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THE PETROLEUM, CHEMICALS AND PETROCHEMICALS INVESTMENT REGIONS (PCPIRs): COMPARATIVE ANALYSIS OF FOUR PCPIRs IN INDIA

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ABSTRACT

After the economic reforms in 1991, vast tracts of agricultural land have been acquired by the various state governments for the development of Special economic Zones (SEZs) and Petroleum, Chemicals and Petrochemicals Investment Regions (PCPIRs).This is the consequence of export promotion based industrial development vigorously followed by the Indian government in the post globalization era. Globalization and liberalization of the Indian economy has led to the emergence of many growth opportunities and expanded the developmental role of the state governments enormously. In this neoliberal economy many Indian states have started promoting industrial and infrastructure development through appropriate policy changes including fiscal incentives, minimal regulations and other promotional measures. PCPIR policy 2007 which approved four PCPIRs in India aimed at developing industrial clusters in the petroleum, chemical and petrochemical sectors of the country. After a decade, only Dahej PCPIR in Gujarat has succeeded in achieving the distinction of being fastest growing industrial cluster in terms of employment generation, investment and exports as compared to other three PCPIRs namely Visakhapatnam–Kakinada (Andhra Pradesh), Paradeep (Odisha) and Cuddalore & Nagapattinam(Tamil Nadu). In this backdrop present paper seeks to analyze basic features of PCPIR policy, current status of Visakhapatnam–Kakinada (Andhra Pradesh), Dahej (Gujarat), Paradeep (Odisha) and Cuddalore and Nagapattinam (Tamil Nadu) PCPIR in India including details of infrastructural support and benefits of establishing these PCPIRs in terms of investment, employment generation and exports. The paper further discusses certain key drivers for success of Dahej PCPIR and various bottlenecks that led to the slow or negligible growth of unsuccessful PCPIRs. In the final section some key revisions proposed by the Ministry of Chemicals and Fertilizers for the future success of non-performing PCPIRs and recommendations of 'PCPIR Rejuvenation Study' jointly prepared by the Federation of Indian Chambers of Commerce & Industry (FICCI) and knowledge partner Mott MacDonald has been discussed.

Keywords: *PCPIRs, SEZs, Infrastructure Development, Exports, Investment, Employment Generation.*

Introduction

Keeping in view current per capita consumption pattern of chemical products in India (1/10th of the global average) and its future demand government is developing industrial clusters in the petroleum, chemical and petrochemical sectors of the country. India's contribution in the global chemical industry is 3.4% and its global ranking is sixth in terms of chemical production. Furthermore Indian Chemical industry has a highly diverse production structure encompassing more than 80,000 commercial products and it is the backbone of the economy and various downstream industries such as paints, paper, automobiles, textile and pharmaceuticals. The total market size of the Indian chemical industry is

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expected to reach US $304 billion by 2025 from US$ 163 billion in 2018 (PCPIR Rejuvenation Study, 2019). PCPIR Policy introduced by the government in 2007 envisaged development of four PCPIRs at Cuddalore (Tamil Nadu), Dahej (Gujarat), Paradeep (Odisha) and Visakhapatnam (Andhra Pradesh) with the sole objective of establishing international standard chemical and petrochemical hubs in the country. Development plan of Dahej PCPIR in Bharuch district encompassing 44 villages of Bharuch and Vagra talukas has been sanctioned and the Ministry of Environment, Forests and Climate Change has granted clearance on September 14th, 2017.

Environmental Impact Assessment (EIA) of Paradeep PCPIR has been initiated and its draft master plan has been prepared. Visakhapatnam – Kakinada PCPIR's draft master plan has also been completed. The housing and urban development department issued a notification on July 19, 2017 for delineation of the 45 villages in as PCPIR as Local Planning Area under Section 10 of Tamil Nadu Town and Country Planning Act.

