

Executive Summary of Dahej Industrial Park Study

Growth Model

The port at Dahej will have a prime "driver" status in addition to the Industrial park, which itself has been accorded a "Driver" status. This would call for adequate linkage infrastructure to make them effective

Dahej Port is Greenfield port to be developed on B-O-O-T. The promoters / developers is Petronet LNG Ltd., a Joint venture of Oil and Natural Gas Corporation, Gas Authority of India Ltd., Indian Oil Corporation and other oil companies.

The developer for Dahej Port, Petronet LNG Ltd., has proposed a 5 MMTPA Port cum Integrated LNG re-gasification facility at Dahej. There is also a stipulation by Gujarat Maritime Board (GMB) that general user facilities also be developed at Dahej. It would be reasonable to assume that the 14 MMTPA capacity planned for by GMB would be the capacity put up by Petronet. This gives Dahej a distinct first mover advantage since it also shares a common hinterland with other ports like Hazira.

If the 14 MMPTA General user Cargo capacity is commissioned by FY 2004, with 5 MMPTA LNG in addition to the 2.5 MMPTA captive user traffic, the movement from Dahej Port could well approach 21 MMPTA by FY 2010. The impact of this quantum of material movement on linkages such as roads, railway, pipelines etc. will have to be incorporated in the external infrastructure.

Review of Infrastructure

The linkage infrastructure that needs urgent attention are:

1. Good roads - Four lane road from Bharuch and good Internal roads at the site
2. Emergency water supply scheme.
3. Storm water drainage
4. Transportation facility for movement of labor
5. Social infrastructure facilities
6. Alternative access to National Highways
7. Common facilities such as banks, commercial services travel agencies, post office, fire station, and police station.
8. Health care facilities including those for fire accidents.
9. Disaster management control facilities.
10. Improved communication facilities.
11. Railway line conversion to Broad Gauge
12. Airstrip

Some of these (housing and four laning of Bharuch - Dahej road) have been already approved for implementation as separate projects and on-site facilities required have been incorporated in the Master Plan now proposed for Dahej Industrial Park.

Competitiveness

India is the 12th largest producer of petrochemical industries and is ranked third in consumption of polymers. In Asia India is ranked next only to China. Indian market size is \$28 billion, which is 1.5% of global market of US\$ 1.5 trillion.

The competitive advantage of Gujarat would be:

- It already has 25% of share in countries chemical industry
- It houses the largest players viz. IPCL and Reliance
- The port infrastructure at Gujarat (Dahej) is already developed for chemical terminals.
- LNG project is already under construction.
- Port projects are in private sector, where in better turnaround times are anticipated.
- Gujarat is already in the process of laying 2500-km gas grid pipelines.
- It offers wide geographic market into Central, West and Northern India.
- It has the best resources in technical manpower availability and
- The state is focussed on policy initiatives and support for petrochemicals.

Similar parks that have been set up with large FDI are:

1. Shanghai Petrochemical part (China). Being set up in 2000 Hectares of reclaimed land. The major companies already attracted to the site are BP AMOCO, Bayer AG, ICI and NIPPON
2. Singapore Petrochemical Complex
3. Jebel Ali, Saudi Arabia
4. Port Kelang in Malaysia

Demand Assessment

GIDB has carried out an analysis of demand and supply scenario for industrial parks in Gujarat. GIDB vision 2010 document envisages demand for chemical industrial parks in the state as 16000 hectares by 2010 and the supply as 5200 hectares. There is a gap of 10828 hectares. Of this, the demand supply gap during 2002 to 2005 is estimated 2454 hectares and an additional gap of 8463 hectares is estimated between 2006 to 2010. Bharuch district accounts for investment proposals for Rs. 45,000 crore and with port project at Dahej, it will be the most attractive destination for major chemical industries. The district has a share of about of 26% of IEMs filed in the state. Against the demand supply gap of 10828 hectares for chemical industries, Dahej industrial park can offer allotable space of

about 2000 hectares, a share of about 16% on demand and 19% of the demand supply gap.

A primary survey was conducted with a structured questionnaire and a data sheet, covering 196 respondents short-listed from various categories, including 77 MNCs. Four responses have been received with total requirement of plots for 151 hectares; 49 respondents have said they have no plans to invest at Dahej while response from 142 companies were not received. On follow up some of them stated that, they have deferred their decision and may respond later. Major companies like BP AMOCO, have also shown interest but no definite response has been given.

In effect, the situation is a reflection of the turbulent times the petrochemical industry is undergoing. The four positive respondents are those who require plots in the immediate future.

Thus it is inferred that, while latent demand exists and though the industry has good opinion on Dahej as a location, the actual materialisation of demand will take place only when the projects have been formulated well, technical tie up have been made before site selection is finalised. This involves substantial lead-time.

In this context, the sales plan prepared for the park needs to reflect slow build up of demand, say at about 200 hectares per year.

