

## Executive Summary of Padra Industrial Park Study

### Site Details

The estate is proposed to be located in Vadodara District at a distance of app. 17 km south of Vadodara town, near the villages of Amla and Sadhi. The project is a Greenfield project. No land acquisition has been initiated, though the location of the Industrial Estate has been identified.

The National Highway No. 8 is located approximately 18 kms from the proposed site, while the Padra-Jambusar State Highway (State Highway No. 6) is 7 kms away. A narrow gauge railway line runs approximately 4 kms from the site.

### Synopsis of Demand Estimation

A detailed demand estimation exercise was undertaken for the proposed project based on the following:

#### *Secondary Research*

- Main industrial sectors with investment plans into Gujarat
- Requirements of these industry groups in terms of location criteria
- Growth trends in target sectors
- Government policies

#### *Primary Research*

- Project profile of other industrial estates in the state including area schedules and infrastructure availability.
- End user perception study regarding proposed location of Industrial Estate, space and infrastructure requirements, advantages of proximity to Baroda, Nandesari, PCC etc.

Findings of the demand estimation established that:

- There would be a demand for 2,300 hectares of industrial land in the Vadodara district over the next 10 years, after accounting for the residual GIDC industrial supply currently available in the district.
- Taking into consideration that no future supply of industrial land is proposed by the government, over the next 10 years in the Vadodara district, three possible scenarios (rounded off) have been considered for the Padra Industrial Estate :

	Pessimistic Scenario 1	Realistic Scenario 2	Optimistic Scenario 3
Share of Padra Estate in the demand to be attracted to the Vadodara district	25%	50%	75%
Area of Padra Estate (hq)	600	1,000	1,700

The competition to the proposed estate would be primarily from the unorganized market as a result of industrialists' practice of purchasing agricultural land and converting it to industrial use.

### Recommended Water Supply Scheme

It is proposed that water from GACL/GIPCL waterworks be used for the Estate. GACL/GIPCL are willing to sell the spare capacity. Discussions also revealed that GACL is interested in selling the entire waterworks system to GIDC. The modality and cost of the sale would be based on discussions between GIDC and GACL/GIPCL.

### Transport Requirements and Options

Since the proposed industrial estate at Padra is well connected by the road network, there is no need for up gradation at present. The link to SH-6 and SH-160 from the proposed site and the Railway line linking Vadodara-Jambusar however need to be upgraded.

Mode	Access to Site	Adequacy
Road	SH-6 & SH-160	<b>Adequate</b> Further improvements to the network in terms of expressway and upgradation of SH-6 will further strengthen the access to the site
Rail	Vadodara	<b>Adequate</b> Improvements to Vadodara-Jambusar line, if undertaken, will improve access.
Air	Vadodara	<b>Adequate</b> Approximate road travel time to site from Airport is 40 Minutes.
Port	Dahej	<b>Adequate</b> Approximate road travel time to port is 3 hrs.

### Common Effluent Treatment Plant (CETP)

The pre-treatment of effluents in a CETP prior to their discharge into the channel would be necessary. It is advised that industries within the estate discharging effluents into the CETP must optimize reuse & recycle water used in their respective processes. Further, each industry may have to pre-treat their process effluent before discharging to the CETP. Secondary treated wastewater & sewage at the CETPs may be reclaimed to develop the estate's green belt, create a water body for aesthetics, recreation and if possible, for an aqua-culture facility. The CETP must be designed to treat wastewater to tertiary level as the effluent is to be discharged to the ECP Channel. Adequate laboratory facilities

will have to be provided to analyze parameters and maintain desired quality levels.

Based on the estimated demand for the Padra estate the estimated effluent discharge form Padra would be as follows :

<b>Alternative</b>	<b>Estimated Effluent Discharge</b>
Alternative 1 (600 ha)	1.7 MGD
Alternative 2 (600 ha)	2.8 MGD
Alternative 1 (600 ha)	1.7 MGD

Hence, it is possible to load the effluent discharge from the estate onto the existing carrying capacity of the ECP. This would allow effluent disposal at a reasonable cost accounted on a pro-rata basis. Effluent quality control as per the GPCB consent conditions would be applicable on the effluent being disposed into the channel, which would include quality of effluent being monitored on an individual basis as per GPCB consent conditions and mixed effluent quality being monitored along the Channel. The ECP Limited, Vadodara, may be consulted for finalizing the engineering aspects for discharge from the proposed Padra industrial estate.