Out of four PCPIRs in the country the Andhra Pradesh PCPIR is the largest PCPIR spread over an area of about 640 square kilometers between Visakhapatnam and Kakinada. Major industries in this region include-NTPC Simhadri Power Plant, Andhra Petrochemicals, HPCL Visakh refinery, Coromandel Fertilizers, Hetero Drugs, and the Kakinada region has 2 chemical and fertilizer plants and 7 power projects. Tamil Nadu PCPIR is spread over 45 villages in Cuddalore and Nagapattinam districts with total a area of 256 sq. km. It has failed to attract major investments in the region except anchor tenant NOCL. In the Paradeep PCPIR major industries are Paradeep Phosphates Ltd, Paradip Carbon Ltd and Deepak Fertilizers & and IFFCO.

PCPIR Policy: Key Features

Under the PCPIR Policy 2007 these CPIRs were perceived as key instruments in providing a boost to manufacturing, exports, foreign exchange earnings and employment generation with the ultimate objective of generating additional economic activity and catapulting Indian economy on a higher growth trajectory through the use of common infrastructure and support services. Basic aim of PCPIR policy is to ensure sustainable operations of industrial units within PCPIR and improve the international competitiveness of Indian petrochemical industry in the international market by removing existing bottlenecks related to infrastructure, feed stocks, logistics, skill development, tariffs etc.

Under the PCPIR Policy responsibility of project approvals, coordination among state governments and central ministries, monitoring and development of PCPIRs, progress of environmental and other clearances and provision of external physical infrastructure linkages has been given to the Central Government. External physical infrastructure includes development of ports, airports, rail, road (National Highways) and telecom in a time bound manner through Public Private Partnerships (PPP model). Central Government will provide necessary budgetary support for infrastructure development in addition to viability gap funding. Responsibility of setting up PCPIR (including selection of suitable site, preparing project proposal) and providing internal infrastructure and other utilities like uninterrupted power supply, state road connectivity, bulk supply of water, sewage & effluent treatment linkages, adequate infrastructure for dealing with safety, health and environmental issues rest with the concerned State Governments. Nodal department of the state government will coordinate these linkages.

Some of the key features of PCPIR Policy 2007 are:

- PCPIR would be a specially delineated investment region spread over an area of around 250 square kilometers.
- 40% of the total designated area is meant for manufacturing facilities, known as 'Processing area' which will include production units along with associated logistics and other services.
- 60% of the area known as 'Non- processing area' would include residential, commercial, social and institutional infrastructure other than manufacturing.
- Central and concerned state governments are entrusted with the responsibility of providing external infrastructure
- Developer and co-developers will built and manage internal infrastructure.
- The PCPIR may include free trade zones, warehousing areas, export-oriented units, and industrial parks, Special Economic Zones etc. duly notified under the relevant Central or State Legislation or policy.
- Environment Impact Assessment will be carried out by the State Government.

PCPIRs: **Current Status in Terms of Infrastructure, Investment, Exports and Employment Generation**

Growth performance of the four PCPIRs in India over the past decade shows that except Dahej all the other three PCPIRs have registered slow growth in terms of exports, infrastructure development, investment and employment generation although initially these PCPIRs were perceived as key instruments in providing a boost to manufacturing, exports and employment generation with the ultimate objective of generating additional economic activity. Out of four PCPI Rs, Dahej PCPIR has become the fastest growing industrial cluster in the country with 180 operational industrial units and 650 units at various stages of construction since its inception. Gujarat Infrastructure Development Corporation (GIDC) the nodal agency for Dahej PCPIR has allotted 5,000 hectares of land to these units in the PCPIR. According to Minister of Chemical & Fertilizer Shri D.V. Sadananda Gowda this industry is expected to grow at a CAGR of 9.3% from USD 163 billion to USD 304 billion by 2025. OPaL, the tenant anchor of Dahej PCPIR has also started exporting many chemical and petrochemical products. The first consignment of butadiene was shipped to Singapore. According to OPaL chief executive K. Satyanarayana products like benzene can be exported to other countries as well for which soon it will be floating tenders. This plant has the capacity to generate annual revenue of Rs. 16,000 crore.

