amount already received)
Cancer	Rs. 2 lakh (less amount already received)
Total Renal Failure	Rs. 2 lakh (less amount already received)
Temporary disability	Rs. 1 lakh (less amount already received)

- 7.7** An amount of Rs. 874.28 crore has been approved by the Government for disbursement of ex-gratia amongst the above categories of victims. The Office of the Welfare Commissioner has commenced disbursal of ex-gratia to the Gas victims on 19<sup>th</sup> December, 2010. 61,373 cases have been decided and an amount of Rs. 832.78 crore has been awarded till December, 2019. Administrative approval for disbursement of Rs.6.80 crore in 170 additional cases under Permanent Partial disability has been accorded by the Department on 1<sup>st</sup> October, 2019.

### **Rehabilitation of Bhopal Gas Victims (Action Plan)**

- 7.8** Rs. 102 crore was sanctioned by the Government of India for relief, rehabilitation and financial assistance to victims of gas tragedy from 1985 to 1989.
- 7.9** In 1990, Government of India approved a 5-year Action Plan of the State Government of Madhya Pradesh with a capital outlay of Rs. 163.10 crore for the Medical, Economic, Social and Environmental rehabilitation of the Bhopal Gas victims. The outlay was subsequently revised upwards to Rs. 258 crore. It was decided that the Action Plan was to be shared by the Government of India and State Government of Madhya Pradesh (GoMP) in the ratio of 75:25 and implemented by the GoMP. The Action Plan was implemented from 1990 to 1999. This involved creation of infrastructure for providing relief and rehabilitation to the gas victims. Against this approved plan, GoMP spent an amount of Rs. 309.53 crore. 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.

- 7.10** 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.
- 7.11** GoMP had submitted to Group of Ministers (GoM) in April 2008, a new Memorandum on New Plan of Action with an outlay of Rs. 982.75 crore for various rehabilitation measures to be taken for Bhopal Gas Victims. The Government, on the recommendations of the GoM, approved a sanction of Rs. 272.75 crore shared between the Central Government and GoMP in the ratio of 75:25 for implementation of New Plan of Action, 2010. A sanction of Rs. 272.75 crore was released by the Ministry of Finance, Department of Expenditure to the GoMP on 08/07/2010 'On Account' payment of Additional Central Assistance (ACA) for other projects (Grant Component) for State's Annual Plan 2010-2011.
- 7.12** GoMP is in the process of implementation of various rehabilitation schemes as approved in the New Plan of Action 2010. The GoMP has apprised that an amount of Rs.130.29 crore has been utilized against the approved plan of Rs. 272.75 crore.

### Social Rehabilitation

- 7.13** An estimated 5000 Widows of Gas Victims was to be paid pension plan of Rs.1000 per month for a period of five years, for which Rs. 30 crore was allocated. An amount of Rs. 25.43 crore has been disbursed as widow pension to 4,995 beneficiaries.
- 7.14** Under Social Rehabilitation, a sum of Rs. 40 crore has been allocated for construction of houses for dependants/families of gas victims residing in the vicinity of UCIL factory as there is a possibility of contamination of ground water because of toxic chemicals of UCIL. As per the proposal, the entire locality was to be shifted to a safe place and houses were to be provided for habitants of the locality. The Government has now provided safe drinking water by pipeline, so there is no need to shift those habitants staying around the UCIL factory. Therefore, GoMP made a proposal seeking approval for an amount of Rs. 25 crore out of the unspent balance of Rs 39.36 crore under Social Rehabilitation scheme, for providing assistance to the 2,500 Bhopal Gas Victims, who do not have pucca dwelling houses, under "Pradhan Mantri Awas Yojana (Urban)", Ministry of Housing and Urban Affairs, Government of India. Necessary administrative approval in this regard was accorded by the Department to the GoMP to implement the scheme.

### Medical Rehabilitation

- 7.15** Most of the essential equipments for Gas Rahat Hospitals have been procured, installed and are

functioning. The work of construction and renovation of Hospital buildings were completed. Out of Rs. 272.75 crore , a sum of Rs. 33.55 crore was allotted for Medical Rehabilitation. GoMP had utilized a fund of Rs. 16.32 crore and sought an administrative approval to utilize the unspent balance fund of Rs. 17.23 crore under Medical Rehabilitation for execution of certain new items of work such as construction of Bone Marrow Transplant Centre and procurement of equipments at Kamla Nehru Hospital, Renovation of civil work for Modular OT for 04 Hospitals namely Indira Gandhi Women and Child Hospital, Khan Shakir Ali Khan Hospital, Jawaharlal Nehru Hospitals Bhopal and Kamla Nehru Hospital. The same was accorded in 2018-19 by the Department to the GoMP.

### Economic Rehabilitation

- 7.16** For ensuring employment to the gas victims, the GoMP launched an entrepreneurship training Programme scheme with built-in employment opportunity. GoMP selected 21 institutes through a transparent procedure, for providing training in different trades to the gas victims. The State Govt. has provided training to 12,355 gas victims beneficiaries under different traits. Initially, this programme was successful but later on it has not been resultant as desired. As the scheme was not attractive, GoMP has submitted a proposal seeking approval for an amount of Rs. 25.12 crore from the unspent balance of Rs. 85.87 crore under Economic Rehabilitation scheme, for the purpose of providing self employment to the beneficiaries of gas victims under “Mukhyamantri Swarojgar Yojna” (Chief Minister Self Employment scheme) which include Rs. 1.00 crore for component of appropriate/relevant training. Necessary administrative approval in this regard was accorded by the Department to the GoMP to implement the scheme.

### Environmental Rehabilitation

- 7.17** Out of Rs. 50 crore allocated for providing clean drinking water to the gas victims, GoMP utilized the entire fund for providing safe drinking water in Gas affected area.

### Environmental Remediation of the erstwhile Union Carbide India Ltd. (UCIL) Plant site

- 7.18** As per Union Cabinet’s decision taken in the year 2010, the GoMP would be responsible for undertaking disposal of hazardous wastes and remediation of the erstwhile UCIL plant at Bhopal. As per cabinet’s decision, an Oversight Committee was constituted in the Ministry of Environment, Forest and Climate Change to provide oversight and support to the GoMP in taking the necessary remedial actions. Hon’ble Supreme Court is seized with the issue of disposal of UCIL waste in the matter of SLP (Civil) No. 9874 of 2012 UoI Vs Alok Pratap Singh and Others. Ministry of Environment, Forest and Climate Change is complying with the orders issued by the Hon’ble Supreme Court then and there. As per the directions given by the Hon’ble Supreme

Court, 10 MT of erstwhile UCIL waste was successfully incinerated at Common Hazardous Waste Incinerator at Pithampur, Madhya Pradesh by Central Pollution Control Board (CPCB) during August 13-18, 2015.

- 7.19** For disposal of remaining 337 MT (approximate) of hazardous waste lying at UCIL factory site, CPCB has been assisting GoMP in technical matters for disposal. Government of Madhya Pradesh is examining various options for disposal of the remaining toxic wastes lying at UCIL.

#### **Curative Petition**

- 7.20** 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. The petition also claims reimbursement of costs incurred by the Government of India for various rehabilitation measures for victims and the amount required for environmental remediation. The case is pending before the Hon'ble Supreme Court.

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**Chapter -8****IMPROVING THE QUALITY OF CHEMICALS & PETROCHEMICALS & TRADE INTELLIGENCE****Mandatory Standards**

- 8.1** Chemicals & Petrochemicals produced domestically and imported may contain impurities & may be hazardous to human safety, health & environment. These products while in use may not be meeting technical characteristics prescribed in the BIS standards, presently being voluntary in nature. It is therefore of paramount importance to improve quality of Chemicals/Petrochemicals produced in the country as well as to monitor the imported chemicals. With this objective, Department has initiated an exercise to make the standards of Chemicals/Petrochemicals as mandatory to ensure that both the exporters of such chemicals to the country and domestic manufacturers meet the BIS quality parameters. Such Chemicals/Petrochemicals shall bear the standard mark under a licence to be obtained from Bureau of Indian Standard . This mechanism shall help in improving quality of these products as some countries dump poor quality and spurious Chemicals/Petrochemicals in the country, which do not meet the quality parameters laid down by BIS Standards as at present.
- 8.2** Hence this Department has initiated steps to make standards mandatory in public interest under section 16 of the Bureau of Indian Standard Act 2016 for:
- (i) Protection of human, animal or plant health
  - (ii) Safety of the environment
  - (iii) Prevention of unfair trade practices
  - (iv) Protection of National Security
- 8.3** With these measures manufacturers and importers have to comply BIS (Conformity Assessments) Regulation, 2018. Any person who contravenes the provisions of this Order is punished under the provisions of section 29 of the BIS Act, 2016. As per the provisions of mandatory standards, the manufacturers of above chemicals must conform to BIS standards and bear the Standard Mark under license from BIS. This includes any imported material, for which the exporter based on foreign country has to apply for BIS license under Foreign Manufacturers Certification Scheme (FMCS).
- 8.4** So far the Department has issued notification for making BIS standards is mandatory for 5 chemicals viz Caustic Soda, Aniline, Acetic Acid, Methanol and Poly Aluminium Chloride. Many more chemicals and petrochemicals are in the process of being covered in this regime.

## Chemicals Regulation

- 8.5** The Department has initiated an exercise to formulate Chemical (Management & Safety) Rules with the objective to ensure a high level of protection of human health and the environment impacted by the use of chemicals. It is expected that the full implementation of this regulation shall promote innovations in greener and safer chemistry within chemicals manufacturing, transport, use and disposal and enhance the competitiveness of domestic chemical industry. These chemical safety rules are proposed to be framed under Environment (Protection) Act 1986. These rules will be for Notification, Registration and Restrictions on Substances, Mixture and Intermediates placed in Indian Territory.

## Better Trade Intelligence

- 8.6** As per World Customs Organization, International trade of commodities is monitored under ITC HS classification. There are many residual entries under 'Others' under different chapters. The import under 'Others' category is huge in terms of quantity and value. So to know the specific names of the chemicals and petrochemicals covered under 'Others' it is very important to assign new HS Codes for numerous chemical and petrochemical products. There are above 2500 tariff lines pertaining to specific chemicals and petrochemicals, and approximately 500 tariff lines pertaining to others. To have better trade intelligence all chemicals and petrochemicals with high trade value are to be given separate HS Codes. So far Department has recommended 106 chemicals and petrochemicals for creation of new HS Codes.

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Chapter – 9

## PUBLIC SECTOR UNDERTAKINGS

### Assam Gas Cracker Project (Brahmaputra Cracker and Polymer Limited)

- 9.1. 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 15<sup>th</sup> 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 18<sup>th</sup> April, 2006, approved the setting up of the Assam Gas Cracker Project (AGCP) at a project cost of Rs. 5460.61 crore (fixed cost) including Capital Subsidy of Rs. 2138 crore. A joint venture company namely M/s Brahmaputra Cracker and Polymer Limited (BCPL) was formed to implement the project. Owing to various reasons, the project has witnessed time and cost overruns. The Revised Cost Estimate (RCE-I) of Rs. 8920 Crore (on “as built basis”) including Capital Subsidy of Rs. 4690 crore was approved by the CCEA on 16<sup>th</sup> November, 2011 with mechanical completion by July, 2013 and commissioning by December, 2013. Again due to time and cost overruns, the Revised Cost Estimate-II (RCE-II) was approved by the Hon’ble Minister (C&F) in July, 2016, as Rs. 9965 crore comprising capital subsidy of Rs. 5,239.45 crore, debt of Rs. 3,307.88 crore and equity of Rs. 1,417.67 crore as against the approved project cost of Rs. 8,920 crore (RCE-I) with the Revised schedule of commissioning of the project by December, 2015. The estimated increase in project cost of Rs. 1045 crore to be funded by capital subsidy of Rs. 549.45 crore, equity of Rs. 148.67 crore and debt of Rs. 346.88 crore. Out of total capital subsidy of Rs. 5,239.45 crore, Rs. 5090.00 crore has been released till November, 2019. Balance capital subsidy has been sought in supplementary Demands for Grants during 2019-20.
- 9.2. The Project has been commissioned on 2<sup>nd</sup> January, 2016 and dedicated to the nation on 05.02.2016 by Hon’ble Prime Minister. In the current financial year i.e. 2019-20, the plant is being operated at more than 100% capacity till November, 2019.
- 9.3. Recently, the administrative control of BCPL has been transferred to Ministry of Petroleum and Natural Gas as per approval of CCEA vide OM No. 45012/10/2014-PC-I dated 01.01.2020.

### Hindustan Organic Chemicals Limited (HOCL)

- 9.4. Hindustan Organic Chemicals Limited (HOCL) was incorporated on 12<sup>th</sup> 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 had two manufacturing units located at Rasayani (Maharashtra) and at Kochi (Kerala). The Rasayani unit (Chemical Complex) started

production from 1970-71 and the Kochi Unit (Phenol Complex) commenced production from 1987-88. The Kochi unit has plants to manufacture Phenol, Acetone and Hydrogen Peroxide. After the implementation of restructuring plan for HOCL that was approved by the Government of India on 17.05.2017, Rasayani unit has been closed down except the strategically important Concentrated Nitric Acid (CNA)/ Di-nitrogen Tetroxide ( $N_2O_4$ ) plant which has been transferred to the Department of Space/ISRO. The CNA/  $N_2O_4$  plant is the only facility for production of  $N_2O_4$  in India which is used exclusively by ISRO in its rocket launching programme. HOCL has a subsidiary company, namely Hindustan Fluorocarbons Limited (HFL), located at Rudraram, Telangana, details regarding which are given further in this chapter.

- 9.5** HOCL'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. Govt. of India holds 58.78% of the equity of the company and the preference shares in full. HOCL is listed on the Bombay Stock Exchange (BSE).
- 9.6** Following globalization and liberalisation 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 erstwhile Board for Industrial & 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 9<sup>th</sup> 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. After implementation of the revival package, the company made profits during 2006-07 and 2007-08 and came out of BIFR.
- 9.7** 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 mainly due to withdrawal of anti-dumping duties on its main products phenol and acetone. In order to enable the company to tide over its liquidity problems, the Govt. on 1<sup>st</sup> 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.
- 9.8** 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. This enabled the company to restore manufacturing operations at its Kochi and Rasayani units. However, the global fall in the prices of petroleum products at that time 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 led to frequent shutting down of operations at both Kochi and Rasayani units thereby further aggravating the financial crisis of HOCL. Due to continuous losses and shortage of working capital, the company was not able to pay regular salary and statutory dues to the employees during 2015 to 2017. Following implementation of restructuring plan for HOCL (refer para 9.11 below), the plant operations of Rasayani unit have been closed down. The Phenol/Acetone plant at Kochi unit resumed operations from July, 2017 and is being operated regularly since then.