## **Development Program for Industrial Estate**

### **Size of Development**

As per findings of the demand estimation three size configurations have been considered for the Padra estate.

<b>Scenario</b>	<b>Share of Vadodara District Industrial Demand</b>	<b>Land Area (ha)</b>
Pessimistic	25%	600
Realistic	50%	1000
Optimistic	75%	1700

It needs to be noted that the key factors that would impact industrial demand to be attracted to Padra include :

- Provision of the requisite infrastructure
- Competitive pricing
- Securing chemical zoning for the estate

### **Saleable Area**

Saleable area at the estate has been computed after accounting for the area required for infrastructure components.

Scenario	Total Area (ha)	Area under infrastructure (ha)	Percentage of total area	Saleable Area (ha)
Pessimistic	600	153	25%	447
Realistic	1000	255	25%	745
Optimistic	1700	431	25%	1269

### Area under infrastructure

The development pattern of the estate in the three alternate size scenarios would be as follows :

Development Component	Percentage Share	Land Area Alt.1	Land Area Alt.2	Land Area Alt.3
Road Development	12%	72	120	204
Open Spaces	10%	60	100	170
Subtotal	22%	132	320	374
Fixed Infrastructure Components	3%	21	35	57
Total	25%	153	255	431
Net saleable Area	75%	447	745	1269

### Projected Mix of Development

Based on the demand assessment exercise the projected mix of the estate in terms of different types of industries is as follows :

Type of Industries	Percentage Share	Land Area Alt.1 (ha)	Land Area Alt.2 (ha)	Land Area Alt.3 (ha)
Chemical Industries	55%	330	550	935
Engg. Industries	32%	106	176	299
General Industries	13%	14	23	39
TOTAL	100%	600	1,000	1,700

### Development of Absorption Schedules

Industrial demand has been estimated for the period 2002-2011 and it has been assumed that the proposed estate would be afflooded into the market over these 10 years. The **Absorption schedule** is therefore structured as such.

Details of the phase wise development envisaged for the industrial estate is provided in the following table :

Year	Percentage of land developed	Percentage of land absorbed
2002	8%	
2003	10%	8%

2004	12%	10%
2005	14%	12%
2006	14%	14%
2007	12%	14%
2008	10%	12%
2009	8%	10%
2010	6%	8%
2011	6%	6%
2012		6%

### **Infrastructure Costing**

The costing of infrastructure at the proposed estate is provided for three distinct components :

- General Infrastructure development cost
- Costs for Water Supply Infrastructure
- Costs for Power Infrastructure

All the three components listed above shall form a part of the Cost Schedule for arriving at the financial value of the project. The infrastructure costs have been escalated at 2% per annum in the financial analysis.

The General Infrastructure Cost and the cost for developing the power infrastructure has been linked to the development schedule of the project assuming that the infrastructure would be developed in phases to minimize holding costs.

The water infrastructure cost has however been segregated into two parts : Cost of distribution network, storage as well as water treatment has been assumed to be linked to the development schedule while the cost of laying the pipeline from the GACL waterworks and in the scenario of purchasing the waterworks, the cost of purchase has been assumed to be in Year 1 itself, as these components would need to be in place before the disposal of land begins.

### **Pricing Schedule**

As per findings of the market study the average pricing of the industrial estates across Central & South Gujarat is as given in the table below :

No	Type of Estate	Location	Price Range (per sq.mt.)
1	Chemical Estate	Central & South Gujarat	Rs. 265 to 600
2	Engineering Estate	Central & South Gujarat	Rs. 100 to 450
3	General Estate	Central & South Gujarat	Rs. 100 to 500

The prices above include estates where infrastructure comprises only of basic roads and streetlights as well as estates where infrastructure includes water

supply and drainage systems. Though some of the prominent chemical estates in South Gujarat such as Vapi and Nadesari have effluent related infrastructure such as CETP and an effluent collection and disposal system now, the capital cost incurred for the development of the infrastructure was borne by the industrialists and not GIDC.

