



सत्यमेव जयते

GOVERNMENT OF GUJARAT

# Chemicals and Petrochemicals Sector Profile

# Indian Chemicals and Petrochemicals Industry: Quick Facts



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**US\$ 92 Bn**

***Turnover of the industry in India***

**6<sup>th</sup>**

***6<sup>th</sup> largest in the world by turnover***

**2.2%**

***Share in global output***

**7.1%**

***Share in Gross Value Added within national manufacturing sector***

**7<sup>th</sup>**

***7<sup>th</sup> largest importer of chemicals in the world***

**17<sup>th</sup>**

***17<sup>th</sup> largest exporter of chemicals in the world***

**US\$ 14.4 Bn**

***Cumulative FDI attracted by the sector\****

**8<sup>th</sup>**

***8<sup>th</sup> highest cumulative FDI earning sector for India***

# Snapshot of Gujarat's chemicals and petrochemicals industry



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Gujarat accounts for 62 % of India's petrochemical production, 30% of other chemicals production & 40% of chemical exports (organic and inorganic)

- 50% share in exports of Inorganic Chemicals
- 39% share in exports of Organic Chemicals



World's largest grassroots refinery in Jamnagar




India's first operational Petroleum, Chemicals and Petrochemicals Investment Region (PCPIR)



4 refining complexes with combined capacity of 102 MMTPA providing feedstock



India's first chemical port in Dahej



Presence of more than 4,400 industrial units that manufacture chemicals and chemical products



6500 chemicals & petrochemicals are being produced

# Growth drivers for Gujarat's chemicals and petrochemicals industry



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Manufacturing sector contributing over 30% to State GDP. Strong manufacturing sector leads to continued high demand for chemicals, petrochemicals and intermediates

Presence of manufacturing units across the chemicals and petrochemicals value chain helps optimize supply chains and logistics costs

Demand from the urban consumer: 43% of Gujarat's population resides in urban areas, fueling demand for consumer chemicals, plastics, paints, cosmetics etc.

Gujarat is a major producer of crops such as wheat, rice, groundnut, bajra, castor, cotton and mango which ensures continued demand for fertilizers and agro-chemicals

Six Smart Cities being developed in Gujarat will lead to increased demand for Construction Chemicals and Paints

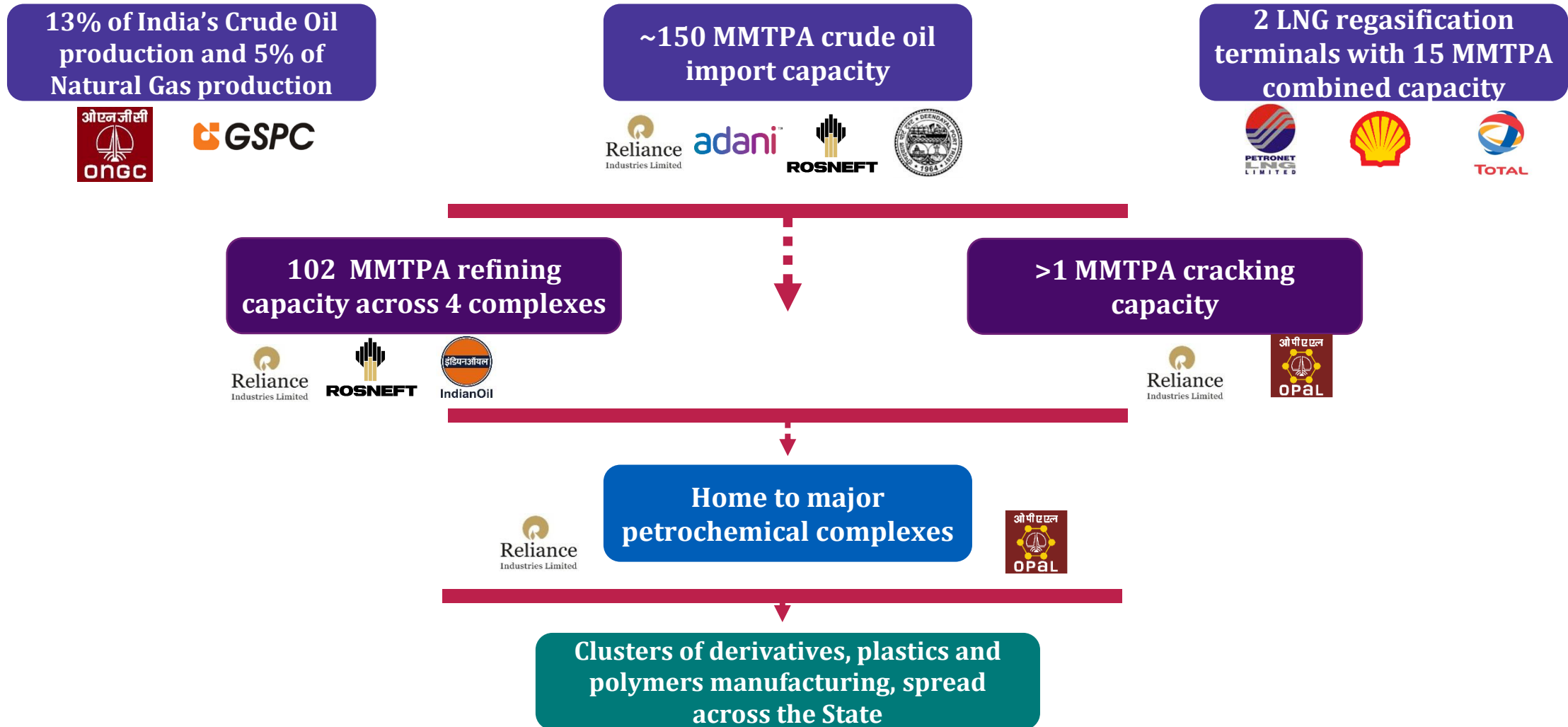
Booming automotive sector in Gujarat will give rise to future demand for Automotive Chemicals