Out of four PCPIRs set up in the country Dahej PCPIR in Gujarat is the only example of successful PCPIR in the country in terms of investment. It has attracted more investments both domestic and foreign than the other three notified PCPIRs in India. Actual investment (made/committed) in Gujarat PCPIR is Rs. 85,928 crores (till FY18) as compared to investment made in Andhra Pradesh PCPIR which is Rs. 43,744 crore, Rs. 45,000 crore in Odisha PCPIR and Rs 8100 crore in Tamil Nadu PCPIR. The Dahej region has succeeded in attracting total investment of Rs. 25,163 crore in only one year i.e.2017-18 alone. Various domestic companies like MRF Ltd., Emami group, Grasim Industries Limited, Bodal Chemicals Ltd and GACL-NALCO Alkalis & chemicals Ltd (GNAL) have proposed their Greenfield and Brownfield projects in the PCPIR. Besides it, many foreign companies have also shown interest and proposed investments worth Rs. 950 crore including South Korea-based Kukdo Chemicals and Sweden's Perstorp. 200 out of 650 industrial units including a mega petrochemical project of ONGC Petro additions Ltd (OPal), have gone into production (May 019).ONGC Petroleum additions Ltd. (OPaL) is the anchor tenant in the entire region with an investment of 27,700 crore which was dedicated to the nation by Hon'ble Prime Minister Mr. Narendra Modi, in March 2017 . OPaL is a joint venture of ONGC, Gujrat State Petroleum Corporation and GAIL which has developed a world scale 1.1 MMTPA multi-feed cracker in the PCPIR. Opal is the largest petrochemical plant in India and it is the first under the PCPIR in the Dahej SEZ, which has to export 50 per cent of its production. According to K.Satyanarayana chief execute OPeL,it has the annual capacity of 14 lakh metric tonnes of polymers, low and high density polyethylene, polypropylene and 5 lakh metric tonnes of benzene, butadiene and pyrolysis gasoline etc" (as on March 2017).According to him the Dahej PCPIR has a potential to employ 32,000 people directly. Dahej PCPIR has also succeeded in generating actual employment of 1.32 lakh persons followed by Andhra Pradesh with total employment of 1.11 lakh persons. Odisha and Tamil Nadu generated employment of 38000 and 13950 persons respectively (till financial year-2018, November).

Dahej and Paradeep are the only PCPIRs where anchor tenants had commissioned their projects. But unlike Dahej PCPIR Vizag, Paradip and Cuddalore PCPIRs have failed to emerge as chemical and petrochemical hubs due to a wide range of issues including lack of investment, infrastructure bottlenecks, delayed process of land acquisition and various other issues related to it. Andhra Pradesh PCPIR has not taken off since it was approved in 2009 due to widespread protests over development of coastal corridors and lack of anchor units. Poor power and water supply, delayed procedure of land acquisition and related disputes has been some of the other important factors which prevented Visakhapatnam to emerge as the chemical and petrochemical hub. Central governments' decision to relook at the policy further delayed the development process. Recently PCPIR project revival move taken by the YSR Congress Party government and promise by Union Petroleum and Natural Gas Minister Dharmendra Pradhan to pump in an investment of 2 lakh crore in various projects in Andhra Pradesh PCPIR raises fresh hopes (26th November 2019, The Hindu). The Andhra Pradesh government has introduced Visakhapatnam- PCPIR master Plan 2031 to develop industrial corridors, residential townships, transport network and expressways. Haldia Petro Chemicals, the anchor unit, would set up a refinery in the Kakinada region to supply the required feedstock and HPCL and GAIL would set up a Greenfield refinery. HPCL is also expanding its refinery at Vishakhapatnam and it would set up a hydro cracker unit with a capacity of 3.053 MMTPA as part of the Visakha Refinery Modernization Project (VRMP).