The shapes of the projects that may materialize or have potential of being located at Dahej are:

Sl. No.	Project	Investment Rs. Crores	Area Hectares
1	An oil refinery of about 15 million tons a year with imported oil through a dedicated new jetty.	15000	400
2	LNG based Petrochemical Plants- Methanol, Formaldehyde, PF, UF plants Ammonia -Urea plants	5000	400
3	Expansion of IPCL cracker with the associated C2/C3 from imported propane, Naptha etc. through GCPTL for increased Polymers PE, PVC, CAN etc.	2000	80
4	State of Art Styrene/PO plants with inputs of propylene, Ethylene and benzene from IPCL Cracker or imports	2000	800
5	C4 Complex to produce Butanes, Butadiene, Isobutylene etc. from imported LPG (Butane rich) and related downstream SBR, PBR, BR elastomers and Oxygenate MTBE/ETBE etc.	5000	200
6	Secondary processes based on imported intermediates through GCPTL like LAB, PTA	3000	200

	etc. Area required		
7	Power plants (Combined Cycle -Cogeneration) to produce power as well supply steam as a utility supplier to high steam demanding process industries based on imported LNG - 1500MW	7500	80
8	Medium and small scale secondary conversion units like Plastics processing, synthetic fibers etc	500	80
	Total	40,000	2200

Technologies for most of above stated Petrochemical units are available from more than one Licensor and capacities fixed based on economics. It is emphasized that the Indian market for most products in this industry is supply driven.

Project Plan

A draft master plan for the park development has been prepared considering the land area available, constraints posed by existing industries and status of development, requirements from demand assessment and potential users and other issues that have a bearing on a feasible plan.

Alternative plan has been prepared by realigning the proposed broad gauge railway line as alternative 2. All the three alternatives provide for modular development without any significant increase in investment. Depending upon the plot size required by the prospective users, the plots can be sub divided. A typical plan based on Master Plan Alternative 1, is provided as Alternative 4.

The land utilisation plan for alternatives 1 and 2 are as follows

	(Hectares)	
	Master Plan Alternative 2	Master Plan Alternative 1
Industrial Plots		
- already allotted	1314.68	1314.68
- available for allotment	2095.49	1933.14
Roads (pipeline & power corridors)	409.30	409.30
Green belt & open space	305.43	467.78
Amenity & Service building	195.40	195.40
Emergency housing	31.60	31.60
Villages	45.00	45.00
Railway corridor	56.10	56.10
Total	4453.00	4453.00

Alternative 2 has an additional saleable area of 163 hectares.

SPECIFICATIONS

The physical infrastructure is expected to be provided in two phases. The first phase will include the basic minimum infrastructure required for efficient functioning of the industry.

This will include:

- Roads and storm water drains
- A common water supply and distribution system
- Power supply preferably by underground cables.
- Telecommunications
- Fire fighting
- Sewage and Industrial waste Treatment and disposal
- Recycling of waste water
- Street and area illumination
- Landscaping and architectural planning
- Parking areas
- Truck terminal with fuel lubricants, repair and maintenance facilities as well as parking and security.
- Bus terminal
- Emergency Personnel Housing
- Disaster Management Cell

During Phase II - The infrastructure will consists of:

- Broad gauging of the existing railway line and its extension to port based area.
- Warehousing and storage facilities.
- Industry related shopping areas
- Industry related services such as engineering workshop.
- Engineering support services.

The social support infrastructure such as township with all its requirements of education, recreation, shopping and the numerous requirements would be provided in a separate township located conveniently near but sufficiently away for safety. The feasibility study for such a township is already conducted by GIDC with established economic viability.

Transfer Price

Since Dahej industrial park is to be developed with private participation, transfer price of the land and development made to it by GIDC needs to be valued in an acceptable manner.

In tune with the GIDC's current practice of "Cost Plus" approach, financial (Cash flow) valuation model has been recommended.

The notional date of transfer has been set as March 31, 2001 / April 1, 2001. All investments made by GIDC upto this date and revenue generated have been calculated and on net cash out flow from GIDC cost of capital at 12% has been charged. Provision for the amount to be spent on land acquisition of the remaining part has been made.

The transfer price works out to Rs. 205.50 crore. Recovery of transfer price is recommended through sale of land (cost) to the allottees charged over the area to be sold . The transfer price works out to Rs. 106.30 per sq.m for Alternative 1 and Rs. 98.10 per sq.m. for Alternative 2. Rs. 100 per sq.m. is recommended as the transfer price.

Indexing of the price can be done based on incremental expenditure on land acquisition and cost of capital there of.

It is recommended that GIDC may collect this price directly from allottees (or through the Park Company), since it can retain the option of charging more or providing subsidy based on the development scenario that emerges. Further, this would avoid tax complications on sale of land.