### **Financial Performance**

- 9.9** Financial performance of HOCL in terms of turnover and net profit / loss for the last 5 years and net worth as on 31.3.2019 are given below:

Year	Turnover (Gross)	Net Profit / (Loss)	(Rs. In crore)
2014-15	167.19	(215.49)	
2015-16	120.79	(173.91)	
2016-17	158.21	(255.57)	
2017-18	242.33	(203.45)	
2018-19	471.99*	50.11	

*Net-Worth (as per new accounting standard Ind AS which includes revaluation of land and other assets) as on 31.03.2019:  
(+)Rs.105.88 crore  
Net-Worth as per the Companies Act (excluding revaluation of land and other assets) as on 31.03.2019: (-)Rs.958.07 crore*

\*After including other non-operational income of Rs.115.71 crore from disposal of assets of Rasayani unit, reversal of excess provisions etc., HOCL earned total revenue of Rs.587.70 crore and made net profit of Rs.70.80 crore During 2018-19, .

- 9.10** During 2019-20 (up to September, 2019), the company achieved a turnover of Rs.145.19 crore and suffered loss of Rs.45.06 crore, as per provisional unaudited results. Significant reduction in the selling price of Phenol & Acetone (main revenue earning products of HOCL) due to huge imports/dumping of both these products to India has adversely affected the company's performance during first half of 2019-20.

### **Restructuring plan for HOCL**

- 9.11** The Government of India on 17.05.2017 approved a restructuring plan for HOCL involving closing down operations of all the non-viable plants at Rasayani unit of HOCL, except N<sub>2</sub>O<sub>4</sub> plant to be transferred to ISRO on 'as is where is' basis, with about 20 acres of land and employees associated with the plant. The N<sub>2</sub>O<sub>4</sub> plant is of strategic importance as it is the only indigenous source of N<sub>2</sub>O<sub>4</sub> which is used as liquid rocket propellant by ISRO in the space launch vehicles. Financial implication of the restructuring plan is Rs.1008.67 crore (cash) which is to be met partly from sale of 442 acres HOCL land at Rasayani to Bharat Petroleum Corporation Ltd. (Rs.618.80 crore) and the balance through bridge loan from the Govt. The funds are to be used to liquidate the various liabilities of the company, including payment of outstanding salary and statutory

dues of employees and repayment of Govt. guaranteed bonds of Rs.250 crore, and for giving VRS/VSS to the Rasayani unit employees except those retained as skeletal staff. The bridge loan amount, along with other Govt. liabilities of the company, is to be repaid to the Govt. from the disposal of remaining unencumbered land and other assets of Rasayani unit.

**9.12 Status of implementation of restructuring plan of HOCL (as on 1.11.2019) is as follows:**

- All plants of Rasayani unit, except N<sub>2</sub>O<sub>4</sub> plant, have been closed down and disposed of. Closure of the unit under the provisions of Industrial Disputes Act, 1947 has also been approved by the Ministry of Labour & Employment.
- N<sub>2</sub>O<sub>4</sub> plant has been transferred to ISRO along with 20 acres land and 131 employees associated with plant. The plant is being entirely operated by ISRO.
- Out of 442 acres land at Rasayani to be sold to BPCL, 289.69 acres have been sold for which HOCL received Rs.401.50 crore (net of TDS).
- Sale of 85.27 acres out of the additional 242 acres (+/- 10%) land approved by the Govt. for sale to BPCL has also been completed for consideration of Rs.135.81 crore (net of TDS).
- BPCL has submitted Expression of Interest for the remaining 250+ acres unencumbered land at Rasayani but final offer is awaited. As Mumbai Metropolitan Region Development Authority (MMRDA) has also shown interest in purchasing the above land, the matter is being followed up with MMRDA for submission of their EoI/proposal.
- Panvel land (7.5 acres) was put up for e-auction on 24.4.2019 but no bid/offer was received. Further action will be taken by HOCL after NOC for sale of the land is received from State Govt.
- All the 10 flats at Nestle Apartments (Mumbai), closed down plants and utility blocks have been successfully e-auctioned through MSTC.
- Transfer of 2 hect. leased land at JNPT tank farm, along with sale of buildings/assets thereon, to JNPT is under process.
- All the employees have been separated through VRS/VSS except skeletal staff (7) for HOCL's corporate office and some VRS optees temporarily retained for implementing the restructuring plan. 23 employees who did not opt for VRS were transferred to the Kochi unit. The outstanding salary and statutory dues of the employees of both Rasayani and Kochi unit have been cleared.
- Bridge loan of Rs.360.26 released by the Govt. in Aug.-Sept. 2017 has been utilized by HOCL to redeem the two Govt. guaranteed bonds totalling Rs.250 crore and for part payment of priority statutory dues (Rs.110.26 crore).

**9.13 It may be seen while Rasayani unit has been successfully closed down under HOCL's restructuring plan, significant progress has also been made in the implementation of other aspect of the restructuring plan as given above. However, disposal of unencumbered land assets of HOCL at Rasayani has been delayed to various reasons. So far out of total of approx. 684 acres of land approved by the Govt. for sale to BPCL, sale & registration of only about 375 acres have been**

completed. Sale of balance approx. 309 acres land has been affected by law & order situation due to protests by the local villagers to fencing of the purchased land by BPCL and the delay in submission of the report by the Committee under Divisional Commissioner, Konkan, constituted by the Maharashtra Govt. to address the concerns and demands of villagers in respect of HOCL land sale to BPCL. The Department is closely following up the matter with the State Govt. at the highest levels for expediting resolution of the issues delaying disposal of HOCL's land.

- 9.14** After implementation of the restructuring plan, the Phenol/Acetone plant at Kochi unit of HOCL resumed regular operations from July, 2017 and has been operating since then with positive contribution. This enabled HOCL to achieve net turnover of Rs.472 crore and earn net profit of Rs.22.47 crore from Kochi unit operations during the preceding FY 2018-19. HOCL has also repaid outstanding Govt. of India loans (principal) of Rs.13.19 crore in the month of June, 2019. However, the reduction in selling price of Phenol & Acetone following huge imports/dumping of both these products in to India in the first half of current FY 2019-20 is adversely impacting the company's performance.

### **HINDUSTAN FLUOROCARBONS LTD. (HFL)**

- 9.15** 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 Sangareddy, 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 sold directly as a refrigerant gas and also as feed stock for production of PTFE.
- 9.16** Authorised and paid up share capital of HFL 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).
- 9.17** HFL started making losses from its inception in 1987-88 resulting in erosion of its net worth and reference to erstwhile 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 which 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 did not come out of BIFR as its net worth remained negative. HFL again suffered loss of Rs.24.82 crore in 2013-14 mainly on account of provisioning for 1997 and 2007 wage revision arrears and reduction in sales realization. Thereafter, the company has continued to suffer losses during 2014-15 to 2017-18 mainly on account of reduction in sales realisation. Net worth of the company is also negative.

## Financial Performance

- 9.18** Financial performance of HFL in terms of turnover and net profit/loss for the last 5 years and net worth as on 31.3.2019 are given below:

Year	Turnover	Net profit / (Loss)	(Rs. In crore)
2014-15	32.75	(3.77)	
2015-16	39.63	(11.11)	
2016-17	38.06	(6.33)*	
2017-18	43.08	(4.82)*	
2018-19	45.86	(4.78)*	
<i>Net worth (as per Ind AS which includes revaluation of land and other assets) as on 31.3.2019: (-) Rs.43.20 crore</i>			

\* As per the new accounting standard Ind AS

- 9.19** During 2019-20 (up to September, 2019), the company has achieved turnover of Rs.18.37 crore and suffered loss of Rs.0.97 crore, as per the provisional unaudited balance sheet.
- 9.20** For revival and growth of HFL, the company had taken steps to diversify into business of fluoro specialty chemicals and adopted the strategy of switching over from single product to multi-product facility to reduce dependency on PTFE. However, due to commercial unviability of the products, mainly on account of small plant size/capacity, old technology and high overhead costs, HFL has been predominantly selling HCFC-22 directly in the market as refrigerant. Some quantity of PTFE and PTFE filled grades is also sold from time to time based on the market conditions.

## Closure of HFL and future roadmap

- 9.21** The CCEA on 27.10.2016 had accorded ‘in principle’ approval for strategic disinvestment of HFL with the parent company HOCL to exit the firm completely. Necessary action was taken by the Department to process the strategic disinvestment of the company as per DIPAM guidelines. However, in view of receipt of only a single bid/offer in response to the PIM /EOI issued in April, 2018 for strategic disinvestment of the HFL, it was decided to terminate the process of strategic disinvestment of the company in February, 2019.
- 9.22** Based on the discussions held in various meetings, a decision was taken by the Govt. to organise sale of the surplus 66.13 acres of HFL land at its plant site (total land area of 126.13 acres) and utilise the proceeds for giving VRS to HFL employees. The surplus land was put up for e-auction through MSTC. The e-auction was publicised widely but no offer/bid was received in the e-auction held on 23.04.2019. After examining the probable reasons for non-receipt of bid, HFL was instructed to take necessary action for fresh e-auction of the surplus land with modified bidding terms and conditions, which includes that NOC for the land sale from Telangana Govt. will be

obtained by HFL. However, in the context of the company's NOC application, the Telangana Govt. intimated that they want to resume the surplus land of HFL as per the relevant clause of the lease-cum-sale agreement dated 22.04.1986 executed by HFL at the time of transfer of the land to the company. After discussions between this Department and the State Govt. to resolve the issue, it has been decided that the District authorities and HFL will determine the value of HFL's industrial land and, thereafter, feasibility of transfer of the land to Telangana State Industrial Infrastructure Corporation (TSIIC) at that value will be considered by TSIIC and HFL/GOI. If TSIIC is not interested in taking over the land, then State Govt. will give NOC to HFL for land sale. Further necessary action in this regard is underway.

- 9.23** As mentioned above, HFL manufactures CFM-22/HCFC-22 and sells most of it directly as refrigerant gas since its conversion to PTFE is not financially viable for the company due to uneconomic plant capacity and old technology. Under the Montreal Protocol, HFL's HCFC-22 non-feedstock production quota is only about 392 MT per calendar year which was enhanced to 1100 MT during the last 2 years and in the current year (2019) by the Minister of Environment, Forest & Climate Change (MoEFCC) based on the exemption request of this Department. MoEFCC has informed that HCFC-22 quota is to be reduced further by 25% from next calendar year (2020) under the Montreal Protocol and that any further exemptions for HFL are not likely. With the reduced HCFC-22 quota (only about 285 MT) in 2020, it would not be possible for HFL to sustain operations and it would be forced to shutdown the plant.
- 9.24** Therefore, in view of the non-viability of the HFL's existing operations the Department moved a proposal for closure and the Govt/ CCEA on 22.01.2020 has approved the shutting down of the plant/unit of HFL and closure of the Company.
- 9.25** Salient features of closure of HFL are as follows:
- All employees (except skeletal staff) to be separated through VRS/VSS as per DPE guidelines; non-VRS opting employees to be retrenched as per Industrial Disputes Act.
  - GOI interest free loan of Rs.77.20 crore to be given to HFL for settling immediate closure related liabilities, including VRS/VSS expenditure, and to meet administrative expenses of skeletal staff.
  - Appointment of NBCC as Land Management Agency to facilitate land disposal subject to Telangana Govt.'s decision to purchase the land.
  - Appointment of MSTC for disposal of plant/machinery and movable assets through e-auction.
  - Loan of Rs.77.20 cr. and other GOI dues of HFL are to be repaid from sale proceeds of land and other assets; loans/dues remaining unpaid due to insufficient sale proceeds to be written off/ waived.
  - Tentative timeline for completing all closure related formalities is 400 days.

Necessary action is being taken to implement the above CCEA decision for closure of HFL.

**HIL (INDIA) Ltd.**

- 9.26** HIL (India) Ltd., formerly known as Hindustan Insecticides Limited (HIL), was incorporated in 1954 in New Delhi for manufacturing and supply of DDT (Dichloro Diphenyl Trichloroethane) for Malaria Eradication Programme of Government of India. In the year 1957, the company set up a factory at Udyogamandal, Kerala, for manufacturing of DDT. HIL set up another factory in 1977 at Rasayani, Maharashtra, for manufacturing DDT and Malathion, an insecticide. The third manufacturing unit of the company for product formulation was set up at Bathinda, Punjab, in 2003 by shifting its erstwhile Delhi factory. Rasayani and Udyogmandal Plants have both DDT and agrochemical manufacturing facilities while Bathinda has only formulations manufacturing and packaging facility. The company has also diversified its business into seeds and fertilizers sectors also. The company has 7 Regional Sales Offices across India and a wide network of dealers for marketing and distribution of its products across India.
- 9.27** The company acquired the new name of HIL (India) Ltd. with effect from 20.03.2018 as the old name viz. Hindustan Insecticides Ltd., was not reflecting the entire gamut of diversified business activities of the company. At the same time, the new name retains the association with its established brand name of HIL.
- 9.28** The authorized 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.
- 9.29** HIL is the sole supplier of DDT to the National Vector Borne Disease Control Programme (NVBDCP) of the Ministry of Health and Family Welfare, Government of India. The company 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.
- 9.30** To further consolidate its position, HIL in 2012-13 ventured into seed production and marketing business. The company has been recognized as a national level seed agency by the Ministry of Agriculture and Farmers Welfare for production and marketing of certified seeds for crops and vegetables. The company actively participated in seed production and supply of seed minikits of high yielding varieties under National Food Security Mission (NFSM), National Mission on Oil Seeds and Oil Palms (NMOOP) and Mission on Integrated Development of Horticulture (MIDH) as National Level Seed Agency. The company supplied 75,183 seed minikits of oilseed crops and 96,967 seed minikits of pulse crops worth Rs.13.20 crore. Turnover from seed business during FY 2018-19 was Rs.63.03 crore.
- 9.31** In order to strengthen the seed infrastructure, HIL has set up a seed testing laboratory at its R&D complex, Gurugram, and is constructing seed godowns and seed processing plant at Bhatinda unit with financial assistance from Ministry of Agriculture & Farmers Welfare, which

will be additional income avenue for the company in near future. In near future, the seed testing laboratory will be upgraded for commercialised benefits apart from in house seed testing.