Tamil Nadu government has decided to scrap the development of PCPIR project in February this year following severe opposition from the people and the political parties who criticized the development of PCPIR at Cuddalore and Nagapattinam districts under Kaveri delta region, known as famous rice-bowl of the state, for adversely affecting agriculture (The New Indian Express, 22nd Feb 2020). A bill was passed by the Tamil Nadu assembly which declared Cauvery delta region comprising Tiruvarur, Nagapattinam, Thanjavur, some portions of Cuddalore and Pudukottai districts the Protected Special Agriculture Zone (PSAZ). This bill excluded existing industrial projects and other infrastructure projects related to roads, water & power supply, pipelines, telecommunications, building of harbor etc. This law doesn't permit certain industries in the PSAZ area like tannery, iron ore processing plants, zinc / copper/ aluminum/smelter etc. to protect the interest of the agriculture sector. Tamil Nadu PCPIR has started facing problems ever since the 4,700 crore Nagarjuna Oil Refinery Project at Cuddalore has entered the liquidation process under Insolvency and Bankruptcy Code (IBC).

Some of the key challenges that have been faced by these three PCPIRs whose performance fell short of expectations unlike Dahej PCPIR are related to infrastructure development including ports, roads, airports, freight corridors and lack of basic utilities like water, electricity, alternate energy, affluent treatment etc. Absence of a Single Window for approvals, slow pace of land acquisition and issues related to it, limited access to advance technologies resulting from failure on the part of Indian industrial units to forge partnership with international companies having access to advance technologies, lack of facilitative policy regime are some of the other challenges faced by the unsuccessful PCPIRs. The current infrastructure in the existing PCPIRs also lacks technological up gradation to process alternative raw material which is being used in place of conventional raw material keeping in view environmental concerns.

Success story of Dahej PCPIR in Gujarat can be attributed to facilitative policy regime. Over the past two decades numerous policy changes have been introduced by the Gujarat Government to promote industrial development in the state. One such important move was related to the notification of Dahej PCPIR as 'special Investment Region by the Gujarat government under Gujarat Special Investment Region Act, 2009(SIR Act). Gujarat is the first and the only state in the country to enact SIR Act with the view to develop large scale Industrial Regions and Industrial Areas in Gujarat especially chemical and petrochemical global hubs supported by various incentives and world class infrastructure.

11 Special Investment Regions are being set up in the Gujarat by Gujarat Infrastructure Development Corporation (GIDC) for achieving unprecedented economic growth in the state. Dahej PCPIR unlike the other three PCPIRs in Andhra Pradesh, Odisha and Tamil Nadu has succeeded in attracting investment of Rs. 85928 crore so far due to the friendly policies of the Gujarat Government where red tapism is almost absent from the inception stage till the final production stage. Time bound approvals, well defined environmental regulations and protection for the firms are some of the key drivers for the success of Dahej PCPIR due to which Gujarat occupies fifth position among other states in terms of 'Ease of doing business.

Robust manufacturing sector of Gujarat which contributes over 30 % to the State's Gross Domestic Product (GDP) constitutes high and continuous demand for chemicals and petrochemicals. Presence of a large number of manufacturing units across PCPIR helps in optimizing the logistics costs and supply chain. Gujarat is emerging as an auto hub which will also give rise to future demand for automotive chemicals. More than half of India's polymer production comes from Gujarat which ensures continuous demand for petrochemical derivatives from the plastic industry. Concentration of chemical, petrochemical and petroleum estates around PCPIR is one of the most important reasons for current success of Dahej PCPIR. Gujarat is a hub for many petrochemical and petroleum refineries. Companies like Indian oil and Reliance etc., have already established their refineries making it a hub of many petroleum and petrochemical refineries which facilitates movement of raw materials and intermediate products.