Gujarat accounts for over 50% of India's polymer production. Plastics industry generates demand for petrochemical derivatives.

# Strong presence across the petrochemicals value chain



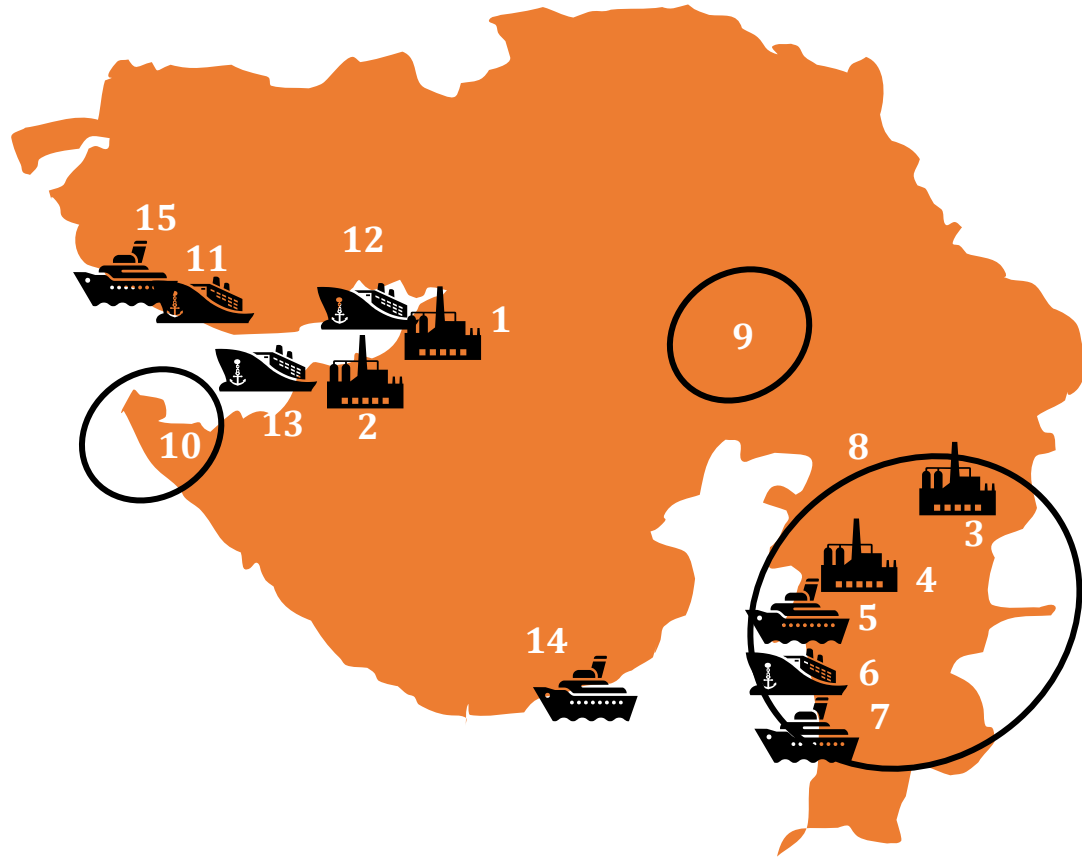
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# Prominent chemicals and petrochemicals hubs and supporting infrastructure across the State



