

# Private Sector Infrastructure Facility at State Level Project



## ***VOLUME 5: CASE STUDIES***

*Provided to the*

**State Governments of  
Andhra Pradesh  
Gujarat  
Karnataka  
Madhya Pradesh  
and  
Asian Development Bank**

*By*

**CPCS Transcom Limited**  
In association with  
**Oxford Policy Management  
Nathan Incorporated  
The Economic Research Institute  
Luthra and Luthra**

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15 February 2005

Mr. Cheolsu Kim  
Head, Financial and Private Sector  
Asian Development Bank  
Indian Resident Mission  
4, San Martin Marg, Chanakyapuri  
New Delhi 110 021

Dear Mr. Kim,

**Reference: TA 3791-IND: Enhancing Private Sector Participation (PSP) in Infrastructure Development at State Level**

It is with pleasure that I am forwarding to you the final report for the above technical assistance project. I believe that the five volumes attached can form the basis for improved private sector participation in the infrastructure sector in India.

In addition to the main volumes, we have also prepared an Executive Summary which summarises the main report recommendations. We have also structured the recommendations into seven key steps which are needed to enhance state level PSP activity. These seven steps comprise an action plan which can be applied by any State in India.

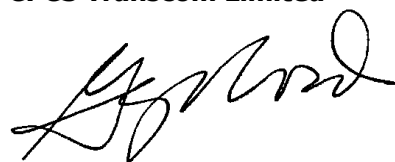
As you pointed out in the tripartite meetings, while the knowledge of how to support PSP activity seems to be fairly widely accepted, following through on that knowledge and implementing the projects is not being done. In the report we have provided a body of material which we hope can assist in that implementation.

While this report is bulky, it was written with the idea of eventually turning it into a reference book for wider dissemination to other state organisations around India. That option still remains. We believe that the concepts and the issues highlighted here, have broader application in other states as well.

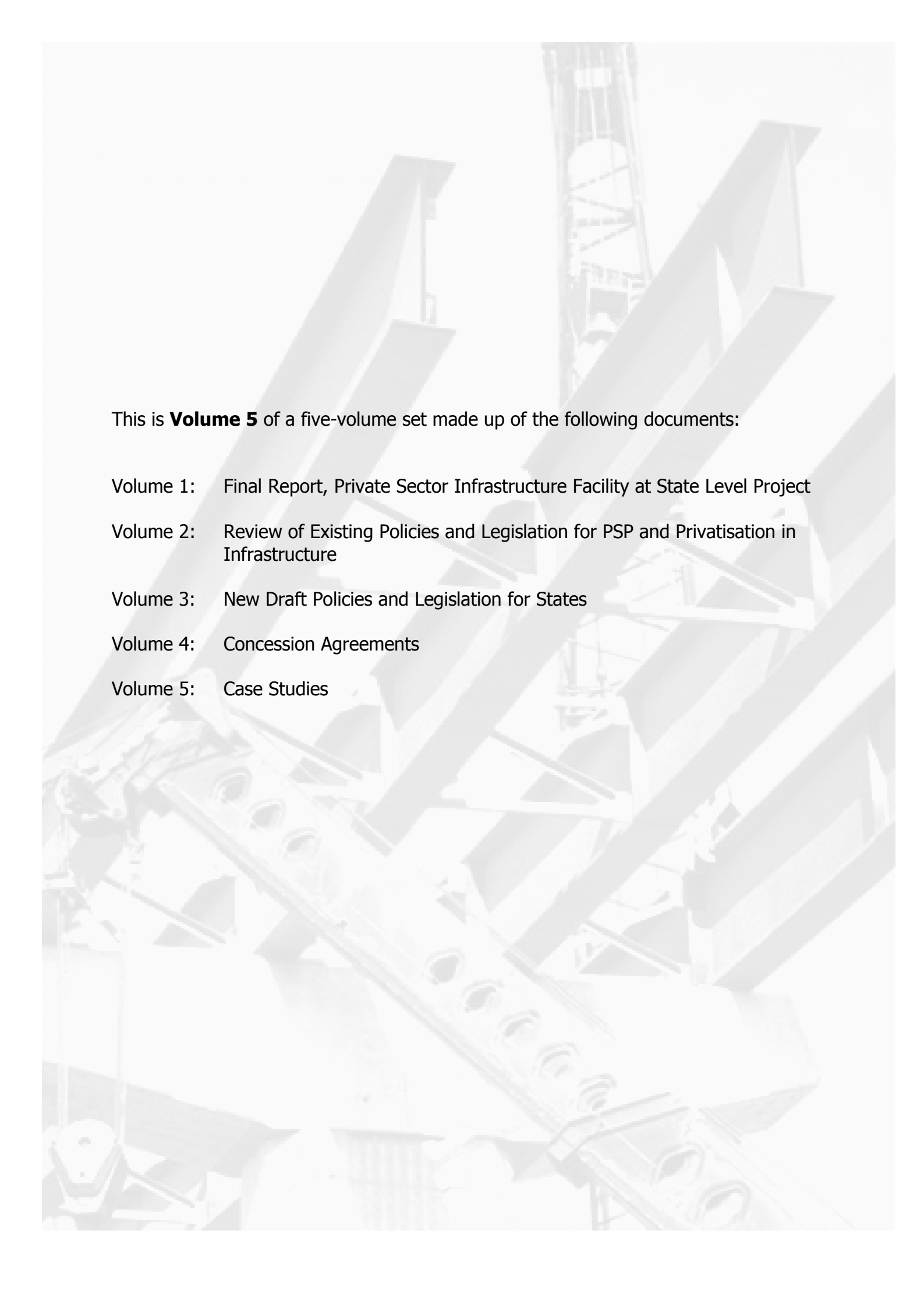
In closing I would also like to thank you and your colleagues for your support and help on the project.

Yours sincerely,

**CPCS Transcom Limited**



W. Greg Wood  
Chairman



This is **Volume 5** of a five-volume set made up of the following documents:

Volume 1: Final Report, Private Sector Infrastructure Facility at State Level Project

Volume 2: Review of Existing Policies and Legislation for PSP and Privatisation in Infrastructure

Volume 3: New Draft Policies and Legislation for States

Volume 4: Concession Agreements

Volume 5: Case Studies

## Table of Contents

<b>1</b>	<b>Introduction .....</b>	<b>1</b>
<b>2</b>	<b>Summary of Selected Projects .....</b>	<b>1</b>
2.1	Karnataka.....	1
2.1.1	Introduction.....	1
2.1.2	SWOT Analysis.....	1
2.1.3	Lessons Learned.....	2
2.2	Andhra Pradesh .....	3
2.2.1	Introduction.....	3
2.2.2	SWOT Analysis.....	3
2.2.3	Lessons Learned.....	5
2.3	Gujarat.....	5
2.3.1	Introduction.....	5
2.3.2	SWOT Analysis.....	6
2.3.3	Lessons Learned.....	7
2.4	Madhya Pradesh.....	8
2.4.1	Introduction.....	8
2.4.2	SWOT Analysis.....	8
2.4.3	Lessons Learned.....	8
<b>3</b>	<b>Conclusion .....</b>	<b>10</b>

### Case Studies

Bangalore–Mysore Infrastructure Corridor

The Port Sector, Gujarat

The Road Sector, Madhya Pradesh

The Visakhapatnam Industrial Water Supply Project

# 1 Introduction

This section reviews the process of PSP in infrastructure in the four States taking the approach from the perspective of a private investor by reviewing projects at various stages of the planning and implementation. Four different sectors were selected based on discussions with the nodal agencies of each State viz. Karnataka (multi-sector); Andhra Pradesh (water supply); Gujarat (ports) and Madhya Pradesh (roads). The focus of the cases also slightly differed, in Karnataka and Andhra Pradesh, awarded projects were tracked through the process of implementation to identify issues faced by the concessionaires, whereas for the States of Gujarat and Madhya Pradesh, the focus was more on the concessionaire selection process, the legislative framework, enabling environment for investment and issues relating to financial closure.

Set out below is a synopsis of each project comprising the SWOT analysis and the lessons learned based on our findings. We have also included in our conclusion a number of key issues across the sectors and which are addressed in more detail in other sections of the Draft Final Report.

## 2 Summary of Selected Projects

### 2.1 Karnataka

#### 2.1.1 Introduction

The Kalyani Group and its Consortium partners, Vanasse Hangen Brustlin, Inc. and SAB Engineering, are the participants to construct an infrastructure corridor and up to seven townships between Bangalore and Mysore. The infrastructure corridor includes a modern, four lane limited access expressway; potable water, sewage treatment, electric power transmission facilities and fiber-optic communications cables. The townships are sufficient communities, each with its own unique economic base and directly served by the infrastructure corridor.

The project is currently at the implementation stage of Phase I.

The estimates developed in 1995 and updated currently put the cost of the construction of the Bangalore to Mysore Road at Rs. 20,000 Million or US\$ 444 million.

#### 2.1.2 SWOT Analysis

**Commitment by the Sponsor.** The gestation of this project has been 9 years and running. It is uncommon to find a project sponsor willing to commit the necessary energy to a project to follow it through all the steps required over such a long time frame. The Consortium has attained financial closure on 28.03.2004.

**Openness of the State to needed changes.** For instance, the initial project plan ran into trouble because a number of different planning authorities along the alignment. The State Government has formed a new Planning Authority ` Bangalore-Mysore Infrastructure Corridor Area Planning Authority (BMICAPA) directly responsible for the corridor.

**Success.** The project is now underway. The first phase of construction has begun and the land has been acquired for most of the alignment.

**Creation of a Very Strong Data Base of Information.** The complete corridor is very highly documented by the Consortium. Each property was individually surveyed against a GIS grid and the properties are all set in an interactive database which shows all information for each property at a

mouse click. This has allowed the Consortium to compete many of the administrative or regulatory requirements with a high degree of confidence and accuracy.

### 2.1.3 Weaknesses

**As a self promoted project**, the Consortium is inevitably viewed with suspicion by the Bureaucracy. This leads to inevitable delays, overzealous application of restrictive covenants and in many cases demands for “off the record” payments. Projects supported by the Government on the other hand, can overcome these concerns. However all approvals from the Government have been received, financial closure attained and works of the first phase is in progress.

**The need for extensive land acquisition** has posed a large burden of cost on the Consortium. The Consortium is responsible for the cost of all land acquired as well as for lease cost for Government land. This in turn reduced the funding available for the actual infrastructure investment itself. From the Government side, the key remaining issue is completion of acquisition of necessary land. Currently about 1000 acres of Government land has not been handed over and a further 1590 acres of private land has been notified but not as yet closed.

**Demand estimates** are traditionally difficult to get right in India. The investment required to reach the start point is already committed but the actual demand is not yet known. The estimates of demand have been done in a very professional manner, but as with other cases in India, the situation has changed significantly since the first estimates were obtained. The parallel State Highway 17 is now being upgraded to a four lane road. The parallel railway is also being upgraded with higher quality service between Bangalore and Mysore. These two developments may have significant impact on the future viability of the Corridor as a toll highway. The Consortium believe that these improvements to the parallel roads and railway will attract more ribbon development and as a consequence, this will drive more traffic onto the toll road. However, this logic has yet to be tested in practice.

### 2.1.4 Opportunities

**Use as Example.** Having cleared many of the hurdles, this project can now stand as an example to other investors about how best to achieve closure on a project of this type in Karnataka.

**Expanding Population Base.** The rapid growth of Bangalore and the ongoing demand for high quality housing will increasingly make the new townships attractive locations for new residents. The longer term financial viability will likely rest more on the value attached to the development of the townships than it will on the revenue from the toll road.

### 2.1.5 Threats

**Parallel Transport Infrastructure.** Improvements to the parallel road and the parallel railway may erode traffic from the Corridor and delay the point at which it becomes profitable. However this threat is not significant since the parallel road is not grade separated and passes through nearly 67 settlements long its route. Even the doubling of railway does not cater to the demand of goods haulage since the railway line is not linked beyond Mysore.

**Water Availability.** Future shortage of water may become an issue. The areas has experienced four years of drought and recent rains, although replenishing some of the watertable, do not overcome the systemic issue. The project does have perineal water available from the Kaveri River and this provides a decent safety net unless long term drought becomes common.

### 2.1.6 Lessons Learned

**Commitment of Senior Government Officials.** Commitment of senior government officials to the project is critical if it is to be successful. In this project, a core committee was formed in 1996 to

guide development of the project, numerous committee meetings have been held with senior government officials including Cabinet Subcommittee Meetings, and the Chief Minister has himself taken a keen interest in the project. Even with that kind of high level support, the project has required 9 years to formally begin construction. The Consortium has argued that for future projects of this type to be successful, the Chief Minister needs to devote significant time each month in support of the project. Only with that kind of high level support can the bureaucratic impediments be overcome.

**Project planning is critical.** In this case, the Consortium has spent a long time and a significant amount of money on the project planning aspect of the project. This included development of a very sophisticated data base of all kinds of required information on all parcels of land within the development corridor. The parcels of land were each resurveyed and coded to a GIS data system. Data related to residents, age, education, income and built environment data together with natural data on vegetation and fauna are all available on demand through the data base. This has allowed the developer to provide detailed information to the various departments at a detail which is not available to the departments themselves. The Consortium argues that this data base has allowed it to cut through otherwise costly and time consuming arguments because the actual data is so well defined and structured that few arguments can be made against it.

**Land Acquisition is Difficult and Time Consuming.** The time required so far for land acquisition is 7 years and all land has not yet been acquired. Again, the project planning activity seems to be a critical element here. Without the detailed data related to each plot of land and the registered ownership of each plot, the notification process would have been much more difficult and would have taken much longer to clear.

For **full private sector investment, multi-sectoral projects** may be needed to allow for cross subsidization of one area of investment from other areas. In this case, the tolled highway may not be fully cost effective for some time, but other revenue sources such as development of the townships will help to maintain cash flow and keep the project financially viable.

Attempts to delay approvals to secure **personal enrichment** remain a key impediment to investors. This use of the approvals process as a way to squeeze investors remains a common feature of most projects throughout India. One area of improvement would be to strengthen anticorruption legislation to provide more protection to investors from political/bureaucratic pressure.

## 2.2 Andhra Pradesh

### 2.2.1 Introduction

The Visakhapatnam Industrial Water Supply Project was to operate as a public-private partnership based upon a 32-year BOOT concession for the finance, implementation, operation and maintenance of the bulk water supply facilities to industrial customers in the vicinity of Visakhapatnam. The original phasing of the Project was divided into two, the rehabilitation and operation of Yeleru Left Bank Canal (YLBC) System and the construction of Godavari-Yeleru Pipeline and operation of Godavari Pipeline and YLBC System.

A sudden and belated decision was made to front-end the pipeline works to counter the effects of drought while the rehabilitation phase work is to be deferred pending further build-up in demand and other conditions. That, in part, resulted in only a single bid being submitted by the L&T Group. The Godavari Pipeline works officially commenced in April 2003 with an estimated cost of Rs. 4,105 million.

### 2.2.2 SWOT Analysis



## Strengths

**A Triumph of Inter-Agency Coordination** – Projects are easy to derail, but generally quite difficult to bring to fruition in the absence of a catalyzing sponsor. APIIC initially alone and then later in conjunction with APIA kept key participants focused, enabling the Project to be brought to completion. This experience will help the GoAP participants to manage other complex PSP projects with greater ease and efficiency in the future.

**Water Supply Solution** – Despite the disruptions brought about by re-phasing, the first phase of the Project is heading for physical completion. This will relieve concerns, particularly for the primary and other core users over the sufficiency of industrial water supply in Visakhapatnam for the next several years.

**Capable Private Sector Partner** – Only one party submitted a bid although 6 were short-listed. A sole bid is seldom ideal from an owner's perspective, but it did give GoAP leverage to negotiate down certain construction/equipment costs proposed by the bidder. In addition, the winning bidder (the L&T Group) is widely considered to be one of the best qualified in India for this undertaking, and we understand that complicated and time sensitive works obligations to date have been administered professionally and without incident.

**Tariff Increase** – The Project was responsible for catalyzing an industrial tariff increase in Visakhapatnam. This achievement should facilitate greater private sector participation in the sector (for wholesale supply and eventually in distribution).

## Weaknesses

**Project will initially be "Overbuilt"** – The Project will initially have 100% capacity redundancy and this in turn requires tariffs to be raised to a level that might otherwise not have been necessary had the works proceeded as originally planned.

**Revised Phasing and its Impact on Bids** – While deemed necessary for strategic reasons, the rapid, tail-end decision to advance the Godavari Pipeline works clearly complicated the transaction and the bidding process. This change likely dampened much of the private sector interest at the final bidding stage. With a single bid, it is difficult to assess whether GoAP got the best terms possible.

**GoAP Loan Guarantees** – The structure and requirements incorporated in the final transaction necessitated the use of non-bank/government enterprise financing coupled with state guarantees. This was not the outcome sought when the deal was first conceived.

## Opportunities

**Established PSP Benchmarks** – As one of the State of AP's first PSP transactions, the Visak Project established a framework of precedents and processes that should facilitate future PSP initiatives including those related to: (i) the scope and requirements for adequate project preparation work, (ii) the concept of what constitutes a commercial equity return, and (iii) a process for assessing and quantifying state support among others.

**Refinancing** – With the completion of the Godavari Pipeline phase expected to be followed by a successful track record providing commercial services to the off-takers, the Visak Project could become a prime refinancing candidate. This could help GoAP eliminate the current requirement for its financial guarantees.

**Rehabilitation Phase Could be Fully Privatized** – After a few years of successful operations, it should be possible to structure the rehabilitation phase of the works as a fully private deal (i.e., with limited or non-recourse financing) without GoAP guarantees.

## Threats

**Master Contracts Remain Unsigned** – The concession, bulk water supply and shareholder agreements all remain unsigned as of the date of this report. Debt financing for Phase 1 is committed and as the Godavari Pipeline construction works proceed towards completion, the GoAP's leverage in the concession and bulk supply agreement negotiations could diminish to an uncomfortable level.

### 2.2.3 Lessons Learned

Formulation of the Visak Project as a PSP undertaking began well before the State's general or specific infrastructure policies (Vision 2020 and G.O. Ms. No. 427) or the AP Infrastructure Development Enabling Act (AP IDEAct) were promulgated. As such, there was little theory or practice for the parties involved in the Project's implementation to have as reference material until quite far along in the Project's development path. The fact that the Project was taken to the first level of closure in such an environment is impressive, and provides a number of lessons for facilitating future PSP developments. The most prominent of these are summarized below:

**Proper Coordination of Participants is Critical** – Starting with a task force comprised of relevant departmental representatives and the Chief Secretary and continuing through the AP Infrastructure Authority after its establishment in 2001, key information on the progress of project development and constraints requiring resolution flowed regularly from the Project's Promoter Sponsors (i.e., APIIC and the private sector) through to the right GoAP departments greatly facilitating the decision-making and implementation processes for the Project.

**Sufficiency of Project Preparation Funds** – On a number of occasions it appears that the GoAP principals in the Project were forced by circumstances to source funds for development studies from non-government sources (e.g., IPDF). While this may have been unavoidable at the time, it appears that in the absence of such funds there would have been great difficulties moving the Project ahead as a PSP initiative. In the future, after a project has been granted concept clearance, it would be more efficient for the State to allocate the appropriate budget resources for development studies in advance.

**Necessity of Complete and Timely Bid Information** – It was unfortunate that the need to advance the Godavari Pipeline works was not recognized prior to the issuance of the RFP. However, once the advancement of these works was deemed unavoidable, all efforts should have been taken to: (i) comprehensively package the revised scope of obligations (for both the government and the private sector) including all revised technical and commercial documents for bidders, (ii) make best efforts to ensure that all bidders receive such information and have the chance to make a thorough assessment of it, and (iii) defer the bid submission date for period of time commensurate with the bidder's requirements to assess all materials and prepare a proper bid proposal. Such an approach, while having a longer duration, may have brought in multiple bids on the Project. As the quantum of PSP transaction increases in the future, it will be essential to take all reasonable measures that help to ensure that deals balance the divergent interests of all stakeholders.

## 2.3 Gujarat

### 2.3.1 Introduction

Two projects in the Port sector were considered as a result of discussions with the Gujarat Maritime Board (GMB) and Gujarat Infrastructure Development Board (GIDB), these were the Simar Port and the Alang Oil Reception Facility cum Jetty (Alang Port). Both projects were chosen for review due primarily to the vastly different nature of the business models within the Port sector and the different administrative agencies involved.

#### Simar Port

Simar has been earmarked by the GMB as a terminal to supply coal to thermal power stations in the immediate area. GIDB and GMB were intending to solicit interests from private investors to participate in this Project.

### **Alang Port**

The stated aim for a basic oil reception facility with jetty at Alang was to serve the Alang ship-breakers as a mooring facility for service vessels, an oil reception facility, and/or as a cargo handling facility for their trade with destinations, which are more efficiently accessible via the sea. The ship-breaking industry is also a much-discussed topic currently and has attracted substantial attention in the media.

Both the Simar Port and the Alang Port were opportunities presented to investors in the recent Vibrant Gujarat Global Investors Summit 2003 held in Ahmedabad from 28-30 September 2003 but have yet to undergo the formal bidding process. The project cost estimates for Simar and Alang are Rs. 29,200m and Rs. 103.92m respectively.

## **2.3.2 SWOT Analysis**

### **Strengths**

- Proven PSP experience and track record for State (Simar and Alang)
- Identified as port for development under Port Policy 1995 (Simar)
- Dedicated port (Simar and Alang)
- Set guidelines for bid process (Simar and Alang)
- Up to date Feasibility Study and information package (Alang)
- Low project cost (Alang)
- Apparent attractive financial returns (Alang)
- Compliance with IMO/MARPOL obligations (Alang)

### **Weaknesses**

- Green-field project (Simar and Alang)
- Long gestation period between bid and financial close (Simar)
- Out of date information package, including financial analysis (Simar)
- Critical dependence on thermal power plants in the area, future prospects unclear (Simar)
- Dependence on support from local ship-breaking industry which is fragmented and experiencing intense regional competition (Alang)
- Upkeep requirement to maintain international pollution and safety standards (Alang)
- Conflict between GMB as the regulatory authority and landlord (Alang)
- Not sufficiently stringent regulation and active enforcement to discourage questionable and unsafe practices (Alang)
- Sub-standard ship-breaking methods distracting potential international business (Alang)

### **Opportunities**

- Management autonomy by private operator (Simar and Alang)
- Incentive and financial support from State (Simar and Alang)
- Potential competitive advantage (Simar and Alang)
- Improvement of Alang's reputation in the industry (Alang)

### **Threats**

- Neighbouring coal supply ports already, or about to be, operational (Simar)
- Opposition from local residents and NGOs (Simar)
- Current, albeit unsafe, cleansing methods practised by ship-breakers (Alang)
- Social economic impact on local industry which is employing around 30,000 people (Alang)
- May require GMB to impose and enforce new regulatory policies and/or lease conditions on plot holders to comply with MARPOL standards which may cause resentment (Alang)
- Potential delay caused by pending restructuring of Gujarat port authorities including GMB under PODEG (Alang)

- Major capital investment required to upgrade current ship-breaking practices to comply with IMO obligations and adequately compete with better equipped shipyards (Alang)

### 2.3.3 Lessons Learned

**Potential conflict and inconsistency requiring clarification** – These areas contained in the Port Policy 1995, BOOT Principles, the Gujarat Infrastructure Development Act, 1999 and the Draft Gujarat Infrastructure Development Rules, 2002 (Draft) include, among others, the division of responsibility among the agencies, investment structures, duration of concession period and terms of asset transfer at the end of concession. The differences, we concluded, are primarily due to the provisions contained in the Act enacted in 1999 that may necessitate amendments to earlier policies and principles to ensure consistency.

