EXECUTIVE SUMMARY

In the wake of the earthquake, the industrial development has been prioritized to develop the economically lagging region of Kutch. The Excise Exemption by the central government and the Sales Tax incentive from state government will be major drivers in the development process. An important step in this direction is to analyze the feasibility of a chemical industrial estate in Kutch.

The major objective of the feasibility analysis is to carry out demand estimation, project sizing, selection of location for the estate, check the financial feasibility and to prepare the project implementation structure for the estate.

Based on the primary survey through questionnaires and personal interviews among eminent industries and associations, the projected investments are in the range of Rs. 800-900 Crores with the requirement of land and water as 200 Ha and 17000 KL respectively. The information collected from the primary survey suggests that the major chemical segments that show a positive growth in the near future are Speciality Chemicals, Cement, Drugs and Pharmaceuticals and Dyestuffs.

The study reveals that the willingness of the investors to invest in the proposed chemical estate is conditional. The factors that govern the success of the estate are:

- Sufficient water for industrial and domestic use
- Continuous power-supply catering to the industrial requirements
- A competent, estate owned effluent treatment and disposal system in place
- A fast clearance system from various Govt. departments
- Approachability of the estate from the other parts of Gujarat and India
- A well planned development with regard to the litigation that may be raised by various public and social organizations which could hamper the development and operation of the estate

All the aforementioned features have to be dealt with keeping in mind the time frame of the Excise Notification, which is till July 31st, 2003 for the industries to start production. In addition to this, there should be at least some large-scale industry that should invest in the estate that will help in the development of various other ancillary units (related to the production cycle of this plant).

It is also to be noted that the excise exemption and sales tax exemption hold an average importance for most of the chemical industry segments (though these are top of mind for the potential investors). The industries expect a long-term commitment from the Government in terms of the overall infrastructure development that accounts for the sustainability of the industries.

Seven sites were identified on the basis of availability of large tracts of Waste Land, Nearness to Water source, Proximity of Quality Transport Infrastructure, Minimum

Pollution Sensitivity and Ease of Effluent Disposal. This exercise covered the coastal *talukas* of Bhachau to Abdasa. Seven sites were identified based on the potentiality analysis. The deciding parameters and the weightages assigned to each one of them have been dealt with in subsequent sections of the report. Out of these locations, three-location viz. Mithi Rohar, Bada-Panchatiya (Near Mandvi) and Kidana-Bharapur (Near Kandla Free Trade Zone) were shortlisted for further analysis. After a detailed land suitability analysis based on land, infrastructure, environment and other parameters and a final SWOT analysis, the site at Kidana-Bharapur was judged to be most suitable for setting up the chemical estate. The first two sites were not recommended due to absence of proper infrastructure and comparative higher environmental sensitivity respectively.

The gap between the existing infrastructure of the proposed site and the requirements is mainly in two critical infrastructure services- water supply and power. A thermal distillation desalination plant of capacity 17 MLD deriving the required steam from a gas based captive power plant of 50 MW capacity is identified as the most cost-effective option. A CETP of 12 MLD capacity would provide tertiary treatment. In addition to this, the highly polluting industry cluster would have a specific treatment plant to treat the Persistent Organic Pollutants. Cleaner production center and testing laboratories would facilitate the industries.

The total cost of infrastructure is about Rs. 430 crores which involves multiple unit of operations like power plant, desalination plant, etc. The feasibility of the estate depends upon whether a private developer would be interested in developing the proposed estate. The primary factor that governs the returns to the estate developer is the price at which the land is sold to the industry. Various scenarios have been considered for analyzing the financial returns.

For a private estate developer, the least cost scenario, which meets the deadline for availing incentives, is achieved when the entire infrastructure for the estate is developed by single entity. The Estate Development Agency would be required to make an investment to the tune of Rs. 150 crores. Under this scenario, at 20% return on equity the land price comes to Rs. 761 per sq. mt. and at 15% return (the minimum return expected by an investor) the land price comes to Rs. 537 per sq. mt.