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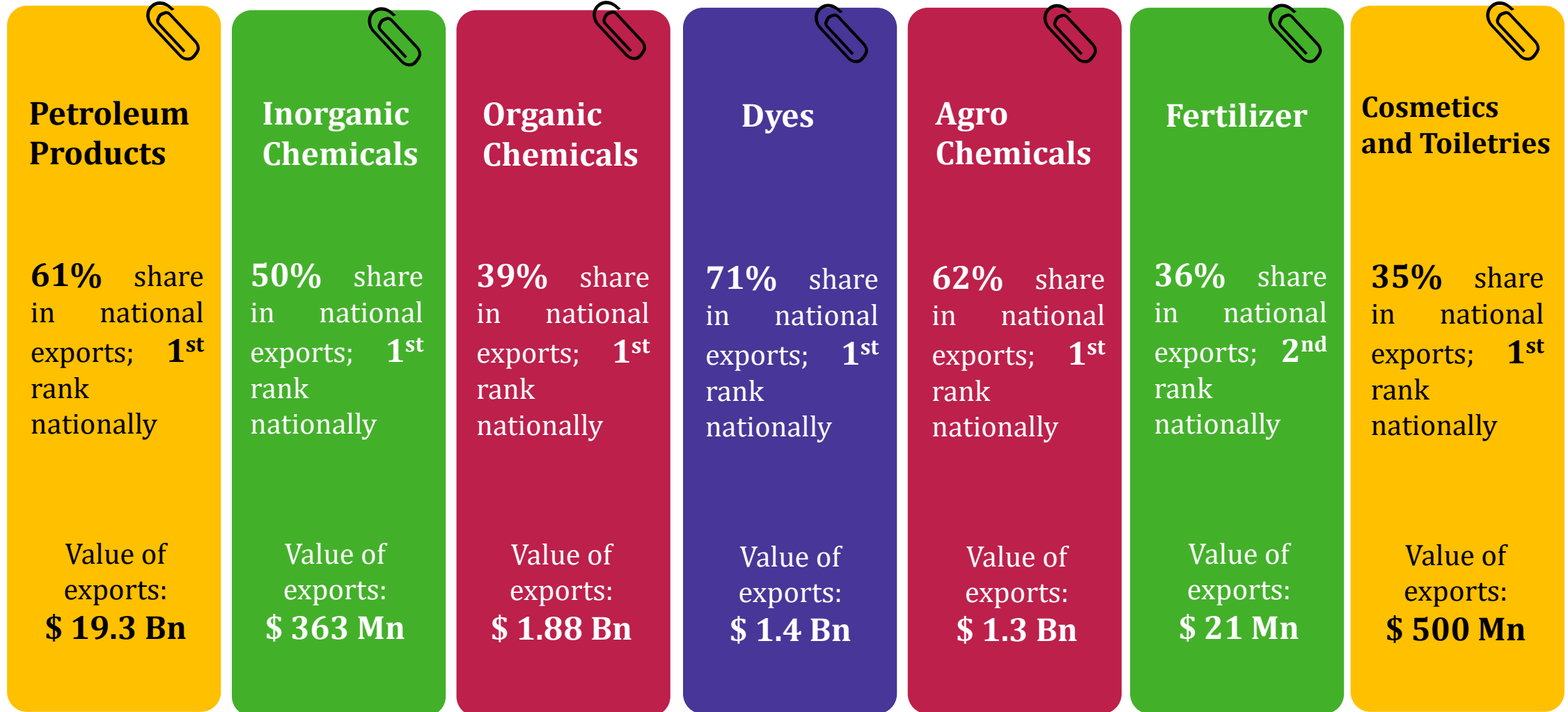


