Executive Summary of Mundra Industrial Park Study

Location

The site has Mundra to the west, Loni village to the east and Gundala village to the north. The proposed site for the industrial estate is located on the State Highway, connecting Mundra-Anjar-Gandhidham. The road connectivity to the proposed Estate is good with the upgradation of the state highway following the development of the Mundra Port. There is a connection upto Gandhidham through a national highway (NH 8A). Gandhidham connects to Mundra through State Highway 33. Mundra connects to the other parts of the region through the following state highways:

- Mandvi to Mundra - SH 26
- Bhuj to Mundra - SH 21/23
- Anjar to Mundra - SH 34

Broad gauge rail facilities are available upto Gandhidham. Plans are afoot to provide rail connectivity between Mundra port to Anjar / Gandhidham and this track is expected to provide rail connectivity to the site also.

Demand Projection

The demand estimation has been undertaken for a 25 year time period taking into account the development and consequent absorption trends in other industrial projects developed across the state. It is however not possible to project accurately market conditions across a 25 year time horizon. The total projection period has therefore been divided into two phases. Phase 1 is for the first 10 years 2001 to 2010 while Phase 2 is for the subsequent 15 years - 2010 to 2025.

Since organized supply information is available for the next 10 years, it is possible to project market conditions over the next 10 years with comparative accuracy along with the projection of the associated demand-supply situation.

However, the demand estimates of Phase 2 require to be reviewed at an appropriate later date in light of the competing supply planned in Phase 2 and the prevailing industrial investment trends.

The main stages of the Demand Estimation exercise undertaken are as follows:

Stage 1 : Projection of the total industrial investments into the state.
Stage 2 : Computation of industrial demand to be attracted by Kutch and Mundra.
Stage 3 : Profile of the industrial demand assessed for Mundra.

Stage 1 : Projection of Demand : The estimation of demand is based on the projection of investments over the next 25 years. The projection of state level investments into different types of Industrial Estates has been computed by the following methods:

Method 1: On the basis of the demand estimation in the Infrastructure Agenda-Vision 2010.

Method 2: On the basis of CMIE time series data on the investments in Gujarat.

Method 3: Based on the Industrial Investment Information from INDEXT-B.

Stage 2: Share of Kutch and Mundra

Method 1

The share of Kutch in the total investments and the final share of the total industrial demand to be attracted to Mundra have been computed as per current trends of spatial distribution of industrial investments in the state and in Kutch district.

Method 2

The demand to be attracted to Mundra in Phase 1 has also been computed through the alternative method. The demand components for Mundra in terms of investments into Chemical industries, Engineering industries, Mineral based industries and other industries have been derived separately.

Findings of the Demand Estimation

The demand assessed by the different methodologies have been compared and rationalized in this section to arrive at the final land requirement. The above has been compared to the findings of the end user perception study and the responses received regarding 'willingness to invest' in Mundra.

	Share of Mundra - Phase 1	Share of Mundra - Phase 2
Stage 1		
Method 1	680	1,360
Method 2	750	1,015
Method 3	550	740
Stage 2		
Method 2	730	

The findings of the Demand Estimation have been summarized in the table above. *The above demand figures are for the gross industrial land to be developed inclusive of area under infrastructure.*

Based on the above the following the following quantum of demand for industrial land has been identified for the two phases of the Industrial Estate:

Phase 1 **: -** Industrial Demand - 680 hectares
Phase 2 **:-** Industrial Demand - 1,000 hectares

Primary Survey Conclusions

Interest has been conditionally expressed by potential investors for approximately 300 hectares (720 acres) of *net industrial land* at the Mundra Industrial Estate. Accounting for land required for infrastructure the total demand for industrial land translates into approximately 410 hectares. It must be noted that the above demand is subject to the infrastructure development at the estate matching the profile of expectations of the potential investors. It may also be noted that the interest expressed at this stage is prior to any physical development at the subject site. If the infrastructure development and pricing at Mundra matches the expectations of the potential investors then this demand is likely to increase.