- 9.32** In 2015-16, with a vision to become one stop shop for all the agricultural inputs needs of farmers, HIL further diversified into fertilizers trading business. It has been inducted by the Department of Fertilizers as an agency to import fertilizers under Nutrient Based Subsidy Scheme. After the successful commissioning of water soluble fertilizer (NPK 19:19:19) plant of 1800 MTPA at Bathinda in 2016-17 under brand name 'HILGOLD', the company has started commercial production of HILGOLD at the other two units (Rasayani and Kochi) also with capacity of 3000 MTPA each. The company achieved a turnover of Rs.131 crore from supply of fertilizers during 2018-19. HIL has also started trading of bio-pesticides and bio-fertilizers.

### Financial Performance

- 9.33** After implementation of revival package sanctioned in 2006-07, HIL has been continuously posting profits. Financial performance in terms of turnover and net profit / loss for the last 5 years and net worth as on 31.03.2019 are given below:

(Rs. In crore)		
Year	Turnover	Net profit / (Loss)
2014-15	339.90	1.60
2015-16	334.75	1.83
2016-17	372.94	3.26
2017-18	432.66	3.41
2018-19	478.24	3.62
Net worth as on 31.03.2019: <i>Rs.103.85 crore</i>		

- 9.34** During current FY 2019-20, upto September, 2019, the company has achieved gross turnover of Rs.182.11 crore and net profit of Rs.1.04 crore, as per provisional unaudited result.

### Exports

- 9.35** HIL achieved exports of Rs.10.12 crore during the year 2018-19 against Rs.32 crore in 2017-18. The company exported DDT, Malathion Technical and Agrochemicals to countries in Africa and Latin America during the year. HIL is planning to give more emphasis to exports in the coming years.

### New initiatives and projects of HIL

- 9.36** With a view to widen the product profile and reduce the company's dependence on DDT revenue, several new initiatives and projects have been taken up / planned by HIL to diversify its operations. Some of these initiatives/projects are given below:

- i. Manufacturing of water soluble fertilizer (NPK 19:19:19), sold under brand name 'HILGOLD', has commenced at all the 3 units at Bathinda, Rasayani and Kochi.
- ii. HIL has signed MoUs with other public sector fertilizer companies namely National Fertilizers Limited (NFL), Rashtriya Chemicals and Fertilizers (RCF) and IFFCO for supply of neem coated UREA, DAP and NPK to HIL's business network across the country. The company has also entered into marketing tie-ups with Single Super Phosphate (SSP) manufacturers in the country for the supply of SSP to the company's business network.
- iii. HIL is in the process of signing of MoU with IPFT and UNIDO for scaling up the commercial production of neem based products like coil, cream, tablets etc. with UNIDO funding.
- iv. The company is setting up a Long Lasting Insecticidal Nets (LLIN) manufacturing facility at its Rasayani Unit with an initial capacity of 50 lakh nets per annum under the UNIDO's project "Development and Promotion of Non-POP alternative to DDT". The facility is expected to become operational in the current FY 2019-20.
- v. With Plan loan of Rs.11 crore provided by the Govt. of India in 2014-15, HIL successfully commissioned a plant at Kochi unit to manufacture Pendimethalin, an herbicide mainly used to control grass/weeds in agricultural and horticultural crops. The commercial production of Pendimethalin commenced in May, 2018.
- vi. The company carried out 24 training programs in 2018-19 for farmers in about 14 states of the country on safe and judicious use of pesticides and adoption of integrated pest management practices. HIL also organised 200 hours of skill development training for about 355 gardeners/nursery men under Prime Minister's Kaushal Vikas Yojna.
- vii. The company has taken initiative to set up Kisan Samadhan Kendras (KSKs) in various states to provide all agro inputs to farmers like agrochemicals, seed & fertilizers, along with advisory services on crop solutions & management, agribusiness opportunities, awareness & guidance to avail Govt. subsidy & welfare schemes etc., to enhance their economic status.
- viii. Based on the decisions taken in the CPSE Conclave held in April, 2018, a Vision 2022 Action Plan for the company has been approved and the progress thereof is also being monitored online through DRISHTI portal of DPE.

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Chapter-10

## AUTONOMOUS INSTITUTIONS

### Central Institute of Plastics Engineering & Technology (CIPET)

#### General Profile

- 10.1** CIPET is an ISO 9001:2015 QMS, NABL, ISO/IEC 17020 accredited premier national Institution under the administrative control of Department of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, Govt. of India fully devoted to Skill development, Technology Support, Academics and Research & Development (STAR) activities for the growth of Polymer & allied industries in the country. CIPET operates through its 37 Centres spread across the country which includes 7 Institute 3 of Plastics Technology (IPTs), 23 Centres for Skilling and Technical Support (CSTS), 03 School for Advanced Research in Polymers (SARP), 3 sub-centres and 01 Plants Waste Management Centre.
- 10.2** Apart from the above, CIPET is also in the process of establishing 9 more Centres at different parts of the country including 4 Plastic Waste Management Centres. CIPET Centres have state-of-the-art infrastructural facilities in the area of Design, CAD/CAM/CAE, Tooling & Mould manufacturing, Plastics Processing, Testing and Quality Control to cater to the needs of plastics and allied industries.

#### ACADEMIC AND SKILL DEVELOPMENT PROGRAMME

##### Long Term Professional Skill Development Programme:

- 10.3** CIPET conducts 13 different long term training programme viz. Diploma, Post Diploma, Post Graduate Diploma, Undergraduate, Post Graduate and Ph.D. programme with varying level of entry qualifications. The long term programmes 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)
  - 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. (Applied Polymer Science) (2 years)
- M.Sc. (Tech.) in Material Science Engineering (5 years, integrated programme)

**10.4** The Undergraduate, Postgraduate & Doctoral programme are offered at CIPET: IPTs in affiliation/collaboration with the respective State Technical Universities. Admission to UG/ PG/Ph.D programmes are carried out as per the norms and guidelines of the respective state affiliating university. Students for the diploma level programmes offered at CIPET: CSTSs are admitted through all India CIPET CBT-JEE 2019. In the academic year 2019-20, 13,029 students have been enrolled for the UG/PG/ Ph.D and diploma level programme.

#### **Short Term Vocational Skill development Training Programme**

**10.5** In line with the “Skill India Mission” of Govt. of India, CIPET also focus on Skill development training programme in the entire gamut of Plastics Engineering & Technology. In line with National Skills Qualifications Framework (NSQF) norms & guidelines, at present CIPET is conducting 37 approved programme in the field of Plastics Engineering & Technology. The broader range of programme offered at CIPET includes:

- Employment linked, sponsored skill development
- Up-skilling and re-skilling
- Short term industry specific
- Tailor made programme for industries
- In plant training for students from various colleges and universities

**10.6** These programmes with duration ranging from 16 hours upto 960 Hrs year are aimed at enhancing skill and competency level of participants in the relevant domains of plastics.

Majority of the skill development programme are sponsored by various State / Central Govt. departments / agencies with the sole objective of uplifting the living standards of underprivileged / unemployed youth through gainful employment in leading plastics & allied industries in India and abroad. During the year 2019-20 upto December, 2019, CIPET has trained 37,728 candidates through long term, short term and skill development programme.

#### **TECHNOLOGY SUPPORT SERVICES**

**10.7** CIPET offers Technology Support Services (TSS) in the entire spectrum of Plastic Engineering & Technology. TSS forms an integral portfolio of CIPET and highlight its core competency by offering high quality services to the customers in the area of Tooling, Precision Machining, Design and Manufacturing of Moulds & Dies, CAD / CAM / CAE services, plastic products manufacturing through state-of-the-art processing machinery and testing and quality control of plastic materials and products. CIPET also offers consultancy and advisory services in the entire gamut of Plastics Engineering & Technology.

- 10.8** During the year 2019-20 upto December, 2019, 63,224 technical support assignments were undertaken which include job works, mould orders, testing and consultancy services.
- 10.9** Pre and Post-delivery inspection (PDI) of plastics products like PVC and PE pipes, woven sacks, water storage tanks, micro-Irrigation components, engineered bamboo boards, polymer based composite doors, etc., as well as the pre-delivery inspection of metallic pipes and fittings (CI/DI/ GI/ MS etc.) are also undertaken by CIPET.

### RESEARCH & DEVELOPMENT ACTIVITIES

- 10.10** Two well established 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 been consistently contributing in applied research for industries since 2008.
- 10.11** Further, Govt. of India has approved a R&D Laboratory at Bengaluru, namely “Advanced Polymer Design & Development Research Laboratory (APDDRL)” with total project cost of Rs.87.00 crore equally shared between Govt. of India and Govt. of Karnataka, Devanahalli, Bengaluru. The construction of the institute and hostel buildings has been entrusted to M/s. NBCC. All the advanced machinery and equipment procured for APDDRL, Bengaluru have been installed. The APDDRL, Bengaluru was inaugurated on 27th December, 2019, jointly by Hon’ble Chief Minister of Karnataka and Hon’ble Union Minister for Chemicals and Fertilizers. The centre is established to contribute in the areas of conducting programs in polymers, CAD/CAM/CAE, coating of adhesives, bio-sensors, renewable energy resources, e-waste recycling, composites of nano-composites, bio-polymer, etc.
- 10.12** During the year 2019-20 (upto December, 2019), major contributions / achievements of R&D wings of CIPET includes 70 research publications in international journals & 07 Book/book chapters, presented 17 papers in international conferences, filed 03 patent and undertaken 26 R&D projects and consultancies.
- 10.13** In order to support the international research with reputed foreign universities and multinational companies, the Department has planned to set up a world class R&D cum Training Centre of CIPET at Gurugram, Haryana, NCR, Delhi. This centre will also coordinate various entrepreneur development activities. Preparation of DPR is under progress.
- 10.14** The major Research & Developmental projects undertaken are given below:
- Development of new generation Acetabular Socket Liner and Femoral Head Prototypes with unique 3D microstructures and better fracture resistance for Osteoporosis and Osteoarthritis treatment, SERB-DST under IMPRINT, New Delhi.
  - Development of Indigenous Floating System for Installation of Solar PV Panels in Water bodies, SERI-DST, New Delhi
  - Translational Research on Biomaterials for orthopedic and Dental Application, DBT, New Delhi

- Developmental study on O-ring rubber Material used in vehicle chains, M/s. Tubes Investments India, Chennai
- Development of Plastic Components for MINE, DRILL, ARERS- APM 14, Ordnance Factory Dum Dum
- Development of outer case assembly for directional Sonobouy, M/s NPOL, Kochi
- Reverse Engineering of integrated COMBI-Test System, ABB India Limited, Bangalore.
- Assessment of Degradation and aging effects of Naval Materials in Marine Environment - Naval Research Board (NRB)
- Development and Evaluation of Weather Resistant Coating, Artlux, Mexico
- Development of Internal Ablative and Insulation material for rocket motor casing application, DRDO
- Development of Consep Cone Internal Plate for CPU regeneration system of NTPC Talcher Kaniha, Odisha
- Hybrid 3D architecture for smart and flexible supercapattery (Indo Germany) -DST
- Development of Hybrid 3D Architecture Electrodes for High Energy Density Supercapattery- DST
- Transparent Heat Reflecting (THR) Nano -Hybrid Coating for Automobile Window Glasses -DST
- Study the Fire retardancy of nano-ATH in polymers, Jawaharlal Nehru Aluminium Research Development and Design Centre- Ministry of Mines
- Development of functionalized gamma irradiated guar gum based biodegradable films for improved mechanical behavior-BRNS, DAE
- Fabrication and Design of Thermal Sensors assembled with in-house developed adhesive for Cryogenic long range Temperature measurement Phase –II-BRNS, DAE
- Centre of Excellence in Bio-engineered Sustainable Polymeric Systems -DCPC
- Competency enhancement of system houses and micro, small and medium enterprises in the foam manufacturing sector -UNDP
- Development of Next Generation Hybrid Solar Cells: Effectual diketopyrrolopyrrole/ carbazole based materials for sustainable photovoltaics -SERB
- Process development for effective utilization of lignocellulosic natural fibres based thermoplastics hybrid composites for high end structural application-DST
- Development of high performance polypropylene composites for engineering application in automobiles sector for Mangalore Refinery and Petrochemicals Limited (MRPL), Mangaluru
- Physio-chemical assessment of medical waste plastics from healthcare facilities at Karnataka, for the United Nations Industrial Development Organization (UNIDO) under “Environmentally Sound Management of Medical Wastes in India”
- Qualitative & quantitative analysis of micro plastics in water for the Just Environmental Charitable Trust
- Development of microcellular & nanocellular 3D printing process to manufacture acrylonitrile butadiene styrene foamed plastic products for Department of Science and Technology (DST) under Advanced Manufacturing Technology (AMT) Program, New Delhi.
- Competency enhancement of system houses and micro, small and medium enterprises

in the foam manufacturing sector, supported by the Ministry of Environment, Forest and Climate Change (MoEF&CC), Government of India.

### FINANCIAL PERFORMANCE (UN-AUDITED)

- 10.15** During the financial year 2019-20, CIPET has planned to generate income of Rs.355.00 crore with the budgeted revenue expenditure of Rs.320.00 crore. CIPET has enriched civil & technical infrastructure facilities which has resulted in ensuring the consistent growth in all the domains of plastic engineering & technology viz., Skill Development, Technology Support, Academic and Research & Development and had been operating on self-sustainable mode since 2008-09 onwards.

### MAJOR EVENTS

- 10.16** Inauguration of Boys and Girls Hostel by Shri Mansukh Mandaviya, Hon'ble Minister of State (Independent Charge) for Shipping; and Minister of State for Chemicals and Fertilizers, Govt. of India on 18.08.2019 at CIPET, IPT, Ahmedabad



- 10.17** Inauguration of Boys Hostel by Shri D.V.Sadananda Gowda, Hon'ble Minister for Chemicals & Fertilizers, Govt. of India on 29.08.2019 at CIPET IPT, Chennai.