Robust supporting infrastructure and large number of educational and training institutes to provide skilled manpower for industrial units within PCPIR region are other key drivers for successful Dahej industrial cluster. There are about 7 ITIs in the PCPIR within a radius of 30 km. GIDC and many private companies like ABG Shipyard, L&T and Essar have already set up various skill up-gradation centers. Many more such training institutes are under implementation. The Central and the State Government have provided both external and internal infrastructure related to road, rail, port, water, power, gas, effluent treatment etc. necessary for trade, investment and development of Dahej PCPIR. To facilitate transport and exports of chemicals, petrochemicals and related products it is connected to highly developed port infrastructure with a Ro-Ro facility which can handle any material-solids, gases and liquids. Gogha-Dahej Ro-Ro Ferry Service has reduced the distance between the two places from 350 Km by road to 30 Km by sea. As far as road infrastructure is concerned 50 km of six lane Dahej-Bharuch State Highway is connecting six lane Delhi-Mumbai National Highway and National Expressway. Ahmadabad Vadodara National Expressway is proposed to be extended to Mumbai. Many internal roads in Dahej PCPIR have been developed for facilitating trade and development. Other proposed road linkages include up-gradation of 8 km of port linkage, escape route (for security purpose),up-gradation of Dahej-Vagra-Bharuch Road, construction of 25 km of coastal roads, 42 km of State Highways within PCPIR to be upgraded to four lane and link Road (Stretch linking PCPIR to NH-8). Dahej PCPIR is also well connected to Delhi – Mumbai Broad Gauge railway line at Bharuch and Bharuch –Dahej rail line (62 km) for both goods and passengers. Proposed Bharuch-Dahej broad gauge line will be connected to the DFC at Dayadra Jn and Delhi-Mumbai Dedicated Freight Corridor (DFC) will touch the PCPIR on the eastern side. Besides various existing power sub-stations at Dahej, two 220 KV, one 44 KV & nine 66 KV substations are planned within Dahej PCPIR. Gujarat Government is ensuring 24 hours uninterrupted power supply to the industrial units within Dahej PCPIR. Presently Gujarat Infrastructure Development Corporation (GIDC) supplies 25 MGD raw water drawn from Narmada river at Nandand Angareshwar to the PCPIR. Government has further proposed water supply scheme for 50 MGD water from Miyagam Branch Canal (130km) and 25 MGD water from Narmada River (65km) which will look after the bulk supply of water within PCPIR. 90 MLD disposal pipeline of 40 km has also been developed within PCPIR to dispose the effluent into deep sea (4.5 Km inside the sea). GIDC has proposed setting up of a CETP with capacity of 40 MLD in Dahej and 90 MLD disposal pipeline & 40 MLD CETP at Saykha Existing Infrastructure. Thus availability of common utilities such as power, fire, safety, water storage, effluent treatment etc has facilitated development of industrial units within Dahej PCPIR.

Table 1: Fact Sheet of Four PCPIRs in India

Indicator	Gujarat	Andhra Pradesh	Odisha	Tamil Nadu
Location/ Region	Dahej, Bharuch	Vishakhapatnam	Paradeep	Cuddalore& Nagapattinam
Total area (sq.kms.)	453	604	284	257
Anchor Tenant	ONGC Petroleum additions LTD.(OPeL)	Hindustan Petroleum Corporation LTD.(HPCL)	Indian Oil Corporation LTD. (IOCL)	Nagarjuna Oil Corporation LTD.(NOCL)
Refinery/Cracker Capacity in MMTPA	Cracker: Ethylene: 1.1 Propylene: 0.6	9.3 to 15 (expansion of existing refinery) 15 (Greenfield).	15 (Greenfield Refinery).	12 (refinery)
Anchor Project Status	Polypropylene unit (commissioned) in March 2017	Anchor Tenant for Greenfield project yet to come on board	Commissioned in February, 2016	Construction work, stalled since 2011, yet to restart
Investment made till FY18 (Rs. Crore)	85,928	43,744	45,000	8,100
Employment generated till FY-18 (number)	1,32,000	1,11,000	38,000	13,950