Residential Township

The total populations at the residential township has been provided in the table below:

	Proposed Investment (crores)	Investment to Area ratio	Total Employment to be generated
Phase 1	140	750,000	1,830

The total population at the Township would include the dependent population. The calculations are given below:

	Total Employment	Factor including Dependent Population	Total Population
Phase 1	1,830	2.03	3,700

A density of 80 persons per hectare has been assumed for the township. As per the above densities, the total area required for the residential township is as follows:

- Phase 1 - 50 hectares

Environment Considerations

- *Ecologically sensitive areas:* The sensitive areas could include, but not limited to, archaeological monuments, historical places, resorts, estuaries, biosphere reserves, forest land, areas of scientific interest, seismic zones, tribal settlements, etc. The coastal area of Kutch has mangroves and fish breeding grounds within the influence zone of 25 kms radius. In addition, an offshore aquatic life conservation park is proposed to be developed in the Gulf of Kutch.
- *Water bodies:* These include rivers, natural lakes and swamps. No water body is found within 1.5 kms of the park.

- *Coastal areas:* Since the proposed park is more than 0.5 kms for high tide line of the coastal area, the stipulation made vide Notification (No. SO 14(E) dated 19/2/91) by Government of India, Ministry of Environment & Forests, pursuant to Environmental (Protection) Rules, 1986, does not apply.
- *National & State Highways and Railway:* The industrial park is located just off the State Highway that connects the towns of Mundra, Anjar and Gandhidham. The nearest rail facility is at Gandhidham, which is approximately 35 kms. A project for rail connectivity from the Port of Mundra to Anjar / Gandhidham is underway. This rail track passes close to the proposed park. It must be ensured that active industrial area is at least 0.5 kms from the State highway and railway track.
- *Major settlements:* The Park is reasonably far from any city or municipal limits.

It may be noted that the GIDC / Private Promoter is not required to obtain any approvals for the park from the Central government for any Environmental Clearances.

Development Plan

As per the demand profile identified through primary research the preference is skewed towards industrial plots via-a-vis built up industrial sheds. The above fact is also supplemented through the comparative non-use of built up industrial facilities in the surrounding industrial areas such as the Kandla Free Trade Zone and the industrial estate at Gandhinagar. It is therefore suggested that the industrial development at the Mundra Industrial Estate be restricted to industrial plots only.

The sizing of industrial plots recommended for the different components at the estate are given in the table below:

No.	Component of the Estate	Plot Sizes
1	Chemical Component	1 hectare to 10 hectares
2	Engineering Component	0.5 hectare to 5 hectares
3.	Mineral based Component	1 hectares to 10 hectares
4.	General Component	0.5 hectare to 10 hectares

The above is based on the findings of primary survey. However, the mix of the plots would need to be based on the actual demand from end users.

Projected Mix of Development

Based on the demand assessment exercise the projected mix of the net saleable area in the estate for different types of industries is as follows:

Type of Industries	Percentage share	Land area (hectares)
Chemical Industries	16%	80
Engineering Industries	34%	170
Mineral based industries	30%	150
General Industries	20%	100

TOTAL	**100%**	**500**

Infrastructure Provision

The average cost of infrastructure provision at the estate is Rs. 125 per square meter. The above includes the following infrastructure components:

No.	Infrastructure Component
1	Internal roads
2	Drainage
3	Compound wall
4	Landscaping
5	Waste treatment system
6	Sewerage Treatment Plant
7	Effluent Treatment Plant
8	Sewerage system
9	Waste Collection system
10	Telecom
11	Medical center
12	Transport terminal & goods loading / unloading
13	Fire station
14	Bus terminal, stop etc.
15	Community center
16	Police Station
17	Post & Telecommunications

Based on the above infrastructure scenarios and sources for provision of water infrastructure the following infrastructure development options emerge:

- **Option 1:** In Option 1 the main water source considered is Desalination plant. The other infrastructure components are as per Level 1 detailed above.

- **Option 2:** In Option 2 also the main water source considered is Desalination Plant. Infrastructure components to be developed are as per Level II.

- **Option 3:** In Option 3 the water source considered is the surface water source from the Macchu III. Harnessing the source would require approximately 200 kms. Pipeline. The other infrastructure components considered as a part of this option are as per Level I.

- **Option 4:** The fourth option explores the possibility of sourcing the water for the estate from the proposed Narmada project. To tap the source a approximately 30 km pipeline would have to be developed. The other infrastructure components considered for the option are as per Level 1 of the Infrastructure Plan.