- 10.18** Inauguration of Boys Hostel by Shri D.V.Sadananda Gowda, Hon'ble Minister for Chemicals & Fertilizers, Govt. of India on 26.09.2019 at CIPET CSTS, Hyderabad.



- 10.19** Inauguration of CIPET : CSTS - Vijayawada Jointly by Shri D.V. Sadananda Gowda, Hon'ble Minister for Chemicals & Fertilizers, Govt. of India & Shri Y. S. Jagan Mohan Reddy, Hon'ble Chief Minister, Govt. of Andhra Pradesh on 24.10.2019.



- 10.20** Inauguration of CIPET: IPT - Kochi by Shri D.V. Sadananda Gowda, Hon'ble Minister for Chemicals & Fertilizers, Govt. of India on 31.10.2019.



- 10.21** Inauguration of CIPET SARP-APDDRL Bengaluru Jointly by Hon'ble Chief Minister of Karnataka Shri B.S.Yediyurappa and Hon'ble Minister of Chemicals & Fertilizers, Gol Shri D.V.Sadananda Gowda on 27.12.2019.



- 10.22** International Day of Yoga : While addressing the 69<sup>th</sup> session of United Nations General Assembly (UNGA) on September 27, 2014, the Hon' ble Prime Minister of India, Shri Narendra Modi urged the world community to adopt an International Day of Yoga. CIPET is celebrating the International Day of Yoga every year. The 5<sup>th</sup> International Day of Yoga was celebrated on 21-06-2019 @ CIPET (IPFT Campus), Gurugram and other CIPET centres.



- 10.23** In continuation to the Memorandum of Agreement (MoA) signed between CIPET: IPT Lucknow and Gifutadaseiki, Japan for Establishment of Advanced Mould Development and Training Facility at CIPET under JICA Project, a team lead by Smt. Aparna S. Sharma, Joint Secretary (PC), Deptt. of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, Government of India visited Japan from April 8-12, 2019 to visit Gifutadaseiki / NRI / JICA, Japan to take up this project to next level as well as understanding the project implementation activities to be undertaken by CIPET:IPT Lucknow and for Establishment of Advanced Mould Development and Training Facility at CIPET under JICA Project.

- 10.24** The delegation also visited Gifu University / FP Corporation / DENSO Corporation and M/s. ADEKA to understand the latest facility and Japan Waste Management Institute & concerned industry to understand latest trends in Plastics Recycling.



### CONFERENCES / SEMINARS / EXHIBITIONS

- 10.25** IPLEX – 2019, the International Plastics Exposition was held at Bengaluru on August 23-25, 2019. The International Plastics Exposition was jointly organized by TAPMA, TAPPMA, KPMA, KSPA and CIPET. International delegates, Technocrats, Industrialists, Ministry officials and other dignitaries from State, Central Govts., and plastics fraternities visited this mega event. Shri D.V. Sadananda Gowda, Hon'ble Minister for Chemicals & Fertilizers, Govt. of India was chief guest of the exposition.



- 10.26** Hon'ble Minister for Chemicals & Fertilizers Shri D.V. Sadananda Gowda and Hon'ble Minister of State (Independent Charge) for Shipping; and Minister of State for Chemicals and Fertilizers Shri Mansukh Mandaviya addressed the gathering during the 1<sup>st</sup> Advisory Forum Meeting with Stakeholders on Chemicals & Petrochemicals Sector at New Delhi on 27<sup>th</sup> August, 2019.



- 10.27** K-2019, the largest show on Petrochemicals, rubber and machinery industries, was held from 16-23 October 2019 at Dusseldorf, Germany. A high level delegation headed by Shri D. V. Sadananda Gowda, Hon'ble Minister for Chemicals & Fertilizers, visited the K-show. Around 3200 international exhibitors from 61 countries show cased the latest developments and ground-breaking innovations in Petrochemicals, rubber and machinery industry.



#### **SWACHH BHARAT ABHIYAN**

- 10.28** CIPET, Head Office and its centres have organized Swachh Bharat Abhiyan activities on monthly basis. The students and staff have undertaken cleanliness activities in the Institute premises including Shop floor, Hostel premises & surrounding areas and also, organized awareness rallies in the adjoining areas highlighting the importance of hygiene and cleanliness.
- 10.29** CIPET Head Office and its Centres observed Swachhta Pakhwada Fortnight from 01.09.2019 to 15.09.2019. During Swachhta Pakhwada Fortnight, the various activities / programme organized by CIPET.

#### **SWACHHATA HI SEVA (11<sup>th</sup> September to 27<sup>th</sup> October 2019)**

- 10.30** Remembering revered Father of our Nation – Shri Mahatma Gandhi during his 150<sup>th</sup> Birth Anniversary, a visionary who always upheld the role of cleanliness and sanitation in a nation's triumph to success, Hon'ble Prime Minister had initiated the Swachh Bharat Abhiyan in 2014. In order to strengthen the campaign and to widen its accessibility, a robust scheme Swachhata Hi Seva (SHS) campaign was initiated in 2017. The SHS 2019 was organized from 11<sup>th</sup> September to 27<sup>th</sup> October 2019 focused on 'Plastic Waste Management' towards making India free from single-use plastic. The Department of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, Government of India through the Central Institute of

Plastics Engineering and Technology (CIPET) organized the various activities at 80 locations (40 wards & 40 villages) identified across the country.

- 10.31** Also, one day Workshop on ‘Plastics Waste Management’ was organized at Bengaluru, Murthal and Ranchi on October 02, 2019 to create awareness and to tackle the issue & get acquainted with the latest technologies, newer methods & innovative ways to recycle plastics as well as proper waste management & disposal etc.
- 10.32** Around 550 participants including Central/State Govt. officials, key stakeholders, industry leaders, waste collecting agencies, recyclers, researchers, associations, waste collectors, students, teachers, etc. actively participated in the workshops.
- 10.33** Shri D.V.Sadananda Gowda, Hon’ble Minister for Chemicals & Fertilizers inaugurated the workshop on Plastics Waste Management at CIPET SARP Bengaluru.



- 10.34** Shri P. Raghavendra Rao, Secretary (C&PC), Department of Chemicals & Petrochemicals at CIPET:CSTS, Murthal inaugurated the workshop on Plastics Waste Management.



- 10.35** Smt. Alka Tiwari, Additional Secretary & Financial Adviser, Department of Chemicals & Petrochemicals at CIPET CSTS Ranchi inaugurated the workshop on Plastics Waste Management.



#### Implementation of Official Language - Hindi

- 10.36** "Hindi Pakhwada" was organized at all CIPET Centres from 14th September (Hindi Diwas). During the event, several competitions in Hindi viz., Vocabulary, Quiz, Debate, Essay Writing, Slogan Writing, Reading and Speech were organized for all Officers / Employees / Students at all CIPET Centres.

#### Rajbhasha Inspection by Ministry

- 10.37** Rajbhasha Inspection of CIPET: CSTS – Hyderabad was undertaken by the Officials of the Department of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, Govt. of India, during 06.08.2019 to 07.08.2019.

#### Institute of Pesticide Formulation Technology (IPFT)

##### Introduction

- 10.38** Institute of Pesticide Formulation Technology (IPFT) located at Gurugram 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 technologies. The institute has established a healthy rapport with the Indian Agrochemical Industries and has been able to successfully transfer technologies 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 house hold formulations. IPFT undertakes both in-house and external funded R & D projects.

### Objectives of the Institute

- 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.

### Purpose to Setup

- 10.39** Pesticides in pure chemical form (technical grade) cannot be applied directly because of very high toxicity and complex physico-chemical properties. The technical grade pesticides are converted into a ready to use state (formulation), in which they can be diluted with water and small quantity may be homogeneously distributed over large target area. The formulated products are suitably applied by practical methods to produce desired efficacy on the target pests.
- 10.40** To minimize the risks and disadvantages of conventional formulations, IPFT was set-up to develop various user & environment friendly new generation pesticide formulations and related activities for safety of user, farmers and environment. IPFT is the only Institute of its kind in the country for helping the Indian Agro-chemical Industries in the field of pesticide formulations development. It has emerged as a reputed institute among the pesticide formulation and analytical R & D Centres of India. IPFT has always been at the forefront of developments in pesticide formulations and analytical technologies.

### Organizational Setup

- 10.41** IPFT has a well-defined Organizational structure comprising of a Governing Body which is the supreme decision taking body. Governing Body meets annually and takes critical policy decisions related to the Projects, Budget, Manpower and General Management of the Lab. For day-to-day financial and administrative control, the Institute has a Finance & Administrative Committee (F&AC). The Committee meets as and when required to clear the issues related to Finance & Administration of the Institute. The Institute has a Research Advisory Board to undertake new projects and the same is headed by ADG(PP), DAC, New Delhi. IPFT is served

by four major Functional Divisions, namely, Formulation Division, Analytical Division, Bio-Science Division and a Pilot Plant Division. The Institute carries out In-house, Grants-in-Aid and Industry sponsored projects.

## **Major Achievements**

### **Research & Development**

- 10.42 Development and Promotion of Non-POPs alternatives to DDT** - The main objective of this project is to develop bio-botanical pesticides formulation technologies for mosquito control applications as safe, user & environment friendly alternative to DDT. The composition of Bti based wettable powder, I, suspension concentrate, formulations has been optimised. The preliminary bio-efficacy restudies results indicated that the sample prepared in the lab provided adequate bio-efficacy against mosquito larvae.
- 10.43 Development of Safer SL and SP formulations of Monocrotophos containing Emetics** - Monocrotophos is an insecticide having broad spectrum efficacy. Presently only SL formulation is being used in the country. This formulation poses the risk of intentional or accidental poisoning for the users. Safer SL and SP formulations containing bittering agents to induce vomiting for minimizing the risk of accidental or intentional poisoning. The technology will be transferred to industry M/s. UPL Limited.
- 10.44 Extraction of Bioactive Compounds & Development of Pesticide: Formulations from Aromatic Plants Available in North Eastern Region of India, their Quality Parameters & Employment Generation** - In this project collaboration with Department of Chemistry, Manipur Central University was approved and sanctioned under Twining programme 2017-18 of Department of Bio Technology, New Delhi. The main objective of the project is to develop environment friendly formulations like micro-emulsion concentrated emulsion, gel, cream from aromatic plant extracts in North Eastern Region of India. Research work will concentrate to develop green pesticide formulations from these plants which will reduce the load of chemical insecticides.
- 10.45 In-house R&D work** - The experimental work was conducted for development of following user & environment friendly new formulations:
1. Composition and process optimization of Thiram Nano-suspension formulation
  2. Suspo-emulsion formulation of neem oil in combination with Bti and bioefficacy evaluation on early stages of mosquito.
  3. Nano-encapsulated formulation of Cedar wood oil in Pectin
  4. Nano suspension formulation of Deltamethrin

**10.46 Industry Sponsored Projects:** IPFT has received the following 15 Industry sponsored projects:

- i. Evaluation of neem formulations with and without synergist against whitefly and jassid in brinjal in cucumber crop respectively
- ii. Bio-efficacy evaluation of new combination insecticides , of Indoxacarb 9% + Emamectin Benzoate 1% SC to control major sucking pests in Chilli crop
- iii. Field study of a new fungicide, WCPL 3535 against the early & late blight of Potato
- iv. Evaluation of WCPL 1550 formulation against the wheat Rust (brown, Leaf, Stem, stripe), and powdery mildew
- v. Evaluation of various neem and mixed botanicals bed mosquito coils to control dengue vector
- vi. Studies on the Residues of Imazamox 35% + Imazathapyr 35% WG in soyabean and cropped soil
- vii. Studies on the Residues of the product Fipronil 4% + Acetamiprid 4% SC in Chilli - a three location study
- viii. Studies on the Residues of the product Fipronil 4% + Acetamiprid 4% SC in Tomato - a three location study
- ix. Studies on the Residues of the product Fipronil 4% + Acetamiprid 4% SC in Okra - a three location study
- x. Studies on the Persistence behavior of the product Fipronil 4% + Acetamiprid 4% SC in Chilli
- xi. Studies on the Persistence behavior of the product Fipronil 4% + Acetamiprid 4% SC in Tomato
- xii. Studies on the Persistence behavior of the product Fipronil 4% + Acetamiprid 4% SC in Okra
- xiii. Alpha-Cypermethrin 5% WP samples received by Central Medical Services Society (CMSS) for quality checks both before and after accelerated storage.
- xiv. Residue studies of fruits, vegetables, cereals & seed spices, oil seeds grown in different parts of Rajasthan
- xv. Monitoring of Pesticide Residues in Vegetables of different parts of India sponsored by Ministry of Agriculture

**10.47 NABL Accreditation of Analytical Division** - Analytical Division is continuing to be an 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. The Re-assessment of the laboratory was held during March 25-26, 2017 and the accreditation of the Lab is valid until 30.06.2021. The renewal of accreditation and scope extension for more than 170 pesticides was granted.

- 10.48 Bureau of Indian Standards-** The laboratory is recognized by Bureau of Indian Stanards (BIS) as per Lab Recognition Scheme for the testing of pesticide formulations. The accreditation is valid till June 06, 2021.
- 10.49 SKILL DEVELOPMENT / TRAINING :** IPFT is conducting Skill Development and Training Courses for various stakeholders in Chemical/ Agrochemical sector. IPFT contributes towards farmers field fays and farmers meetings with significant impact under development of rural agriculture and intensive crop management. Research scholars/ students/ executives from Indian universities/ pesticide industries come to IPFT for taking training on above areas. IPFT has also been creating awareness and doing extension activities for farmers through the following activities:
- Identifying and adopting villages for educating the farmers in Pesticide Application Technologies.
  - Conducting survey and obtaining feedback on latest pest's problems.
  - Educating farmers about organic farming and propagating the use of indigenous techniques/ traditional knowledge.
  - Conducting workshops for judicious use of pesticide through Krishi Vigyan Kendras (KVKs).
  - Participation in various Krishi Melas, Conferences, Agriculture Exhibitions etc.
- 10.50** The Institute has 11 publications in reputed national & International journals and published 03 Book chapters during the year 2019-20.