**Length of time between bid submission and signing of concession agreement** - The Institutional Approval Process is set out in Gujarat Infrastructure Development Rules, 2002 (Draft) and has done much to improve the clarity of the investment procedure. However, we observed that the entire process lasts between 2 and 3 years while the period between the submission of bid and the signing of the concession agreement could take more than 18 months. The process, on the other hand, requires the bidder to provide commercial bids with validity of up to 6 months from the day of submission and that the second ranked bidder will need to standby until there is an outcome on the first set of negotiations. Under the present rules, the second ranked bidder is also in danger of forfeiting its bid security if it is unable to enter into a contract thereafter. While it is unrealistic to expect qualified bidders to extend their unconditional proposals, it may be desirable to shorten the time period for a) evaluation of bids from 210 days to, say 5 months and b) reaching agreement with preferred bidders from 365 days to no more than 6 months. It may also be reasonable to consider allowing the second ranked bidder to stand-down or extend the validity of its commercial offer at the time of expiry.

**Out-of-date project information** - The information on Simar made available for inspection is too out of date to provide a realistic assessment of the viability of the project. We noted that a number of assumptions made in the 1996 Engineering Pre-Feasibility Study may well be invalid by now and should be updated. An interesting example is the original rationale of the project, which was to supply coal to nearby power plants being built at that time – six years later, there appears to be no power plants built or contemplated in that area, particularly given the recent publication of the Electricity Act. As the Rules provide that sufficient preparatory work must be done and approved by the PBAC before seeking expression of interest, we recommend that a preliminary study be prepared on the financial viability of the project before taking it to the public arena.

**Position of conflict of interest in enforcement of safety** - Despite the obvious improvement of safety standards that could be derived from the implementation of the Alang project, there is significant scepticism from the local ship-breakers, particularly when they themselves, in order to maximise their profits at the expense of safety, are tolerated on somewhat dubious business practices without stringent penalties. GMB is also in an unenviable position of conflict being the regulatory authority as well as the landlord of the yard.

**Preliminary project assessment and project management procedures** – These need to be put in place to assess the suitability and viability of the project in question. The principle of merely passing risky or unprofitable projects to private sector not only increases the mistrust of any information presented by the nodal agency but also adversely affect the creditability of the government in its privatisation efforts. Government should be seen to adopt a policy whereby projects with high economic returns should be supported by public funds and those with sufficient financial returns by private funds. This would include adequate training for nodal agency staff in order to be familiar with the commercial requirements of the private sector investors as well as sectoral business models including issues relating to financial and economic returns, conflict of interests and environmental policy implications to private sector funding.

## 2.4 Madhya Pradesh

### 2.4.1 Introduction

As a consequence of considerable increase in traffic and commercial activities in the last decade, 15 of the most important road corridors within the State have been identified for development, strengthening and upgrading totalling 2,155 kms. Since 2000, MPRSNN has been designated the nodal agency to implement this task.

The development of the road projects would be given to private investors on a BOT basis over an agreed concession period of around 15 years during which toll revenue collected would accrue to the investor. To make the projects sufficiently attractive, MPRSNN was given the right to provide financing in the form of grants on a competitive bidding basis. The maximum amount of financing provided for each project is informally put at around 66% of project costs. The source of the funding would be through another State agency, the Madhya Pradesh Infrastructure Investment Fund Board (MPIIFB). MPIIFB raises its funds from financial institutions such as HUDCO through loans and the repayment of these loans is charged against the State budget allocation to PWD.

Up to now, 13 road projects of 1,863 kms valued at Rs. 1,000 Crores have been awarded to private developers in respect of which the grant contribution is Rs. 460 Crores. We are told, however, a number of these projects took a long time (up to 15 months) to achieve financial closure. We were also informed that institutions other than ILFS (with one exception that was financed by CTNL, an ILFS affiliate) financed the projects. None of the financed projects availed of the PSIF II facility.

The remaining 2 of the 15 projects were bid out several times without success and have been transferred back to the Public Works Department for development on a management contract basis.

### 2.4.2 SWOT Analysis

#### Strengths

- Proven PSP experience and track record for State
- Identified as road for development under the Bond-BOT Scheme
- Guidelines for bid process and concession agreement based on National Highway model
- Road already operating with discernable traffic pattern

#### Weaknesses

- Open system access, significant leakage possible
- Potential high maintenance cost due to problematic soil composition
- Insufficient time for financial closing before start of concession period due to lack of an acceptable financial feasibility study
- Bureaucratic and lengthy approval and clearance process

#### Opportunities

- Management autonomy by Concessionaire
- Incentive and financial support from State

#### Threats

- No assurance that alternate routes would not be built

### 2.4.3 Lessons Learned

Selection of financially capable developers - Whereas the process for competitive bidding is clearly set out and administered efficiently by MPRSNN with the entire period from the date of advertisement to the signing of the concession agreement lasting no more than 45 days, financial closing appears to

take far longer and ranged from 3 months to as long as 15 months. Once the developer is selected based on the appropriate technical and financial bids, the concession agreement is then signed and the prerogative is thereafter left to the developer to seek sufficient funding (other than the grant from MPRSNN) to complete the project. At the time of this study, 5 of these projects, as a result, had the initial concession agreement terminated due to the developers' inability to achieve financial closure and were reassigned.

**Lack of usage of the PSIF facility** - With the exception of the Jabalpur-Narsinghpur-Piparia road where financing was provided by CTNL, an ILFS affiliate, and 4 other projects financed by banks associated with the Malaysian concessionaire, the remaining projects were primarily financed by IDFC and SBI. None of the projects utilised the PSIF II facility.

**Slow response from, and changes of personnel in, Government departments** - The projects appear to have experienced difficulties in achieving financial closure partly due to the procedure within the government to provide the necessary documentation and partly due to the slow implementation of decisions exacerbated by the change in personnel during the project period.

**Lack of proper documentation for financial closure** - To keep the tender exercise to around 45 days, the bidder would often rely on the pre-feasibility study undertaken and data provided by consultants appointed by the government. However, the financiers require a full independent feasibility study before financial closure is possible. The reconciliation of the findings and allocation of risks under the terms of the signed concession agreement often caused significant difficulties in achieving funding within the time allowed.

Other issues or difficulties mentioned by concessionaires include the following:

Local community often requests additional works falling outside the scope of the agreed contract and not budgeted for including the building of bypasses etc. whereas the procedure for changing the scope of work is not well defined and often causes delays. Procedures for changing the scope of work need to be easier and shorter if changes are found necessary after the concession agreement is signed.

The concessionaire faces situation of significant unforeseen costs as no maintenance is done on the road from the time the road is called for tender and the grant of the concession. In a typical situation, 30% of a road would need attention when tenders are called but by the time the concessionaire takes over, the proportion has risen to 70%.

Requests for contracted payments are often held up within the government system and the procedures not being well established.

In the final analysis, we see the potential for the State to replicate what has been achieved successfully in the road sector to other infrastructure sectors that require private sector funding. However those issues set out above need to be properly addressed and could be dealt with by the formulation of an infrastructure development act and rules similar to those already exist in other States such as Andhra Pradesh and Gujarat including the set up of a cross sector nodal agency to act as a conduit between the State Government and the private sector. In addition, we would also recommend that criteria for the selection of concessionaires during the bidding process should include the commitment to project funding from a financial institution if required. This would necessitate the involvement of the financial institution at an early stage of the bid and the negotiation of the terms of the concession agreement. This may lengthen the evaluation process but at least the probability of achieving financial closing within a reasonable timeframe would be greatly enhanced.

The conclusions and recommendations of each of the cases are set out in more detailed in the respective reports attached herein and the same is also incorporated and referred to in the relevant sections of the Draft Final Report.

### 3 Conclusion

It is not difficult to recognise from our findings that the full potential of the private sector to meet the States' infrastructure needs is still largely untapped due to the extent of risks other than normal business risks that are sufficiently significant to discourage private sector entrepreneurs to participate more freely. These non-business risks are primarily attributable to the lack of efficiency and transparency in the contracting and supervisory process. While the increasing focus on private provision of infrastructure funding and services is placing new demands on the government, the limited commercial management capacity has no doubt resulted in projects that have been inadequately prepared, little interest shown in the bidding process and tarnished reputation due to long delays caused by a bureaucratically driven decision-making process.

With regard to project financing, the tenure of loans available for infrastructure is still relatively short and the numbers of providers limited as the regulatory system, as well as the lack of adequately prepared documentation, have constrained the willingness of lenders to provide financing for these projects.

In order to improve the interaction between public and private sectors therefore, we have identified a number of the key issues that should be highlighted and considered.

- Clearly define relationships and independence among the regulatory agency, policymakers and the operating service provider and avoid conflicts of interest.
- Improve inter-departmental communications on project identification.
- Identifying and preparing viable project with differentiation between economic return for public funding and financial return for PSP.
- Identifying and providing State support, if necessary, for privately financed projects in the public sector.
- Capacity building for private sector management to improve efficiency.
- Improve the efficiency and transparency by establishing a single body responsible for contracting and obtaining necessary clearances.
- Strengthen the power of the anti-corruption agencies to audit the award of PPP projects.
- Increase demands for long term debt instruments through pensions and insurance reform.
- Consider and review the procedure for infrastructure company listings and debt instrument issuance in the capital markets to support long term financing.

# **Bangalore – Mysore Infrastructure Corridor**

## **Case Study**

**March 2004**



## Table of Contents

<b>1</b>	<b>The Bangalore – Mysore Infrastructure Corridor .....</b>	<b>1-1</b>
<b>1.1</b>	<b>Project Identification and Development of Project Agreement.....</b>	<b>1-1</b>
<b>1.2</b>	<b>Project Summary.....</b>	<b>1-1</b>
1.2.1	Infrastructure Corridor .....	1-2
1.2.2	Utilities .....	1-2
1.2.3	New Townships.....	1-5
1.2.4	Purpose and Need .....	1-5
1.2.5	Population Dispersion and Financial Feasibility .....	1-6
<b>1.3</b>	<b>Project Development and Planning.....</b>	<b>1-7</b>
1.3.1	Land Acquisition .....	1-7
<b>1.4</b>	<b>Environmental and Social Requirements .....</b>	<b>1-8</b>
1.4.1	Bangalore-Mysore Infrastructure Corridor Project .....	1-8
<b>1.5</b>	<b>SWOT Analysis.....</b>	<b>1-10</b>
1.5.1	Strengths.....	1-10
1.5.2	Weaknesses.....	1-11
1.5.3	Opportunities .....	1-11
1.5.4	Threats .....	1-11
<b>1.6</b>	<b>Lessons Learned .....</b>	<b>1-12</b>

# 1 The Bangalore – Mysore Infrastructure Corridor

## 1.1 Project Identification and Development of Project Agreement

In the early 1980's the Government of Karnataka prepared plans for a modern expressway to link Bangalore with Mysore. Due to financial limitations the proposed expressway was never built. In 1995 a consortium of Indian and U.S.A based firms visited India as part of a trade mission sponsored by the State of Massachusetts, and led by the Governor, Mr. William F. Weld. As a result of that mission a Memorandum of Understanding ( MOU ) was signed by the consortium members, the Government of Karnataka and US officials. That MOU was the beginning of the Bangalore – Mysore Infrastructure Corridor (BMIC) Project.

The members of the International Consortium are as follows:

- **Kalyani Group of Companies.** This group is an Indian based manufacturing concern, involved in producing forged and machined steel components to transportation industries worldwide;
- **VHB International Ltd.** VHB is a transportation, land development and environmental services firm. It is a subsidiary of Vanasse Hangen Brustlin, Inc. was established in 1979 as a transportation firm. VHB is the lead engineering firm for the consortium;
- **SAB International Ltd.** SAB was also established in 1979 to provide development services including design, engineering, construction, construction management and operations.

Together the above members of the consortium have created:

- **Nandi Infrastructure Corridor Enterprises Ltd. (NICE)** This company is the holder of the Build - Own – Operate - Transfer (BOOT) agreement for the BMIC and is ultimately responsible for the development of the financial plan, project implementation and project operations;
- **India International Infrastructure Engineers Ltd. (IIIE)** This company was also established by the consortium to manage the development of the BMIC. IIIE provides planning, engineering, program management and construction management services to the project.

Based on the MOU signed in February of 1995, a full project feasibility report was prepared by the consortium and submitted to the Government for consideration . This was called the Corridor Project Technical Report, and was used as the basis to develop a "Framework Agreement". The Framework Agreement was signed by the Government of Karnataka and NICE on 3<sup>rd</sup> of April 1997 with subsequent modifications signed on 31<sup>st</sup> March 2000 to enable the company to implement the project in three phases.

## 1.2 Project Summary<sup>1</sup>

The Kalyani Group and its Consortium partners, Vanasse Hangen Brustlin, Inc. and SAB Engineering, propose to construct a privately financed infrastructure corridor and at least seven<sup>2</sup> townships between Bangalore City and Mysore City in Karnataka State, India. The infrastructure corridor will include a modern, four-lane (expandable to six-lane), limited-access 110 Km. expressway; five

<sup>1</sup> The project summary is taken from the initial project report prepared for the Chief Minister of Karnataka and presented in November of 1995. The project has largely remained as was originally planned.

<sup>2</sup> The original planned seven townships have been reduced to five in the current configuration.

townships with potable water, sewage treatment, electric power transmission facilities; fiber-optic communications cables; 42 Km. peripheral road on the southern section of Bangalore and a 9 Km. Link road to link Bangalore to the hinterland. The outer peripheral road will link the infrastructure corridor with the region's entire highway network. The townships will be organic, self-sufficient communities, each with its own unique economic base and directly served by the infrastructure corridor.

The Consortium strongly believes that this project is a sound investment for the future of Karnataka State and India. It fulfills many National and State policy goals for population dispersion, infrastructure modernization, and economic development. In addition, the project facilitates India's movement toward economic and infrastructure privatization.

### **1.2.1 Infrastructure Corridor**

The proposed Bangalore-Mysore Infrastructure Corridor as illustrated in Figure 1.1 will include an efficient, reliable, and safe toll expressway that represents a key link in the national Indian highway system. It will bypass congested villages, eliminating conflict between inter-city and local traffic. The corridor will significantly reduce travel time between Bangalore and Mysore to about one and one-half hours. By limiting access to the corridor and charging tolls, local traffic will be discouraged from using the expressway. This will help mitigate the adverse local economic impacts associated with bypassing traffic around existing urban centres (i. e., lost revenue for local retail).

The infrastructure corridor will be constructed to high standards of roadway safety with two marked lanes in each direction and divided by a wide landscaped median. Access to the corridor will be limited to designated interchanges with staffed toll plazas. The interchanges will consist of high-speed on- and off-ramps with acceleration and deceleration lanes. To accommodate stream, river, ravine, road, and cattle crossings, about 50 bridges, about 100 underpasses, number of culverts, cattle-passes and service roads will be constructed along the length of the corridor. All roads crossing the corridor will be grade separated by bridges or underpasses; there will be no at-grade intersections. Unauthorized access to the corridor by vehicles, pedestrians, or livestock will be prevented by a continuous barrier.

An important extension of the infrastructure corridor will be the southern section of the Bangalore City outer peripheral road. Upon completion, this beltway will surround the city and enable vehicles to easily bypass Bangalore traffic. The section of the outer peripheral road to be constructed by the consortium will link the infrastructure corridor to National Highways 7 and 4, as well as to connecting roadways. The result will be fast, easy access to the region's entire highway network. The infrastructure corridor and its facilities will be constructed of the best materials and implemented using state-of-the-art highway engineering and construction techniques. The roadway surface will be graded to prevent water pooling and curves will be banked to enhance driving safety. All bridges will be built of modern materials. The surface pavement will be constructed of high-integrity concrete that reduces the need for maintenance and will withstand the effects of weather and heavy usage.

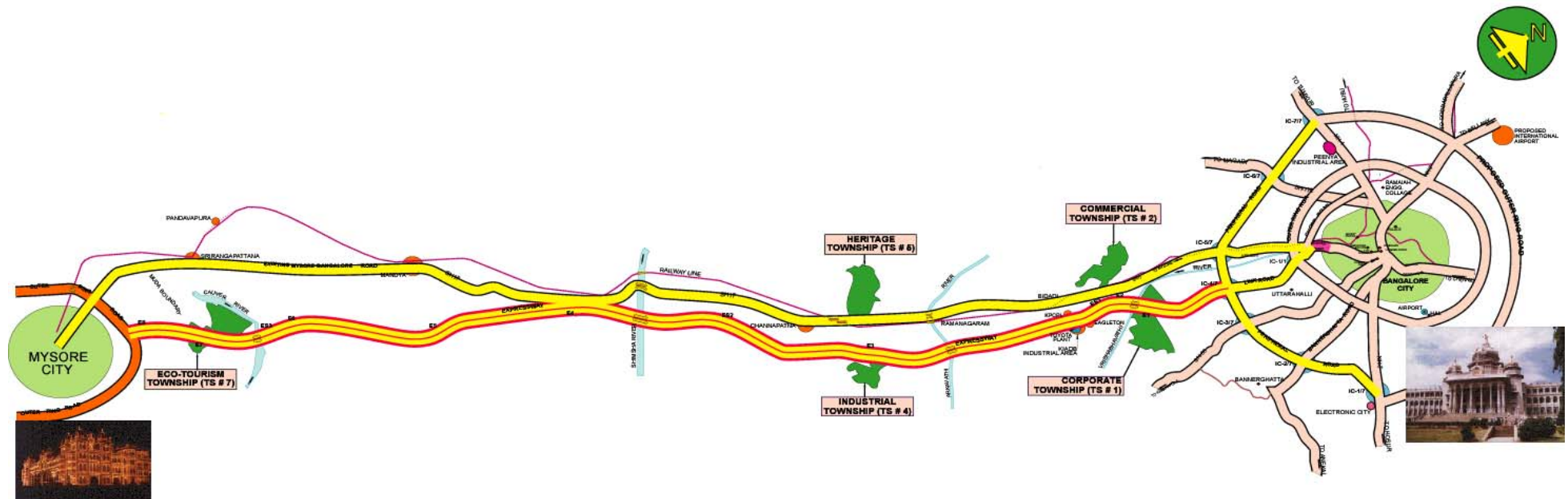
### **1.2.2 Utilities**

A long-standing goal of National and State planning is to provide a broader range of services to a greater number of people. As part of the project, water, electricity, and communications utilities will be constructed within the infrastructure corridor right-of-way. Utilities will be designed to utilize modern technology, to provide reliable service, and to accommodate adequate capacity for current and future needs. Water will be pumped from the Kaveri River northeast of Mysore. The water will be treated at a water filtration and pumping station built as part of the project and carried by a transmission pipeline within the infrastructure corridor to the proposed new townships and to Bangalore. All buildings and dwellings in each new township will be provided with pre-treated piped water.

Electric power will be generated at facilities for each new township or for clusters of townships. As an alternative, electricity that would be generated at a Kalyani-built plant on Karnataka's western edge, will be transmitted and distributed throughout the infrastructure corridor. Substations will convert the electric power for consumers in the proposed new townships.

High quality telecommunications will be provided along the corridor and within the new townships. Fiber-optic cables will be provided for use by corporate and industrial clients. The cables will be linked to government -operated microwave and satellite relay stations for long distance transmission. The new townships will be served by a sufficient supply of Direct Exchange Lines (DEL).

Figure 1.1: Schematic of the Bangalore-Mysore Infrastructure Corridor



### 1.2.3 New Townships

The Consortium will design, acquire land for, and construct five new townships along the infrastructure corridor. The townships will be developed entirely by the Consortium, including the provision of roads and utilities, municipal services, and recreation facilities. Each township will have a unique economic base that determines its design and location as follows:

- **Corporate Center.** A home for corporate headquarters, offices, and research and development facilities.
- **Industrial Center.** A self-sufficient community dedicated to clean manufacturing and industrial research and development.
- **Eco-tourism Center** An environmental park and cultural arts center which will become a destination for Indians and foreign travelers who wish to learn about the region's environmental resources, fine and performing arts, and heritage crafts.
- **Heritage Center** A pilgrimage site with conference and traditional healing facilities.
- **Commercial Center** A residential suburb of Bangalore with retail, light industry, and municipal support services.

### 1.2.4 Purpose and Need

#### 1.2.4.1 Transportation

As a four-lane, limited-access, divided highway, the proposed expressway will address many of the capacity and safety problems associated with existing roads connecting the two cities. Currently, vehicles traveling between Bangalore and Mysore must use either State Highway 17 or State Highway 86, both congested thoroughfares. Through traffic in the corridor is expected to increase by 7.0 to 8.5 percent annually, from 2,583 vehicles in 1994 to approximately 7000 by 2004. These roads pass directly through villages and often serve the dual but conflicting purposes of a commercial street and an inter-city highway. The resulting congestion increases the traveling time between cities. The current trip between Bangalore and Mysore on State Highway 17 takes about 2 hours 45 minutes and is expected to increase to 3 hours 30 minutes by 2004. Such delays stifle economic growth by limiting the efficient movement of goods and people. For instance, trucking delays often result in financial losses for companies that depend on timely shipment of materials. Furthermore, both State Highway 17 and State Highway 86 are unsafe for high speed inter-city travel. The poor condition of the pavement, at-grade intersections, the lack of medians, and uncontrolled access are all in appropriate for an inter-city highway.

#### 1.2.4.2 Electric Power

Karnataka State and Bangalore City are facing serious deficiencies in their electric power infrastructure. There is a shortage of electric power in the State, and the southern grid management and discipline are poor. The resulting unreliability of electricity is a deterrent for high technology firms to locate in Karnataka. Though current plans seek to increase installed generating capacity, transmission and distribution have not received sufficient attention. The infrastructure corridor project will involve the construction of power generation, transmission, and distribution facilities. This will free the proposed new townships from the problems of the grid, ensure reliable electric service, and allow a crucial element of the project to become operational without depending on outside support. The surplus electricity will augment supplies in Bangalore, relieving the burden on existing systems and improving service reliability.

### 1.2.4.3 Other Utilities

The proposed townships will require other basic utility services including water, sewage, and telecommunications. Water needs will be met by pumping pre-treated water from the Kaveri River to the new townships. All buildings and dwellings will be connected to the water and sewage system. Municipal sewage will receive primary, secondary and tertiary treatment. Treated waste water will be tertiary treated and recycled to meet the requirements of the non-drinking purposes in townships including irrigation. Recycled water will not be used for drinking, cooking, and bathing. A modern storm drainage system will ensure the proper runoff of water from streets and property. Rain water harvesting is also incorporated in the townships. The service industry orientation and the economic standards of the majority of the township residents also will require very good internal and external telecommunications. A fiber-optic trunk line along the corridor and a modern telephone network in each township will meet these needs.

### 1.2.5 Population Dispersion and Financial Feasibility

Considered separately, the expressway and the infrastructure components are not financially feasible. However, the State and National goal to disperse population away from Bangalore City provided the Consortium with an opportunity to make the project feasible. In 1991, the population of Bangalore was 4.13 million. If the city continues to grow at its current rate, it will expand to 8.46 million people by the year 2011. Most of this increase would occur as a result of population inflows from other areas. To achieve a more manageable population of 7 million, it will be necessary to establish urban "counter magnets" to absorb growth. By creating five new, economically self-sufficient townships in the Bangalore-Mysore corridor, the Consortium will support this goal. It also provides the Consortium with the revenues necessary to accomplish the infrastructure components of the project.