Sno.	Detail
1	Refining complex operated by Reliance Industries Ltd. (68 MMTPA)
2	Refining complex operated by Rosneft (20 MMTPA)
3	Refining complex operated by Indian Oil Corp. Ltd. (13 MMTPA)
4	PCPIR at Dahej
5	LNG terminal operated by Petronet LNG (10 MMTPA)
6	India's first dedicated Chemical Port at Dahej (2.5 MMTPA)
7	LNG terminal operated by Shell Hazira (5 MMTPA)
8	Chemicals and Petrochemicals Manufacturing Cluster: Vadodara, Ankleshwar, Bharuch, Dahej, Surat, Hazira
9	Chemicals and Plastics Manufacturing Cluster: Ahmedabad
10	Chemicals Manufacturing Cluster: Mithapur
11	Mundra Port
12	Sikka Oil Jetty (operated by Reliance Industries)
13	Vadinar Oil Terminal (operated by Kandla Port)
14	Upcoming Floating Storage and Regasification Unit (FSRU; floating LNG terminal) (5MMTPA)
15	Upcoming LNG terminal at Mundra by GSPC (5 MMTPA)

# Leading exporter of 'Made in India' products and intermediates across the value chain



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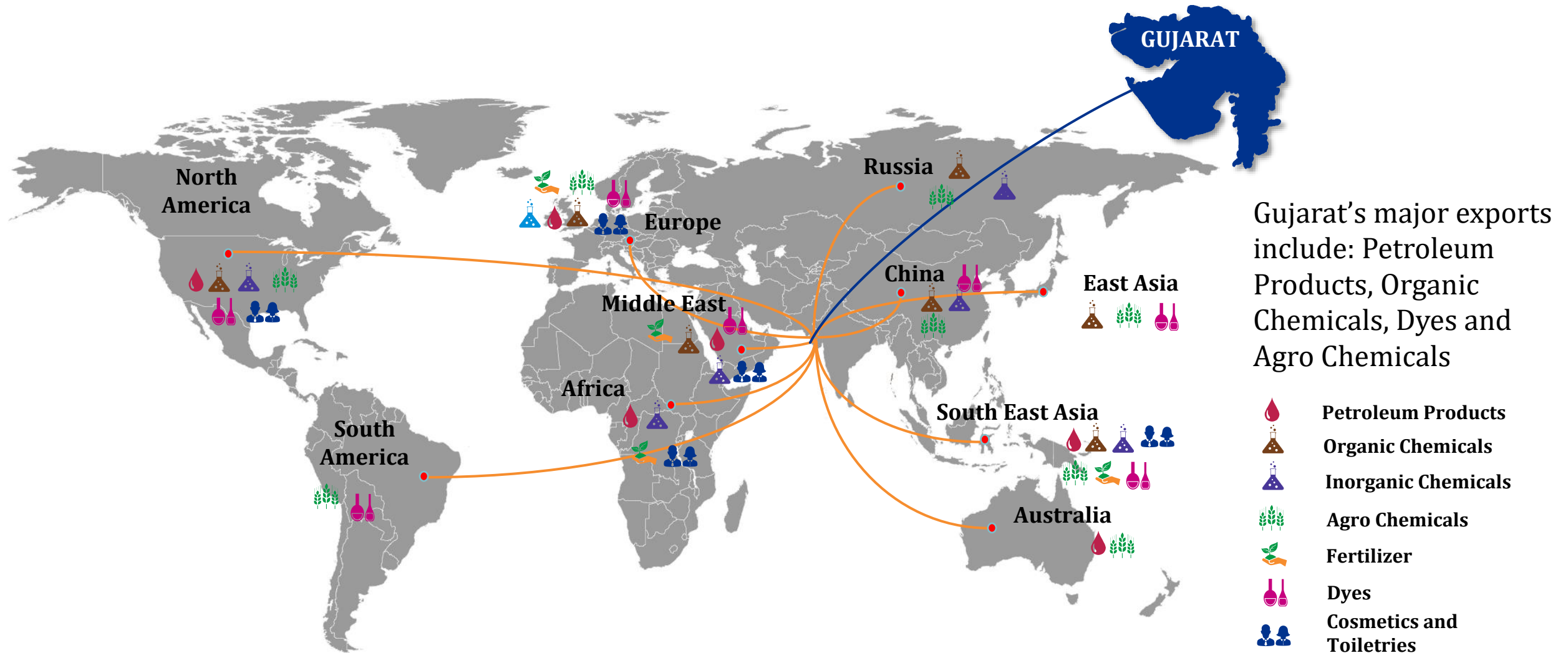