*The sale price for Padra however includes land as well as all infrastructure costs to be borne by the industrialists. There are no components of hidden cost. Feedback from industrialists regarding the price that they would be willing to pay for industrial land that would be inclusive of all infrastructure costs was identified to be in the range of Rs. 400 to 500 per sq.mts.*

Taking into account the percentage share of each of the components at the estate the average sale price for the estate at the two levels given above would be as below.

#### Pricing Level 1 (Realistic Scenario)

No.	Estate Component	Percentage share of the land at the Estate	Projected Sale Price (per sqm)
1	Chemical Component	55%	525
2	Engineering Estate	32%	460
3	General Estate	13%	490
	<b>Average price</b>		<b>500</b>

#### Pricing Level 2 (Optimistic Scenario)

No.	Estate Component	Percentage share of the land at the Estate	Projected Sale Price (per sqm)
1	Chemical Component	55%	580
2	Engineering Estate	32%	500
3	General Estate	13%	540
	<b>Average price</b>		<b>550</b>

### Financial Analysis Findings

Various alternative scenarios considered for financial analysis are:

Scenario	Water Source Option	Water Distribution Network	Size of Estate (Ha)
Scenario 1	Option 1 – No buyout of GACL waterworks	No Distribution	Alt. 1 - 600
Scenario 2			Alt. 2 - 1000
Scenario 3			Alt. 3 - 1700
Scenario 4		With Distribution	Alt. 1 - 600
Scenario 5			Alt. 2 - 1000
Scenario 6			Alt. 3 - 1700

Scenario 7	Option 2 – Buyout of GACL waterworks	No Distribution	Alt. 1 - 600
Scenario 8			Alt. 2 - 1000
Scenario 9			Alt. 3 - 1700
Scenario 10		With Distribution	Alt. 1 - 600
Scenario 11			Alt. 2 - 1000
Scenario 12			Alt. 3 - 1700

Project cash flows have been discounted at a rate of 18% p.a.

The findings of the financial analysis are highlighted in the table below:

No.	Options	NPV (in Rs. mn) – Optimistic Scenario (Price-Rs. 550 per sq.m.)	NPV (in Rs. mn) – Realistic Scenario (Price-Rs. 500 per sq.m.)
1	Scenario 1	(69)	(171)
2	Scenario 2	(38)	(207)
3	Scenario 3	81	(207)
4	Scenario 4	(262)	(363)
5	Scenario 5	(422)	(591)
6	Scenario 6	(533)	(821)
7	Scenario 7	(88)	(190)
8	Scenario 8	(22)	(191)
9	Scenario 9	27	(261)
10	Scenario 10	(280)	(382)
11	Scenario 11	(406)	(575)
12	Scenario 12	(626)	(914)

### Breakeven Sale Prices

The sale prices for industrial land at which the options break even are given in the table below:

No.	Options	Breakeven Sale Price (Rs. per sq.mt.)
1	Scenario 1	584
2	Scenario 2	561
3	Scenario 3	536
4	Scenario 4	679
5	Scenario 5	675
6	Scenario 6	643
7	Scenario 7	593
8	Scenario 8	556
9	Scenario 9	545
10	Scenario 10	688
11	Scenario 11	670
12	Scenario 12	658

Based on discussions with GIDC, it has been considered that the subject industrial estate would be developed on a partnership basis with a private developer where GIDC would act as a facilitator for the project. We understand that GIDC would acquire the land for the subject development and facilitate any negotiations with government/private agencies necessary for the implementation of the project.

It needs to be highlighted that, the project viability is impacted primarily due to substantial infrastructure development as well as land acquisition costs in the initial years of the project. The main investment commitments in the initial years primarily comprise of the following cost components:

- Land Acquisition
- Laying the 22 km. pipeline from the GACL waterworks
- Purchase of the GACL waterworks (in the relevant options)

Consideration of these costs in the initial years represents the upfront recovery of investments by GIDC. In order to improve financial attractiveness of the project, GIDC needs to address the following key issues:

- Concessions that could be provided vis-à-vis these identified costs.
- In accordance with the existing policy framework the extent to which the recovery of these initial costs may be deferred.

In addition to the above the other issues that would be key to the success of the estate would be actual provision of infrastructure facilities before disposal of land to end users and competitive pricing.

However, in conclusion it needs to be highlighted that Padra is already established as an industrial destination and the proposed project would attract latent demand in the market. With provision of the requisite infrastructure Padra has the potential to become one of the preferred industrial destinations in the state.