#### 1.2.5.1 Traffic Demand

Estimates of future year traffic developed in 1995 estimated a target opening date for the highway of 2004. The consultants estimated that the annual daily vehicle traffic in 2004 would be about 7000 vpd and in 2021 the traffic would be just under 33,000 vpd. The rising economic prosperity of India and Karnataka could justify a traffic growth rate of 10 percent annually. However, to develop a financing plan for this project, it is necessary to use a conservative growth rate of between 8 percent and 8.5 percent. Traffic which will use the proposed expressway can be categorized into three groups: traffic diverted from existing roadways; traffic generated from the annual growth in vehicles in the region; and traffic generated from the proposed new townships. The proposed expressway has been designed to run parallel to SH 17. As a result, traffic using the expressway will not achieve a significant reduction in distance traveled between Bangalore and Mysore. However, travel time can be expected to be reduced significantly. Presently, the travel time between the two cities is about 2 hours and 45 minutes, and it is expected to grow to over 3 hours by 2001. Time savings by using the expressway will be in the order of 33 percent, as it would take approximately 1.5 to 2 hours to travel between Mysore City and downtown Bangalore City.

As the primary corridor between Bangalore and Mysore, recent traffic surveys focused on SH 17. A traffic counting program and origin-destination studies were completed for this road. Annual traffic growth on SH 17 ranges from over 15 percent near Bangalore, to around 6 percent in the middle of the corridor near Mandya, to near 7 percent near Mysore. Similarly, average daily traffic volumes on SH 17 are approximately 21,000 near Bangalore, approximately 11,500 near Mandya, and approximately 8,500 near Mysore. These traffic volumes reflect the difficulty in traveling between Bangalore and Mysore. The poor conditions of the roadway together with excessive travel times between the two cities result in declining volumes of traffic as one travels away from Bangalore.

#### 1.2.5.2 Tolls

Tolls have been set on the basis of vehicle operating cost savings and “willingness to pay” surveys. Based on the estimates made in 1995, the tolls are estimated as follows:

Selected Trips					
Mode of Travel	A	B	C	D	E
Buses	Rs. 250	25	55	100	70
Trucks	Rs. 100	10	22	40	28
LCVs	Rs. 75	8	17	30	20
Automobiles	Rs. 60	6	13	24	17

Note: Two Wheelers will be charged a set toll of Rs. 20

- A. Bangalore Outer Peripheral to Mysore end
- B. Bangalore Outer Peripheral to Township #2 and Bidadi
- C. Township Site #2 to Township Site #4
- D. Township Site #2 to Mandaya
- E. Mandaya to Mysore end

### 1.2.5.3 Project Costs

The estimates developed in 1995 and updated currently put the cost of the construction of the Bangalore to Mysore Road at Rs. 20,000 Million or US\$ 444 million.

## 1.3 Project Development and Planning

The project identification steps which led to this agreement are shown in figure 1.2 below.

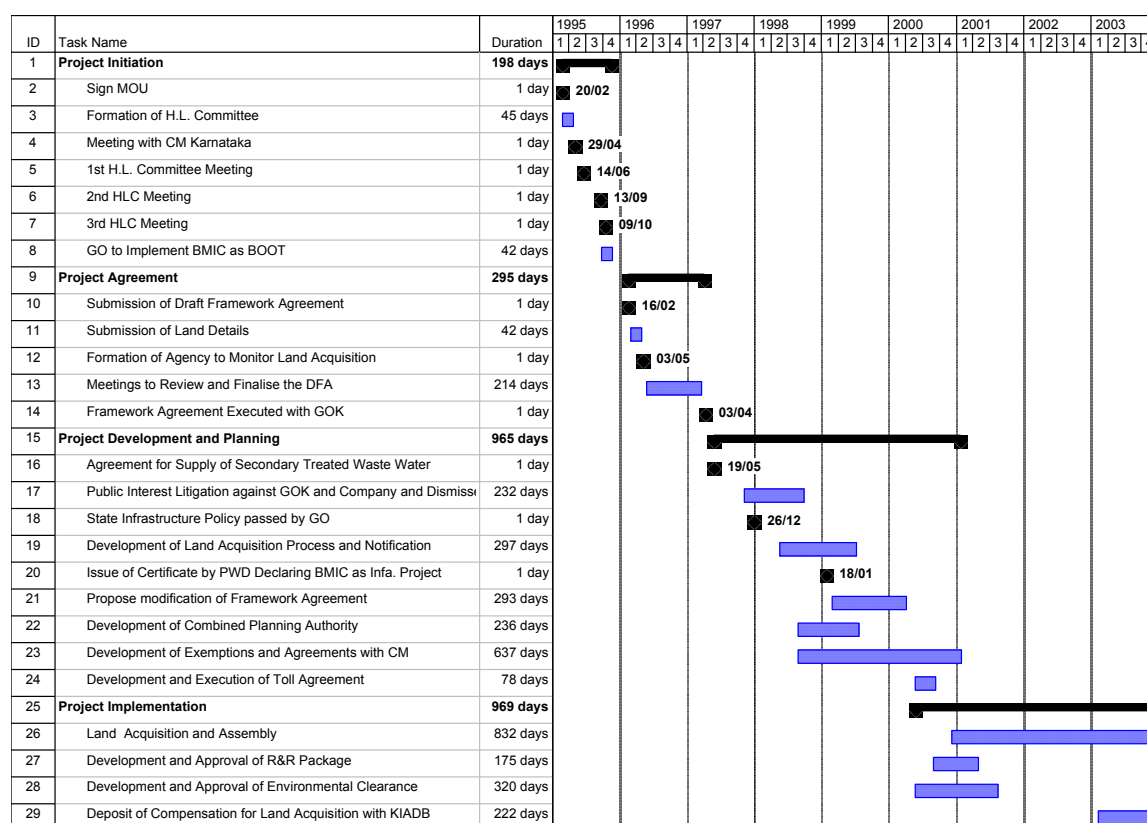
### 1.3.1 Land Acquisition

One of the key logistics issues for the project was acquisition of the project land. The alignment is a green fields route which runs roughly parallel to the existing state highway linking Bangalore and Mysore. The total land required for the project comprises 20,193 acres including both Government owned and private land.

Approximately 25,000 parcels of land are involved in the Corridor. Of these, many have multiple owners. Further, the land title documents did not match the actual dimensions of the properties. The Consortium carried out a full field survey and documentation review of all properties along the line and it is this database that is used to identify beneficiaries of the land acquisition. The land acquisition is being carried out under eminent domain rights exercised through the Karnataka IADB under the KIAD Act. Notification of acquisition is issued by KIDA. Service charges for the acquisition of the land amount to 7 Crores paid by the Consortium. The target for completion of the land acquisition is 30 months starting from 23<sup>rd</sup> November 1999. This has not been achieved. NICE has deposited 10 Crores Rupees with KIDAB on 3<sup>rd</sup> February 2003 as a revolving fund towards the acquisition of the private land as well as a commitment letter from ICICI for a further 150 crores Rupees.

In addition to the private land, a total of 5,688 Acres of Government land has been leased to NICEL through KIADB at Rs. 10 per acre per annum through Government Order on 7<sup>th</sup> October 1999. Of the government land, 3,219 acres is required for the development of the townships and another 1,217 acres for the road. Further, 168 acres of Forest Department land has been ceded to the Consortium in exchange for Rs. 67.75 Lakhs to enable reforestation of land as specified in the Forest Conservation Act.



**Figure 1.2: Timeline of Project Development to End of 2003**

## 1.4 Environmental and Social Requirements

Both full environmental and social/resettlement reviews were carried out. The environmental review included a full assessment and development of data base of all vegetation, water resources and fauna on each of the 25,000 properties. The environmental assessment was completed by mid 2001 and clearance was obtained from the Pollution Control Authority.

The resettlement action plan includes both compensation for those owners named on the property rolls as well as limited recommended resettlement assistance for squatter residents. The resettlement plan normally follows the requirements of the Land Acquisition Act but in this case, the resettlement plan has been broadened to include non formal owners.

### 1.4.1 Bangalore-Mysore Infrastructure Corridor Project

The Bangalore-Mysore Infrastructure Corridor Project (BMIC) is a 100 percent private sector BOOT project being undertaken by NICE. The main elements of the project comprise the construction of a 111-km 4-lane expressway (expandable to 6 lanes) between Bangalore and Mysore, 42 km of peripheral road (expandable to 6 lanes), 9 km. of link road and 5 new townships along the corridor.

The project will yield important benefits in terms of time and travel cost savings for the movement of people and goods in the corridor. It will also generate economic growth and increase income and consumption levels through induced development and diverse backward and forward linkages. The new townships will expand options for housing and employment. The infrastructure corridor will include improved power transmission, water distribution and communications.

At the same time, however, the project will entail the acquisition of 20,193 acres of land in four districts. A total of 6,999 acres has been acquired for the expressway and link roads; the townships will occupy a total of 13,194 acres of acquired land<sup>3</sup>.

Along the main corridor and township areas, rural land will be acquired; the link roads pass through suburban areas of Bangalore. Over 60 percent of project-affected families (PAF) are either marginal or smallholder farmers or agricultural laborers. More successful business people are located in the suburban areas of Bangalore. Nearly half of PAF own less than 2.5 acres of land, and most live in kutchha and semi-pucca housing.

Land acquisition for the BMIC has been carried out by the Karnataka Industrial Area Development Board (KIADB), a Government of Karnataka (GoK) agency responsible for acquiring land for industrial and infrastructure projects. A resettlement and rehabilitation (R&R) program has been formulated for the BMIC in accordance with the R&R policy framework for the World Bank-funded Karnataka State Highway Improvement Project (KSHIP)<sup>4</sup>, as well as procedures of the KIADB Act.

The main features of the R&R program provide for compensation for lost assets, and assistance for relocation and rehabilitation of PAF:

### **Compensation for lost assets**

Compensation for lost assets is paid to legal, titled owners, as per the following entitlements:

- i) land owners losing more than 50 percent of their holdings in any particular Survey Number, and being relocated; and,
- ii) owners of residential, commercial and/or residential-commercial structures.

Compensation for lost land, structures (in whole or in part) and other assets will be determined by consent award or in accordance with KIADB guidelines. Unviable remaining land holding and holdings that are separated from the village by the road corridor may be considered on a case-by-case basis for inclusion in the land acquisition program.

Instead of cash compensation, PAF who lose residential structures can choose a free residential site equal in area to the lost structure in a rehabilitation area to be provided by the project. Similarly, PAF who lose commercial or commercial-residential structures can opt for allocation of a commercial site equal in area to the lost structure in a shopping complex to be developed by the project. The resettlement area or shopping complex will be developed if the number of PAF displaced from a continuous 2-km stretch exceeds, respectively, 20 or 25, and if so desired by PAF.

### **Relocation assistance**

Relocation assistance is provided to legal, titled owners who are displaced and, as well, to other non-titled PAF. The provisions for legal owners are as follows:

- i) legal owners of structures receive a shifting allowance; they have the right to salvage materials from their existing structures; and, the project covers the registration costs for new housing; and,
- ii) legal owners of land and structures receive a 6-month subsistence allowance.

Residential and commercial tenants on legal land are entitled to 90-day notice to vacate and ex-gratia grants if they vacate within the specified period. Residential tenants who belong to the Below Poverty Line (BPL) group and do not own any assets will be provided assistance to procure housing under the

<sup>3</sup> The R&R Report for the BMIC does not identify the distribution of acquired land between private and government lands. In addition, although 650 PAF were included in a sample socio-economic survey, there is no information available regarding the total number of PAF or the distribution of titled and/or non-titled PAF.

<sup>4</sup> The KSHIP R&R policy framework was approved by the GoK G.O. No PWD 21 DRM 96 Bangalore, dated 21 November 2000.

Economic Weaker Section (EWS) Housing Scheme. Commercial tenants who are BPL can choose between a rental shop in a project-developed shopping complex or a one-time Economic Rehabilitation Grant.

Residential encroachers are eligible for relocation assistance if there is total loss of their structures. Specifically, BPL households without other assets are assisted to obtain EWS housing, while above poverty line PAF are given 60-day notice to vacate. BPL households also receive small shifting and subsistence allowances.

### Rehabilitation assistance

Rehabilitation assistance is offered to PAF who experience loss of livelihood. The focus of rehabilitation efforts is titled land owners, although assistance is also provided to commercial tenants, some encroachers and agricultural laborers who lose employment or livelihood. In addition, there is rehabilitation assistance for lost community properties and assets.

A major focus is assisting land owners who lose some or all of their land holdings to restore their household income generation capacity through job-oriented training for the head of each eligible PAF or a qualified nominee from his family. BMIC proponents will work with GoK agencies to facilitate access of PAF to existing government programs, or will develop training programs.

Other income restoration measures include:

- i) titled owners who are BPL households who lose land, commercial structures or commercial-residential structures and relocate will receive one-time Economic Rehabilitation Assistance for purchase of income generating assets;
- ii) eligible agricultural laborers may be considered for ex-gratia payments for three months; and,
- iii) encroachers cultivating Government land will be permitted to harvest their standing crop and will receive one-time economic assistance.

The project will restore, replace and/or improve affected community assets and common property resources.

### Grievance mechanism

A Grievance Redressal Committee (GRC) including district, local (panchayat) and project representatives will be formed in each of the four districts to address and resolve PAF grievances regarding the entitlements or benefits under the R&R program<sup>5</sup>.

## 1.5 SWOT Analysis

### 1.5.1 Strengths

- **Commitment by the Sponsor.** The gestation of this project has been 9 years and running. It is uncommon to find a project sponsor willing to commit the necessary energy to a project to follow it through all the steps required over such a long time frame. The Consortium has attained financial closure on 28.03.2004.
- **Openness of the State to needed changes.** For instance, the initial project plan ran into trouble because a number of different planning authorities along the alignment. The State Government has formed a new Planning Authority ' Bangalore-Mysore Infrastructure Corridor Area Planning Authority (BMICAPA) directly responsible for the corridor.

<sup>5</sup> However, there is no discussion of the rights or procedures for PAF to refer their grievances to the courts should they be unsatisfied with the decisions of the GRC.

- **Success.** The project is now underway. The first phase of construction has begun and the land has been acquired for most of the alignment.
- **Creation of a Very Strong Data Base of Information.** The complete corridor is very highly documented by the Consortium. Each property was individually surveyed against a GIS grid and the properties are all set in an interactive database which shows all information for each property at a mouse click. This has allowed the Consortium to compete many of the administrative or regulatory requirements with a high degree of confidence and accuracy.

### 1.5.2 Weaknesses

- **As a self promoted project,** the Consortium is inevitably viewed with suspicion by the Bureaucracy. This leads to inevitable delays, overzealous application of restrictive covenants and in many cases demands for “off the record” payments. Projects supported by the Government on the other hand, can overcome these concerns. However all approvals from the Government have been received, financial closure attained and works of the first phase is in progress.
- **The need for extensive land acquisition** has posed a large burden of cost on the Consortium. The Consortium is responsible for the cost of all land acquired as well as for lease cost for Government land. This in turn reduced the funding available for the actual infrastructure investment itself. From the Government side, the key remaining issue is completion of acquisition of necessary land. Currently about 1000 acres of Government land has not been handed over and a further 1590 acres of private land has been notified but not as yet closed.
- **Demand estimates** are traditionally difficult to get right in India. The investment required to reach the start point is already committed but the actual demand is not yet known. The estimates of demand have been done in a very professional manner, but as with other cases in India, the situation has changed significantly since the first estimates were obtained. The parallel State Highway 17 is now being upgraded to a four lane road. The parallel railway is also being upgraded with higher quality service between Bangalore and Mysore. These two developments may have significant impact on the future viability of the Corridor as a toll highway. The Consortium believe that these improvements to the parallel roads and railway will attract more ribbon development and as a consequence, this will drive more traffic onto the toll road. However, this logic has yet to be tested in practice.

### 1.5.3 Opportunities

- Having cleared many of the hurdles, this project can now stand as an example to other investors about how best to achieve closure on a project of this type in Karnataka.
- The rapid growth of Bangalore and the ongoing demand for high quality housing will increasingly make the new townships attractive locations for new residents. The longer term financial viability will likely rest more on the value attached to the development of the townships than it will on the revenue from the toll road.

### 1.5.4 Threats

- Improvements to the parallel road and the parallel railway may erode traffic from the Corridor and delay the point at which it becomes profitable. However this threat is not significant since the parallel road is not grade separated and passes through nearly 67 settlements long its route. Even the doubling of railway does not cater to the demand of goods haulage since the railway line is not linked beyond Mysore.
- Future shortage of water may become an issue. The areas has experienced four years of drought and recent rains, although replenishing some of the watertable, do not overcome the

systemic issue. The project does have perineal water available from the Kaveri River and this provides a decent safety net unless long term drought becomes common.

## 1.6 Lessons Learned

1. **Commitment of Senior Government Officials.** Commitment of senior government officials to the project is critical if it is to be successful. In this project, a core committee was formed in 1996 to guide development of the project, numerous committee meetings have been held with senior government officials including Cabinet Subcommittee Meetings, and the Chief Minister has himself taken a keen interest in the project. Even with that kind of high level support, the project has required 9 years to formally begin construction. The Consortium has argued that for future projects of this type to be successful, the Chief Minister needs to devote significant time each month in support of the project. Only with that kind of high level support can the bureaucratic impediments be overcome.
2. **Project planning is critical.** In this case, the Consortium has spent a long time and a significant amount of money on the project planning aspect of the project. This included development of a very sophisticated data base of all kinds of required information on all parcels of land within the development corridor. The parcels of land were each resurveyed and coded to a GIS data system. Data related to residents, age, education, income and built environment data together with natural data on vegetation and fauna are all available on demand through the data base. This has allowed the developer to provide detailed information to the various departments at a detail which is not available to the departments themselves. The Consortium argues that this data base has allowed it to cut through otherwise costly and time consuming arguments because the actual data is so well defined and structured that few arguments can be made against it.
3. **Land Acquisition is Difficult and Time Consuming.** The time required so far for land acquisition is 7 years and all land has not yet been acquired. Again, the project planning activity seems to be a critical element here. Without the detailed data related to each plot of land and the registered ownership of each plot, the notification process would have been much more difficult and would have taken much longer to clear.
4. For **full private sector investment, multi-sectoral projects** may be needed to allow for cross subsidization of one area of investment from other areas. In this case, the tolled highway may not be fully cost effective for some time, but other revenue sources such as development of the townships will help to maintain cash flow and keep the project financially viable.
5. Attempts to delay approvals to secure **personal enrichment** remain a key impediment to investors. This use of the approvals process as a way to squeeze investors remains a common feature of most projects throughout India. One area of improvement would be to strengthen anticorruption legislation to provide more protection to investors from political/bureaucratic pressure.

# **The Port Sector, Gujarat**

## **Case Study**

## Table of Contents

1	The Port Sector, Gujarat .....	1-1
1.1	Introduction and Summary .....	1-1
1.1.1	Simar Port .....	1-1
1.1.2	Alang Port .....	1-1
1.1.3	Summary, Conclusion and Recommendations .....	1-2
1.2	Legislative Framework, Policies, Investment Process and Statutory Clearance Requirements relating to Port Sector Investment by Private Sector.....	1-3
1.2.1	Overview of Legislative Framework and Infrastructure Policy.....	1-3
1.2.2	Overview of Port Policy .....	1-4
1.2.3	Institutional Approval Process .....	1-7
1.3	Information on Simar and Alang Ports .....	1-13
1.3.1	Information on the Simar Port .....	1-13
1.3.2	Synopsis of the Coal Industry in India .....	1-14
1.3.3	Background Information on the Simar Port .....	1-15
1.3.4	Preliminary Economic/Financial Assessment of the Project .....	1-19
1.3.5	Information on the Alang Port .....	1-20
1.3.6	Preliminary Economic Assessment of the Project .....	1-25
1.4	Conclusion .....	1-27

# 1 The Port Sector, Gujarat

## 1.1 Introduction and Summary

The Port sector was selected by the State of Gujarat as the case study under the Technical Assistance Program of the Enhancing Private Sector Participation in Infrastructure Development at State level Project of the ADB (ADB TA No. 3791-IND). Two projects were considered as a result of discussions with the Gujarat Maritime Board (GMB) and Gujarat Infrastructure Development Board (GIDB), these were the Simar Port and the Alang Oil Reception Facility cum Jetty (Alang Port). Both projects were chosen for review due primarily to the vastly different nature of the business models within the Port sector and the different administrative agencies involved. Visits were made to both sites and interviews held with local officials as well as officials from GMB and GIDB.

### 1.1.1 Simar Port

The Gujarat Maritime Board (GMB) commissioned a report in 1996 entitled the **Gujarat Maritime Master Plan**<sup>1</sup> and identified Simar as a green-field port to be developed by private sector in its Port Policy. GMB further undertook an **Engineering Pre-feasibility Study**<sup>2</sup> of the project in the same year for the development of this port. Simar has been earmarked by the GMB as a terminal to supply coal to thermal power stations in the immediate area. GIDB and GMB are currently intending to solicit interests from private investors to participate in this project.

### 1.1.2 Alang Port

A **Feasibility Study**<sup>3</sup> of the project was recently completed in October 2003 under the Port Development Gujarat Program (PODEG) sponsored by the Royal Netherlands Embassy, the civil engineering division of Rijkswaterstaat of Netherlands and the GMB. The stated aim of the study for a basic oil reception facility with jetty at Alang was to determine the technical and economic feasibility of a jetty that would serve for the Alang ship-breakers as a mooring facility for service vessels, an oil reception facility, and/or as a cargo handling facility for their trade with destinations, which are more efficiently accessible via the sea. The ship-breaking industry is also a much-discussed topic currently and has attracted substantial attention in the media.

Both the Simar Port and the Alang Port were opportunities presented to investors in the recent Vibrant Gujarat Global Investors Summit 2003 held in Ahmedabad from 28-30 September 2003. The project cost estimates for Simar and Alang are Rs. 29,200m and Rs. 103.92m respectively.

The purpose of this Case Study is to perform a review the available proposals and related commercial materials of both projects, the enabling environment and process put in place to facilitate private sector interests, a preliminary assessment of the viability of the proposals and to recommend improvements, if applicable, to enhance private sector interests in terms of investment in this sector.

We have taken the approach from the perspective of a potential private investor who would be undertaking an initial assessment of the legislation framework and enabling environment of investing in Gujarat as well as a preliminary review of the proposed projects prior to taking the next step. Our conclusion and recommendation therefore will be based on the clarity and "user friendliness" of the investment environment and the economic attractiveness of the projects themselves without delving into financial returns and project risk mitigation.

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<sup>1</sup> Gujarat Maritime Master Plan, Final Report, dated May 1996 prepared by Consulting Engineering Services (India) Pvt Ltd

<sup>2</sup> Engineering Pre-Feasibility Study for Development of Ports in Gujarat, Simar, Final Report dated November 1996 prepared by Rendel Palmer & Tritton, London

<sup>3</sup> Alang Oil Reception Facility cum Jetty, Final Report, October 2003



### 1.1.3 Summary, Conclusion and Recommendations

The following are our observations during the course of preparing this case study. It must be emphasised that the approach taken here is from the viewpoint of a potential private investor making an initial appraisal of investing in the Port sector in the State. With regard to a more formal review of the legislative framework, policy and the enabling environment including the project selection and investor evaluation process and recommendation thereof, these are presented in detail in separate sections of the report under this TA.

Our review of the Port Policy 1995, BOOT Principles, the Gujarat Infrastructure Development Act, 1999 and the Draft Gujarat Infrastructure Development Rules, 2002 (Draft) has identified a number of areas of potential conflict and inconsistency that require clarification. These areas include, among others, the division of responsibility among the agencies, investment structures, duration of concession period and terms of asset transfer at the end of concession. The differences, we concluded, are primarily due to the provisions contained in the Act enacted in 1999 that may necessitate amendments to earlier policies and principles to ensure consistency.