# Our chemicals, petrochemicals and intermediates serve markets around the world



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# Incentives offered under policies of Government of Gujarat



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## Assistance under Gujarat Industrial Policy, 2015

- Financial assistance for industrial infrastructure
- Incentives for developing Industrial Parks
- Assistance to set up Logistics Parks
- Assistance to labor intensive industries
- Assistance for environment management
- Special Incentives for Mega/ Innovative Projects
- Assistance schemes for MSMEs
  - ✓ Capital Investment Subsidy
  - ✓ Interest Subsidy
  - ✓ Venture Capital assistance
  - ✓ Assistance for quality certification and patent registration
  - ✓ Assistance for raising capital through SME Exchange
  - ✓ Market Development Assistance

## Assistance under General Incentive Scheme, 2016

- Tax reimbursement based on quantum of investment and location of the project\*

## Assistance to Plastics Industry

- Interest Subsidy @ 7% per annum for interest payable on Term loans
- Tax reimbursement based on Fixed Capital Investment\*


# Partners in our progress



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# **Petroleum, Chemicals and Petrochemicals Investment Region (PCPIR)**

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# Preferred investment destination for chemicals and petrochemicals sector

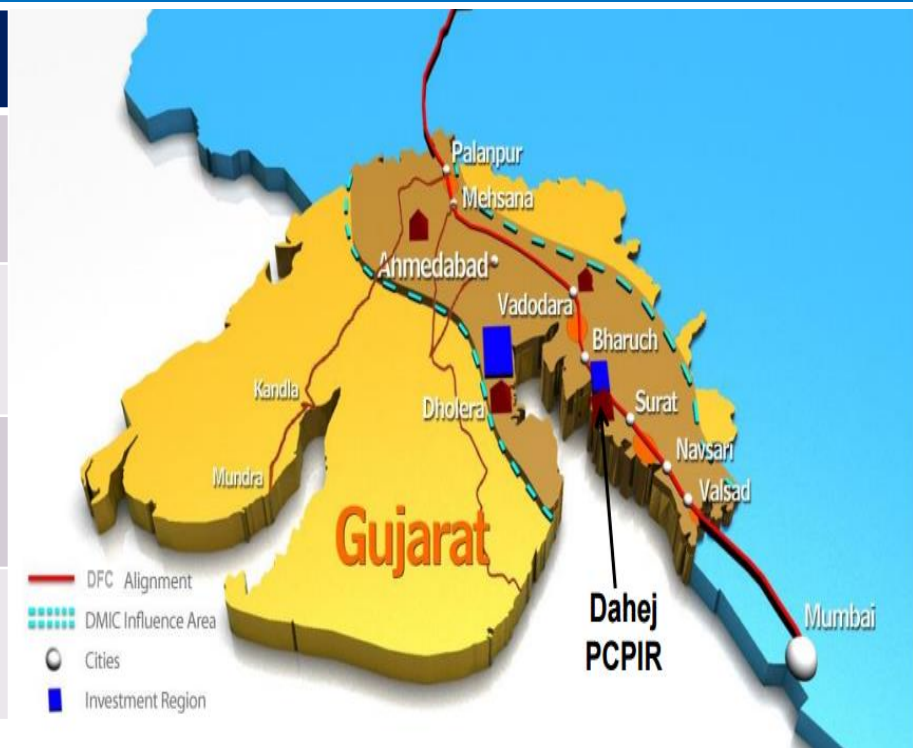


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- Special delineated investment region of 453 sq. km. planned for the manufacturing of petroleum products, chemicals and petrochemicals
- World class 1.1 MMTPA multi-feed cracker - investment of \$ 4.6 Billion (INR 30,000 Crore)
- Presence across the entire chemical value chain which enables cost competitive production

## Key information

Investment Made & Committed in <b>Manufacturing</b>	<b>\$ 27.4 Billion</b> <b>(INR 1,75,858 Crore)</b>
Investment in units that have commenced production	\$ 10.9 Billion (INR 69,869 Crore)
Investment in units that are under implementation	\$ 16.5 Billion (INR 1,05, 989 Crore)
Investment on <b>Infrastructure Development</b>	<b>\$ 2.5 Billion</b> <b>(INR 16,059 Crore)</b>