Source: White Paper on PCPIR Policy Review, May 2019 prepared by FICCI and Mott MacDonald

Table 2: Infrastructure Development at Dahej PCPIR

Ports	
Existing Infrastructure	Dahej Port: 11.7 MMTPA
	Liquid Chemical Terminal: 5 MMTPA
	LNG Terminal: 12.5 MMTPA
	Liquid fuel jetty: 2.12 MMTPA
	Bulk cargo jetty: 3.8 MMTPA
On-going development	Gogha-Dahej Ro-Ro Ferry Service (distance between the two places reduced from 350 Km by road to 30 Km by sea)
	Jetty for handling Over Dimensional Cargo by Gujarat Maritime Board and Dahej SEZ Ltd.
Proposed future development	41 MMTPA port for Solid Cargo, Liquid Cargo and Container
Roads	
Existing Infrastructure	50 km of six lane Dahej-Bharuch State Highway connecting six lane DelhiMumbai National Highway and National Expressway
	Internal roads in Dahej PCPIR
Proposed development	Ahmadabad Vadodara National Expressway to be extended to Mumbai

Airport	
Existing	85 km from domestic airport at Surat
	90 km from International airport at Vadodara
	250 km from International airport at Ahmadabad
Proposed	Greenfield airport for PCPIR
	Airstrip at Ankleshwar
Rail	
Existing	Connected to Delhi –Mumbai Broad Gauge railway line at Bharuch
	Bharuch –Dahej rail line (62 km) for both goods and passengers
Proposed	Delhi-Mumbai Dedicated Freight Corridor (DFC)
	Bharuch-Dahej broad gauge line to be connected to the DFC at Dayadra Jn.
Power	
Existing	Four 220 KV sub-stations located at Dahej, Dahej SEZ, Rahiyad-Suva and Vilayat
	Seven 66 KV substations located at Dahej, Luna, Bhensali, Vilayat
	Gujarat Energy Transmission Corporation Limited (GETCO) has completed construction of 220 KV substation at Suva Dahej, which is operational
	1600 MW gas based power plant by Torrent Power Ltd. in Dahej SEZ has been completed
Proposed	Two 220 KV, one 44 KV & nine 66 KV substations are planned in Dahej & Saykha area respectively within PCPIR
Water	
Exsisting	GIDC supplies 25 MGD raw water drawn from Narmada river at Nandand Angareshwar
Proposed	Water supply scheme for 50 MGD water from Miyagam Branch Canal (130km) and 25 MGD water from Narmada River (65km)
Effluent Treatment	
Existing	90 MLD disposal pipeline of 40 km within PCPIR to dispose the effluent into deep sea (4.5 Km inside the sea)
Proposed	Setting up of a CETP with capacity of 40 MLD by GIDC in Dahej
	90 MLD disposal pipeline and 40 MLD CETP at Saykha Existing Infrastructure
Gas	
Existing	Gujarat Gas Company Limited (GGCL) owns and operates nearly 900 km of distribution pipelines in Bharuch district
Proposed	All gas suppliers to extend network

Source: Gujarat Infrastructure Development Corporation

PCPIR Policy Revisions and Recommendations of PCPIR Rejuvenation Study

PCPIR policy was launched in 2007, but even after a decade except Dahej PCPIR the other three hardly witnessed any progress and failed to attract desired investments due to which the Union Ministry of Chemicals and Fertilizers is contemplating revision of the PCPIR Policy. Some of the key revisions proposed by the Ministry include:

- Proposal to reduce land requirements for a PCPIR from 250 sq km to about 50 sq. km.
- Introducing multiple anchor tenants or cracker project investors at the seaport-based PCPIRs.
- Revival of the Visakhapatnam and Kakinada PCPIR in Andhra Pradesh. Due to the opposition from the public and the political parties government is contemplating to replace the name of PCPIR by the Vizag-Chennai Industrial Corridor (VCIC).
- Establishing petrochemical clusters downstream, closer to the refineries to address the issue of non availability of feedstock for downstream units. Currently the anchor tenant is facing problems in supplying feedstock to the industries within PCPIR due to SEZ export norms which is pushing related industries in the region towards imports. OPaL now has applied for exit from SEZ which would help it to explore opportunities in the domestic market.
- The Ministry is considering budgetary funding of infrastructure projects wherever needed in addition to special mode of Viability Gap Funding and public private partnership (PPP).

In order to improve the condition of dysfunctional PCPIRs the ‘PCPIR Rejuvenation Study’ was jointly prepared by the Federation of Indian Chambers of Commerce & Industry (FICCI) and knowledge partner Mott MacDonald. This study analyses the current status and potential of the four zones and recommends measures to attract investments into these regions. The study’s recommendations include measures related to government support, infrastructure development, planning & execution and promotional measures. Some of the key proposed revisions include-

Government Support

- Appointment of full-time CEOs heading each PCPIR and dedicated managerial/ technical teams.
- Single window fast track clearance.
- Benefits to tenants like GST & income tax rebates, duty free import of feedstock.
- Chemical industry modernization fund.
- Skill development.
- Cess on imports to reduce petrochemical imports and to create funds for promoting investments.
- Policy stability for a period of 20-25 years with appropriate revisions considering sensitivities of the stakeholder to boost investor's confidence.

Promotional Measures

- Brand building for promoting exports and FDI through conducting trade shows, delegations etc.
- Clearly defined role of Embassies and Consulates.

Infrastructure Development:

- Well established logistics, infrastructure and pipeline network.
- Building pipeline corridors to ensure uninterrupted supply of raw material for smooth functioning of the industries

Planning and Execution

- Master Plan incorporating best international practices.
- Viable PPP model to ensure supply of adequate funds for the project.
- Feedstock strategy along the value chain to ensure availability of feedstock for the downstream industries
- Effective project and programme monitoring and evaluation
- Waste water treatment with focus towards self regulation with stiff penalties for violation
- Consolidation of small capacities so that smaller investors may jointly invest in a PCPIR to hedge the risk that comes from high investments

Conclusion

The Indian Chemical & Petrochemical Industry is currently witnessing a rapid expansion and the untapped potential of this industry needs to be addressed with appropriate policy revisions. PCPIR policy was launched in 2007, but even after a decade except Dahej the other three PCPIRs set up in Andhra Pradesh, Odisha and Tamil Nadu hardly witnessed any progress and failed to attract desired investments due to which the Union Ministry of Chemicals and Fertilizers is contemplating revision of the PCPIR Policy. Infrastructure development is key to the success of PCPIR projects hence the government is making every effort to meet the industry's demand for various types of infrastructure support through Viability Gap Funding (VGF). The Ministry of Chemical and Fertilizer is also considering the scope of budgetary funding into these projects. Policy intervention could also include various fiscal incentives and sourcing of feedstock at a reasonable price which is the major challenge faced by downstream industrial units. PCPIR policy needs to facilitate continued investment flows in future to increase the exports, employment and production to meet the rising demand for chemicals and petrochemicals reflected by the increasing imports which is 10 million tonnes of chemicals and petrochemicals worth 65,000 crore currently. It is likely to grow to 46 million tonnes and over 200,000 crore by 2030.Government is studying various successful models developed by Singapore and other countries to overcome the challenges currently faced by units within PCPIR region so that success story of Dahej PCPIR could be replicated and goal of $1 trillion manufacturing economy by 2025 could be realized by making PCPIR policy more vibrant.

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