The Institutional Approval Process is set out in Gujarat Infrastructure Development Rules, 2002 (Draft) and has done much to improve the clarity of the investment procedure. However, we observed that the entire process lasts between 2 and 3 years while the period between the submission of bid and the signing of the concession agreement could take more than 18 months. The process, on the other hand, requires the bidder to provide commercial bids with validity of up to 6 months from the day of submission and that the second ranked bidder will need to standby until there is an outcome on the first set of negotiations. Under the present rules, the second ranked bidder is also in danger of forfeiting its bid security if it is unable to enter into a contract thereafter. While it is unrealistic to expect qualified bidders to extend their unconditional proposals, it may be desirable to shorten the time period for a) evaluation of bids from 210 days to, say 5 months and b) reaching agreement with preferred bidders from 365 days to no more than 6 months. It may also be reasonable to consider allowing the second ranked bidder to stand-down or extend the validity of its commercial offer at the time of expiry.

We are of the view that seeking private sector interest on the Simar Port project is premature at this stage as the information currently available for inspection is too out of date to provide a realistic assessment of the viability of the project. We noted that a number of assumptions made in the 1996 Engineering Pre-Feasibility Study may well be invalid by now and should be updated. An interesting example is the original rationale of the project, which was to supply coal to nearby power plants being built at that time – six years later, there appears to be no power plants built or contemplated in that area, particularly given the recent publication of the Electricity Act. As the Rules provide that sufficient preparatory work must be done and approved by the PBAC before seeking expression of interest, we recommend that a preliminary study be prepared on the financial viability of the project before taking it to the public arena.

Whereas the feasibility study is up to date on the Alang Port project, we encountered somewhat different issues. We noted that despite the obvious improvement of safety standards that could be derived from the implementation of the project, there is significant scepticism from the local ship-breakers, particularly when they themselves, in order to maximise their profits at the expense of safety, are tolerated on somewhat dubious business practices without stringent penalties. GMB is also in an unenviable position of conflict being the regulatory authority as well as the landlord of the yard. Therefore we believe that until this issue is somehow resolved, it would be a significant stumbling block in attracting outside investment. Furthermore, new rules governing the cleaning of ships, tightening of regulatory measures and demonstration of cost savings for the ship-breakers may be the only way to enhance the attractiveness of this project. On the other hand, since the estimated project amount is small relative to the economic benefits that could be derived from this project, GMB could consider funding the building of the infrastructure in its entirety and outsource the operation and management to outside parties just as it acts as landlord to the ship-breakers.

In the final analysis, both port projects are, in our opinion, non-bankable in their present state and would require significant amount of work by both GMB and GIDB to be able to attract serious interest from the private sector. Lessons learnt from this exercise include the following.

- Preliminary project assessment procedures need to be put in place to assess the suitability and viability of the project in question. A further discussion of such a process is set out in an earlier section of this report.
- There should be a paradigm shift in the selection of projects not just to pass to the private sector those projects that are considered too risky and unprofitable for public funding. The principle of merely passing those projects to private sector not only increases the mistrust of any information presented by the nodal agency but also adversely affect the creditability of the government in its privatisation efforts. Government should be seen to adopt a policy whereby projects with high economic returns should be supported by public funds and those with sufficient financial returns by private funds. Further discussion on these guidelines is also set out in more detail in a separate section of this report.
- Co-ordinating or the nodal agencies should expand their role beyond merely shifting information from state to the public arena but need to have the capability to undertake preliminary due diligence exercises similar to the work that have been done in this case study to ensure that substantial problems and issues are identified and dealt with before the projects are allowed to go public.
- Initial training and regular updates should be provided to nodal agency staff in order to be familiar with the commercial requirements of the private sector investors as well as sectoral business models including issues relating to financial returns, conflict of interests and environmental policy implications to private sector funding.
- Consideration should be given to the set up of a dedicated team within the nodal agencies to assist the winning bidder to obtain the necessary approvals for the implementation of the project as quickly as possible and to deal with any issues and problems during the concession period.

## **1.2 Legislative Framework, Policies, Investment Process and Statutory Clearance Requirements relating to Port Sector Investment by Private Sector**

### **1.2.1 Overview of Legislative Framework and Infrastructure Policy**

Ports are a mixed responsibility under the Indian Constitution. Ports declared by law to be major ports are governed under Central legislation, the Major Port Trusts Act, 1963 (Act No. 38 of 1963), as amended. Ports other than major ports are the concurrent responsibility of both the Central Government and the State Government. The Indian Ports Act, 1908, as amended, grants power to State Governments to make port rules in all areas except public health, to appoint port officials except health officers, to set rules for the safety of shipping and the conservation of ports, to set port dues and charges, and to group ports.

Gujarat has been at the forefront in establishing State law for ports. It established the Gujarat Maritime Board Act, 1981 to carry out the functions specified to State Governments under the Indian Ports Act, 1908. It reports to the State Department of Ports & Fisheries.

The GMB created two commercial entities in partnership with the Gujarat Industrial Investment Corporation. These are:

- The Gujarat Port Infrastructure Development Corporation Ltd. (GPIDCL), as an investing arm of the GMB for routing equity into new joint sector ports;

- Alcock & Ashdown Ltd. For ship breaking, shipbuilding, ship repairing and dry-docking.

The State Government of Gujarat is now planning to separate service delivery and development from regulatory functions. Two new institutions, the Gujarat Port Authority, to act as the concessioning body with private parties, and the Maritime Regulatory Commissions, to, inter alia, monitor concession agreements, act as a dispute resolution agency and to encourage competition in the sector. The relevant laws are currently being drafted by consultants in the Port Development Gujarat Program (PODEG) for the empowerment of these institutions. It is expected that the GMB will also be restructured as a consequence.

The general policy regarding private sector participation in the infrastructure sector in Gujarat is laid out in the Gujarat Infrastructure Agenda – Vision 2010, prepared by GIDB. The Vision focuses on power, ports and industrial parks as drivers. It relies on port-led development to attain regional growth and demand for other sectors.

There is no specific general infrastructure policy regarding private sector participation in Gujarat. However, the general points made in Vision 2010 are then reinforced through the functions and powers of GIDB under the Gujarat Infrastructure Development Act, 1999 (the Act).

The Act is to provide a framework for participation of persons other than the State Government and government agencies in the financing, construction, maintenance and operation of infrastructure projects. The GIDB is established as the nodal agency for the implementation for that purpose. Among other things, it defines the functions for the GIDB, the infrastructure project process, the scheme of the concession agreement, the types of State support available and the arbitration process.

Further expansion of the Act is contained in the Gujarat Infrastructure Development Rules, 2002 (the Rules) still in Draft form. The Rules set out the definition of the concession agreement, the allocation of responsibility between GIDB and the line departments by way of project costs and the process of qualification, bid award and evaluation.

The institutional approval process is further set out in detail in a later section of this paper.

### **1.2.2 Overview of Port Policy**

Private sector participation in the port sector has been the major focus at the national level following the issuance of the Guidelines on Private Sector Participation in Ports in October 1996, as amended, (the National Guidelines) by the Ministry of Shipping. Ports are a concurrent function of government – with major ports under the Central Government and other ports under the State Government. The National Guidelines set rules for PSP in major ports and has been influential in the establishment of State port policies. In addition, the National Guidelines permit a major port to form a joint venture to assist a minor port.

The State Government of Gujarat, through the GMB, issued a comprehensive and integrated Port Policy in 1995. Its purpose was to integrate the development, power generation and infrastructure development. One of the Policy's seven objectives was to attract private sector investment in the existing minor and intermediate ports and in new port locations. Detailed rules for furthering that objective were then set out in Build-Own-Operate-Transfer (BOOT) Principles Under Port Policy-1995; Government of Gujarat Resolution No. WKS-1097-G-213-GH, dated 29 July 1997. The BOOT Principles set out in detail guidelines for the following.

- Build stage of the BOOT Package
- Ownership Rights of Different Parties
- Operation of the Port

- Commercial Issues
- Transfer of Assets

Among the important provisions are the following.

- Land acquisition is the responsibility of the State Government;
- The concession period shall be 30 years based on a lease, but port assets may be mortgaged to a lender under that agreement;
- State Government tax concessions include lowered stamp duty and registration fee;
- Investor has a financial commitment to maintain at least 51% of the shares in the company carrying out the venture for a minimum period of 5 years of operation;
- The State Government will also participate as an equity partner, and will facilitate the concomitant development of roads, rail corridors and industrial parks. It will also encourage the investor to add port capacity
- The investor shall have operational autonomy and flexibility to set and collect tariffs.

Whereas the BOOT Principles serve as the framework for involvement of private sector in the construction and operation of new and joint sector ports, the Act, published in 1999, now provides the flexibility for GIDB to enter into other forms of private sector co-operation. There appears to be a number of differences between the Port Policy (and its associated BOOT Principles) and the more recently announced Act (and its draft Rules). For example, the nature of Concession Agreement under the Act include also the following forms<sup>4</sup> :

- Build Own Operate and Transfer Agreement
- Build Own Operate and Maintain Agreement
- Build and Transfer Agreement
- Build Lease and Transfer Agreement
- Build Transfer and Operate Agreement
- Lease Management Agreement
- Management Agreement
- Rehabilitate Operate and Transfer Agreement
- Rehabilitate Own Operate and Maintain Agreement
- Service Contract Agreement
- Supply Operate and Transfer Agreement
- Joint Venture Agreement

We are informed that, from GIDB's perspective, the appropriate framework, including any incentive package offered by the State Government, would be decided in consideration of the greatest benefit and least cost to the State and would be subject to negotiation with the qualified developer on a case by case basis.

Set out below is a comparison of the provisions contained in the Port Policy and BOOT Principles with the Act and the Draft Rules that has identified a number of issues requiring clarification. As part of this TA, we are undertaking a more detailed review of these issues and will comment and make the appropriate recommendations in a separate section of this report.

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<sup>4</sup> Schedule II of the Gujarat Infrastructure Development Act, 1999

Subject Matter	Port Policy and BOOT	Act and Rules
Coordinating agency	GMB	GIDB
Agency Role	Development of 10 named green-field ports under the Policy	Functions as set out in Act Ch. IV covering 20 sectors listed in Sch. I, including Ports
Division of Responsibility	None mentioned	Per Act Ch. II (5)(1) and (10)(1)(b) If project does not require subsidy and exceeds project cost limit, then GIDB, otherwise remain with agency Under Rules 4, on project cost limit per App I, see also section below
PSP participation framework	BOOT only	In total 12 types of cooperating structures set out in Act Sch. II
Guiding principles of framework	Per Annexure A of BOOT Principles promoting long term economic benefits and minimum financial liabilities to the state	Limited reference. Per Act Ch. II 9(2) and (3). Evaluate proposals to ensure maximum benefit to state.
Inception of project, qualification, evaluation of proposals and bid management	Per Annexure B (II)(7) of BOOT. By tender with GMB involvement but process not mentioned in detail.	Per Act Ch. II 5, 7, 8, 9 and 10 GIDB approves project. State agency manages process Per Rules 7 PBAC manages process, see also section below.

Assistance by State Govt/agency	Per Annexure B (II) of BOOT -State to acquire land -Additional land acquired to facilitate future expansion of port related activity -Tax concession- lower stamp duty and Registration fee -Award status of Notified Area -Latest traffic study and engineering pre-feasibility report -Equity stake as co-promoter (no detail of equity limit) -Initiate concomitant development of road, rail corridors and industrial parks -Royalty holiday period until total approved capital cost is set off or end of concession period, if earlier Additional incentives -Permission to develop marine related activities such as ship breaking and dry docks -Port based industrial complexes -Real estate	Per Act Ch. II (6) -Invest in equity of the project not exceeding 49% -Subsidy not exceeding 15% of project cost (no detail on nature of subsidy) -Senior or subordinate loans (no detail on nature of assistance) -State guarantee of State agency liability arising out of a concession agreement -Opening and operation of escrow account -Conferment of right to develop any land -Exemption or deferred payment of any State tax or fees (no detail on period) -In any manner as deemed fit
Terms of lease of land	Concurrent to term of concession agreement Rental based on acquisition cost	None mentioned
Site studies	Latest traffic study and site specific engineering pre-feasibility report from GMB. Costs recoverable from selected developer. Undertaking by developer to prepare detailed project report and EIA for assessment by GMB	None mentioned
Configuration	Per BOOT Annexure B (II)(8)	None mentioned
Clearances	Per BOOT Annexure B (II)(9)	None mentioned
Construction	Per BOOT Annexure B (II)(10)	None mentioned
Financial Stake of Developer	Per BOOT Annexure B (II)(11)	None mentioned
Stipulation on Developer's financial commitment	Minimum stake of 51% for a period of 5 years of commercial operation. Otherwise Government concurrence required	None mentioned
Linkages to transport corridors	Developer has first preference as separate BOT packages	None mentioned
Ownership rights	Per BOOT Annexure B (III)	None mentioned
Operation of Ports	Per BOOT Annexure B (IV)	None mentioned

Duration of concession period	30 years commencing 3 years after signing of agreement. Can be greater than 30 years if project requires sizable capital investment	Per Act Ch. II (4)(3) no more than 35 years from date of agreement for transfer of project
Transfer of assets and consideration payable	-Immoveable assets at Fair Value -Moveable assets may be removed by Developer or transfer at Fair Value Fair Value formula is pre-determined at the time of	Per Act Ch. II (14) and (15) compensation as specified in the concession agreement

	signing concession agreement	
Options after Transfer	-Offer the Developer a roll-over option -Offer the port to another Developer -Government to take over as landlord and outsource services to private sector on contract basis -Government to act as operator	None mentioned
Option after Termination by Default	None mentioned	Per Act Ch. II (15)(2) allowing Government or its agency to take over and enter into a new concession agreement with a third party
Force Majeure issues	Per BOOT Annexure B (VII)(5)	None mentioned
Regulation	Independent Port Authority to be established	None mentioned
Combination of more than one agreement	None mentioned	Per Act Ch. II (4)(2)
Amount to be charged for providing goods and services	None mentioned	Per Act Ch. II (11)
Financial security for maintenance of project	None mentioned	Per Act Ch. II (12)
Training of employees	None mentioned	Per Act Ch. II (13)
Amount charged by the nodal agency	None mentioned	Per Act Ch. VI (32)
Arbitration	None mentioned	Per Act Ch. VI (35) and (36)

### 1.2.3 Institutional Approval Process <sup>5</sup>

The various institutions who are responsible for project development or approval in some capacity have been listed by State and Sector in Appendix D. This section reviews the process for approvals among those institutions in Gujarat.

#### 1.2.3.1 Division of Institutional Responsibility for Project Development

Where the cost of a project exceeds the limits for projects in different sectors (Rs. 250 crs for Ports <sup>6</sup>), the project proposal, along with the draft Concession Agreement, prepared by the State Government or its agency is required to be submitted to GIDB for its consideration. GIDB would specify the terms of the Concession Agreement that are open for negotiations amongst the parties and those that are final and non-negotiable. GIDB is the main determinant on the basic structure, bid conditions and award of the project.

Accordingly projects that are below the cost limits will not fall within the administrative responsibility of GIDB but will be administered by the line departments or the related government agency. In both cases, the procedure to solicit private sector interest as set out in the Act and the Rules will be followed except for those smaller projects, the line department/agency will take the place of GIDB.

Under the cost criteria referred to above, the responsible agency for the Simar Port and the Alang Port are respectively GIDB and GMB.

The responsible agency is then required to form a working group to assess the viability of the project and develop it to a stage where private sector participation may be sought and thereafter, making a recommendation to a project committee (the PBAC or equivalent, see below) to proceed with a solicitation for interest.

<sup>5</sup> The Gujarat Infrastructure Development Rules, 2002 (Draft)

<sup>6</sup> Appendix I, Limits of Project Cost, The Gujarat Infrastructure Development Rules, 2002

### **1.2.3.2 Constitution and Responsibility of the Pre-qualification, Bids and Awards Committee (PBAC)**

GIDB will form the PBAC comprising representatives from GIDB and the Government departments including the granting authority of the project (Grantor). The responsibilities of the PBAC are the following.

- Carry out all functions and responsibilities of pre-qualification and selection of developer.
- Publication of notice for pre-qualification (RFQ).
- Preparation of bid documents.
- Pre-qualification of the prospective bidder including specification of criteria.
- Conduct pre-bid conference and issue supplemental notices.
- Evaluation of bids.
- Giving hearing to disqualified bidders.
- Giving recommendations for the acceptance of the bids and/or award of the project.
- All other responsibilities for undertaking the process of selection of developer.

### **1.2.3.3 Solicitation for Interest**

Upon PBAC recommending the proposal, an advertisement will be published as provided in Section 9 of the Act and containing the following<sup>7</sup>.

- The names of the implementing agency and GIDB
- Name of the project
- Short description of the project
- Approximate cost of the project
- Last date of submission of RFQ document
- Contact details of the representative of the Government agency who has to receive the RFQ document
- Amount of non-refundable fee to whom payable and details of payment

The advertisement will be published once a week for two consecutive weeks in at least three newspapers, two in general circulation and one in circulation in the area in which the project is to be undertaken as well as any other means of mass communication. The amount of non-refundable fee is a nominal fee approved by the PBAC as a % of the project cost.

### **1.2.3.4 Pre-Qualification Process**

The prospective bidder is given at least 21 days from the last date of collection of documents (which, in past practice, would be 15 days after the last publication of the advertisement) for pre-qualification to submit the bid. The terms and conditions, evaluation criteria and the rating system for the pre-qualification of the bidder is determined by PBAC and may include the legal requirement, experience or track record, technical and financial capability and managerial capacity.

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<sup>7</sup> Appendix II, Essential details for publication of notice, The Gujarat Infrastructure Development Rules, 2002

The process of pre-qualification should be completed within 15 days of the last date of submission of the bid for pre-qualification. The bidders will be informed of the results within 7 clear days of the decision.

The disqualified bidders may appeal against the decision within 3 clear days from the receipt of result. The Chairman of the PBAC is to take a decision on the appeal and communicate it in writing within 7 clear days from its receipt after hearing the bidder in person, if deemed necessary.

#### **1.2.3.5 Request for Proposal**

The Grantor will then prepare the Request for Proposal document (RFP) clearly mentioning whether the proposal of the bidder is solicited against an unsolicited proposal and would be in the nature of a "Challenge Bid". The related bid documents will be made available to all qualified bidders within 45 clear days and provide them with sufficient time, not exceeding 60 clear days, to examine the same and to prepare the respective bids.

#### **1.2.3.6 Bid Preparation**

For clarification of bid terms, the bidder may submit a written request to the Grantor no later than 15 clear days after the issue of the RFP. Any substantial clarification, or amendment of any provisions of the RFP shall be issued in the form of a supplemental notice with copies to all pre-qualified bidders within 10 days after receiving queries.

A pre-bid conference could be conducted at the discretion of PBAC at least 45 clear days before the deadline for the submission of bids to clarify provisions, requirements and/or terms and conditions of the bidding documents and/or any other matters that the bidders may raise. The draft concession agreement should be made available to bidders at least 7 clear days before the pre-bid conference.

After the pre-bid conference, the PBAC could, at its discretion, extend the last date for the submission of bids by a maximum of 30 days. This will be duly intimated to all bidders.

#### **1.2.3.7 Submission and Evaluation of Bids**

The bid should be in 2 separate sealed envelopes comprising a "technical proposal" and a "commercial proposal" both clearly marked and addressed to the Chairman of PBAC and should be submitted on or before the deadline. The validity of the commercial proposal must be for at least 6 months.

A minimum of three members of the PBAC, including the Member Secretary, must be present at the time of the opening of the envelope. The PBAC will open only the envelope containing the technical proposal at the stipulated time and ascertain the completeness of the required data and the required security in the prescribed form, amount and period of validity.

If the required submission is found to be incomplete, the envelope containing the commercial proposal shall be returned to the bidder unopened with the reason for disqualification.

The PBAC could invite all pre-qualified bidders at any stage during the technical evaluation to understand their technical proposal and to modify any of the criteria for evaluation. A rating system is used to assess the bids based on the criteria laid down in the RFP.

Only those bidders who passed the technical evaluation will have the second envelope, marked "commercial proposal" opened for further evaluation. The commercial bid will not include any pre-conditions. In case of modification in technical criteria, those bidders will be eligible to submit revised commercial bids. However, such revised bids will also be unconditional.

The commercial proposal is to contain the required basis of the financial bid, in terms of the evaluation criteria referred to in the draft concession agreement. The bid should be one figure, which could be the weighted average of a single, or two or more criteria as specified by PBAC.



The commercial proposal evaluation will be completed by the PBAC within a maximum of 30 clear days after the assessment of technical bids.

The PBAC will then prepare and submit a detailed evaluation assessment report on its decision and recommendation to the Government or the Head of the designated Government Agency acting as the Competent Authority. The Competent Authority will, within 3 days, issue a letter to the highest-ranking bidder conferring on it the status of preferred bidder.

#### **1.2.3.8 Negotiation of Concession Agreement**

A letter of intent will be issued and sent to the preferred bidder within 15 days subject to the following conditions.

- Undertaking from the bidder to pay to the Grantor the specified development expenses, including cost of feasibility studies, on entering into concession agreement.
- Undertaking to submit the required performance security, if any.
- Evidence of adequate equity base.
- In the case of a joint venture/consortium, submission of a joint undertaking that the members of the joint venture/consortium are jointly and severally responsible for the obligations of the project proponent under the contract.
- Fulfilment of other conditions imposed by the Grantor in the RFP or any other communication.

A maximum time limit of not more than 365 clear days would be set for the preferred bidder to comply with those conditions and to sign the concession agreement failure of which would result in the disqualification of the bid and the forfeiture of the bid security.

In case the preferred bidder fails to enter into a contract within the specified time, a letter of intent will be issued to the second ranking bidder as per the evaluation report of the PBAC. If the second ranking bidder likewise fails to enter into a contract, his bid security will also be forfeited. At that point, the Grantor has the right either to consider the next highest-ranking bidder or scrap the bid.

Where there is only one purchaser of the RFP or when no complying bids are received, the project will be subject to re-bidding.

#### **1.2.3.9 Unsolicited Proposals**

An unsolicited proposal from a Proponent could be considered by the Government or its agency if the requirements of Section 10 of the Act is fulfilled and that sufficient information including an acceptable technical and financial feasibility study, a draft concession agreement vetted by a reputed independent lawyer and information on the entity proposing to undertake the project.

If the Government or its agency finds that the proposal, after consultation and modification, if any, deems fit to invite competitive bids, it will submit it to GIDB for consideration.

Upon the recommendation from GIDB of the proposal and the proposed concession agreement, the Grantor will then follow the bidding process referred to in Rule 8.

While issuing the RFP under Rule 9 to the pre-qualified bidders, the PBAC will clearly mention that the proposal has been received through direct negotiation under Section 10 of the Act. At that stage, the Proponent shall also be asked to submit his commercial bid in a sealed envelope.

If the Proponent is not the highest ranked bidder on the submission of the evaluation report under Rule 13, he will be given 30 days to match on an unconditional basis the commercial proposal of the

highest ranked bidder. In the proposal is matched, the Proponent will be designated the preferred bidder under Rule 14.1. Otherwise, the highest ranked bidder as per the evaluation report will become the preferred bidder – in that event, an amount of development costs, comprising costs for preparation of proposal, concession agreement, pre-feasibility reports and legal costs, agreed with the Government or its agency, will be reimbursed by the winning bidder to the Proponent. The preferred bidder will pay such costs to the Grantor within 60 days on notification of its preferred status and the Grantor will disburse that amount to the Proponent 15 days thereafter.