# Investment by the Anchor Tenant



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- ONGC Petro Additions Ltd. (OPaL), a JV of ONGC, GAIL and GSPC has developed a world scale 1.1 MMTPA multi-feed cracker in the PCPIR
- OPaL's unit at PCPIR, is the largest petrochemical plant in India, developed at an investment of \$ 4.6 Billion



The OPaL Cracker Unit was dedicated to the nation by Hon'ble Prime Minister Mr. Narendra Modi, in March 2017

# Advantage of the PCPIR



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Concentration of Petroleum, Chemical and Petrochemical estates around PCPIR

Rich natural resources and feedstock

Robust supporting infrastructure - road, rail, port, power, gas, water

Chemical Port and Storage Facility at Dahej

LNG regasification terminal at Dahej

Efficient waste management - effluent disposal pipelines, solid waste disposal sites

Quality Work Force, Peaceful Labour

# Supporting infrastructure: Port Facilities



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## Existing Infrastructure

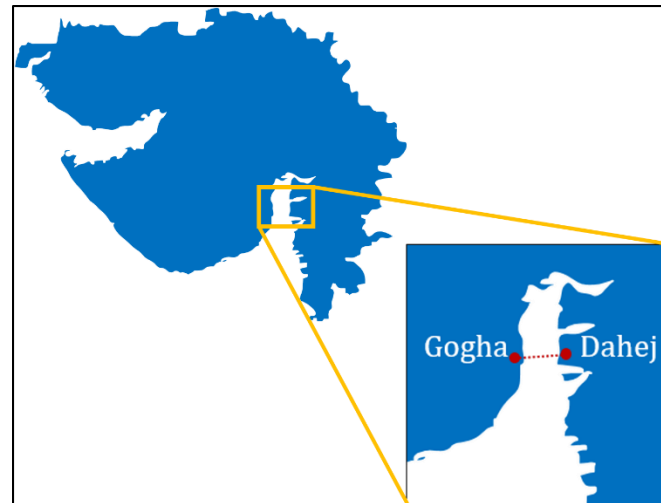
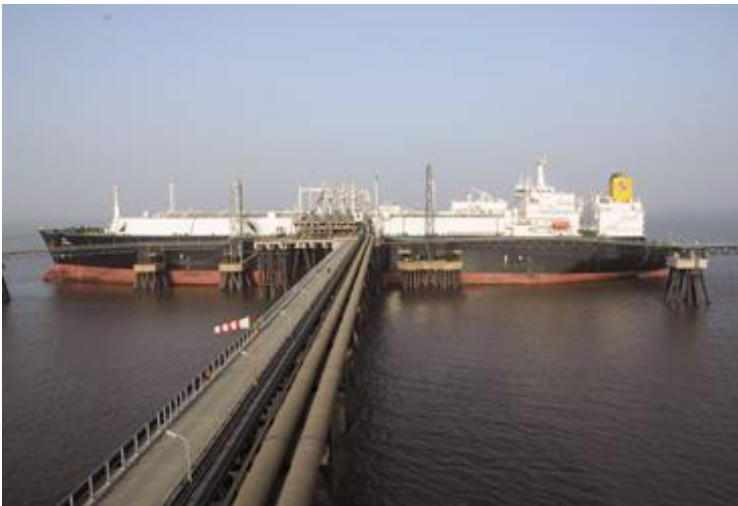
- Dahej Port: 11.7 MMTPA
- Liquid Chemical Terminal: 5 MMTPA
- LNG Terminal: 12.5 MMTPA
- Liquid fuel jetty: 2.12 MMTPA
- Bulk cargo jetty: 3.8 MMTPA

## 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





# Supporting infrastructure: Road, Rail & Air



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## Road



### Existing Infrastructure

- 50 km of six lane Dahej-Bharuch State Highway connecting six lane Delhi-Mumbai National Highway and National Expressway
- Internal roads in Dahej PCPIR

### Proposed development

- Ahmedabad Vadodara National Expressway to be extended to Mumbai

## Airport



### Existing Infrastructure

- 85 km from domestic airport at Surat
- 90 km from International airport at Vadodara
- 250 km from International airport at Ahmedabad

### Proposed development

- Greenfield airport for PCPIR
- Airstrip at Ankleshwar

## Rail



### Existing Infrastructure

- Connected to Delhi –Mumbai Broad Gauge railway line at Bharuch
- Bharuch –Dahej rail line (62 km) for both goods and passengers

### Proposed development

- Delhi-Mumbai Dedicated Freight Corridor (DFC)
- Bharuch-Dahej broad gauge line to be connected to the DFC at Dayadra Jn.