Project Cost

The project cost is arrived taking into account three components:

1. Transfer price (GIDC) - (TP-GIDC_ for land
2. Common Infrastructure Development Cost (CIDC) for common site infrastructure that is to be charged on the basis of unit of area sold
3. User specific facilities cost (USFC) that be developed based on users requirement and recovered from them / funded from their sources based on the unit of facility to developed. Items included are :
 - Water supply and distribution
 - Effluent collection, conveyance and disposal
 - Railway siding
 - Construction of housing complex etc.

The total cost of the project is estimated as **Rs. 1067.53 crore:**

	Rs. crore
Transfer price	205.50
Common Infrastructure Development Cost	320.92
User Specific Facilities Cost	541.11
Total	1067.53

Break up of CIDC is given below

Earth work	6090.00
Roads	9108.80
Amenities and Service Buildings	1379.00
Sewerage and storm water drains	5335.11
Treated effluent for horticulture	336.60
Conduits for electrical & Telephones	462.83
Street & area illumination	2610.00
Aboriculture	507.50
Contingencies (15%)	3874.48
Preliminary & Preoperative expenses	2388.32
Total	32092.63

Means of Finance

Project investment will be made in a phased manner and sources will also be raised accordingly. The means of finance envisaged is as follows:

(Rs. in Crore)

Source	TP-GIDC	CIDC	USFC	Total
GIDC	205.50	-	-	205.50
SPC / (Equity)	-	64.44	-	64.44
Loan	-	102.65	-	102.65
FI / Banks	-	-	-	-
User Finance	-	153.82	541.11	694.93
Total	205.50	320.92	541.11	1067.53

The key ratios for CIDC are given below:

Debt Equity Ratio	: 1.59: 1
Debt to non-debt ratio	: 0.47: 1
Equity to total cost	: 20.08%
Loan to total cost	: 31.99%
User finance to total cost	: 47.93%

Selling Price

The pricing of development charges for "CIDC" has been worked out (Refer Schedule 1.12) as Rs. 210 per sq.m. The total price for the allottees will be Rs. 310 per sq.m. including cost of land. In addition, user specific facilities are to be paid for separately. A comparison of selling price of other parks has been carried out and it is seen that the price is within the band of comparable projects. The project financials are given Chapter 7.4 and schedules in Volume II of this report.

The CIDC project has an **IRR of 24.9%** (post tax) and a **debt service coverage ratio of 1.75:1**.

The cash flow position is satisfactory and it can fund a portion of USFC by charging cost of capital.

Sensitivity Analysis

Sensitivity analysis has been carried out for appropriate and likely changes and the results are summarised below:

	IRR	<i>DSCR</i>	Cash flow
Normal	24.9%	<i>1.75</i>	Satisfactory
Slow build up of demand - by 50% lower than envisaged level for year 2001-02, 02-03, 03-04 compensated by increase in year 2004-05, 05-06 & 06-07 respectively	18.1%	<i>1.78</i>	In year 2003-04 external (additional) funding of Rs. 700 lakhs is required; otherwise satisfactory
Lower selling price in Initial years - by 25% less in year 2001-02 (Rs. 157.50 per sq.m.) 2002-03 (Rs. 165.40 per sq.m.) and at regular rate (Rs. 210 per sq.m.) from year 2003-04	13.3%	<i>1.46</i>	Negative cash flow in year 3,4,5; compensated by buffer from year 1 and 2
Project cost increased by 20%	10.5%	<i>1.33</i>	Negative cash flow in year 3 to 7 compensated by buffer in year 1 and 2.
Normal scenario for Master Plan Alternative 2	33.0%	<i>1.94</i>	Satisfactory

It is inferred that the project has highest sensitivity to increase in cost and hence developer selection should have high premium on successful track record in project implementation within schedules and on the lowest cost of development offered by them. Marketing experience for industrial area would also require high priority in criteria for developer selection.

Project Implementation Structure

Issues relating to privatisation of Industrial parks have been discussed in Chapter 8.1 "Gujarat Infrastructure Development Act 1999" has list various models for privatisation and of these, the feasible ones for Dahej Industrial park are:

1. Build, Own, Operate and Maintain Agreement (BOOM)
2. Joint Venture Agreement (JVA)

While both are feasible models, BOOM should be accorded highest priority as fits more into the vision envisaged for GIDC.

The structuring envisages that

- a Park Development Company (Dahej Industrial Park Ltd. - DIPL) is promoted jointly by GIDC, the developer / concessionaire and the users; DIPL will implement the project, allot land to users and maintain the park.
- A concessionaire will be selected by competitive bidding process who is totally responsible for
 - Design
 - Development
 - Finance
 - Marketing and
 - Maintenance of the park

for a specified period (say 15 years), the will be paid by DIPL for the development work based on mile stone achievements.

- GIDC will make available the land to the DIPL / Concessionaire for development and sell (lease) the past of land sold to the users (buyers) by DIPL.