### 1.2.3.10 User Charges

User charges, if appropriate, will be specified in the final concession agreement and may be subject to adjustment during the life of the contract based on pre-determined formulae. The charges adjustments should take into account different factors such as inflation, foreign exchange variation, interest rate and sector specific adjustments to the extent that each may be relevant and defined specifically in the agreement.

### 1.2.3.11 Termination on Default

If the project developer commits a default specified in a concession agreement, the Grantor may give notice that it proposes to terminate the agreement. The developer may, within 15 days on receipt of the notice, file a representation and request to be heard in person. Such an opportunity will be granted within a reasonable period after which, in consideration of the representation and the facts brought out in the hearing, the Grantor is entitled to terminate the concession agreement.

A summary of the approval process and the approximate timing thereof is set out in the table below.

Date	Event	Event in Unsolicited Bid Situation
D-30	Publication of Advertisement	Same
D-15	Last publication date	Same
D	Last day for collection of RFQ documents	Same
D+21	Last day of submission of RFQ	Same
D+36	Pre-qualification decision made by PBAC	Same
D+43	Bidders informed of qualification status	Same
D+46	Last day for appeal by disqualified bidders	Same
D+53	Appeal decision notified	Same
D+98	RFP available to qualified bidders	RFP to mention receipt of unsolicited proposal and the bid is now in the nature of a Challenge Bid Request Proponent to submit commercial proposal
D+106	Draft concession agreement available to bidders	Same
D+113	Request by bidders for clarification of RFP Pre-bid conference	Same
D+123	Clarification sent by supplemental notice	Same
D+158	Last date for submission of bids	Same
D+188	Extension of bid date at the discretion of PBAC	Same
D+338	Completion of technical proposal evaluation	Same
D+368	Completion of commercial proposal evaluation	Proponent given opportunity to match highest ranked offer on an unconditional basis
D+371	Notice sent to highest ranked bidder	
D+386	LOI sent	
D+398		Last day of matching of bid
D+401		Notice sent to highest ranked bidder
D+416		LOI sent
D+461		Reimbursement of agreed development costs by preferred bidder, if

		applicable
D+476		Receipt of agreed development costs by Proponent, if applicable
D+751	Concession Agreement signed	
D+1116		Concession Agreement signed

### 1.2.3.12 Statutory Clearance Requirements for Port Sector Investment <sup>8</sup>

The following tables illustrate the process of clearances and approvals required to move these projects forward. The yellow cells indicate the areas of responsibility of the sponsoring organisation (GIBD or Line Department ) and the tan cells indicate the areas of responsibility of the private sector partner/successful bidder.

#### Government of India and its Agencies

Subject Matter	Relevant Agency	Timing
1) Promoter company registration	Registrar of Companies	Company formation stage
2) Environmental impact assessment and environmental management plan – Sec 3(1) and 3(2)(iv), Environmental (protection) Act 1986 and Rule 5(3)(a), Environmental (protection) Rules 1986	Ministry of Environment & Forests	Before project implementation
3) Physical Chief/Mathematical modelling of the LNG terminal marine structure	Central Water & Power Research Station	Before project implementation
4) Detailed design of LNG berth	Controller of Explosives	Before project implementation
5) Detailed design of LNG berth	Ministry of Surface Transport	Before project implementation
6) Scheme pursuant to Sec 29, Electricity (Supply) Act 1948	Central Electricity Authority (CEA)	Project implementation
7) Fire equipment	Tariff Advisory Committee	Project implementation
8) Coastal Regulation Zone (CRZ)	Relevant port authority	Before project implementation
9) Height of chimney	National Airports Authority	Project implementation
10) Automatic clearance for import of capital goods and raw materials	Director General of Technical Development/Director General of Foreign Trade	Project implementation
11) Permission to enter into financing agreements	Dept of Economic Affairs, Ministry of Finance	Project implementation
12) Permission to (a) remit principal and interest to lenders and create security over assets of the company in favour of NR lenders, (b) open USD bank accounts both in and outside India, pursuant to FERA 1973 and (c) provision of any guarantee by Indian entities of any loans extended by overseas lenders to the company	Reserve Bank of India	Project implementation

#### Government of Gujarat and its Agencies

Subject Matter	Relevant Agency	Timing
1) Project site and related greenbelt is not deemed to be 'reserved forest' land as per Forest (Conservation) Act 1980	Gujarat Forest Department and Ministry of Environment and Forests	Pre-project implementation
2) Sec 18A of Electricity Supply Act	Government of Gujarat	Pre-project implementation
3) Allocation of requisite amount of water to the proposed project and for abstraction of sea water	Department of Irrigation and/or relevant authority	Pre-project implementation

<sup>8</sup> [http://www.gidb.org/port\\_listclearancesrequi.htm](http://www.gidb.org/port_listclearancesrequi.htm)

4) Use of Ground Water	Chief Conservator of Ground Water Department	Project implementation
5) Water supply of required quantity for the proposed site	Gujarat Water Supply and Sewerage Board	Pre-project implementation
6) Sec 21 of Air (Prevention & Control of Pollution) Act 1981 in connection with emissions	Gujarat Pollution Control Board	Pre-project implementation
7) Availability of electricity during project construction period Clearance under Sec 44 of Electricity (Supply) Act 1948	Gujarat Electricity Board	Construction period
8) Confirmation relating to project and greenbelt	Collector/Directorate of Town Planning	Before construction period
9) Proposed design and construction of project	Chief Inspector of Factories	Before construction period
10) Fire fighting capability under Factories Act 1948	Chief Inspector of Factories	Before construction period
11) Licence for construction pursuant to Sec 7 of Contract Labour (Regulation and Abolition) Act 1970	Labour Commissioner	Before construction period
12) Registration of workers pursuant to Sec 2A of Employees State Insurance Act 1948, or exemption to be claimed if other group insurance is taken	Labour Commissioner	Before construction period
13) Transportation of heavy material/machinery by ships, roads/bridge	Relevant authority	Project implementation
14) Electrical installation	Chief Electrical Inspectorate	Construction period

## 1.3 Information on Simar and Alang Ports

### 1.3.1 Information on the Simar Port

The map below identifies the location of Simar and Alang Ports

#### 1.3.1.1 Inception and status of the Project

The Simar Port was initially conceived as a result of a study commissioned by the GMB in 1996 that formed the Gujarat Maritime Master Plan. The site was selected based on its proximity to a number of thermal power stations planned to be constructed in the area, and can offer the most economical and direct coal supply route from the sea. A further engineering pre-feasibility study was undertaken in the same year by a firm of consultants to

- Examine the marine conditions prevailing at Simar and propose a best possible site for locating the port facilities.
- Propose offshore and onshore facilities to handle estimated traffic.
- Indicate order of magnitude cost estimates for the proposed facilities.

Given that a number of other minor ports are now operating or under construction, several green-field ports, including Simar, Bedi, Vansi Borsi and Mithivirdi are planned to be awarded to private sector in 2005 subject to sufficient cargo throughput in the respective areas to make them financially viable. This is particularly relevant to Simar due to the availability of capacity for solid cargo at Mundra and, in the near future, Dahej. However, it has been decided by GMB and GIDB to accelerate the project timetable for Simar and that an advertisement to solicit interest in the form of a RFQ is contemplated in the next few weeks. This will be the first project of which the Gujarat Infrastructure Development Rules 2002 will be followed.

Apart from a brief summary of the project included in the recent Vibrant Gujarat Global Investors Summit 2003, no other form of public presentation has been prepared to date. In summary, the only available documentation on this project is a) the Gujarat Master Plan and b) the Engineering Pre-feasibility Study, both prepared in 1996.

We are told that an expression of interest of a general nature on the site was received by GMB some time ago from a local developer but this was not followed up with the submission of the relevant documents to qualify as an Unsolicited Bid. Thus at this stage, it is assumed that the RFQ will be drafted on a clean basis.

### 1.3.2 Synopsis of the Coal Industry in India<sup>9</sup>

#### 1.3.2.1 Introduction

Coal is used as a fuel in the production of electricity, cement and steel. Small quantities are also used in the other sectors such as chemicals and textiles. Main coal varieties are steam/thermal coal, which is used in the production of cement and power, and coking coal.

In Gujarat (and in India in general) coal users have different options and may choose between imported or domestic coal or utilize domestic lignite (brown coal for use in Gujarat power stations). This choice is largely determined by the import duties (on imported coal which are set annually by the government), the location of the user, the quality (caloric value, ash content) of domestic coal and the total cost of the logistic chain. The import duties primarily concern steam coal, which commodity is sufficiently available in the country. Consequently over 90% of the imports are coking coal whereas the power plants and the cement industry use the indigenous steam coal variety.

The total consumption in India is estimated to be around 300m tonnes for 1997/8 with the production at 285m tonnes. Out of the 300m tonnes consumed, around 50m tonnes are of steam coal for use in power and cement plants. The total coal consumption in Gujarat stood at 17.3m tonnes in 1997/8.

#### 1.3.2.2 Ports, Transport and Ship-size

The Indian coal imports arrive principally from Australia, Indonesia and South Africa. Apart from transport over some shorter distances or non-rail connected destinations, all inland transport of coal is executed by rail, while the same applies to the transport flows through the ports. Traditionally, most of the import flows were directed through eastern ports, such as Paradip and Visakhapatnam. However, with the liberalization of the import duties, since 1994/5, Gujarat ports have been importing increasing quantities.

Next to Kandla: 800,000 tonnes, Navlakhi imports 1.64m tonnes. 70% of these are bound for Rajahstan, Punjab and Uttar Pradesh transported by train in 3,500 tonnes lots/train (58 wagons). The fixed rail transport costs to this last destination amount to Rs. 1,061 per tonne. The Ahmedabad Electricity Corporation consumes the remaining 30%.

The unloading speed in Navlakhi, executed by ship's gear from Panamax vessels stands at around 12,000 tonnes per day. Excavators unload the barges to the pier where front-loaders unload the coal onto trucks, which then carry the coal between the quay and the storage area and then to the railhead.

Whereas Mundra handles only 200,000 tonnes, the volume is expected to increase dramatically possibly at the expense of Navlakhi and Kandla with the installation of new conveyor belts and rail connection. Destinations for Mundra are Haryana (1,300 km), the Punjab (1,250 km) and Gujarat (average distance 650 km).

#### 1.3.2.3 Other coal importing ports are:

- Magdella: 1.02m tonnes. Part of this volume is bound for the local industry and the Ahmedabad Electricity Company, 240,000 tonnes to Essar. With the opening of the broad gauge railway link in Navlakhi, the competitiveness of this port (where the coal has to be trucked to the railhead in Surat) in the Ahmedabad bound flows has decreased.

<sup>9</sup> Helicopter Assessment, Commodity analysis & Forecast of cargo in the Gujarat ports, NEI Transport, April 2001

- Okha handled 830,000 tonnes consisting of captive volumes for Tata Chemicals in Mithapur and reroutable quantities for VK Industries, BLA Industries and Bhatia International with destinations in Kodinar (250 km), Ranavav (170 km) and the Punjab (1,450 km). It is possible that the future coal demand for the Sikka power station will be routed through Okha.
- Muldwarka (for Gujarat Ambuja Cement).
- Jafrabad (for Narmada Cement).
- Pipavav/GPPL (L&T Cement).
- Porbandar (for Saurashtra Cement)
- Veraval (for Gujarat SIDHEE Cement, located 45 km from the port).
- Dahej imports smaller volumes of between 70 and 200,000 tonnes.

Most of these cargos are discharged on the roads into barges. Unloading speeds range from 5,000 tonnes to 10,000 tonnes per day. In general, imported coal is destined for the coastal cement factories, for Essar steel and for some other minor coastal located industries and can be regarded as captive. Non-coastal located industries and the supply for power stations can be re-routed.

Lignite or brown coal, which in Gujarat is primarily mined by the Gujarat Mineral Development Corporation, arrives mostly by trucks from quarries in the Western Kutch region. On an overall Indian production total of 24m tonnes (1999/2000), about a quarter is extracted in the region. Around 4m tonnes have inland destinations as well as to coastal-based cement and power plants in neighbouring Indian states.

About 1m tonnes, however, is transported by truck to coastal destinations in the Saurashtra (around the port of Okha) and Bharuch (around Surat) areas and could potentially be transported by coastal shipping. Compared to the current transport costs to the Bharuch area of around Rs. 1,100 per tonne, the combined land/sea transport operation would provide for savings of around Rs. 150/200 per tonne.

The lack of port facilities prohibits the coastal transport. The nearest port of Koteswar is closed for military reasons, while the alternative port of Jakhau is currently not operational.

#### **1.3.2.4 Future Prospects**

Whereas in the past decade, the annual growth rates, caused by low capital investments, did not exceed 2.5% per annum, new capacity additions in thermal power, steel and to some extent, the cement industry have generated coal imports into Gujarat. It is estimated that the trend in the volume of unloaded coal through GMB ports will increase linearly from around 8m tonnes currently to 20m tonnes in 2015.

### **1.3.3 Background Information on the Simar Port**

#### **1.3.3.1 Overview**

GMB has identified Simar as a potential site for a power port to handle coal as fuel. At present no marine facilities exist at the site. Considering the proximity of the site to the proposed power plants, and its ability to handle post-panamax vessels, the site is deemed suitable for port development through private sector participation.

This is a green-field port project in two phases comprising an offshore structure to accommodate ships up to 200,000 DWT. The number of berths to be initially provided in Phase I comprises of one berth of 350m in length and in Phase II, the jetty is extended by a further 350m.

The entire project cost is estimated to be around Rs.29, 200m before land costs, engineering design, investigation and project management expenses<sup>10</sup>. We understand that consultants in preparation of the Gujarat Maritime Master Plan in 1996 performed a brief financial analysis of Simar but there has been no other financial feasibility study on this project since then. We will make a preliminary economic assessment of the project based on the latest available data in the next section of this paper.

### **1.3.3.2 Location of the Site**

Simar is located at latitude 20 45'39" N and longitude 71 09'18"E in the Junagadh district of Gujarat State on the west coast of India and is approximately 25 km east of Diu Island on the southern side of Saurashtra Peninsula. Simar faces the Arabian Sea and lies on the entrance to Gulf of Khambhat. The nearest large town is Una, approximately 12 km away.

The proposed port is located approximately 9.5 km from the National Highway 8E. The site is not connected to the rail network. The nearest station is a rail terminus at Delwada some 12 kms away, which is connected by a meter gauge single-track railway line.

### **1.3.3.3 Basic Utilities and Infrastructure<sup>11</sup>**

In summary, the basic infrastructure at Simar is undeveloped, generally inadequate and will require additional investment into the supporting infrastructure in order to make the port operationally viable. The viability of the project is also dependent on the acceptance on the plans relating to the environmental impact to the area and will require approval from the Environmental Impact Assessment, EIA- State & National and the Environmental Monitor Planning, EMP- State & National as well as a number of other institutions.

#### **Power**

The nearby 66 KV sub-station is at Una. There is an 11 KV rural feeder from the Una to the village of Simar and it can be extended to the proposed site. This would be over a distance of about 15 km from Una. The capacity of Una sub-station is 30 MVA. Another 220 KV sub-station is under construction at the village Kansari which is 9 km from Una. From there, a 66 KV power line can be made available to the proposed site.

#### **Water**

In Simar and other nearby villages in the region, it is common to dig wells into the limestone rock. The depth of the wells generally varies from 2m to 15m. Quality is not in the range of acceptability. The State Government has however assisted with irrigation schemes to promote agriculture.

It has been concluded in the Pre-feasibility Study that water supply both for the construction and operation of the onshore facilities will be difficult to obtain.

#### **Road and Rail Links**

Turning south off the main east-west highway CH No. 6 at Kanakbarda, approximately 7 km east of Una, approaches Simar. From there the single track metalled road goes through the villages of Garol, Motha to Simar approximately 8 km to Simar village. The site is reached on mud track road over a further distance of 1.5 km. It would be difficult to reach the site during the monsoon season without a four-wheel drive vehicle.

A new road will be necessary to connect the new coal handling facility to the main highway CH No. 6.

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<sup>10</sup> Opportunities in Port Sector - Profiles compiled by INDEXTb

<sup>11</sup> as reported in the Engineering Pre-feasibility Study for Development of Ports in Gujarat, Simar, Final Report dated November 1996 prepared by Renton Palmer & Tritton, London

Simar is not connected to the rail network. At present the nearest station is at the terminus at Delvada some 12 km away. The existing rail line is a single-metre gauge track, which runs through Una. It may be possible to connect Simar to the national network through a branch line at Una.

### Land Availability

The proposed land area required for development at Simar is approximately 197 ha divided into the following categories.

	Hectare	Percent
Forest Land	70	35
Waste Land	7	4
Grazing Land	5	2
Private Land	115	59
Total	197	100

Whereas the Waste Land, which is government owned, would be relatively easy to acquire and that the Private Land would require some negotiation, the Grazing Land and Forest Land may be difficult to obtain and develop particularly from the environmental standpoint.

### Environmental Impact

The impact on the development will have on the environment will be in two phases, during construction and during operation. These include Noise, Dust, Gases, and Waste in the form of sewage, garbage and oil, and Visual.

#### 1.3.3.4 Further Observations based on the Site Visit

The following were notes taken during a site visit to Simar by our Environmental Consultant in November 2003.

#### Overview

The proposed coal port on the Arabian Sea at Simar, Junagadh District, Gujarat, lies about 450 km SW of Ahmedabad, the State Capital. The nearest city is Una, about 20 km NW of the site and the nearest existing railhead is at Delvada, about 12 km W of the site. (Until 2002 Delvada was the terminus of the former narrow gauge line from Ahmedabad, which has recently been upgraded to broad gauge but not yet opened to regular service.)

The purpose of the project is to receive colliers (i.e., coal ships) supplying one or more proposed coal-fired power generating stations. These could be constructed on or near the port site itself, in which case the fuel could be loaded directly by conveyor belt. Alternately, if the power plants were built a considerable distance offsite, the fuel could be either moved from the port by rail (or less likely by road), or pumped as aqueous slurry through an enclosed pipeline. The latter system would require a pulverization facility at the port, and a facility to dewater the slurry at the plant site and to treat or recycle the wastewater. The power plant design could opt for once-through seawater cooling if a coastal locale —on- or off the port site— were selected. A more inland plant would ordinarily use dry stack cooling towers.

Were any or all of these facilities built, it could be expected that a 400-500 MW plant would consume something on the order of 50,000 tonnes of coal per week. This amount could be loaded by a single very large bulk carrier. Thus, for a typical medium-size coal-fired thermal station, about fifty such vessels would enter the proposed port annually. It is likely that the coal would be imported, probably from Australia.



Simar is attractive for port development in part because of its situation along a low-energy coastline, i.e., not exposed to cyclones, extreme currents or high waves; and because of its considerable near-shore depth: about twelve fathoms (23 m.) within 0.5 km of the existing shoreline. This well exceeds the draft of a fully laden 50,000 DWT (deadweight tonnes) collier.

The feasibility of the overall scheme depends in large part on the cost advantages of electricity produced in Gujarat by coal thermal plants compared especially to natural gas thermal plants, as Gujarat is presently developing its offshore and onshore gas fields in addition to terminals for offloading liquified natural gas (LNG), to be delivered by purpose-designed (i.e., pressurized and refrigerated) LNG tankers from Middle Eastern producers such as Oman. The LNG facility at Hajira Port, on the Gulf of Khambatt, in Surat District is presently nearing completion. An additional LNG port has been proposed for a greenfield site near Umargam, Valsad District, about 160 km down coast from Hajira (of which more below).

Shipping, offloading and storing LNG is considered as inherently hazardous, which is not the case with coal. Natural gas fired power stations, however, are much cleaner in almost every aspect than coal-fired plants: in respect to the messiness of the fuel itself; the ongoing disposal requirements for fly ash and combustion residues; and the relatively larger atmospheric emissions of CO<sub>2</sub> and SO<sub>2</sub> per KWh of energy produced.

While there appears to be slender interest at present in developing major new coal fired power plants in Gujarat—hence little immediate rationale for going forward with the proposed coal port at Simar—according to local people, engineers and surveyors came to the site by helicopter quite recently (i.e., within the last several months), and stayed for some nights at the nearby Hindu ashram. The priest of the ashram, who was reputed to be well apprised of the Simar project's details, was clearly reluctant to discuss with us what he might have actually known.

### **Environmental Characterization**

Simar lies on a small, semi-protected bay, which was formerly the estuary of the Machhundri River, a relatively small coastal stream with a [ballpark] estimated catchment of ca. 450 km<sup>2</sup>. Annual rainfall in the Macchundri basin (in the region of southern Saurashtra) is probably about 80 cm. The upper Macchundri was dammed in recent decades for an irrigation project, and more recently—consistent with the ecologically-pernicious ideology that “freshwater allowed to flow out to sea unused is wasted”—a coastal embankment and barrage were constructed just above the debouchment into Simar Bay, with some water abstracted for shore side and inshore irrigated agriculture. Thus, presumably excepting only extreme-rainfall episodes with a high recurrence interval, no freshwater at all is presently discharged into the former estuary.

More positively, the effect of the lower barrage and reservoir scheme has been to create a permanent freshwater lagoon and islet complex occupying a considerable area: at least several hundred hectares. Under the previous natural hydrological regime this would have been a splendid tidal estuary and wetlands complex of the highest ecological value, but much of it would probably have been dewatered and barren during the driest months. While not necessarily the most valuable wildlife habitat in Saurashtra, during our brief visit in early November 2003 the artificial Macchundri lagoon nevertheless displayed quite an impressive avifauna comprising perhaps fifty or more species of waterfowl and shorebirds.

The Portuguese presence in Saurashtra (presumably dating to the 15th Century, with its nexus on Diu Island) actually extended eastwards at least as far as Jaffrabad. Thus, there are substantial ruins of a Portuguese fort and old lighthouse at the western cusp of Simar bay, on a low island in what would have been the mouth of the Macchundri. We were not able to observe close-up the extent and condition of this archaeological asset.

There remains a small local fishing port within the bay's western reach. No more than a half dozen motor-driven open-decked vessels, up to c. 10m in length and ca. 5 tonnes in displacement, appear

to be based now at Simar. The local population overwhelmingly belongs to the Gujarati fishing caste, but most of them now are farmers, not fishermen. Indeed, this area is famous for its groundnuts and mangoes and extensive mango orchards have been developed along the coastal plain to within perhaps 700m of the present shoreline. Most of the mango plantations do not appear to be more than 20-30 years old.

If the shore side facilities presumably required only by the coal off-loading machinery —not to mention any prospective on-site electric generating stations— were emplaced on new hydraulic fill within the present lagoon (which is presumably “government land” according to English common law, hence conveyable to a port developer at no cost to the State) there would be minimal involuntarily displacement of comparatively prosperous coastwise agriculturalists. But the environmental costs would be much higher than if the facilities were sited primarily on what is already “fastland”, i.e., lands not now or ever tidally inundated and long under private ownership.

Overall, the aesthetic values of the Simar area are quite nice indeed. From the shore, the bay looked like prime snorkelling waters, and the nearby ashram mentioned above already attracts a certain quotient of well-heeled tourists.

Countrywide Coastal Zone Management (CZM) regulatory mechanisms are now under serious consideration by the Government of India. Simar is exactly the sort of green-field port development likely to be subjected to the most serious scrutiny under any kind of stringent CZM system. This is a most attractive place still holding considerable environmental and cultural value. The question would/should certainly be posed as to why an enormous coal facility should be sited here, rather than within the nearby existing industrialized port complexes at Pipavav and Jaffrabad, which are much bleaker landscapes aesthetically, presumably less valuable ecologically, and certainly not subject to alternative development scenarios for ecotourism and/or preservation as wildlife habitat.