# Supporting infrastructure: Power Supply



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## Existing Infrastructure



- 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 development

- Two 220 KV, one 44 KV & nine 66 KV substations are planned in Dahej & Saykha area respectively within PCPIR

# Supporting infrastructure: Water, Effluent Disposal and Gas



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## Water



### Existing Infrastructure

- GIDC supplies 25 MGD raw water drawn from Narmada river at Nandand Angareshwar

### Proposed development

- Water supply scheme for 50 MGD water from Miyagam Branch Canal (130km) and 25 MGD water from Narmada River (65km)

## Effluent Treatment



### Existing Infrastructure

- 90 MLD disposal pipeline of 40 km within PCPIR to dispose the effluent into deep sea (4.5 Km inside the sea)

### Proposed development

- Setting up of a CETP with capacity of 40 MLD by GIDC in Dahej
- 90 MLD disposal pipeline and 40 MLD CETP at Saykha

## Gas Network



### Existing Infrastructure

- Gujarat Gas Company Limited (GGCL) owns and operates nearly 900 km of distribution pipelines in Bharuch district

### Proposed development

- All gas suppliers to extend network

# GIDC Saykha Chemical Zone



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Saykha Industrial Estate, developed by Gujarat Industrial Development Corporation is part of Gujarat PCPIR, and lies within the impact area of Delhi Mumbai Industrial Corporation



**Location:**  
Within PCPIR - Bharuch District (Non-SEZ area)



**Electricity cost, excluding taxes (\$/KWh) :**  
Approx. 0.107



**Total Area: 1,01,339 m<sup>2</sup>**  
**Land Price: \$25/m<sup>2</sup>**



**Water availability: 50 MGD**  
**Water cost, excluding taxes (\$/m<sup>3</sup>):** Approx. 0.445



**Closest ports:**

- Dahej - within PCPIR
- Hazira - 135 kms

**Railway Station:**

- Bharuch -12 kms



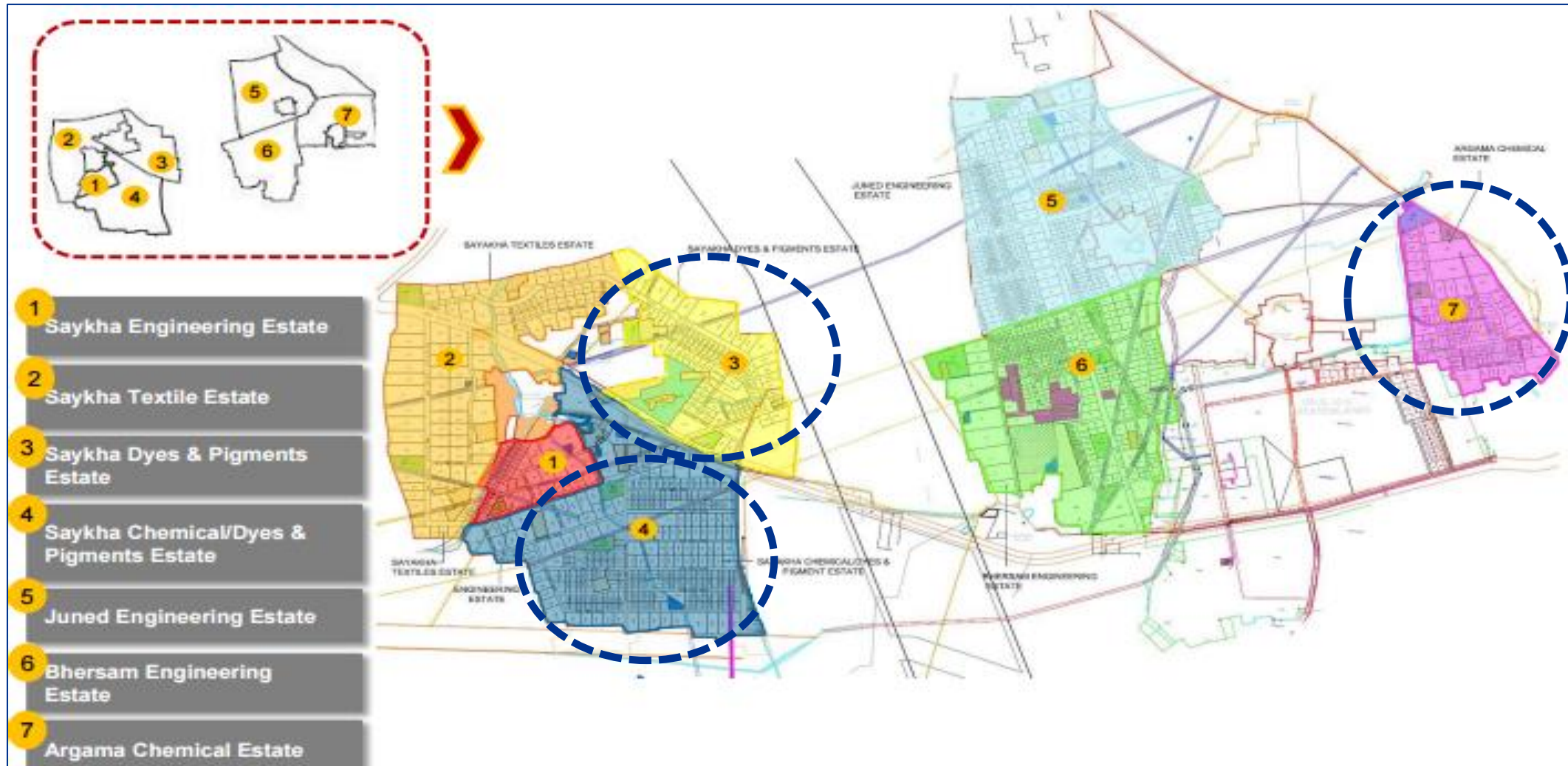
**LNG available in region (SCM)/day):** 31.92 MMTPA  
**LNG cost, excluding taxes (\$/SCM):** Approx. 0.385