### **Swach Bharat Mission**

- 10.51** Swachhta Pakhwada was observed from 01st September, 2019 to 15<sup>th</sup> September, 2019 at Institute of Pesticide Formuation Technology (IPFT). The office premises and roads nearby area were cleaned by employees of IPFT. Plantation of trees, identification of old records/ files for weeding out, etc. were also done by them. Cleanliness drives in and around factory premises in the Industrial Area i.e. Udyog Vihar was also done by a team of Institute's employees. During shramdan in Industrial area, employees of IPFT educated the illiterate people, local vendors, labour class about the importance of cleanliness. A talk on "Awareness Programme on Swachh Bharat" was also organized.
- 10.52** Swachta Hi Sewa campaign 2019 was organized at IPF wherein all the employees participated. This Institute had started promoting campaign for alternative to Single Use Plastics (SUPs) and directed each and every employees should use alternative to SUPs e.g. they may use glass bottle, water glasses, kulhad for daily uses items and their home also as SUPs are not safe to use and are non-biodegradable. Such activities are also promoted to the general public and local food vendors in and around Udyog Vihar, Gurugram area. During the campaign, waste from surrounding area of IPFT including SUPs was collected by the employees of IPFT and later on it was segregated in two parts i.e. (i) Bio-degradable waste and (ii) Single Use Plastic (SUPs), which was handed over to the waste collectors.

### Promotional Activity for Swacch Bharat

- 10.53** Essay Competition was organized, wherein the employees of IPFT and the Project Employees were required to write the essay between 0930-1000 hrs. on “Importance of Swachhta in our Life”, the topic was made known the participants. Best three essays were selected by Professor Rakesh Kumar, Department of Hindi and Journalism, Delhi University. The Cash Award was given to the selected participants on the concluding day of the Pakhwada.
- 10.54** **Rajbhasha Activities:** IPFT have its own bilingual website. Formats of Bills/ Test reports, Covering letters, Codes, Manuals, Forms, Procedural literature have been prepared in bilingual form. IPFT is a member of Town Official Implementation Committee (TOLIC), Gurgaon.

**10.55 Photo Gallery**

- (a) IPFT celebrated International Yoga Day on 21<sup>ST</sup> June, 2019



- (b) IPFT conducted Swachhta Pakhwada – 1 – 15 September, 2019



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**Chapter – 11****PROMOTIONAL ACTIVITIES AND MAJOR EVENTS****INDIA CHEM 2020**

- 11.1** To promote the Indian Chemicals and Petrochemicals Industry, Department of Chemicals and Petrochemicals in collaboration with FICCI have been organizing the “India Chem” event biennially since 2000. These events provide a platform to the Indian Chemical and Petrochemical Industry to showcase its potential to an international audience.
- 11.2** 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 Iran, China, Japan, United Kingdom, Spain, USA, Germany, Italy, Brazil, Turkey and South East Asian countries are participating as exhibitors, delegates and visitors
- 11.3** With initiatives like "Make in India" program gaining steam, investments, innovation and infrastructure are going to be the major thrust areas for chemical industry players. The current per capita consumption of chemical products in India is about 1/10<sup>th</sup> of the world average, indicating that the demand potential is yet to be realized. It is expected that with growth in per capita income, the chemical industry will grow at even a faster rate and is likely to double by 2025.
- 11.4** Keeping in view the growth & potential of export in the specialty chemicals and petrochemical, Department of Chemicals and Petrochemicals, Government of India and Federation of Indian Chambers of Commerce and Industry (FICCI) will jointly organize the 11<sup>th</sup> edition of INDIA CHEM during 8-10 October, 2020 at Mumbai. It is India's largest composite event of Chemicals, Petrochemicals, and Technologies, Process Plant Machinery, controls & Automation system industry. The event is expected to witness 300 + national and international exhibitors, 15000+ business visitors.

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**Chapter – 12****GENERAL ADMINISTRATION****Organisational Set Up Of the Department**

- 12.1** 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 petrochemicals, as well as Autonomous Bodies engaged in these sectors are some of the other major functions of the Department.
- 12.2** The Department is headed by a Secretary to the Government of India who is assisted by an Additional Secretary & Financial Adviser, one Economic Adviser, two Joint Secretaries, one Deputy Director General and one Chief Controller of Accounts (Organisation chart at Annexure IV).

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

- 12.3** The status of employment of Scheduled Castes/Scheduled Tribes/Physically handicapped in the main Secretariat of the Department, as on 30.11.2019 is as under:-

Group	Total No. of posts	Scheduled Castes	Scheduled Tribes	Physically Handicapped
A	35	3	2	0
B	68	8	1	0
C	78	10	3	1
<b>TOTAL</b>	<b>181</b>	<b>21</b>	<b>6</b>	<b>1</b>

- 12.4** Officers in Group 'A' include officers on deputation from All India Services, Central Services, officers belonging to Central Secretariat Service and Technical posts of the Department. Placements in posts of Group B and C is 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**

- 12.5** 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**

- 12.6** To ensure compliance with the statutory provisions & Presidential Orders on the Official Language Policy of the Union in the Department & in its' attached & subordinate offices, there is a Hindi Section. The work of the Hindi Section is supervised by Deputy Director (OL) under the overall guidance of Economic Advisor.
- 12.7** Hindi Pakhwada was organized in the Department from 12<sup>th</sup> to 25<sup>th</sup> September, 2019. During the Pakhwada, five competitions on Hindi Essay Writing, Noting & Drafting, Translation, Hindi Poetry Recitation & Hindi Essay Writing exclusively for MTSs were held.
- 12.8** Two meetings of the Departmental Official Language Implementation Committee were held under the chairpersonship of DDG and Economic Advisor respectively on 28.06.2019 and 26.09.2019. The progress made in the use of Hindi in the Department was reviewed in these meetings and suggestions for further improvement were adopted for implementation. In these meetings status of Hindi correspondence including noting in Hindi was also discussed.
- 12.9** To promote the use of Hindi in the Department, two incentive award schemes, approved by Department of Official Language, namely: (1) Original Noting/Drafting in Hindi & (2) Dictation in Hindi have been implemented.
- 12.10** Official Language related inspection of CIPET, Hyderabad was carried out by the Department on 6-7 August, 2019 and of HIL (India) Ltd. Rasayani, Mumbai on 19.12.2019 & suggestions were given to the Officers/Officials present during the inspections for increasing the use of Hindi & also to overcome the difficulties being faced by them in use of Hindi.
- 12.11** Two Hindi workshops were organised in the Department on 27.06.2019 & 24.07.2019. The subject of both of the workshop was "Hindi Typing on Computer". 46 Officers/Officials were also provided information on different provisions related to Official Language also in these workshops.
- 12.12** Documents like Annual Report, Performance Budget, Demand-for-Grants, Parliament Questions & Assurances, Papers of Department related Parliamentary Standing Committee & report of

Comptroller and Auditor General, Cabinet notes, papers of updating the Departmental website were issued in bilingual form as per the Section 3(3) of the Official Language Act, 1963. All letters received in Hindi were replied to in Hindi 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 laid out in the Annual Programme of the Department of Official Language.

- 12.13** During the year, Quarterly Progress Reports of Hindi were compiled on the basis of the inputs received from different Sections of the Department & were sent to the Department of Official Language for inclusion in their database. Reports received from attached and subordinate offices were reviewed and deficiencies found therein were suggested for rectification.

### Activities of the Vigilance Set up

- 12.14** 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 Director, Under Secretary and a Vigilance Section.



- 12.15** 'Vigilance Awareness Week' was organized during the period 28<sup>th</sup> October, 2019 to 2nd November, 2019 with the theme "Integrity- A way of life". All the PSUs and Autonomous Organizations under the administrative control of the Department also organized 'Vigilance Awareness Week'. Integrity Pledge was also taken by the officers/officials of this Department as well as PSUs/ Autonomous Organizations under the administrative control of this Department on 28<sup>th</sup> October, 2019.

## Gender Equality

- 12.16** In compliance of The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 the Department has constituted an Internal 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 the Economic Advisor since 13.08.2019. The following activities were undertaken:
- Constitution of the ICC on Sexual Harassment of Women at Workplace was uploaded on the website of the department.
  - One complaint box has been placed at 2<sup>nd</sup> Floor, A Wing near Gate No. 2 for the convenience of women employees.

## Rights of Persons With Disabilities

- 12.17** The Rights of Persons with Disabilities Act, 2016 aims to uphold the dignity of every person in the society and prevent any kind of discrimination. 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 available to attend to the problems of persons with disabilities.
- 12.18** 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'. The post of MTS Group 'C' in this Department has been identified for the post suitable for following categories of disabilities covered under Section 34(1) of the RPWD Act, 2016 :-
- Blindness and low vision
  - Deaf and Hard of hearing
  - Locomotor Disability (OA, OL, OAL, BL, BA) including leprosy cured, cerebral palsy, dwarfism, acid attack victims and muscular dystrophy.
  - Autism, Intellectual Disability, specific learning disability and mental illness.
  - Multiple Disabilities from amongst (a) to (d) including deaf-blindness.

## Observance of 'SWACHHATA PAKHWADA' In The Department

- 12.19** Towards the implementation of Government's vision to mainstream Swachhta activities, the

Department including all PSUs/Autonomous Bodies under the Department prepared Action Plan and implemented the same for the year 2019-20. The reports and photographs are regularly uploaded on the portal hosted by Department of Drinking Water and Sanitation. Department of Chemicals and Petrochemicals observed Swachhta Pakhwada from 1st September to 15<sup>th</sup> September, 2019, and undertook various activities such as displaying banners, special cleanliness drive, removing / weeding out of old files / records, installation of dustbins. Secretary (C&PC) administered Swachhta Pledge at 11:00 AM on 01.09.2019 in his chamber to all Under Secretary and above level officers. The Section Officers / Supervisory Officers of various sections administered the pledge to their staff member at 11:00 AM in their respective rooms.

- 12.20** Two other activities observed during the Pakhwada activities were Essay Writing Competition and Poetry Recital Competition on the subject “Relationship between cleanliness and health” (स्वच्छता और स्वास्थ्य में संबंध) & “Adopt Cleanliness, make your today and tomorrow Healthy” (स्वच्छता अपनाएं अपना आज और कल स्वस्थ बनाएं) respectively, in both English and Hindi. Both the competitions received enthusiastic response from Officer and staff of the Department.
- 12.21** Secretary (C&PC) and other Senior Officers of the Department with the officers and officials of other PSUs and ABs participated in Shramdan activities at IPFT, Gurugram on 11.09.2019.
- 12.22** Shramdan activities were being carried out at Shastri Bhawan by the officers and officials of the Department of Chemicals and Petrochemicals on 11.09.2019. Shri P. Raghavendra Rao, Secretary, (C&PC) and Ms. Alka Tiwari, AS & FA visited the rooms of the Department of Chemicals and Petrochemicals to see the cleanliness of the rooms of the officers and officials during Swachhta Pakhwada.

### **Observance of ‘Swachhata Pakhwada’ in PSUs / AIs.**

- 12.23** During the ‘Swachhata Pakhwada 2019, the CPSEs / Autonomous Bodies under the administrative control of the Department undertook activities like cleaning of office complexes / factories / labs / toilets / premises, organizing swachhata awareness programmes, essay writing, drawing cartoons and quiz competitions / workshops in schools, conducting rallies, distribution of pamphlets, displaying banners and posters on cleanliness, workshop on swachhata etc.

### **SWACHHATA HI SEVA CAMPAIGN**

- 12.24** Responding to the call of the Hon’ble Prime Minister to take the first public step on 2<sup>nd</sup> September towards making India free from Single Use Plastic Waste, the Department as well as CPSEs / Autonomous Bodies, working under the administrative control of this Department, actively participated in “Swachhata Hi Seva” campaign with the aim to make it a Jan Andolan for realizing the vision of a clean India. Smt. Godhuli Mukherjee, Economic Advisor in the Department was

nominated as a nodal officer on behalf of the Department for this campaign. The program implemented was along the following action plan:

### **Action Plan for the Department of Chemicals & Petrochemicals**

The forty CIPET centres and other CPSEs and AB will adopt one Village (Rural) and one Municipal Ward (Urban) for the purpose.

#### **Phase-I (11<sup>th</sup> September to 1<sup>st</sup> October):**

- Training and awareness creation activities will be taken up in the chosen villages and wards.
- Local Educational Institutions, Sarpanches and General public will be involved.
- Collection of plastic waste, also involving training of rag-pickers will be carried out.
- T-Shirts and caps made out of recycled plastic etc. will be provided to the volunteers.

#### **Phase-II (2<sup>nd</sup> October) Shramdaan**

##### **At the National/Regional level:**

- Programmes will be organized in the following three locations on the menace of single use plastic and awareness creation about responsible use of plastic:
  - Mурthal Haryana (North)
  - Bengaluru, Karnataka (South)
  - Ranchi, Jharkhand (East)
- One village will be adopted near Mурthal where the officers and staff of the Department will provide Shramdaan to collect plastic waste.

##### **At Village and Ward level:**

- Plastic waste will be collected and deposited for recycling in suitable locations in consultation with the district authorities.
- Swachhata Pledge will be taken.

#### **Phase III (3<sup>rd</sup> to 27<sup>th</sup> October)**

- Assistance in transportation of collected waste to city/district collection hubs in coordination with the district administration.
- Provide training and assistance to all concerned in segregation, recycling and disposal.

Some of the activities undertaken at Mурthal are noted below:

- i. Swachhta Hi Seva, 2019 programmes were organised by Department of Chemicals & Petrochemicals at CIPET (CSTS) Mурthal, Haryana on 2<sup>nd</sup> October on the occasion of 150<sup>th</sup> birth Anniversary of Mahatma Gandhi ji.

- ii. Secretary DCPC paid tributes to Mahatma Gandhi ji and administered Swachhta Shapath to the officers and officials of DCPC, Faculties and Students of the CIPET: CSTS MURTHAL
- iii. Sharmandan activities were carried out by the Secretary DCPC, Economic Advisor and other officers & officials of DCPC and the Chief Guest Sh. Sangram Singh, sports personality, at Murthal village under Swachhta Hi Sewa.
- iv. Sh. P Raghavendra Rao, Secretary DCPC inaugurated a workshop on Plastic Waste Management to create awareness for management of plastic and to avoid Single use plastic at CIPET CSTS Murthal.