### 1.3.4 Preliminary Economic/Financial Assessment of the Project

The 1996 Master Plan<sup>12</sup> study arrived at a Financial Internal Rate of Return (FIRR) of 13.6% for the Simar Port on an estimated cost of Rs. 4,031m based on traffic flow assumptions and tariff based on rates in existing ports. This can be compared to an estimated cost of Rs. 20,720m from the Engineering Pre-feasibility Study done in the same year. We noted that the cost estimates for the latter do not include land acquisition costs, engineering investigations, costs for design, management and supervision of construction and internal project management. We believe also that the ancillary costs of improving the basic utilities and transportation infrastructure to make the port operable are not included in the project cost estimates. At this stage, the stated FIRR appears to be overstated and should be recalculated accordingly.

As a proposed port to supply coal to neighbouring thermal power plants, the critical issue therefore is whether the Simar Port can provide a cost effective solution to the power plants for its supplies. We are informed, however, from a review of current and proposed power projects in the State that there are no significant new buildings, current or proposed, in the vicinity of Simar. This was apparently due to the publication of the new Electricity Act opening the power generation capacity completely to private sector thus shifting the focus for National and State Governments to distribution and transmission. We are not aware that there are any proposals for private interests to build new generation units around Simar. As a consequence, this may render the Simar Port a non-viable proposition for private investment at this stage.

A SWOT Analysis on the Simar Port is set out below.

#### STRENGTHS

- Proven PSP experience and track record for State

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<sup>12</sup> Gujarat Maritime Master Plan, May 1996 prepared by Consulting Engineering Services (India) Private Limited

- Identified as port for development under Port Policy 1995
- Dedicated port for coal
- Set guidelines for bid process

**WEAKNESSES**

- Green-field project requiring basic infrastructure and utilities upgrade
- Long gestation period between bid and financial close
- Out of date information package, including financial analysis
- Critical dependent on thermal power plants in the area, future prospects unclear

**OPPORTUNITIES**

- Management autonomy by private operator
- Incentive and financial support from State
- Potential competitive advantage

**THREATS**

- Neighbouring coal supply ports already, or about to be, operational
- Opposition from local residents and NGOs

**1.3.5 Information on the Alang Port****1.3.5.1 Inception and Status of the Project**

The Alang Port was conceived as a result of the Feasibility Study under the PODEG program undertaken by the Civil Engineering Division of the Dutch Ministry of Transport, Public Works and Water Management on behalf of the Royal Netherlands Embassy in New Delhi and GMB. The Feasibility Study<sup>13</sup>, which was completed in October 2003, aimed to improve the safety and the environment and to comply with IMO (International Maritime Organization)/MARPOL (Convention for the Prevention of Pollution of Ships) regulations. It concluded that the investment in an Oil Reception Facility cum Jetty is an economically feasible proposition and will benefit the ship breaking industry as a whole. We also interviewed the local ship-breakers who are the potential users/customers of this jetty during our site visit – the report is set out in the later section below.

Due to the small size of the project (estimated cost of approximately Rs. 103.92m), it falls below the project cost limit set by the Act and the Rules. Accordingly, the responsible agency remains with GMB. We understand, however, that the qualification, bidding and project award process will be no different than those set out in the BOOT Policy 1995 and the Act.

At the writing of this paper, the process of seeking private sector interests has not yet formally commenced although this project was marketed to investors during the Vibrant Gujarat Global Investors Summit in Ahmedabad in September 2003.

**1.3.5.2 Synopsis of the Ship-Breaking Industry in India**

Ship-breaking was recognized as a source of raw materials for the steel re-rollers in the 1980s and as a result, the import of ships for breaking was accelerated. Over the last 20 years, a definite shift in

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<sup>13</sup> Alang Oil Reception Oil Reception Facility cum Jetty, Final report, October 2003

the industry has been observed from Europe to Taiwan, South Asia and China; this shift had been primarily due to low cost structures in the developing nations. Before 1979, ship-breaking in India was limited to breaking of barges, small-sized ships and casualty ships and concentrated in Mumbai and Calcutta. As the volume and size of ships for breaking increased over the years, Alang village near the western coast of Gulf of Cambay was identified as a suitable site as India's prime ship-breaking yard due to its favourable natural parameters of high tidal range, firm seabed and gentle seaward slopes resulting in low capital investment requirement. Amongst various methods of ship-breaking, the beaching method is the one adopted by the industry in India despite environmental issues well recognized by the international community whereas in China and in European countries, dry docking method is used but requires much higher capital investment than the former. Presently, Alang and Mumbai are the only two relatively substantial breaking yards in India with Alang accounting for 90% of the business breaking around 300 ships of 2.4m lwt a year. We are informed that Mumbai is encountering severe operational problems and is now essentially non-functional.

The International Convention for the Prevention of Pollution of Ships (MARPOL) is part of the worldwide maritime legislation agreed under the International Maritime Organization (IMO) to which India is a member. MARPOL legislates against marine pollution by controlling or prohibiting discharges of oil, noxious liquid substance, sewage and other discharges from ships.

GMB and the Mumbai Port Trust are the respective regulatory authorities of the ship-breaking yards in Alang and Mumbai. The GMB has in the recent years played a very active role regulating the activities of the ship breaking industry in Alang. It has been instrumental in making the industry highly viable economically as well as in terms of providing vast employment opportunities. The Alang ship-breaking yard is now one of the largest in the world competing with Pakistan, Bangladesh and China.

The industry has been facing a major depression since 1999 because of the global economic slowdown, which has affected the demand for recycled products. From around 3m lwt broken in 1999, volume has fallen to around 2.4m lwt in 2002. Prices offered by ship breakers to acquire ships from owners for breaking has also risen substantially due to the competitiveness of the industry whereas the price of ship scrap plates has also declined.

Stringent propaganda against the ship-breaking industry by environmental activists, the proposal of the international community of ship-breakers to enforce a code of conduct, rating of both buyers and sellers of ships and the preparation of standard contract form will transform the structure and functioning of this industry. India's ship-breaking industry will have to adjust to the new developments and face new challenges and may enforce the consolidation of the ship-breaking fraternity to larger units to ensure long-term survival.

### **1.3.5.3 Background Information on the Alang Port**

#### **Overview**

Since its establishment in 1983, the Alang ship-breaking yard is now one of the largest in the world. GMB is both the regulatory authority and the landlord of the facility divided into around 182 plots, which have been leased to private ship-breakers on a 10-year lease basis for undertaking ship-breaking operations to various parties.

Of around 150,000 workers in the industry around the world, Alang accounts for approximately 25,000 – 30,000. The recovered scrap derived from Alang is sold to hundreds of small-sized steel re-rolling mills in Gujarat and in other states transported by lorries.

The yard is facing a number of operational problems relating to areas of safety, hazardous waste, pollution control etc. due to unsafe practices by the ship-breakers. Currently, at Alang, the fuel oil from ships is pumped out in a laborious and cumbersome manner using loosely connected pumps and breakable plastic hoses into open overflow tanks, road tankers and barrels. This leads to inevitable spills on board, in the sea and on the beach. Another apparent disadvantage of current practice is the

inability to separate high-grade fuels and low-grade oily waste, thus spoiling potential for additional revenue. The adverse reputation is made even worse by the recently revealed practice of impatient plot holders who are not waiting for permission for flame cutting inside a newly beached ship with plenty of oil still inside. Three fatal accidents happened between February and May this year resulting in a high number of casualties including deaths. There is now heavy international pressure on the Gujarat Government and GMB to improve the operating conditions and to discontinue the present extremely dangerous practices on board dead ships, where inadequate ventilation, lighting, communication and fire-fighting facilities could create fire and explosion accidents during oil removal operations.

The project for the setting up of an Oil Reception Facility (ORF) envisages construction of a jetty at Sosiya beach, which will serve as a reception facility for liquid wastes. These wastes will be stored in onshore storage tanks and treated prior to disposal. The main commodity received and treated at the ORF will be pump-able oil liquid. As these are readily marketable in Gujarat, revenue could be accrued to the ORF. The objective is to handle oily liquids faster, safer and cleaner at an industrial scale by trained professionals. The establishment of a shore reception facility is an international obligation through India's membership of IMO.

The proposed jetty also serves as mooring for service and emergency vessels where they are all presently moored in Bhavnagar, 30 nautical miles and 3.5 hours away.

The Feasibility Study undertaken for GMB under PODEG was completed in October 2003 and has identified this facility to be commercially viable.

GMB is proposing to select a private developer under a BOOT concession to implement this project. The concession period would be 30 years and the developer is expected to perform the following functions.

- Design, Build, Operate and Finance the facility.
- Collect and transport oil/sludge from the ships to the ORF.
- Storage of oil/sludge on shore based tank farms, its treatment and disposal.
- Levy service charges based on discussions with GMB and ship-breakers.
- Compliance with pollution control guidelines and rules.

The construction period of the project is expected to be 27 months with total estimated project cost of Rs. 103.92 comprising Rs. 58.03 for the ORF and Rs. 45.89 for the Jetty.

### **Location**

The ORF will be located at Sosiya beach in Alang around 40km southwest of Bhavnagar. The land for the proposed facility has been identified and is located at plot V-10, near the landing point of a jetty at the Sosiya beach.

### **Basic Utilities and Infrastructure**

The location is adequately served by road and the availability of all basic utilities, as it is an existing ship-breaking yard.

### **Further Observations based on the Site Visit**

The following were notes taken during a site visit to Alang by our Environmental Consultant in November 2003.

The existing Alang Port, in the Bhavnagar District of Gujarat State, India, is evidently the world's largest ship-breaking facility. Thanks to fairly deep water quite near shore, and with spring tides

ordinarily approaching 12 m, approximately 300-350 ships per year are driven up onto the beach there for the cutting up and recycling of steel and other materials. Types of vessels broken at Alang include tankers, bulk carriers, and passenger ships of all sizes. The largest vessel ever to be disposed of at Alang is a 70,000 DWT ("deadweight tonnes") VLCC ("very large crude carrier"), which just arrived there in October 2003. It is expected that its complete demolition will take about six months. Smaller craft are broken up in a proportionately shorter time

The Alang facility occupies nearly 10 km of beachfront, divided into approximately 190 individual parcels, of which about 180 are presently under lease to individual operators. The lessor is the Gujarat Maritime Board (GMB); the period of a lease is normally ten years; and since improvements to the sites are completely at the expense of the lessees, ordinarily the same operator will opt to renew the lease at the time of its expiration. The Gujarat Shipbreakers Association (GSBA), in Bhavnagar city represents the collective interests of the individual companies, but heretofore—in the informal view of the Alang Port Captain—a general unsophisticated and abject rivalry between its many, many members have weakened the GSBA's potential effectiveness.

One result is that the extraordinarily poor PR situation—both nationally and internationally—of the ship-breaking operations at Alang, and it has not very been effectively countered: by actively rectifying the significant environmental and social problems resulting from operations there, where the critique may be broadly accurate. In the absence of stringent and enforced regulation of the ship-breaking industry by the State or by the Central Government, there is little incentive to upgrade facilities and operations under the present, comparatively short-term investment horizon.

(We did not inquire regarding statistics of worker mortality and morbidity, and on compensation mechanisms or survivor benefits—if any—for on-the-job deaths and injuries and/or long-term health problems, such as asbestosis, toxicological problems and cancers. There can be no question that this is a most dangerous occupation, an extraordinarily hazardous working environment, and a deeply suboptimal level of "corporate social responsibility".)

Nevertheless, the GSBA hasn't successfully countered the bad PR even where deficiencies may well be overstated, and where progress towards improved environmental management and worker safety is both considerable and under-publicized. For example the GMB is presently providing freshwater for drinking and bathing at cisterns every 500m along the entire 10km leased beachfront, and more developed bathhouses and toilets are being installed at 2.5km intervals. And certain unrecyclables, such as fibreglass insulation, and now being systematically trucked to offsite solid waste dumps; as opposed to being wantonly dumped on the beach at unoccupied lease sites, or on "wastelands" shoreward of the main road.

(Some misleading or overstated anti-Alang propaganda originates—according to the GSBA—from competing countries with even lower standards, such as Pakistan and Bangladesh.)

There are unauthorized bustees throughout the older, more northerly 5km reach of Alang, although it is the exception rather than the rule for the migrant labour force to be accompanied by their families. The newer southern reach of leased plots is kept free of unofficial worker housing shoreward of the main road, but in some places the individual lessees have either provided or tolerated the creation of substandard worker housing within their allocated parcels. There does not appear to exist high- or even reasonable-quality worker quarters anywhere at Alang, except the GMB's residential colony for its own staff.

Approximately 35,000 jobs are directly or indirectly yielded by the Alang ship-breakers, of which about half are on the site itself. This suggests that perhaps 150,000 people are economically dependent on operations there. Yard employees are primarily migrant unskilled labourers from poorer states in the east of India, particularly Orissa and Bihar. They are typically paid about Rs. 100/day (US \$2.20), which is roughly equal to India's national per capita income. While no sign of worker safety equipment (helmets, face mask, safety glasses, etc.) is seen at some (maybe most) of the

facilities we observed, at other facilities safety equipment was evidently provided and its use made mandatory.

A small number of lessees have upgraded their operations to meet the extremely minimal worker health and safety requirements and environmental management criteria under ISO 9000x, and an even smaller number has committed to, although not yet necessarily achieved, meeting the significantly more stringent requirements of ISO 14000x. Even the latter standard, however, is far beneath the calibre of operations required in most developed countries, where the accepted standard is MARPOL. Under MARPOL, for example, a ship-breaker must function completely “in the dry”, meaning that the demolition area has to be completely isolated from adjacent waterways by means of floating or fixed dry-docks. This would be a very expensive proposition, although probably not technically impossible at Alang.

Compared, say, to ship-breaking operations at Chittagong, Bangladesh, which a decade ago was still completely un-mechanized —i.e., plates were cut off the beached vessels entirely by hammer and chisel, and dragged onto the beach by human powered winches— Alang is largely mechanized with steel cutting universally done by oxy-LPG torches and segments moved by an army of mobile shore based cranes (and the ship’s own cranes being used wherever feasible). Nevertheless, the loading of cut plates onto trucks remains a completely manual and dangerous process at Alang, with no sign of magnetic lifting devices.

One thing that should be noted is that at Alang and similar facilities in the developing countries, the ship-breaker purchases the vessel “as is” (with the nominal requirement that some minimal cleaning has been accomplished), and that the former ship-owner bears no responsibility of liability thereafter. Whatever profits flow from recycling materials and from resale of machinery and furnishings goes to the ship-breaker alone. Likewise, whatever expenses may arise from proper disposal of toxics, liquid and solid wastes, and various un-recyclables are also the ship-breakers’ responsibility entirely.

In recent years, the US Navy and the US Maritime Administration (USMA, Department of Commerce) had expressed its intention to dispose of aging and surplus vessels overseas at places such as Alang. This precipitated a firestorm of political opposition from environmentalists, corporate social responsibility and worker health and safety activists inside and outside of government, and the USN and the USMA were forced to withdraw all such plans. At present, there are hundreds, perhaps thousands, of such vessels, many of them lying since the end of WWII in the “mothball fleets” occupying the larger estuaries of the USA. Some of these vessels were used for grain storage — a function they no longer serve— and given their complete obsolescence, their advanced state of deterioration and the emergence of strategic airlift capacity in case of international emergencies, maintaining these mothball fleets cannot be justified in any way. No doubt some of these ships may have certain levels of contamination beyond the “usual” construction and operations practices of their era —i.e., widespread use of asbestos, presence of lead and other heavy metals in fixtures, paints and plumbing, polychlorinated biphenyl (PCB) coolants in electrical devices— but it is likely an overstatement or a red herring to describe these ships universally as “toxic time bombs”.

Given stringent and generally enforced codes in the West for worker health and safety, environmental protection and waste management, there remains very little ship-breaking activity, and capacity, in N. America and Europe. They continue functioning only because of political constraints against Western governments disposing of their ships in grossly substandard yards in the developing world.

It is our understanding that in contrast to the complete opt-out of the ship-owner, once a vessel is transferred to a domestic ship-breaker yard, a government agency in the West must pay very dearly indeed to dispose of even routine contaminants (such as asbestos or residual fuels and paints), not uncommonly in authorized hazardous waste disposal facilities. Such costs could exceed several thousand dollars per cubic meter (or per tonne), and are very unlikely to be amortizable by the revenues yielded from recycling the relatively benevolent remaining components such as steel and other metals. Thus, it is not far-fetched to imagine that a single one of these ships could engender

completely prohibitive costs to the government agency. Disposing of a significant number of defunct ships in domestic ship-breaking/recycling facilities is probably altogether unfeasible.

At the time of this writing (November 2003), four ex-USMA vessels from the James River (Virginia, USA) mothball fleet are undertow to the UK, where they were to have been broken and recycled by yards on the Teeside, yielding several hundred jobs in an otherwise severely depressed region of NE England. The terms of the contract with the Teeside ship-breakers have not been publicized, but are presumably more attractive to the USMA than the domestic disposal alternative.

(The James River, incidentally, is one of the most severely polluted waterways in the USA, as a result of the astonishingly irresponsible disposal through the 1960s and 1970s of long half-life Kepone pesticide residues and precursors.)

In an unforeseen turn of events, the license to the Teeside yard to receive the American ships was suddenly withdrawn by the British government, ostensibly because the requisite waste disposal facilities were still incomplete, even as the first four ships already passed the coast of Portugal. Greenpeace and Friends of the Earth were out in force wearing death mask costumes, and the Teeside local government had evidently decided that the political liabilities of supporting the operation outweighed the job creation element. The tow operator has heretofore denied all requests to reverse direction, even by the EU environment minister. The BBC has been quick to use inflammatory "toxic time bomb" terminology, although it is unclear whether the four ships in question represent anything other than a routine level of environmental risk.

Returning to Alang, at first glance, the environmental damage to the 10 km beachfront has already been done, and given the pressures now on the industry there is unlikely to get appreciably worse. We did no scientific survey, but it would be a good guess that the background levels of heavy metals, oil and grease in coastal sediments and overlying waters would be far, far above any acceptable criteria in the West. And the area as a whole is characterized by various dumped junk-piles certainly including fibreglass and possibly including asbestos as well. Extensive environmental remediation would be required to make the area even marginally safe for fishing and wildlife habitat, and to improve aesthetics in the tidal ponds, creeks and salt flats which occupy a considerable part of the roadway shore side.

On discussion with local officials in Alang, it may be worth considering the concept that the ADB, in cooperation with the relevant agencies (including perhaps the USN and USMA) and in partnership with the GSBA, seriously investigate the feasibility of massive investment in upgrading one or more sites at Alang to meet MARPOL criteria, with the object of specifically attracting potential Western government clients that cannot presently utilize Alang. Indications are that one or more GSBA members would be willing to pursue such a strategy, predicated on the availability of capital at a reasonable rate, and high level of confidence that "if it were built, they would come".

Regarding the proposed 1 km Alang jetty already under consideration by the GMB, there seems little attraction there for the private sector (from the point of view of the privately owned ship-breakers): original plans to use the jetty for loading recycled steel for shipment by sea have been abandoned, and the jetty project has been recast primarily as an environmental management facility to offload residual fuel and oil, which are presently not formally declared by the ship-breakers, as that would entail paying what are perceived as onerous import duties. (According to GMB officials, the volumes involved are comparatively modest, usually not exceeding 3,500 litres per vessel.) The other rationale for the jetty is safety, in that there is no way at present to launch emergency craft from the Alang side of the Gulf of Khambatt.

### **1.3.6 Preliminary Economic Assessment of the Project**

The Feasibility Report arrived at an Economic Internal Rate of Return (EIRR) ranging from 41% to 106% depending on the model of the jetty on an estimated total project cost of Rs. 103.92m. Despite the obvious improvement of safety standards that could be derived from the availability of this



facility, there is still significant scepticism from the local ship-breakers from an economic standpoint, particularly when the ship-breakers, to maximise their profits at the expense of safety, are tolerated on somewhat dubious business practices without stringent penalties. The GMB is also in an unenviable position of conflict being the regulatory authority as well as the landlord of the yard – we believe however a review of the regulation and possible restructuring of the GMB is in progress.

With regard to the ORF, support from the ship-breakers is critical as they are the only customers for the facility operator. The business model for the ORF could be attributable to two main revenue streams; firstly, revenue generated from selling the treated oil to the market and secondly, the service fee charged to the ship-breakers.

The potential for the first may be limited in that historically, the entire business cycle, including the sale of treated oil, has been handled by the ship-breakers who have maintained that relationship with the buyer. Attempting to undercut the pricing is impractical since the ship-breakers are also the supplier of the oil in untreated form. Alternatively, if it can be proven that a significant amount of additional oil and marketable products could be retrieved by the ORF, the co-operation from the ship-breakers should be possible with additional contribution of revenue, which could be shared with the ORF operator.

Secondly, the charging of a service fee for the cleaning of ships would require analysis of cost benefit by the ship-breakers themselves. Under the existing regulatory regime, the ship-breakers are allowed to beach the ships first and then send the labourers to clean the ships before breaking on the same site. Costs involved include rent on the landing during the time of cleaning, labour and materials. New rules governing the cleaning of ships, tightening of regulatory measures and demonstration of cost savings for the ship-breakers may be the only way to justify the imposition of the charge.

With regard to the Jetty, we are informed that, in the past, a project consisting only of the jetty was marketed by GMB for PSP without success. Even with the potential for the transport of scrap by sea to an expanded market at lower cost did not persuade the ship-breakers to participate in the project. For it to be considered as a candidate for PSP, it has to be part and parcel of the ORF where there is potentially identifiable revenue streams to support the capital and operating costs of the jetty. The alternative is for the GMB to consider building the jetty as supporting infrastructure for the ORF and provides the facility to the ORF operator at cost.

A SWOT Analysis on the Alang Port is set out below.

## **STRENGTHS**

- Proven PSP experience and track record for State
- Up to date Feasibility Study and information package
- Dedicated facility for ship-breaking industry
- Low project cost
- Apparent attractive financial returns
- Set guidelines for bid process
- Compliance with IMO/MARPOL obligations

## **WEAKNESSES**

- Green-field project requiring 27 months lead time
- Dependency on support from local ship-breaking industry which is fragmented and experiencing intense regional competition
- Upkeep requirement to maintain international pollution and safety standards

- Conflict between GMB as the regulatory authority and landlord
- Not sufficiently stringent regulation and active enforcement to discourage questionable and unsafe practices
- Sub-standard ship-breaking methods distracting potential international business

## **OPPORTUNITIES**

- Management autonomy by private operator
- Incentive and financial support from State
- Potential comparative cost advantage through economy of scale
- Improvement of Alang's reputation in the industry

## **THREATS**

- Current, albeit unsafe, cleansing methods practised by ship-breakers
- Social economic impact on local industry which is employing around 30,000 people
- May require GMB to impose and enforce new regulatory policies and/or lease conditions on plot holders to comply with MARPOL standards which may cause resentment
- Potential delay caused by pending restructuring of Gujarat port authorities including GMB under PODEG
- Major capital investment required to upgrade current ship-breaking practices to comply with IMO obligations and adequately compete with better equipped shipyards

## **1.4 Conclusion**

Based on the available information provided, we have to conclude that it would be extremely difficult to solicit any serious interests from private sector for either the Simar or Alang project at this time given the various issues we have identified during the course of this review. Although we have set out only the issues specific to the projects in this paper, we believe that the problems may be more fundamental relating to the specific role of the nodal agency and the project selection process. For both projects in question, it appears that these were permitted to be presented in public during the Vibrant Gujarat Global Investors Summit in September without sufficient due diligence to ensure that the same issues are identified and the projects withdrawn until they are appropriately dealt with. Accordingly, we have set out the lessons learnt from this exercise in the first section of this paper along with our recommendations.