The industry view is that the land price shall be around Rs. 250 / sq. mt. Though only a few respondents are willing to pay in range of Rs. 600 - 800 per sq. mt.

An alternative of GWIL Water Supply with long term phasing of the estate development is also relatively low cost scenario. In the interest of Government, this scenario is also better than the previous one. Under this scenario, at 20% return on equity the land price comes to Rs. 790 per sq. mt. and at 15% return the land price comes to Rs. 365 per sq. mt.

From investor perspective this scenario would be preferable because of relatively lower investment. However, the major disadvantage under this scenario is that the industry will not be able to avail excise incentives.

The indicative financial analysis for the industry shows that the returns to the industry are above the average market returns at unit land price of Rs. 761. Therefore no incentives would be required to make the industrial estate proposition more attractive for the industry.

Another alternative of water supply through GWIL but no long term phasing is the least cost scenario from the industry point of view, while maintaining the returns to the investor. However, the major assumption here is that all investment would be made almost immediately and GWIL also supplies in the next one year, both of which seems to be practically impossible to implement.

In view of the above, it seems unlikely that this estate can be developed through private participation at commercial consideration, while also optimizing the benefits of excise and sales tax incentives to the industry.

ABBREVIATIONS

BOD	:	Biological oxygen demand
CENVAT	:	Central Value Added Tax
CETP	:	Common Effluent Treatment Plant
CMIE	:	Centre for Monitoring Indian Economy
COD	:	Chemical oxygen demand
CPCB	:	Central Pollution Control Board
CPP	:	Captive Power Plant
CRZ	:	Coastal Regulation Zone
DG	:	Diesel Generated
DMP	:	Disaster management plan
EIA	:	Environmental Impact Assessment
EMP	:	Environmental management plan
EOU	:	Export Oriented Units
EPP	:	Emergency preparedness plan
EPZ	:	Export Promotion Zones
GDP	:	Gross Domestic Product
GIDB	:	Gujarat Infrastructure Development Board
GIDC	:	Gujarat Industrial Development Corporation
GLC	:	Ground Level Concentration
GPCB	:	Gujarat Pollution Control Board
GWIL	:	Gujarat Water Infrastructure Limited
FDI	:	Foreign Direct Investment
FETI	:	Fire Explosion and Toxicity Index
FIRR	:	Financial Internal Rate of Return
FY	:	Financial Year
IEE	:	Initial Environment Examination
IMD	:	Indian Meteorological Department
IRR	:	Internal Rate of Return
IIP	:	Index of Industrial Production
KFTZ	:	Kandla Free Trade Zone
KPT	:	Kandla Port Trust
LNG	:	Liquefied Natural Gas
MDR	:	Main District Road
MoEF	:	Ministry of Environment and Forest
MLD	:	Million Litres per Day
MNC	:	Multi National Company
MODVAT	:	Modified Value Added Tax
MSF	:	Multi Stage Flash
MT	:	Metric Tonne
NH	:	National Highway
NPV	:	Net Present Value
OFC	:	Cable
O & M	:	Operations and Maintenance
PAP	:	Project Affected Persons
P & L	:	Profit & Loss

POP	:	Persistent Organic Pollutants
PPMP	:	Post-project Monitoring Plan
PSU	:	Public Sector Undertaking
PVC	:	Poly Vinyl Carbonate
RA	:	Risk Assessment
R&D	:	Research & Development
RO	:	Reverse Osmosis
SEZ	:	Special Economic Zone
SH	:	State Highway
SME	:	Small and Medium Enterprises
SPM	:	Suspended particulate matter
SS	:	Suspended Solids
TDS	:	Total dissolved solids
TIBL	:	Thermal Internal Boundary Layer
TOC	:	Total Organic Carbon
TSS	:	Total suspended solids
TPA	:	Tonnes Per Annum
VAT	:	Value Added Tax
WTO	:	World Trade Organisation