- **Option 5:** The Option 5 is also based on sourcing the water from the proposed Narmada project. The infrastructure components considered are however as per Level II of the Infrastructure Plan.

Marketing Schedule

The absorption schedule is based on the demand projected for the industrial estate and the associated time period involved. The absorption schedule projected is as follows:

Year	Percentage of land absorbed	Year	Percentage of land absorbed
2002	10%	2007	10%
2003	12%	2008	8%
2004	14%	2009	8%
2005	14%	2010	8%
2006	10%	2011	6%

Pricing

As per the findings of the market study the average pricing of the industrial estates across the state is as given in the table below:

No.	Type of Estate	Location	Price Range (per sqm.)
1	Chemical Estate	South Gujarat	Rs. 200 - Rs. 615
2	Engineering Estate	South Gujarat	Rs. 100 - Rs. 450
3	Engineering Estate	Saurashtra	Rs. 100 - Rs. 750

Pricing for Mundra Industrial Park.

Pricing Level 1

No.	Estate Component	Projected Sale Price (Rs. per sqm.)
1	Chemical component	400
2	Engineering component	300
3	Mineral processing component	375
4	General component	350

Weighted Average Price Rs. : 349 per sqm.

Pricing Level 2

No.	Estate Component	Projected Sale Price (Rs. per sqm.)
1	Chemical component	450
2	Engineering component	350
3	Mineral processing component	400
4	General component	400

Weighted Average Price Rs. : 390 per sqm.

Financial Analysis

The various development scenarios i.e. option 1 to 5 have been considered for the Financial Analysis. The findings of the financial analysis are highlighted in the table below :

No.	Options	NPV-Realistic Scenario (Price - Rs. 350 per sqm.)	NPV - Optimistic Scenario (Price - Rs. 400 per sqm.)
1	Option 1	(218 mn)	(119 mn)
2	Option 2	84 mn	182 mn
3	Option 3	(722 mn)	(624 mn)
4	Option 4	(135 mn)	(36 mn)
5	Option 5	154 mn	253 mn

For the calculation of net present value the project cash flows have been discounted at a rate of 18% p.a. The above financial analysis highlights that there are two options with positive NPV, Option 2 and Option 5.

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

No.	Options	Breakeven Sale Price (Rs. per sqm.)
1	Option 1	460
2	Option 3	715
3	Option 4	419

Critical Evaluation of various Development Options

The table below highlights the financial attractiveness and the risk associated with various developments options.

Development Option	Characteristic	Financial Attractiveness	Associated Risk
Option 1	Water from Desalination Plant, all infrastructure to be provided		Medium to Low
Option 2	Water from Desalination Plant, all infrastructure to be provided except Water and power supply distribution networks	Low to Medium	Low
Option 3	Water from Machhu III dam through 200 km. pipeline, all infrastructure to be provided		High to Medium

Option 4	Water from Narmada project through 30 km. pipeline, all infrastructures to be provided.		High
Option 5	Water from Narmada project through 30 km. pipeline, all infrastructure to be provided except Water and power supply distribution networks	Medium to high	High

Project Structure

From the GIDC's perspective the various equity participation scenarios for the development of the park can broadly be classified under three heads:

- **Scenario 1: GIDC** acts as a facilitator by assisting the private developer and does not invest in the project.

- **Scenario 2:** GIDC assumes the role of a developer and assumes the investment responsibility for the entire project.

- **Scenario 3:** GIDC enters into a joint venture and the investment responsibilities are shared between the GIDC and the private developer.

The returns accrued from the project would be shared between the private promoter and GIDC on the basis of their equity participation however the private promoter would receive a premium over and above the equity participation ratio for undertaking the project risk. The revenue sharing ratio would primarily be dependent on the nature of arrangement with the private developer.

Considering the profile of the project the role of the GIDC / government would primarily focus on the following aspects:

- Land acquisition
- Selection of the private promoter
- Facilitating the development of the infrastructure at the estate by the private promoter
- Facilitating the clearances and the notifications required for the park :
    - Declaration of the area as an Industrial land
    - Notification as Chemical Zone
    - Environmental clearances
    - Liasoning with government agencies such as the Irrigation Department, GEB, the telecommunications and the postal department etc. for the various infrastructure requirements at the estate.
    - Any coordination required during marketing of site.