Beside, Department Secretariat, all PSUs / AIs under the administrative control of Department of Chemicals and Petrochemicals organized various events under the Swachhta Hi Sewa Campaign – 2019.

### **International Day of Yoga**

- 12.25** Department as well as CPSEs / Autonomous Bodies working under the administrative control of the Department, actively participated in 5<sup>th</sup> International Yoga Day observed by Department of Chemicals & Petrochemicals, Govt. of India along with HIL (India) Limited, CIPET & IPFT on 21.06.2019. Sh P. Raghavendra Rao, Secretary (C&PC) led the mass yoga program. About 500 persons benefitted from the program.

### **National Unity Day**

- 12.26** Rashtriya Ekta Diwas (National Unity Day) was observed in the Department on 31/10/2019. On this occasion, Rashtriya Ekta Diwas Pledge was administered by Secretary to officers of the Department.



- 12.27** In addition to the Special Days already mentioned, the Department celebrated/observed the following occasions and took pledge wherever prescribed:

World No Tobacco Day	31 <sup>st</sup> May
Sadbhavana Day Pledge	20 <sup>th</sup> August
Swachhta Pledge	2 <sup>nd</sup> September
Hindi Pakhwada	11 <sup>th</sup> September
Swachhta Hi Sewa	2 <sup>nd</sup> October
Vigilance Awareness week	28 <sup>th</sup> October
Rashtriya Ekta Divas	31 <sup>st</sup> October
Constitution Day	26 <sup>th</sup> November
National Voters Day	25 <sup>th</sup> January

#### **Procurement Through Government E-Market (GEM)**

- 12.28** The Department made full utilization of the Government's E-procurement platform by procuring items it consume through GeM. As a result, the value of goods procured through GeM for the period From 01.04.2019 till 31.12.2019 is Rs 92.01 Lakh against the procurement value of Rs 26.0 Lakh during the entire previous Financial Year

#### **Workshop On Capacity Building on GeM Procurement and Holding of Regular Meetings of SCoGeM.**

- 12.29** A workshop was organized in the Department under the Chairpersonship of Economic Advisor on 04.07.2019 on capacity Building on GeM Procurement for all the staff handling procurement in the Department as well as in all PSUs / AIs under the administrative control of Department of Chemicals and Petrochemicals, with a view to train them on all aspects of procurement through GeM. During the workshop, officers from GeM replied to the queries and informed about various aspects of GeM related issues to the participants.
- 12.30** Apart from the above, meetings of the standing committee on Government e-office Marketplace (SCoGeM) are being held regularly to discuss the GeM related issues of the Department and its PSUs / AIs.

#### **Make In India**

- 12.31** The Cabinet in its meeting held on 24<sup>th</sup> May, 2017 approved the "Policy to Provide

Preference to Make in India in Public Procurement". Department for promotion of Industry and Internal Trade has issued a public Procurement (Preference to Make In India) Order, 2017 which mandates all Government Agencies to accord Preferences to Make In India in Public Procurement. The policy aims to boost domestic value addition by providing preferential market access and reliable demand to the domestic manufactures in public procurement. The Department of Chemicals & Petrochemicals has been identified as the nodal Department for implementing the provisions related to procurement of goods and services related to 'Chemical' sector.

- 12.32** Department has issued Public Procurement (Preferences to Make in India) Order for six chemicals viz. (i) Soda Ash, (ii) Caustic Soda, (iii) Aluminium Fluoride, (iv) Carbon Black, (v) Formaldehyde and (vi) Chlorine, on 25<sup>th</sup> May, 2018.
- 12.33** Further, the Department has issued Public Procurement (Preference to Make in India) Order 2017 for forty-nine additional Chemicals, Petrochemical, Dyestuff and Pesticides, on 23<sup>rd</sup> October, 2018.

### **Redressal of Public Grievances**

- 12.34** An internal grievances redressal machinery functioning in this Department, attends to all the public grievances. During the period 01.04.2019 to 31.12.2019, 384 public grievances were received in the Department. These were attended to promptly. The rate of redressal of Public Grievances in this Department is about 98%. The Economic Advisor has been nominated as Nodal Officer of Public Grievances of the Department. The name, designation, room number, telephone number, etc. of the Nodal Officer of Public Grievances has been displayed on the website of the Department (<http://chemicals.gov.in/>). A Public Grievance Officer has been nominated in each Division as the Nodal Officer who monitors the progress of the redressal of public grievances relating to respective Divisions.

### **Right to Information Act, 2005**

- 12.35** Under the provisions of the Right to Information Act, 2005, a RTI Cell has been set up in the Department to coordinate the RTI-related work. This Section collects, transfers the application seeking information under the RTI Act, 2005 to the Central Public Information Officers / Public Authorities concerned with the subject matter and submits quarterly returns regarding receipt and disposal of the RTI applications/appeals to the Central Information Commission.
  - a) All Under Secretary/ Section Officer level officers have been designated as Central Public

Information Officers (CPIOs) under section 5(1) of the Act, according to the subjects being handled by them.

- b) All Director /Deputy Secretary level officers have been designated as Appellate Authorities in terms of section 19 (1) of the Act, in respect of Under Secretaries/Section Officers working as CPIOs with them.
- c) To facilitate the receipt of applications under the RTI Act, 2005, a provision has been made to receive the applications at the Reception Counter of the Department. The applications so received are further forwarded by the RTI Cell to the CPIOs/Public Authorities concerned.
- d) During the year 2019-20 i.e. from 01.04.2019 to 31.12.2019, 192 RTI applications and 7 RTI First Appeals were received in this Department. These were promptly transferred/ forwarded to the concerned public authorities/CPIOs for providing information to the applicants.
- e) As per para 1.4.1 of DoPT's guidelines issued vide their O.M. No. 1/5/2011-IR dated 15.4.2013, this Ministry has been disposing all RTI applications, appeals and replies of CPIOs and appellate authorities through the portal.

#### **12.36 Voter Awareness Forum**

Voter Awareness Forum (VAF) was activated in the Department of Chemicals and Petrochemicals, Ministry of Chemicals and Fertilizers in March 2019 as per the instructions of Election Commission of India. The objectives of VAF are to (i) spread awareness amongst voters of their rights and duties in service class people, (ii) create awareness amongst voters about the process of enrolment, and (iii) to ensure maximum enrolment of youth. Under the aegis of VAF, various activities are carried out in the Department as follows:

- i) On 20<sup>th</sup> March, 2019, a meeting of all VAF in the Department was conducted and members were apprised of the importance of VAF and various activities planned for the members of the forum including contractual manpower working in the Department.
- ii) On 09<sup>th</sup> April, 2019, 'Registration & Name Check' Activity was carried out and the process of enrollment as General Voter and filling up of Form 6, Form 6A, Form 7, Form 8 and 8A physically and online at National Voters' Service Portal was elaborated to the participants. Further, participants were briefed about the dates of Election to the Lok Sabha 2019 and the role of Voter in electoral process.

iii) On 24<sup>th</sup> January, 2020, National Voters' Day (NVD) Pledge was taken in the Department. This was followed by another meeting of Voter Awareness Forum in which the participants were sensitised to the important role of Voters' and requested to cast their vote in the upcoming Delhi Legislative Assembly Election 2020.



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## Annexure – I

## PRODUCT-WISE INSTALLED CAPACITY &amp; PRODUCTION OF MAJOR CHEMICALS

(Figures in 000'MT)

Major Groups / Products	Installed Capacity			Production					CAGR
	2015-16	2016-17	2017-18	2014-15	2015-16	2016-17	2017-18	2018-19	
1	2	3	4	5	6	7	8	9	10
<b>Alkali Chemicals</b>									
SODA ASH	3031.00	3086.00	3464.00	2462.00	2583.01	2613.42	2989.57	3048.19	<b>5.48</b>
CAUSTIC SODA	3102.02	3297.22	3335.94	2442.89	2503.96	2594.50	2742.31	2925.35	<b>4.61</b>
LIQUID CHLORINE	2289.26	2438.51	2474.20	1720.10	1714.82	1800.67	1899.41	2069.11	<b>4.73</b>
<b>Total</b>	<b>8422.28</b>	<b>8821.73</b>	<b>9274.14</b>	<b>6624.99</b>	<b>6801.78</b>	<b>7008.58</b>	<b>7631.30</b>	<b>8042.65</b>	<b>4.97</b>
<b>Inorganic Chemicals</b>									
ALUMINIUM FLUORIDE	25.60	25.60	25.60	6.73	9.51	8.14	7.51	5.70	<b>-4.09</b>
CALCIUM CARBIDE	112.00	112.00	112.00	87.18	83.47	85.02	87.30	83.17	<b>-1.17</b>
CARBON BLACK	640.00	640.00	640.00	444.35	469.56	535.27	530.36	546.39	<b>5.30</b>
POTASSIUM CHLORATE	3.00	3.00	4.60	0.45	0.41	0.01	0.35	0.70	<b>11.99</b>
TITANIUM DIOXIDE	82.50	82.50	82.50	47.88	58.53	58.46	57.82	57.06	<b>4.48</b>
RED PHOSPHORUS	1.68	1.68	1.68	0.89	0.84	0.77	0.88	1.03	<b>3.84</b>
HYDROGEN PEROXIDE	169.23	165.85	165.85	119.75	153.08	148.87	157.02	156.45	<b>6.91</b>
CALCIUM CARBONATE	282.35	282.35	282.35	236.93	226.13	216.33	217.25	213.33	<b>-2.59</b>
<b>Total</b>	<b>1316.35</b>	<b>1312.98</b>	<b>1314.58</b>	<b>944.15</b>	<b>1001.53</b>	<b>1052.87</b>	<b>1058.48</b>	<b>1063.83</b>	<b>3.03</b>
<b>Organic Chemicals</b>									
ACETIC ACID	177.43	177.43	159.62	159.61	157.91	158.51	157.07	153.80	<b>-0.92</b>
ACETIC ANHYDRIDE	118.30	115.43	115.43	93.84	92.99	94.82	97.09	95.47	<b>0.43</b>
ACETONE	47.14	47.14	47.14	25.98	24.96	26.79	32.87	40.74	<b>11.90</b>
PHENOL	76.75	76.75	76.75	42.26	40.42	43.57	53.45	65.39	<b>11.53</b>
METHANOL	474.30	474.30	474.30	209.83	162.62	176.96	260.49	271.93	<b>6.70</b>
FORMALDEHYDE	411.30	411.30	411.30	255.95	242.09	244.19	248.23	226.61	<b>-3.00</b>
NITROBENZENE	91.80	91.80	112.05	69.72	68.37	69.71	71.41	68.80	<b>-0.33</b>
MALEIC ANHYDRIDE	6.40	6.40	6.40	3.20	3.54	3.53	3.31	4.56	<b>9.21</b>
PENTAERYTHRITOL	13.72	13.72	13.72	13.46	13.97	14.01	14.10	14.99	<b>2.73</b>
ANILINE	60.10	54.10	54.10	34.47	39.40	41.45	41.88	37.85	<b>2.36</b>
CHLORO METHANES	221.10	221.10	219.92	220.71	220.18	221.51	222.43	285.53	<b>6.65</b>

(Figures In 000' MT)

Major Groups / Products	Installed Capacity			Production					CAGR
	2015-16	2016-17	2017-18	2014-15	2015-16	2016-17	2017-18	2018-19	
1	2	3	4	5	6	7	8	9	10
ISOBUTYLBENZENE	13.80	13.80	13.80	4.30	7.24	6.92	8.95	9.70	<b>22.52</b>
ONCB	30.00	30.00	30.00	16.13	19.26	22.55	24.90	23.70	<b>10.10</b>
PNCB	30.00	30.00	30.00	26.96	31.27	34.19	37.78	36.07	<b>7.55</b>
MEK	5.00	10.00	10.00	4.02	5.75	6.54	6.40	7.00	<b>14.85</b>
ACETALDEHYDE	189.01	167.01	163.01	67.77	58.96	60.46	65.74	61.89	<b>-2.24</b>
ETHANOLAMINES	17.76	17.76	17.76	13.76	13.25	13.11	13.20	16.70	<b>4.96</b>
ETHYL ACETATE	545.83	520.63	526.63	327.94	360.40	371.27	411.49	440.56	<b>7.66</b>
MENTHOL	33.65	33.65	33.65	17.45	14.73	14.54	13.68	6.24	<b>-22.67</b>
ORTHO NITRO TOLUENE	16.40	16.40	19.00	11.74	11.52	13.80	14.39	16.89	<b>9.52</b>
<b>Total</b>	<b>2579.78</b>	<b>2528.71</b>	<b>2534.57</b>	<b>1619.11</b>	<b>1588.83</b>	<b>1638.44</b>	<b>1798.85</b>	<b>1884.42</b>	<b>3.87</b>
<b>Pesticides and Insecticides</b>									
D.D.T.	6.34	6.34	6.34	3.63	2.09	2.26	1.27	1.37	<b>-21.66</b>
MALATHION	3.80	3.80	3.80	2.24	2.04	2.26	3.29	4.39	18.31
DIMETHOATE	1.45	1.45	1.45	1.43	1.44	1.37	1.18	1.26	-3.22
D.D.V.P.	33.92	33.92	33.62	6.66	7.22	8.13	8.13	9.14	8.24
QUINALPHOS	2.80	2.80	2.20	1.88	0.84	1.29	1.18	0.89	-17.18
MONOCROTOPHOS	13.94	13.94	13.94	6.97	5.48	6.58	5.50	5.30	-6.62
PHOSPHAMIDON	2.00	2.00	2.00	0.13	0.13	0.09	0.11	0.00	-100.00
PHORATE	10.13	12.40	12.40	6.62	5.92	5.91	7.02	5.85	-3.05
ETHION	2.20	2.20	2.20	1.60	1.72	2.11	2.38	1.32	-4.79
FENVALERATE	3.60	3.60	3.60	0.51	0.56	0.53	0.74	0.70	7.94
CYPERMETHRIN	27.79	24.33	24.43	8.59	8.53	7.88	8.25	10.95	6.27
ACEPHATE	19.67	19.67	18.97	17.97	16.58	16.27	18.27	19.63	2.24
CHLORPYRIPHOS	16.85	19.15	18.48	9.73	6.87	5.87	7.98	7.14	-7.44
TRIAZOPHOS	3.90	3.36	3.36	1.00	1.72	2.37	1.54	0.89	-2.98
TEMEPHOS	0.25	0.25	0.25	0.00	0.08	0.08	0.10	0.08	
DELTAMETHRIN	0.61	0.61	0.62	0.51	0.38	0.37	0.55	0.68	<b>7.48</b>
ALPHAMETHRIN	0.50	0.50	0.50	0.75	0.23	0.10	0.32	0.34	<b>-17.59</b>
PROFENOFOSS TECHNICAL	12.90	10.50	10.50	7.58	6.85	10.50	9.95	12.45	<b>13.22</b>
PRETILACHLOR TECHNICAL	2.58	2.58	2.58	1.88	1.94	2.58	3.60	3.63	<b>17.91</b>
LAMBDA CYHALOTHRIN	2.40	2.40	2.60	0.47	0.42	0.74	1.14	0.62	<b>7.09</b>