# Saykha industrial estate plan



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# Investment opportunities in Gujarat's chemicals and petrochemicals industry



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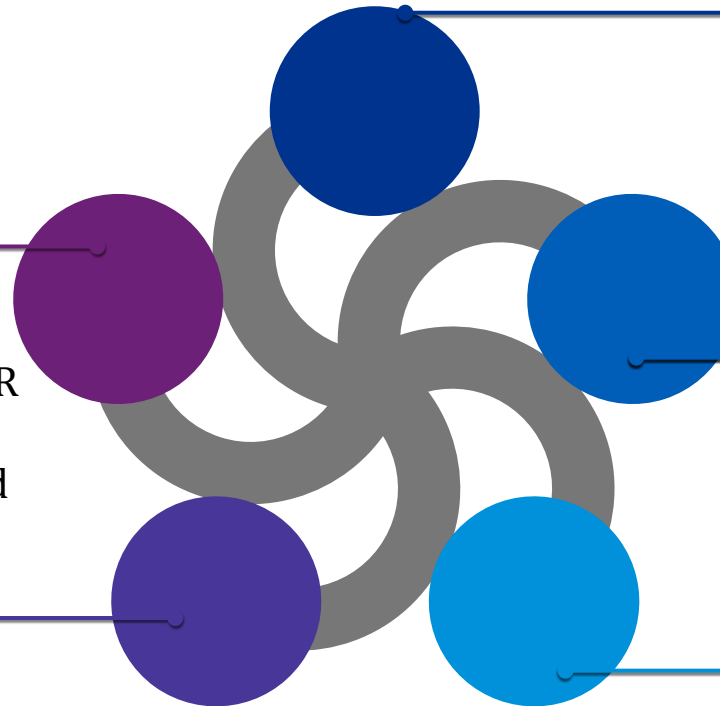
Manufacturing of **Specialty Chemicals**: Textile Chemicals, Construction Chemicals, Automotive Chemicals which are expected to be in high demand going forward

Development of dedicated **Chemicals Logistics Park** at PCPIR Dahej: Encompassing Container Freight Station (CFS), rail and road connectivity to port facilities; warehousing facilities

Manufacturing of feedstock for polymer industry: **Ethylene and Propylene** to reduce import dependence and lower costs for domestic polymer manufacturing

Manufacturing of chemicals such as **Aniline, Acrylic Acid, Methyl Diphenyl Di-isocyanate (MDI) Phenol and Acetone**

Development of **Tank Farms** at Dahej PCPIR for storage of POL (Petroleum Oil and Liquids)



# Thank you

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