# **The Road Sector, Madhya Pradesh**

## **Case Study**

## Table of Contents

<b>1</b>	<b>The Road Sector, Madhya Pradesh .....</b>	<b>1</b>
<b>1.1</b>	<b>Introduction and Summary .....</b>	<b>1</b>
<b>1.2</b>	<b>Summary, Conclusion and Recommendation.....</b>	<b>1</b>
<b>1.3</b>	<b>Legislative Framework, Policies, Investment Process and Statutory Clearance Requirements relating to Road Sector Investment by Private Sector .....</b>	<b>3</b>
1.3.1	Overview of Legislative Framework .....	3
1.3.2	Overview of Road Policy and Private Sector Participation Guidelines.....	3
1.3.3	Bond-BOT Road Scheme .....	4
<b>1.4</b>	<b>Institutional Approval Process under the Bond-BOT Road Scheme .....</b>	<b>6</b>
<b>1.5</b>	<b>Third Party Feedback on ISBKE Project .....</b>	<b>10</b>
1.5.1	Inception and status of the Project .....	10
1.5.2	Further Observations based on the Site Visit.....	13
1.5.3	Financial Issues relating to the Project .....	14
<b>1.6</b>	<b>Conclusion .....</b>	<b>15</b>

# 1 The Road Sector, Madhya Pradesh

## 1.1 Introduction and Summary

The Road sector was selected by the State of Madhya Pradesh (MP) as the case study under the Technical Assistance Program of the Enhancing Private Sector Participation in Infrastructure Development at State level Project of the ADB (ADB TA No. 3791-IND). The project identified for this study is the Indore-Sanawad-Khandawn-Burhanpur-Edelabad Highway (the ISKBE Project or the Project). This project is one of the 15 road projects offered by MP for private sector participation the scheme of which has been termed "Bond-BOT Road Scheme" (the Scheme).

A visit was made to the site and interviews held with local as well as state officials from the responsible agencies in consideration of the environmental aspect of the ISKBE Project.

The Government of Madhya Pradesh (GoMP) has authorised and transferred to Madhya Pradesh Rajya Setu Nirman Nigam Ltd. (MPRSNN) for the reconstruction, strengthening, widening and rehabilitation of 203 kms of an important north-south corridor in the state connecting Rajasthan, Maharashtra and Andhra Pradesh. The Project road section taken up for improvement starts at Indore, the commercial city of MP and ends at the MP-Maharashtra border, near Edelabad.

The project cost estimate for the Project is Rs. 160 Crores.

The Project has since been successfully allocated to VIVA Highways Pvt. Ltd, Nasik as the BOT operator with the concession agreement signed on 22 September 2001. The first section of 72 Kms has been completed with toll started from 25 November 2002. Investment totalling around Rs. 75 Crores have been committed by the developer with a term loan of Rs. 65 Crores sanctioned by IDFC of which the initial portion has been drawn down. A subsidy of Rs. 45 Crores was also granted by MPRSNN as part of the Bond-BOT Road Scheme to encourage private sector participation (see below).

As all of the 15 road projects under the Scheme have been offered to private sector participation with varying degrees of success, we have, in this Case Study, expanded our review to include issues identified based on feedback from private investors/developers and project financiers of these projects.

## 1.2 Summary, Conclusion and Recommendation

The following are our observations during the course of preparing this Case Study. With regard to a more formal review of the legislative framework, policy and the enabling environment including the project selection and investor evaluation process and recommendation thereof, these are presented in detail in separate sections of the report under this TA.

The road sector is the only infrastructure sector that has been formally offered for private sector participation under a BOT scheme within Madhya Pradesh. At the State level, MP does not have either a Road Act or an independent Authority Act although policies regarding private sector investments in roads have been developed in the Road Policy more than 10 years ago. The MP Highways Bill 2001 has been approved by the State Cabinet and is waiting for concurrence by the Central Government. At present, the rules regarding the Scheme is not set out in any formal policy or act but in a MOU dated 1 June, 2001 between MPIIFB, MPRSNN and PWD.

13 out of the 15 road projects have been successfully allocated to private sector developers on a BOT basis and 12 of these have been reported to have also achieved financial closing. The remaining 2 projects were unsuccessful in attracting bidders and have since been reverted back to the Public

Works Department (PWD) to be contracted out to third parties on operational and maintenance contracts.

Whereas the process for competitive bidding is clearly set out and administered efficiently by MPRSNN, the appointed nodal agency, with the entire period from the date of advertisement to the signing of the concession agreement lasting no more than 45 days, financial closing appears to take far longer and ranged from 3 months to as long as 15 months. We are informed that once the developer is selected based on the appropriate technical and financial bids, the concession agreement is then signed and the prerogative is thereafter left to the developer to seek sufficient funding (other than the grant from MPRSNN) to complete the project. 5 of these projects, as a result, had the initial concession agreement terminated due to the developers' inability to achieve financial closure and were reassigned. This highlights perhaps as part of the lessons learnt in this exercise a potential weakness in the selection of financially capable developers and, in spite of the quick turnaround time on the bid process, the availability of sufficiently detailed project information for the financier to provide project funding.

We noted that with the exception of the Jabalpur-Narsinghpur-Piparia road where financing was provided by CTNL, an ILFS affiliate, and 4 other projects financed by banks associated with the Malaysian concessionaire, the remaining projects were primarily financed by IDFC and SBI. The PSIF facility was not utilised for any of these projects under the Scheme.

The projects appear to have experienced difficulties in achieving financial closure partly due to the procedure within the government to provide the necessary documentation and partly due to the slow implementation of decisions exacerbated by the change in personnel during the project period.

We understand also that to keep the tender exercise to around 45 days, the bidder would often rely on the pre-feasibility study undertaken and data provided by consultants appointed by the government. However, the financiers require a full independent feasibility study before financial closure is possible. The reconciliation of the findings and allocation of risks under the terms of the signed concession agreement often caused significant difficulties in achieving funding within the time allowed.

Other issues or difficulties mentioned by concessionaires include the following:

- Local community often requests additional works falling outside the scope of the agreed contract and not budgeted for including the building of bypasses etc. whereas the procedure for changing the scope of work is not well defined and often causes delays. Procedures for changing the scope of work need to be easier and shorter if changes are found necessary after the concession agreement is signed.
- The concessionaire faces situation of significant unforeseen costs as no maintenance is done on the road from the time the road is called for tender and the grant of the concession. In a typical situation, 30% of a road would need attention when tenders are called but by the time the concessionaire takes over, the proportion has risen to 70%.
- Requests for contracted payments are often held up within the government system and the procedures not being well established.

In the final analysis, we see the potential for the State to replicate what has been achieved successfully in the road sector to other infrastructure sectors that require private sector funding. However those issues set out above need to be properly addressed and could be dealt with by the formulation of an infrastructure development act and rules similar to those already exist in other States such as Andhra Pradesh and Gujarat including the set up of a cross sector nodal agency to act as a conduit between the State Government and the private sector. In addition, we would also recommend that criteria for the selection of concessionaires during the bidding process should include the commitment to project funding from a financial institution if required. This would necessitate the involvement of the financial institution at an early stage of the bid and the negotiation of the terms of the concession agreement. This may lengthen the evaluation process but at least the probability of achieving financial closing within a reasonable timeframe would be greatly enhanced.

## 1.3 Legislative Framework, Policies, Investment Process and Statutory Clearance Requirements relating to Road Sector Investment by Private Sector

### 1.3.1 Overview of Legislative Framework<sup>1</sup>

The Road sector has seen significant private sector participation in recent years, especially at the national level, as a means of meeting major needs and severe budgetary restraints. The National Highway Act 1956 was amended in 1995 by new Section 8-A enabling the Government of India to enter into agreements with private parties. Model concession agreements have been developed for large projects of over Rs. 100 Crores and for other projects of up to Rs. 100 Crores. A model annuity based agreement has also been finalised.

At the State level, MP does not have either a Road Act or an independent Authority Act although policies regarding private sector investment in roads have been developed (see below). However the MP Highway Bill 2001 has since been approved by the State Cabinet and is awaiting the Central Government for concurrence. That Bill was prepared based on guidelines for a model Highway Act issued by the GoI. Its salient features include the following.

- Declaration of a State Highway Authority and its powers.
- Fixing of highway boundaries, building lines and control lines, and the imposition of certain restrictions and regulations for the use of land within those lines.
- Regulation or diversion of right of access to a highway.
- Compulsory acquisition of land and compensation thereof.
- Provisions for prevention and removal of unauthorised occupations and encroachments on a highway.
- Provisions to facilitate private partnerships in highway projects.
- Levying of betterment charges based on the increase of value of land due to the construction of highway.
- Provisions to secure the safety of traffic and the prevention of damage to highways including prohibition of the use of heavy vehicles on certain highways.

With regard to the levying of tolls, the Indian Tolls (MP) Act 1932 has been amended to specifically permit the levying of tolls for new construction of roads and bridges as well as for their improvements.

### 1.3.2 Overview of Road Policy and Private Sector Participation Guidelines

MP is one of the first states to develop a Road Policy<sup>2</sup> in India 10 years ago that includes private investment in the road network. For that purpose, GoMP has initiated the following schemes.

- Build-Operate-Transfer (BOT)
- Maintenance-Operate-Transfer (MOT)
- Public-Private Partnership (PPP)

Viable projects are offered to the private sector under a BOT scheme, especially projects for the widening of high-density corridors, the strengthening and maintenance of economically viable section of highways, and the construction or reconstruction of bridges.

With the publication of the Road Policy and the creation of a Rs. 500 Crores grant to help attract private investment, a concerted effort is being undertaken to ensure that road improvements in high priority corridors are implemented before 2005.

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<sup>1</sup> also refer to Working Paper 1 Ch 2

<sup>2</sup> MP Road Policy xxxx

MP has a total road network of more than 67,000 kms out of which 62,000 kms are classified as state roads and maintained by the Public Works Department (PWD). The implementation of the Road Policy is monitored by PWD through an Implementation Cell within which the Chief Secretary heads a committee that regularly reviews the progress. It came to our notice during this case study that a separate ADB TA team (TA 4013-IND) is currently working with the PWD to provide assistance in institutional strengthening for the State road sector.

### 1.3.3 Bond-BOT Road Scheme

As a consequence of considerable increase in traffic and commercial activities in the last decade, PWD has identified 15 of the most important road corridors (including the ISKBE Project) within the State for development, strengthening and upgrading totalling 2,155 kms. Since 2000, MPRSNN has been designated the nodal agency to implement this task.

The development of the road projects would be given to private investors on a BOT basis over an agreed concession period of around 15 years during which toll revenue collected would accrue to the investor. To make the projects sufficiently attractive, MPRSNN has been given the right to provide financing in the form of grants on a competitive bidding basis. The maximum amount of financing provided for each project is informally put at around 66% of project costs. The source of the funding would be through another State agency, the Madhya Pradesh Infrastructure Investment Fund Board (MPIIFB). MPIIFB raises its funds from financial institutions such as HUDCO through loans and the repayment of these loans is charged against the State budget allocation to PWD.

Up to now, 13 road projects of 1,863 kms valued at Rs. 1,000 Crores have been awarded to private developers in respect of which the grant contribution is Rs. 460 Crores. We are told, however, a number of these projects took a long time (up to 15 months) to achieve financial closure. We were also informed that institutions other than ILFS (with one exception that was financed by CTNL, an ILFS affiliate) financed the projects. None of the financed projects availed of the PSIF II facility.

The remaining 2 of the 15 projects were bid out several times without success and have been transferred back to PWD for development on a management contract basis.

A summary table of the progress report of these 15 road projects made available to us in November 2003 is set out below.

Name of the Road	Length (kms)	Cost <sup>3</sup> (Rs. Crores)	BOT Operator	Grant (Rs. Crores)	Date of Agmt	Status
ISKBE	203	123	VIVA Highways Pvt Ltd, Nasik	45.00 (36.59%)	22.09.01	72 Kms complete. Financing from IDFC.
Ujjain-Agar-Susner-Jhalawad	134	65.19	Agroh Infrastructure Developers Pvt Ltd	22.3251 (34.25%)	16.11.01	In progress. Financing from IDFC of Rs. 37.63 Cr.
Hoshangabad-Harda Khandwa	185.6	81	M.S.K. Infrastructure and Toll Bridge (P) Ltd, Baroda	51.03 (63%)	20.05.02	In progress. Financing from SICOM, SBI and Bank of Baroda.
Rewa-Jaisinghungar-Shahdol-	246.8	110	Rewa Tollways (P) Ltd	53.5 (48.6%)	15.09.02	In progress.

<sup>3</sup> Construction costs only excluding consulting and development expenses which are typically 15-25% higher



Name of the Road	Length (kms)	Cost <sup>3</sup> (Rs. Crores)	BOT Operator	Grant (Rs. Crores)	Date of Agmt	Status
Amarkantak						
Satna-Maihar-Tala-Umaria	141.3	54.22	Rewa Tollways (P) Ltd	29.10 (53.67%)	15.09.02	In progress.
Sagar-Damoh-Jabalpur	176	89.7	Tiara Dhaya Maju Constructions Ltd	47.70 (53.17%)	11.04.03	Project rebid and allocated to new developer. Initial work started.
Jabalpur-Narsinghpur-Piparia	140	74.16	Tapi Prestressed Products Ltd, Jalgaon	45.81 (61.77%)	06.03.03	Project rebid and allocated to new developer. Initial work started.
Bina-Sironj-Guna	144	41	TDM-Percons Malaysia	23.80 (58%)	23.02.03	Work started.
Raisen Rahatgarh	100	57.72	MSK Infrastructure (P) Ltd	32.77 (56.7%)	07.05.03	Project rebid and allocated to new developer. Initial work started.
Seoni-Balaghat-Gondia	114	59.8	MBL, Kolkatta	34.80 (58.19%)	18.11.02	Initial work started.
Mandla-Kanha	59	35	Nila Buarat, Baroda	17.14995 (48.99%)	04.05.02	In progress. SICOM approached for financing.
Dewas-Ujjain-Badnagar-Badnawar	106	49.3	Sanghi Investments and Finance Ltd	24.27 (49.22%)	In negotiation	Project rebid and allocated to new developer.
Hoshangabad-Piparia-Pachmarhi	123	59.88	Chetak Enterprises	35.49 (59.26%)	In negotiation	Project rebid and allocated to new developer.
Jabalpur-Patan-Shahpura	50	25				No bid received. Transferred back to PWD.
Katni-Damoh	101	62.3				No bid received. Transferred back to PWD.
	2023.7	987.27		459.5		

As for whether the Bond-BOT Road Scheme will be extended to other State roads, the consensus appears to be the following.

- The current concessioning of roads under the Scheme is essentially at an end given that the state controlled corridors handed over to MPRSNN are the best in terms of traffic volume and financial viability.

- Project implementation is behind schedule and will be ongoing for some time since only 350 kms out of the 2,000 kms have been completed to date.
- Difficulties have been experienced in financial closures for the majority of the road projects despite the availability of the grant.
- The role of MPRSNN will have to be further clarified in the light of its contribution and duplicity of responsibility with PWD. Furthermore, a separate State Highway Authority is currently under consideration.

## 1.4 Institutional Approval Process under the Bond-BOT Road Scheme <sup>4</sup>

### 1. Division of Institutional Responsibility for Project Development

PWD would identify the Road Corridor based on a number of parameters including, but not restricted to, the traffic density, role of the corridor in facilitating economic development and tourism for, and its static importance to, the State.

Once selected, PWD would notify MPRSNN to carry out the pre-feasibility studies to determine if the Road Corridor could be taken up for development with private sector participation.

### 2. Pre-feasibility Study and Evaluation of Project for Development

On being notified by PWD, MPRSNN would appoint consultants to conduct the pre-feasibility study on the identified Road Corridor with funding provided by MPIIFB. On being notified of such appointments, MPIIFB would make available funds for these engagements within 15 days of request notification by MPRSNN. Within 3 months, MPRSNN would have to take a decision on whether or not to take up the development of the Road Corridor.

At every stage, expertise would be outsourced by the engagement of consultants. For each project, 3 consultants would be selected through advertisement issued on all India basis as follows:

- The technical consultant<sup>5</sup> for the preparation of the Detailed Project Reports (DPR).
- The financial consultant<sup>6</sup> for the preparation of bid and concession documents and the management of the tendering, evaluation and financial closure processes.
- The supervision and quality control consultant for the construction supervision and quality assurance during the construction and implementation process.

### 3. Transfer of Project Assets to MPRSNN

PWD would, within 45 days of receiving the request for transfer of Project Assets, vest in or entrust the Project Assets to MPRSNN for development with financial assistance from MPIIFB. Such transfer would be published in the Official Gazette.

### 4. Selection of the Private Developer

In general the private developer would be selected based on its financial and technical capabilities. The selection would be through a competitive bidding process.

According to guidelines published as Annexure-1 of the MOU<sup>7</sup> dated 1 June 2001, the process of selecting a private developer would go through 8 stages as follows:

<sup>4</sup> MOU dated 1 June 2001 between MPIIFB, MPRSNN and PWD

<sup>5</sup> Consultants who have been involved include LEA Associates South Asia Pvt Ltd., CES (I) Pvt Ltd., Mukesh & Associates, ICT Ltd. and Dalal Consultants & Engineering.

<sup>6</sup> Consultants who have been involved include L&T Capital Ltd., Artefact Projects, Capital Fortunes Ltd. And Nayan Parikh and Consultants.

<sup>7</sup> See 4 above.

#### 4.1 Preparation of Pre-qualification Document

MPRSNN and its financial consultant would

- Determine the minimum bidder qualification requirements (financial, management, technical and track record etc.) for the evaluation of the expressions of interest and the evaluation system to be used to rank the bids would have to be drawn up.
- Prepare the Request for Qualification documents (RFQ).
- Review queries on RFQ.
- Evaluation of Pre-qualified bids and short-listing bidders.
- Preparation of Request for Proposal documents (RFP).
- Negotiation and completion of the Concession Agreement.

The RFQ would broadly include the following information:

- A brief introduction of MPRSNN.
- Background and project description, status of project clearances.
- Proposed responsibilities and financial involvement of the private developer.
- Selection process, bid schedule, instructions relating to the bid documents etc.
- Qualification criteria.
- Special conditions, if any.
- Format for the bid response sheets for RFQ.
- Any other information.

#### 4.2 Solicitation of Interest and Review of Queries on RFQ

Advertisement is published in four newspapers, two in general circulation and two in circulation in the area in which the project is to be undertaken as well as any other means of mass communication. Interested parties would pay a nominal sum to acquire the RFQ.

Queries received from prospective bidders after the sale of RFQ documents would be reviewed and clarified.

#### 4.3 Evaluation of Pre-Qualification Bids

The RFQ applications would be evaluated as per the set criteria and the bidders would be short-listed accordingly.

#### 4.4 Preparation of Request for Proposal Document

The RFP documents would be prepared in two stages. The first stage would be a technical bid which is distributed to the pre-qualified bidders. Drafts of all contractual agreements and details of the nature of project assistance would also be provided. The second stage would involve the financial bid for the project, which would include the financing plan of the bidder and the estimated cost of the project.

#### 4.5 Review of Queries on RFP technical bid

Pre-qualified bidders would be given the opportunity to review the technical bid documents and raise any queries thereon.

#### 4.6 Preparation of revised RFP technical document, if required

Based on the response received on the RFP, a revised RFP technical document would be prepared, if necessary, and circulated among the pre-qualified bidders.

#### 4.7 Evaluation of RFP technical bids

MPRSNN would negotiate with each pre-qualified bidder to bring all the technical bids to a common platform. On that basis, the bidders would be invited to submit a financial bid on a common design platform.

#### 4.8 Evaluation of financial bids

The financial bids would be assessed based on a formulated ranking system pre-determined by MPRSNN and its financial consultant to facilitate comparative evaluation.

### 4. Timing and Implementation of the Selection Process

Notwithstanding the procedure set out above, we are informed that in practice, the process has been condensed and MPRSNN no longer issues RFQ and RFP notices and while bids are submitted within 40-45 days of the date of advertisement, the Board of MPRSNN awards the bid within a week of such submission. Thus the entire process is usually completed within two months of the date of advertisement. However if the terms proposed by any developer are not considered to be reasonable by MPRSNN, the project is re-advertised.

We are also informed that apart from the 15 road projects under the Bond-BOT Scheme, two other roads have been developed by private sector, one through a "pick and choose" method and the other by way of "open bidding".

### 5. Negotiation of Concession Agreement

It is provided in the MOU (see footnote 4) that MPRSNN would enter into the Concession Agreement with the Concessionaire within a period of 30 days of awarding the contract. Upon signing, the Concessionaire could commence construction immediately subject to obtaining the required permits. Financial closing is not a necessary condition to the concession although it is provided in the agreement that closure should be achieved within 120 days of signing subject to extension provided the project implementation schedule is not materially affected.

### 6. Unsolicited Proposals

There appears to be no set rules relating to unsolicited proposals from private developers. We are informed by MPRSNN that no unsolicited bids have been received to date.

### 7. Putting up the Proposal to MPIIFB for providing funded assistance

On having selected the Concessionaire, MPRSNN would prepare a proposal to MPIIFB for providing funding assistance to the project. The proposal would include details of the project, the proposed project structure, details of the Concessionaire, project cost and means of finance including the amount to be funded by MPIIFB.

MPIIFB would, based on the recommendation of its independent consultants, either accept or reject the proposal or seek a modification to the terms and conditions thereof. If the funding were sanctioned, MPIIFB would make provision to disburse the funds as per the approved timetable. The first tranche of funds is usually disbursed on the signing of the Concession Agreement and other contractual documents between MPRSNN and the Concessionaire. Subsequent tranches would be disbursed on receipt of the Utilization Certificate, duly certified by a Chartered Accountant from MPRSNN regarding utilization of at least 50% of the previously disbursed instalments, and independent verification by the supervision consultant appointed by MPIIFB to ensure compliance to the performance standard and technical requirements.

### 8. Toll Fee, Concession Fee, Project Monitoring Fee and Maintenance Fund

MPRSNN is, on behalf of GoMP, empowered to collect, and may engage or entrust other parties to collect, fees from the users of the road at such rates as may be laid down by the Indian Tolls (MP) Act 1932 as amended and notified in the Gazette.

Toll fee is specified in the Concession Agreement and in the case of the roads under the Bond-BOT Scheme; annual adjustment is a straight percentage increase of around 7% for the duration of the concession period.

A Concession Fee of Rs. 1 per annum is payable to MPRSNN for the duration of the concession period.

A Project Monitoring Fee amounting to 1% of the Toll Fee collected is payable to MPRSNN for the duration of the concession period.

A Maintenance Fund is set up to pay for road maintenance amounting Rs. 600,000 to be deducted from the Toll Fee at a rate of up to 3% per month for the duration of the concession period.

## 9. Transfer of Project Assets back to PWD

On expiry of the concession period, MPRSNN would inform the same to PWD. PWD may, by way of notification in the Gazette, take over the Project Assets that have been reverted back to MPRSNN. However, PWD, at its discretion, thereafter offer MPRSNN, or any party it deems appropriate, to operate and maintain the Project Assets under a new operating contract.

## Statutory Clearance Requirements for Road Sector Investment

The following permits highlighted in red are required to be applied for by the Concessionaire on or before financial closure whereas other permits relating to the construction, operation and maintenance of the state road project would be obtained by MPRSNN under the terms of the Concession Agreement.