(Figures In 000' MT)

Major Groups / Products	Installed Capacity			Production					CAGR
	2015-16	2016-17	2017-18	2014-15	2015-16	2016-17	2017-18	2018-19	
1	2	3	4	5	6	7	8	9	10
PHENTHOATE	0.90	0.90	0.90	1.40	1.11	1.14	1.32	1.53	<b>2.31</b>
PERMETHRIN TECH	1.97	1.97	1.67	1.70	1.30	1.10	1.53	1.86	<b>2.33</b>
IMIDACALOPRID TECH	1.13	1.13	1.13	0.56	0.20	0.18	0.34	0.10	<b>-34.99</b>
CAPTAN & CAPTAFOL	3.45	3.43	3.43	2.38	2.12	1.79	1.76	1.93	<b>-5.11</b>
ZIRAM(THIO BARBAMATE)	0.70	0.70	0.70	0.58	0.51	0.60	0.72	0.76	<b>7.19</b>
CARBENDZIM(BAVISTIN)	0.98	0.98	0.98	0.36	0.24	0.13	0.03	0.02	<b>-50.68</b>
MANCOZAB	72.46	77.14	82.39	61.40	66.38	78.48	70.25	69.33	<b>3.08</b>
HEXA CONAZOLE	1.08	1.08	1.08	0.59	0.62	0.46	0.59	0.50	<b>-4.13</b>
METCONAZOLE	0.75	0.75	0.75	0.61	0.39	0.35	0.40	0.34	<b>-13.74</b>
2, 4-D	22.00	26.00	27.00	11.62	18.46	23.36	25.83	24.24	<b>20.17</b>
BUTACHLOR	0.50	0.50	0.50	0.00	0.00	0.00	0.00	0.00	
ETHOFUMESATE TECHNICAL	1.56	1.65	1.43	0.62	0.50	1.04	1.29	1.04	<b>13.91</b>
THIAMETHOXAM TECHNICAL	3.10	3.10	3.10	1.66	1.92	2.51	3.28	5.57	<b>35.36</b>
PENDIMETHALIN	3.00	4.50	4.50	2.26	2.82	4.04	3.78	2.82	<b>5.72</b>
METRIBUZIN	1.20	1.20	1.20	0.52	0.91	1.12	0.88	1.92	<b>38.67</b>
TRICLOPYR ACID TECH	0.30	0.30	0.30	0.19	0.30	0.28	0.15	0.13	<b>-10.06</b>
ISOPROTURON	6.25	6.25	6.25	2.43	1.95	0.13	0.00	0.00	<b>-100.00</b>
GLYPHOSATE	9.26	13.16	12.92	9.69	6.96	6.35	6.29	6.68	<b>-8.86</b>
DIURON	3.30	3.72	3.72	0.12	1.26	3.68	3.26	3.62	<b>133.36</b>
ATRAZIN	0.50	0.50	0.50	1.20	1.21	1.90	2.25	1.48	<b>5.37</b>
ZINC PHOSPHIDE	1.32	1.92	1.92	1.29	1.50	1.31	1.40	1.26	<b>-0.59</b>
ALUMINIUM PHOSPHIDE	3.90	4.74	4.74	5.05	5.75	6.40	4.77	4.91	<b>-0.69</b>
DICOFOL	0.15	0.15	0.15	0.11	0.09	0.09	0.08	0.05	<b>-16.51</b>
<b>Total</b>	<b>307.39</b>	<b>321.57</b>	<b>325.09</b>	<b>186.47</b>	<b>187.52</b>	<b>213.72</b>	<b>212.70</b>	<b>216.70</b>	<b>3.83</b>
<b>Dyes and Pigments</b>									
AZO DYES	22.62	22.62	21.14	10.59	9.82	9.98	11.04	9.05	<b>-3.86</b>
ACID DIRECT DYES(OTHER THAN AZO)	44.90	44.90	44.90	17.23	20.57	19.86	21.15	24.13	<b>8.79</b>
DISPERSE DYES	55.21	71.01	67.21	29.56	43.57	41.35	46.72	55.24	<b>16.92</b>
FAST COLOUR BASES	0.50	0.50	0.00	0.01	0.00	0.00	0.00	0.00	<b>-100.00</b>
INGRAIN DYES	1.61	1.61	1.44	0.44	0.30	0.00	0.00	0.00	<b>-100.00</b>
OIL SOLUBLE (SOLVENT DYES)	3.60	3.60	3.60	1.80	2.20	2.23	2.07	2.29	<b>6.22</b>
OPTICAL WHITENING AGENTS	40.90	40.90	40.80	22.94	24.70	23.77	23.21	29.30	<b>6.31</b>

(Figures In 000' MT)

Major Groups / Products	Installed Capacity			Production					CAGR
	2015-16	2016-17	2017-18	2014-15	2015-16	2016-17	2017-18	2018-19	
1	2	3	4	5	6	7	8	9	10
ORGANIC PIGMENT	80.75	80.75	87.04	76.89	61.31	63.74	73.34	73.94	-0.98
PIGMENT EMULSION	5.41	5.41	5.41	9.64	9.67	10.61	10.16	9.78	0.35
REACTIVE DYES	171.82	170.59	178.49	89.47	106.23	120.96	151.91	151.38	14.05
SULPHUR DYES (SULPHUR BLACK)	3.00	3.00	8.25	9.38	9.55	10.07	7.32	7.54	-5.32
VAT DYES	2.98	2.98	2.86	1.77	1.44	1.52	1.65	1.78	0.16
SOLUBILISED VAT DYES	0.13	0.13	0.13	0.03	0.03	0.02	0.02	0.004	-40.54
FOOD COLOURS	0.00	0.00	0.00	0.66	0.71	0.75	0.78	0.786	4.54
NAPTHOLS	0.90	0.90	0.90	0.00	0.00	0.00	0.00	0.00	
INORGANIC PIGMENTS	18.05	18.05	18.05	14.82	14.19	15.41	17.88	16.29	2.39
Total	452.37	466.95	480.22	285.23	304.28	320.27	367.25	381.51	7.54

Note : Production and Installed Capacity data based on MPRs received from large and medium scale units only.

Note : Some Pesticides and Dyes manufacturing units supply combined Installed Capacity.

## Annexure-II

## PRODUCT-WISE INSTALLED CAPACITY &amp; PRODUCTION OF MAJOR PETROCHEMICALS

(Figures in 000' MT)

Major Groups / Products	Installed Capacity			Production					CAGR
	2015-16	2016-17	2017-18	2014-15	2015-16	2016-17	2017-18	2018-19	
1	2	3	4	5	6	7	8	9	10
<b>A : BASIC MAJOR PETROCHEMICALS</b>									
<b>I. Synthetic Fibres / Yarn</b>									
1. Polyester Filament Yarn (PFY)	2898.36	2841.29	2715.53	2178.749	2179.003	2200.908	2283.406	2316.43	1.54
2. Nylon Filament Yarn (NFY)	61.96	63.96	63.96	32.449	37.251	40.906	40.008	46.615	9.48
3. Nylon Industrial Yarn (NIY)	93.58	93.58	93.58	100.524	94.866	103.559	107.585	109.545	2.17
4. Polypropylene Filament Yarn (PPFY)	3.60	3.60	3.60	5.14	3.467	3.394	3.146	2.356	-17.72
<b>Sub Total Yarn (1+2+3+4)</b>	<b>3057.49</b>	<b>3002.42</b>	<b>2876.67</b>	<b>2316.86</b>	<b>2314.59</b>	<b>2348.77</b>	<b>2434.15</b>	<b>2474.95</b>	<b>1.66</b>
5. Acrylic Fibre (Inc. Dry Spun) (AF)	107.00	107.00	107.00	89.63	105.87	95.39	90.97	99.45	2.64
6. Polyester Staple Fibre (PSF)	1256.56	1256.08	1256.56	1021.25	1039.65	1056.00	1005.30	931.44	-2.27
7. Polypropylene Staple Fibre (PPSF)	32.13	32.13	32.13	25.42	27.04	24.56	22.24	20.74	-4.96
8. Polyester Staple Fibrefil (PSFF)	69.00	69.00	69.00	57.30	51.05	53.65	51.33	52.99	-1.93
9. Polyester Industrial Yarn (PIY)	21.50	21.50	21.50	16.58	15.38	16.33	15.04	14.83	-2.76
10. Elastomeric/Spandex Filament Yarn	5.00	5.00	8.50	4.95	4.81	4.70	6.18	7.08	9.36
<b>Sub Total Fibre (5 to 10)</b>	<b>1491.19</b>	<b>1490.71</b>	<b>1494.69</b>	<b>1215.12</b>	<b>1243.80</b>	<b>1250.63</b>	<b>1191.05</b>	<b>1126.53</b>	<b>-1.87</b>
<b>Total Synth. Fibre / Yarn(1 to 10)</b>	<b>4548.68</b>	<b>4493.13</b>	<b>4371.35</b>	<b>3531.98</b>	<b>3558.39</b>	<b>3599.40</b>	<b>3625.20</b>	<b>3601.48</b>	<b>0.49</b>
<b>II. Polymers</b>									
1. Linear Low Density Polyethylene (LLDPE)*	No separate Capacity			910.257	1204.568	1318.263	1290.046	1581.224	14.80
2. High Density Polyethylene (HDPE)*	No separate Capacity			1155.794	1317.151	1520.037	1578.378	1597.676	8.43
<b>LLDPE/HDPE (Combined) *</b>	<b>3135.00</b>	<b>3135.00</b>	<b>3135.00</b>	<b>2066.05</b>	<b>2521.72</b>	<b>2838.30</b>	<b>2868.42</b>	<b>3178.90</b>	<b>11.37</b>
3. Low Density Polyethylene (LDPE)	160.00	160.00	160.00	184.40	200.03	201.76	185.66	193.05	1.15
4. Polystyrene(PS)	472.00	472.00	471.00	281.17	308.58	311.35	301.58	292.86	1.02
5. Polypropylene(PP)	4456.20	4456.20	4456.20	3614.82	4284.42	4253.39	4350.20	4779.02	7.23
6. Poly Vinyl Chloride(PVC)	1423.00	1493.00	1493.00	1330.44	1437.89	1461.53	1466.08	1488.40	2.84
7. Expandable Polystyrene (EX-PS)	121.80	122.80	126.30	80.68	86.20	96.77	103.91	108.27	7.63
<b>Total Polymers</b>	<b>9768.00</b>	<b>9839.00</b>	<b>9841.50</b>	<b>7557.57</b>	<b>8838.84</b>	<b>9163.10</b>	<b>9275.85</b>	<b>10040.50</b>	<b>7.36</b>
<b>III. Synthetic Rubber</b>									
1. Styrene Butadiene Rubber (SBR)	271.00	271.00	271.00	57.25	124.80	167.33	193.97	228.64	41.37
2. Poly Butadiene Rubber (PBR)	114.00	114.00	114.00	107.54	113.93	117.09	113.63	122.23	3.25
3. Nitrile Butadiene Rubber (NBR)	25.30	25.30	25.30	0.38	0.39	0.35	0.05	0.00	-100.00

(Figures in 000'MT)

Major Groups / Products	Installed Capacity			Production					CAGR
	2015-16	2016-17	2017-18	2014-15	2015-16	2016-17	2017-18	2018-19	
1	2	3	4	5	6	7	8	9	10
4. Ethyl Vinyl Acetate (EVA)	15.00	15.00	15.00	6.42	2.41	0.00	0.00	0.00	-100.00
<b>Total Synthetic Rubber</b>	<b>425.30</b>	<b>425.30</b>	<b>425.30</b>	<b>171.59</b>	<b>241.53</b>	<b>284.78</b>	<b>307.66</b>	<b>350.87</b>	<b>19.58</b>
<b>IV : Synthetic Detergent Intermediates</b>									
1. Linear Alkyl Benzene (LAB)	547.40	547.40	547.40	410.54	377.20	447.65	451.53	454.82	2.59
2. Ethylene Oxide (EO)	140.00	140.00	140.00	185.32	188.31	216.06	291.30	232.34	5.82
<b>Total Synth. Detergent Intermediates</b>	<b>687.40</b>	<b>687.40</b>	<b>687.40</b>	<b>595.86</b>	<b>565.51</b>	<b>663.71</b>	<b>742.82</b>	<b>687.16</b>	<b>3.63</b>
<b>IV. Performance Plastic</b>									
1. ABS Resin	128.00	140.00	140.00	107.28	117.01	117.77	145.23	148.18	8.41
2. Nylon-6 & Nylon 66	28.20	28.20	28.20	20.75	21.44	21.54	20.56	21.52	0.92
3. Polymethyl Methacrylate (PMMA)	3.50	3.50	3.50	1.05	1.47	0.29	0.02	0.00	-100.00
4. Styrene Acrylonitrile (SAN)	136.00	148.00	148.00	88.77	98.68	99.24	114.69	131.76	10.38
5. PET Chips/Polyester Chips	2702.91	2605.06	2477.40	1361.98	1452.93	1548.70	1424.60	1271.09	-1.71
6. PTFE (TEFLON)	19.71	19.80	19.80	11.35	8.75	11.73	13.72	16.24	9.36
<b>Total Performance Plastics</b>	<b>3018.32</b>	<b>2944.56</b>	<b>2816.90</b>	<b>1591.18</b>	<b>1700.27</b>	<b>1799.27</b>	<b>1718.81</b>	<b>1588.79</b>	<b>-0.04</b>
<b>Total Basic Major Petrochemicals</b>									
(I+II+III+IV+V)	<b>18447.70</b>	<b>18389.39</b>	<b>18142.45</b>	<b>13448.16</b>	<b>14904.54</b>	<b>15510.25</b>	<b>15670.34</b>	<b>16268.79</b>	<b>4.88</b>
<b>B : INTERMEDIATES</b>									
<b>I. Fiber Intermediates</b>									
1. Acrylonitrile (ACN)	41.00	41.00	41.00	33.70	1.94	0.00	0.00	0.00	-100.00
2. Caprolactum	120.00	120.00	120.00	87.05	86.30	86.96	85.97	92.56	1.55
3. Mono Ethylene Glycol (MEG)	1153.40	1153.40	1153.40	1001.14	1158.97	1110.50	1132.65	1159.76	3.75
4. Purified Terephthalic Acid (PTA)	3753.00	3753.00	3873.00	3755.28	3431.78	3390.56	3492.44	3404.93	-2.42
<b>Total Fibre Intermediates</b>	<b>5067.40</b>	<b>5067.40</b>	<b>5187.40</b>	<b>4877.16</b>	<b>4678.98</b>	<b>4588.01</b>	<b>4711.06</b>	<b>4657.25</b>	<b>-1.15</b>
<b>II. Building Blocks</b>									
<b>Olefins</b>									
1. Ethylene	4283.40	4233.40	4233.40	3191.90	3727.39	4021.73	4222.68	3831.89	4.67
2. Propylene	4745.63	4745.62	4745.62	3869.40	4456.69	4425.21	4457.91	4639.53	4.64
3. Butadiene	433.00	433.00	433.00	239.45	343.45	347.36	332.38	385.76	12.66
<b>Total Olefins</b>	<b>9462.03</b>	<b>9462.03</b>	<b>9412.02</b>	<b>7300.74</b>	<b>8527.53</b>	<b>8794.29</b>	<b>9012.97</b>	<b>8857.18</b>	<b>4.95</b>
<b>Aromatics</b>									
1. Benzene	1566.15	1566.35	1566.35	1094.38	1332.59	1332.04	1318.03	1414.56	6.63
2. Toluene	287.97	288.27	288.27	108.16	115.74	126.76	106.94	141.14	6.88

(Figures in 000'MT)

Major Groups / Products	Installed Capacity			Production					CAGR
	2015-16	2016-17	2017-18	2014-15	2015-16	2016-17	2017-18	2018-19	
1	2	3	4	5	6	7	8	9	10
3. Mixed Xylene	898.33	898.33	898.33	215.00	269.35	296.03	271.35	249.05	<b>3.74</b>
4. Ortho-xylene	420.00	420.00	420.00	462.46	499.51	444.88	447.76	406.30	<b>-3.18</b>
5. Paraxylene	3131.70	3131.70	3131.70	2757.84	3266.36	3161.30	3194.52	3331.81	<b>4.84</b>
<b>Total Aromatics</b>	<b>6304.15</b>	<b>6304.15</b>	<b>6304.65</b>	<b>4637.84</b>	<b>5483.55</b>	<b>5361.02</b>	<b>5338.60</b>	<b>5542.87</b>	<b>4.56</b>
<b>Total Intermediates</b>									
(I+II)	<b>20833.58</b>	<b>20833.58</b>	<b>20904.07</b>	<b>16815.75</b>	<b>18690.06</b>	<b>18743.32</b>	<b>19062.62</b>	<b>19057.29</b>	<b>3.18</b>
<b>C : OTHER PETRO-BASED CHEMICALS</b>									
1. Butanol	26.00	26.00	26.00	4.20	11.08	12.47	17.39	21.69	<b>50.73</b>
2. C4-Raffinate	291.60	291.60	291.60	364.61	428.64	437.17	339.20	380.26	<b>1.06</b>
3. Di-Ethylene Glycol	84.50	84.50	83.30	100.96	114.24	108.24	105.70	107.41	<b>1.56</b>
4. Diacetone Alcohol	9.50	9.50	9.50	0.00	0.00	0.00	0.21	4.07	
5. Ethylene Dichloride (By Product)	593.20	593.20	593.20	285.30	277.35	282.57	282.35	339.20	<b>4.42</b>
6. 2-Ethyl Hexanol	55.20	55.20	55.20	13.89	44.41	45.59	56.64	58.89	<b>43.49</b>
7. Iso-Butanol	2.80	2.80	2.80	0.67	1.86	1.96	2.23	2.21	<b>34.65</b>
8. Isopropanol (IPA)	70.00	70.00	70.00	74.98	71.18	72.47	71.83	58.27	<b>-6.11</b>
9. Methyl Methacrylate (MMA)	4.38	4.38	4.38	3.47	2.28	0.54	2.83	3.99	<b>3.56</b>
10. Phthalic Anhydride (PAN)	349.05	349.05	349.05	291.52	305.78	296.07	290.01	275.07	<b>-1.44</b>
11. Propylene Oxide (PO)	36.00	36.00	36.00	36.61	25.59	29.34	36.00	35.12	<b>-1.03</b>
12. Propylene Glycol (PG)	20.00	20.00	20.00	16.25	13.65	16.35	17.64	19.13	<b>4.17</b>
13. Polyvinyl Acetate Resin	17.34	17.34	17.34	0.00	0.00	0.00	0.00	0.00	
14. Vinyl Acetate Monomer (VAM)	30.00	30.00	30.00	0.00	0.00	0.00	0.00	0.00	
15. Vinyl Chloride Monomer (VCM) (By Product)	541.30	541.30	541.30	717.88	790.71	791.26	777.98	803.62	<b>2.86</b>
16. Polyol	142.00	141.63	141.63	51.78	71.80	78.72	79.43	82.13	<b>12.22</b>
17. PBT	**	**	**	0.50	0.50	0.61	0.58	1.29	<b>26.60</b>
18. Polycarbonate	**	**	**	0.16	0.17	0.15	0.09	0.12	<b>-8.49</b>
<b>Total Other Petro-based Chemicals</b>	<b>2272.87</b>	<b>2272.87</b>	<b>2272.49</b>	<b>1962.81</b>	<b>2159.22</b>	<b>2173.50</b>	<b>2080.10</b>	<b>2192.46</b>	<b>2.80</b>
Note : * Combined capacity to produce both LLDPE and HDPE. However production is independent.									
Note : ** Includes capacity with Nylon 6, 66									
Source::Production and Installed Capacity data based on MPRs received from large and medium scale units only.									

**Annexure-III****Chemicals Under Rotterdam Convention**

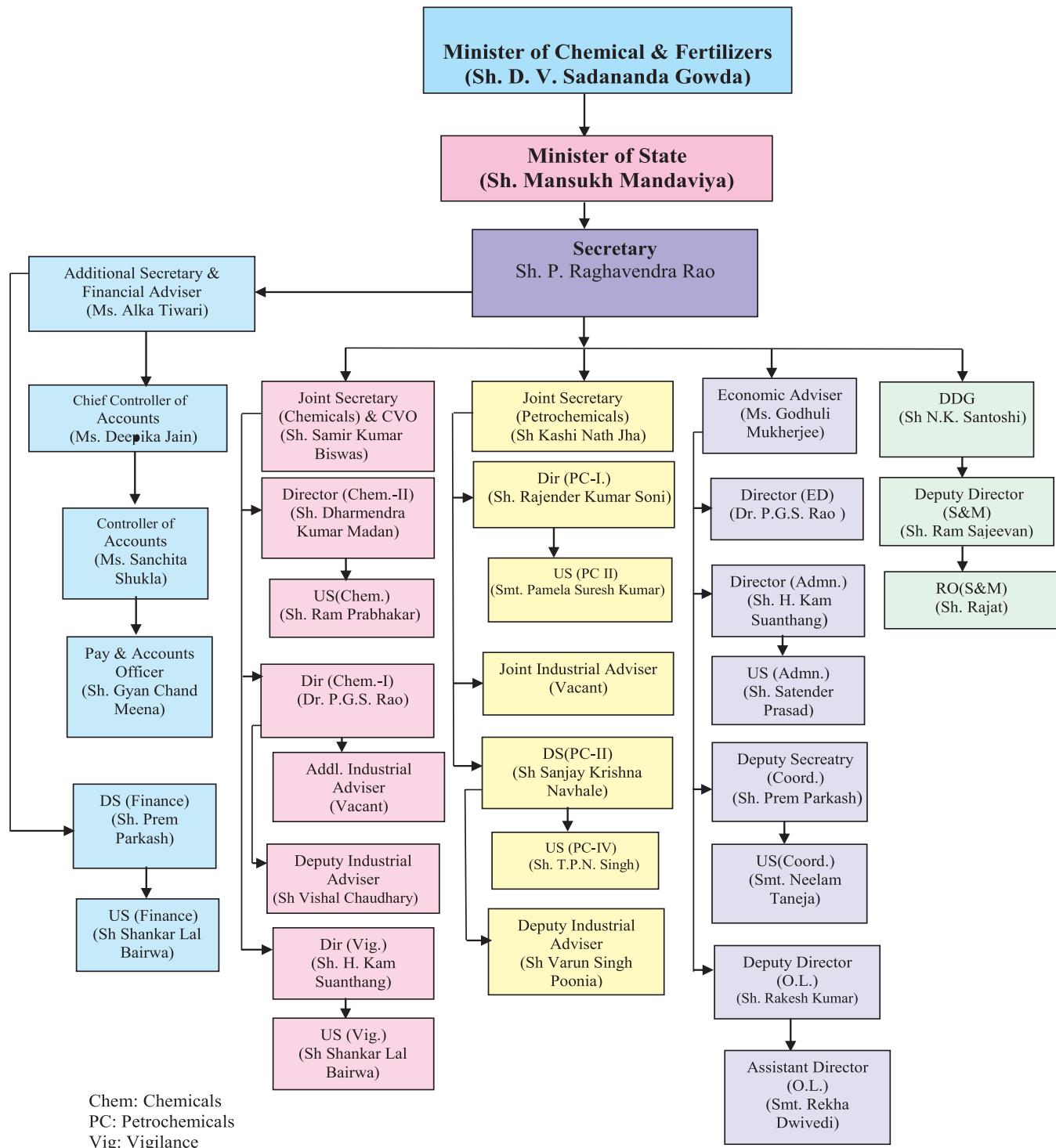
There are a total of 52 chemicals, 35 pesticides (including 3 severely hazardous pesticide formulations), 16 industrial chemicals, and 1 chemical in both the pesticide and the industrial chemical categories

<b>S. No.</b>	<b>Chemical</b>	<b>Category</b>
1	2,4,5-T and its salts and esters	Pesticide
2	Alachlor	Pesticide
3	Aldicarb	Pesticide
4	Aldrin	Pesticide
5	Azinphos methyl	Pesticide
6	Binapacryl	Pesticide
7	Captafol	Pesticide
8	Chlordane	Pesticide
9	Chlordimeform	Pesticide
10	Chlorobenzilate	Pesticide
11	DDT	Pesticide
12	Dieldrin	Pesticide
13	Dinitro-ortho-cresol (DNOC) and its salts (such as ammonium salt, potassium salt and sodium salt)	Pesticide
14	Dinoseb and its salts and esters	Pesticide
15	1,2-dibromoethane (EDB)	
16	Endosulfan	Pesticide
17	Ethylene dichloride	Pesticide
18	Ethylene oxide	Pesticide
19	Fluoroacetamide	Pesticide
20	HCH (mixed isomers)	Pesticide
21	Heptachlor	Pesticide
22	Hexachlorobenzene	Pesticide
23	Lindane (gamma-HCH)	Pesticide
24	Mercury compounds including inorganic mercury compounds, alkyl mercury compounds and alkyloxyalkyl and aryl mercury compounds	Pesticide
25	Monocrotophos	Pesticide
26	Parathion	Pesticide
27	Pentachlorophenol and its salts and esters	Pesticide
28	Toxaphene (Camphechlor)	Pesticide
29	Tributyl tin compounds	Pesticide/Industrial

30	Dustable powder formulations containing a combination of : benomyl at or above 7 per cent, carbofuran at above 10 per cent, thiram at or above 15 per cent	Severely hazardous pesticide formulation
31	Methyl-parathion (Emulsifiable concentrates (EC) at or above 19.5% active ingredient and dusts at or above 1.5% active ingredient)	Severely hazardous pesticide formulation
32	Phosphamidon (Soluble liquid formulations of the substance that exceed 1000 g active ingredient/l)	Severely hazardous pesticide formulation
33	Actinolite Asbestos	Industrial
34	Anthophyllite asbestos	Industrial
35	Amosite Asbestos	Industrial
36	Crocidolite asbestos	Industrial
37	Tremolite asbestos	Industrial
38	Commercial octabromodiphenyl ether (including Hexabromodiphenyl ether and Heptabromodiphenyl ether)	Industrial
39	Commercial pentabromodiphenyl ether (including tetrabromodiphenyl ether and pentabromodiphenyl ether)	Industrial
40	Perfluorooctane sulfonic acid, perfluorooctane sulfonates, perfluorooctane sulfonamides and perfluorooctane sulfonyls	Industrial
41	Polybrominated biphenyls (PBBs)	Industrial
42	Polychlorinated biphenyls (PCBs)	Industrial
43	Polychlorinated terphenyls (PCTs)	Industrial
44	Tetraethyl lead	Industrial
45	Tetramethyl lead	Industrial
46	Tris (2,3 dibromopropyl) phosphate	Industrial
47	Carbofuran	Pesticide
48	Trichlorfon	Pesticide
49	Short Chain Chlorinated Paraffins (SCCP)	Industrial
50	Methamidophos	Pesticide
51	Phorate	Pesticide
52	Hexabromocyclododecane	Industrial

**Annexure-IV**

**ORGANISATIONAL CHART OF DEPARTMENT OF CHEMICALS & PETROCHEMICALS (As on 06.02.2020 )**





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**Ministry of Chemicals & Fertilizers**  
**Department of Chemicals and Petrochemicals**  
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