### a) Government of India and its Agencies

- 1- Forest clearance as per rule 6 of Forest (Conservation) Rules – Ministry of Environment and Forests (MOEF)
- 2- Environmental clearance following the consideration of Environmental Impact Assessment (EIA) and Environment Management Plan (EMP) pursuant to section 3 (1) and (2) (iv) of the Environment (protection) Act, 1986 and Rule (3) of the Environment (protection) Rules, 1986 in order to control environmental pollution - MOEF
- 3- Rehabilitation and Resettlement of Displaced families – MOEF
- 4- Cutting trees and transporting – Department of Social Forestry/ MOEF
- 5- Cost Estimate – Roads and Building Department
- 6- Techno-economic clearances – Roads and building Department
- 7- Junction with National Highways – National Highway Authority of India (NHAI)
- 8- Pollution clearance (water and air) – Central Pollution Control Board (CPCB)
- 9- Approval for foreign Investment and foreign loans, if required – Ministry of Finance/ RBI
- 10- Approval for import of equipment and machinery for construction and operation, if required – Ministry of Finance/ RBI
- 11- Exemption on Excise duty on construction material, if required – Ministry of Finance/ RBI
- 12- Permission/clearance for setting up of wireless system, if required –Department of Telecommunication (DOT)
- 13- Clearance/permission for the use of the optical fibre cables of DOT, if required – DOT
- 14- Shifting of services and utilities – DOT
- 15- Company registration –Registrar of Company (RoC)
- 16- Crossing railways lines – Indian Railways
- 17- Checking by other tax collection agencies – Excise and Sales Tax Department

## b) Government of Madhya Pradesh and its Agencies

- 1- Pollution clearance (water and air) – Madhya Pradesh Pollution Control Board
- 2- Permission for installation of crusher - Madhya Pradesh Pollution Control Board
- 3- NOC consent of batching plant - Madhya Pradesh Pollution Control Board
- 4- Asphalt Plant clearance - Madhya Pradesh Pollution Control Board
- 5- Traffic Management and regulation during operation – Police Department, Madhya Pradesh
- 6- Police checkpoint removal - Police Department, Madhya Pradesh
- 7- Clearances for blasting, electrical connections, boilers, and all other aspects relating to all site works - Police Department, Madhya Pradesh
- 8- Shifting of services and utilities – Madhya Pradesh Electricity Board
- 9- Installation of DG - Madhya Pradesh Electricity Board
- 10- Permission for electrical connection, if power source is available - Madhya Pradesh Electricity Board
- 11- Shifting of services and utilities – Madhya Pradesh Water Supply and Sewerage Board
- 12- Shifting and services utilities – Municipal Corporations/ Urban Bodies
- 13- Permit for installation of crusher – Village Panchayat
- 14- Asphalt Plant clearance – Village Panchayat
- 15- Borrow Earth permission required - Village Panchayat
- 16- License for Batching Plant – Inspector of Factories
- 17- Clearances for crossing other waterways – Irrigation Department
- 18- If water has to be taken from river/reservoir – Irrigation Department
- 19- Borrow Earth Permission if land taken from irrigation land – Irrigation Department
- 20- Permits for extraction of boulder from quarry (ADM Mines)-Department of Mines and Minerals
- 21- Borrow Earth permission required for Government and private land – Department of Mines and Minerals
- 22- Clearance for cutting and transporting soil – Department of Mines and Minerals
- 23- Clearances for blasting, explosives electrical connections, boilers and all other aspects relating to all site works – Commissioner of Explosives
- 24- License for storing Diesel – Commissioner of Explosives
- 25- Clearance for cutting trees – Department of Horticulture
- 18- Clearances for employing labour-Primary employer – Labour Commissioner
- 19- Clearances for employing labour-Contractor – Labour Commissioner
- 20- Employment of migrant labour – Labour Commissioner
- 26- Labour camps – District of Health Officer

## 1.5 Third Party Feedback on ISBKE Project

### 1.5.1 Inception and status of the Project

The Project provides for the reconstruction, strengthening, widening and rehabilitation of 203 kms of an important north-south corridor in the State connecting Rajasthan, Maharashtra and Andhra Pradesh. The Project road section taken up for improvement starts at Indore, the commercial city of MP and ends at the MP-Maharashtra border, near Edelabad.

The Project's total cost, including development and other expenses, is estimated to be Rs.160 Crores.

The Project was one of the first to be taken as part of the Bond-BOT Road Scheme initiated by PWD to encourage private sector participation. It was successfully bid out in 2001 and was assigned to Viva Highways Pvt. Ltd, Nasik as the Concessionaire. The Concession Agreement was signed on 22 September 2001 for a period of 15 years.

The Concessionaire is responsible for survey, investigation, design, financing, procurement planning, monitoring, construction, operation and maintenance of the Project. The entire work of design &

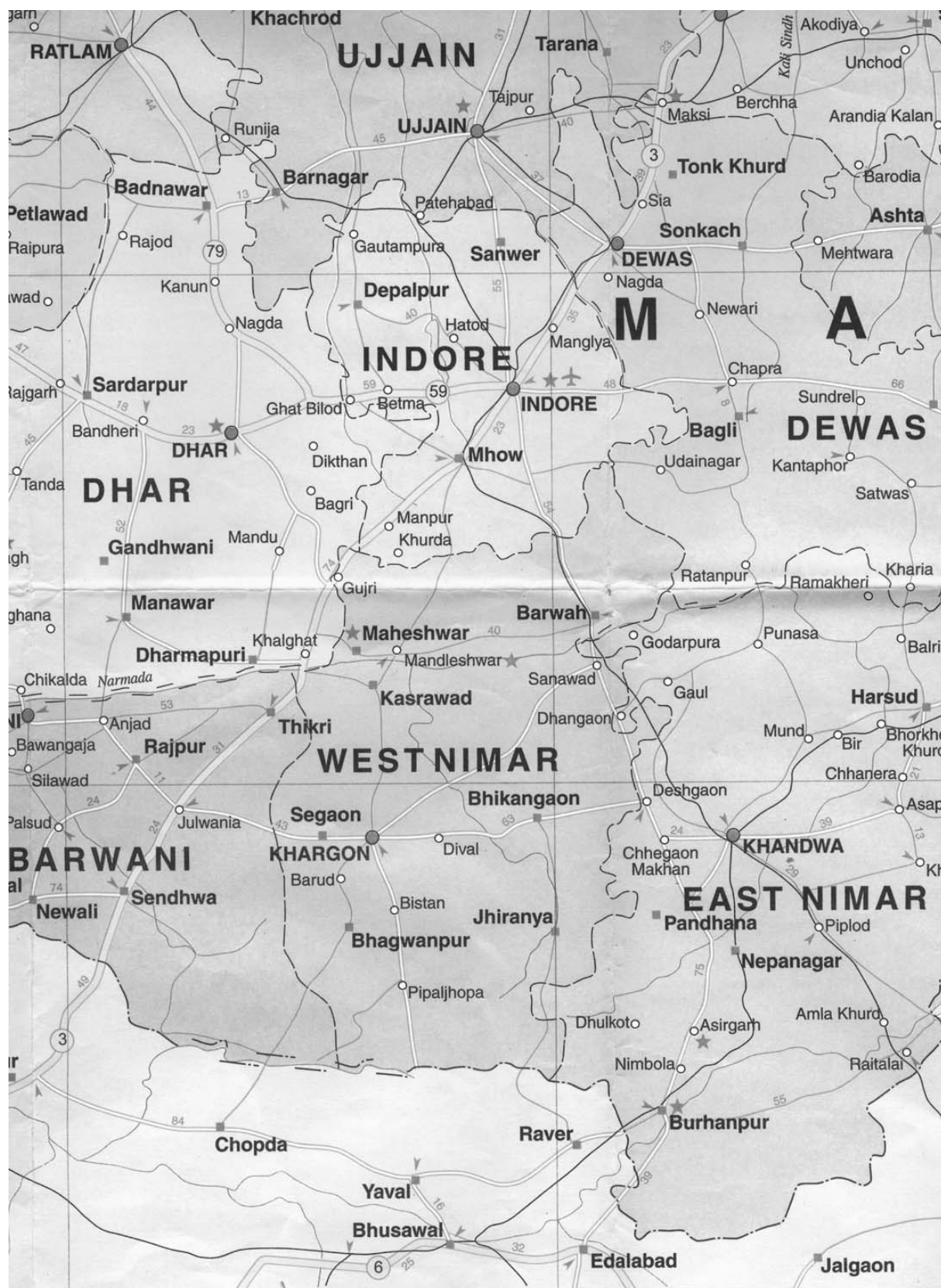
construction is to be executed in accordance with designs as approved by MPRSNN and with specifications (to the extent not contrary to those prescribed by MPRSNN) in terms of applicable & relevant IRC codes and specifications for Road & Bridge work issued by Ministry of Surface Transport (MOST), Govt. of India with cross reference to relevant Bureau of Indian Standards for materials or other aspects not covered by IRC.

The Concessionaire is entitled to collect fee or toll from the Users at rates notified by MPRSNN and to appropriate the proceeds as per provision of Concession Agreement. On termination of concession period, the Project Assets in good operational conditions shall be handed over to MPRSNN.

Prior to the selection of the developer for the Project, CES Consultants were engaged by MPRSNN as part of the approved procedure of project evaluation to carry out surveys & investigations and have prepared a detailed project report giving necessary design details for construction/ widening of the road carriageway, bridges, culverts and the cross drainage system as well as traffic surveys and forecast and that the same firm is engaged as the Maintenance and Supervision Consultant for the Project for the duration of the concession period. We also understand that Nayan Parek was engaged as the Financial Consultant for the management of the bid process.

We are informed that the first section of 72 kms has been completed with toll started from 25 November 2002. Investment totaling around Rs. 75 Crores has been committed by the Concessionaire with a term loan of Rs. 65 Crores sanctioned by IDFC of which the initial portion has been drawn down. A grant of Rs. 45 Crores was also been provided by MPRSNN for this Project.

A map showing the location of the road project is set out below.





## 1.5.2 Further Observations based on the Site Visit

The following were notes taken during a site visit by our Environmental Consultant in November 2003.

### 1. Overview

In the opinion of the Madhya Pradesh State Industrial Development Corporation (MPSIDC), far and away the most advanced Special Economic Zone (SEZ) project in India is 1,800 ha. facility at Indore, MP's second largest city, after the State Capital, Bhopal. While Indore lies at the junction of National Highways #3 (west to Ahmadabad, Gujarat) and #7 (SW to Mumbai, Maharashtra), the present MP state highways linking Bhopal, Indore, Khandwa and points south are altogether insufficient. Accordingly, the MPSIDC has prioritized the proposed ISKBE Tollway for private sector infrastructure development (PSID).

By and large, the right of way (RoW) for the proposed ISKBE Tollway—ca 300 km in length—would occupy the existing RoW. It is foreseen that during the presumed fifteen-year term of a prospective build-operate-transfer (BOT) contract with the investor consortium, the tollway would be limited to two lanes only: one in each direction. After the facility was transferred to the State of MP's ownership, it is planned that the project would eventually be doubled in width to four full lanes.

(It should be noted that the expected terminus of the project at Edalabad is actually about 12 km SW of the border with Maharashtra. It is unclear how the two states would resolve issues regarding finance and eventual ownership of this relatively short section.)

The width of the existing MP state highways RoW is about 31 m., while the width of the first stage (i.e., two lanes only) of the ISBKE project would be no more than 13 m. Thus, insofar as the greatest part of the new tollway would be superimposed directly over the footprint of the existing state highway, it is foreseen that there would be no substantive *direct* environmental impacts nor involuntary displacements of homes and businesses resulting from the proposed scheme, at least during the near- and middle-term.

(This view was corroborated by the outgoing director of the independent *Madhya Pradesh Land and Water Management Institute*, at Bhopal University.)

Prior to arriving in MP, we had opportunity to travel on a section of the existing Ahmadabad-Anand tollway, a recently-completed PSID project in Gujarat. Here too the new two-lane fast route was largely superimposed on the old state highway within the previous RoW. However in this case, a single service lane was also constructed in each direction, outboard of the tollway proper. The total width of new construction there may thus have occupied or even exceeded the previous RoW width: leading, presumably, to some involuntary displacements—although possibly limited to residential or commercial “encroachments”. Countervailing those possible social impacts was the decision to allow free access by local traffic to the service lanes, which are ungated for the full length of the tollway.

By Indian standards, the tolls collected are quite high indeed: about twice the average user-fee per km of tollways in N. America, which are usually built and operated by the public sector but where construction costs are significantly underwritten by fuel taxes (e.g., through the Federal Highway Trust Fund in the USA).

The predictable result is that a considerable portion of long distance traffic on the Ahmadabad-Anand route endeavors to stay on the service road and thus avoid the tollbooths. A system of uniformed monitors and diversion structures has been put in place to discourage or reverse this serious haemorrhaging of the expected income stream, but so far with only mixed success. From a potential investor's perspective a combined free- and toll lane highway design may well be a recipe for financial disaster. Even if the social impacts on low- income local users are minimized thereby.

In light of the experience in neighbouring Gujarat, the MPRSNN has proposed an alternative system where there are no free service lanes, but that on an expected monthly basis, local vehicles would be

enrolled under a computerized “smart card” system allowing a 75% reduction over normal tollway charges. In addition to the collection booths at the extreme ends of the prospective tollway, there would be booths emplaced at intervals of ca. 70 km along the full route. There would, however, also be numerous ungated access points along the tollway, so that short-distance local traffic entering and leaving between tollbooths would effectively be able to travel for free. The absence, generally, of parallel routes between such ungated entries would discourage, by-and-large, inappropriate toll evasion by long distance travellers.

Evidently, no such system is yet in place anywhere in India so it is unclear how successful such a design would be in protecting both the legitimate interests of private sector investors, and of low-income local users who have heretofore been able to ply the existing state highways for free.

## 2. Environmental and social characterization

We were able to look only at a single site west of Khandwa, which may have actually not lie on the direct Indore-Edalabad RoW, but which certainly would have eventually been developed as intercity spur of the proposed tollway. We traveled for some km on the existing state highway towards Indore, until reaching the junction of what would probably be a bypass link, so that southbound traffic from Indore direct to Burhanpur and Edalabad (and from there to Mumbai via National Highway 6) could avoid Khandwa’s urban congestion. That bypass exists already as a mostly-unpaved single lane, which at present evidently bears very little traffic. Indeed, it is unclear what proportion prospective users of the ISKBE Tollway would intend to bypass Khandwa, the most important city along the route, excepting Indore itself.

As described above, a certain proportion of *bona fide* local users, depending upon their entry and exit points, would have to pay a reduced toll —assuming they were properly subscribed and regularly (every thirty days!) renewed— where now they get to ply that same stretch of the existing mediocre state highway more slowly, but for free. This may develop into a political liability for both the state and the investors.

A considerable proportion here of the rural roadside has years ago been planted with shade trees, presumably under government protection. These might well be removed either to facilitate construction or because contemporary highway engineering practice regards such a treeline as a genuine traffic hazard.

It is generally accepted that reducing energy imports, reducing overall fuel consumption and reducing atmospheric emissions are priority environmental management objectives. India probably has the world’s greatest proportion of *per capita* travel by rail, compared to road and air. Rail systems display the highest passenger-mile and freight tonnage fuel efficiencies by far of any land (or air) transportation mode. Railways also entail the smallest footprint of land transport infrastructure relative to load and distance.

Thus, while these points might well be outside the scope of our study, it should be noted that facilitating road travel at the possible expense of upgrading rail networks may be an environmentally suboptimal infrastructure development strategy. Conversely, India is in the forefront of compressed natural gas (CNG) fuel technologies and in the absolute number of CNG vehicular conversions. CNG emissions compare very favorably to diesel and petrol, and CNG is in part supplied by domestic gas fields.

It also should be considered that while the long-distance tollway would mostly be routed within the present RoW, necessary bypasses and spurs could well require extensive condemnation of private property. Given the population density, the number of those so affected may be large. We do not have access to the project designs and the cartographic data to address such issues now.

### 1.5.3 Financial Issues relating to the Project

We understand that a notional FIRR of 18% was determined by MPRSNN as an acceptable rate of return for private developers and on that basis, the amount of grant was computed and made

available to the selected Concessionaire. While we were not able to review the assumptions leading to the FIRR number, we were informed that the traffic survey, the design recommendation and the estimated construction cost for each project were compiled and reported by the technical consultant in the DPR. The estimated construction cost, however, does not include consultancy and other development expenses that would be typically 15-25% more. In addition, the 1% Project Monitoring Fee and 3% Maintenance Fund contribution by the Concessionaire out of the Toll Fee would also be affecting the FIRR calculation. Taking those factors into account, we expect the net FIRR to the Concessionaire to be in the low teens.

A SWOT Analysis on the ISBKE Project is set out below.

#### STRENGTHS

- Proven PSP experience and track record for State
- Identified as road for development under the Bond-BOT Scheme
- Guidelines for bid process and concession agreement based on National Highway model
- Road already operating with discernable traffic pattern

#### WEAKNESSES

- Open system access, significant leakage possible
- Potential high maintenance cost due to problematic soil composition
- Insufficient time for financial closing before start of concession period due to lack of an acceptable financial feasibility study
- Bureaucratic and lengthy approval and clearance process

#### OPPORTUNITIES

- Management autonomy by Concessionaire
- Incentive and financial support from State

#### THREATS

- No assurance that alternate routes would not be built

## 1.6 Conclusion

Based on the information provided, we are of the view that the BOT Road Scheme has been successfully implemented although a number of areas could be refined and improved to make the process more efficient. This include perhaps the inclusion of the involvement of financing institutions during the bid and concession negotiation process to ensure that timely financial closure is achieved once the concessionaire is selected and that during the concession period, the nodal agency continues to act as the conduit between the government and the concessionaire to ensure all issues are resolved efficiently.

Currently, only the road sector has implemented such a BOT scheme. We would recommend that the State should consider the enactment of a set of rules for infrastructure development similar to those in Andhra Pradesh and Gujarat so that it can be implemented for other infrastructure sectors in the State.

# **The Visakhapatnam Industrial Water Supply Project**

## **Case Study**

## Table of Contents

<b>1</b>	<b>The Visakhapatnam Industrial Water Supply Project (the Project).....</b>	<b>1</b>
<b>1.1</b>	<b>Project Identification .....</b>	<b>1</b>
<b>1.2</b>	<b>Project Preparation .....</b>	<b>1</b>
<b>1.3</b>	<b>Project Summary.....</b>	<b>2</b>
1.3.1	Water Demand – Current and Forecast.....	3
1.3.2	Base Case Financial Analysis.....	3
<b>1.4</b>	<b>Private Developer Selection for the Project.....</b>	<b>4</b>
1.4.1	Request for Proposals (RFP) .....	4
1.4.2	Advancement of the Godavari Pipeline Phase.....	5
1.4.3	Bidder Reaction to Advancement of Godavari Pipeline Works.....	5
1.4.4	Results of Competitive Bid.....	6
<b>1.5</b>	<b>Structure for the Winning Bid .....</b>	<b>6</b>
<b>1.6</b>	<b>Direct Support – Subordinated Financing Offered to Concessionaire.....</b>	<b>7</b>
<b>1.7</b>	<b>Environmental and Social Requirements .....</b>	<b>8</b>
<b>1.8</b>	<b>SWOT Analysis.....</b>	<b>8</b>
<b>1.9</b>	<b>Lessons Learned .....</b>	<b>9</b>

# 1 The Visakhapatnam Industrial Water Supply Project (the Project)

## 1.1 Project Identification

In 1997, Andhra Pradesh Industrial Infrastructure Corporation Ltd. (APIIC) acquired 2,600 acres of land for industrial development in Visakhapatnam on the coast of the Bay of Bengal. At that time, the primary source for the area's industrial water use was a facility that had been developed by the Department of Irrigation & CAD (commissioned in 1991) and used primarily to service the requirements of Visakhapatnam Steel Corporation (VSC). The lack of a reliable water source for prospective tenants that would come to the newly acquired APIIC site created a long-term concern that GoAP planners were keen to address with the assistance of the private sector.

On 26<sup>th</sup> May 1997 the Industries & Commerce Department issued G.O. Ms. No. 131 providing for the private development of a project to supply bulk water to industrial customers in the vicinity of Visakhapatnam (the Project). GoAP subsequently appointed the APIIC as the nodal agency for development and implementation of the Project on a PSP basis.

## 1.2 Project Preparation

APIIC engaged IL&FS Infrastructure Development Corporation (IIDC) as the Project advisor in early 1998. IIDC was tasked with the preparation of a *Pre-Feasibility Study* for the Project that included the identification of industries that could be attracted to Visakhapatnam as long-term tenants.

The IIDC study concluded that a *Detailed Feasibility and Investment Banking Report* (DFIBR) covering water demand, pricing and sourcing from the Yeleru Reservoir and the associated Yeleru Left Bank Canal (YLBC) system should be conducted.

From the onset, funds for project preparation were difficult to secure due to the State's budgetary constraints. After failing to secure funds for the Project studies from GoAP sources, we understand that IL&FS applied for and received a World Bank line of credit that was used, in part, for development work on the Project, including the DFIBR. International Consultancy, Binni, Black & Veatch (BBV), was commissioned to prepare the DFIBR in 1998 and completed its work in March 2000. Key findings of the BBV study included:

- (i) Water losses from the YLBC system from reservoir to tail-end users were in the range of 60-70% which the consultants considered could be reduced to 32% with a relatively modest investments for refurbishments,
- (ii) Then current user charges were well below the expected cost of provision,
- (iii) The Project's implementation should be phased consistent with forecast demand and a need to minimize capital outlays in order to keep tariffs as low as possible and facilitate private sector operation and financing.

The next step needed prior to soliciting private developers was to complete a *Detailed Engineering* study. Again, a lack of sufficient government funds for this work caused delays. While APIIC was able to secure a portion of these funds from GoAP sources, the balance came from a private venture capital fund called the India Project Development Fund (IPDF). IPDF was initially capitalized with Rs500MM<sup>1</sup> when it was established in July of 2000. Key sponsors of IPDF included IL&FS and other domestic financial institutions, the L&T Group and the Hong Kong Land Group. IPDF ultimately provided Rs95MM of the total development costs of Rs128MM contributed for the Project by APIIC

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<sup>1</sup> Subsequently increased to Rs1,000MM.

and IPDF. IPDF played a catalytic development role in terms of getting the Project prepared for private bidding.

Prior to soliciting bids for the detailed engineering work, a special purpose company in the name of Visakhapatnam Industrial Water Supply Company (VIWSCO) was established as a public private partnership venture to serve as the holding vehicle for the Project. At the time, VIWSCO was owned by APIIC and IPDF and was capitalized proportionately with the development funds that each party had contributed to date.

Preparation of the detailed engineering study for the Project was awarded to a consortium comprised of Lahmeyer International and Tata Consulting Engineers. In addition, M/s Slaughter & May in association with M/s Kanga & Associates were engaged as legal counsel for the preparation of bidding and contract documentation for the Project including draft concession agreement terms.

An outline of the Project structure, based upon development works undertaken through to the completion of the first round of detailed engineering and preliminary financial analysis is summarized in the following section.

### 1.3 Project Summary

The Project was designed in two phases. When complete, it would be capable of supplying up to 520 million litres of water/day to industrial users in the vicinity of the city of Visakhapatnam located on the Bay of Bengal.

The Project was to operate as a public-private partnership based upon a 32-year BOOT concession for the finance, implementation, operation and maintenance of the bulk water supply facilities. Project phasing, as originally proposed, is set forth in the box below.

#### **Original Phasing of the Project<sup>2</sup>**

Phase 1 – *Rehabilitation and Operation of Yeleru Left Bank Canal (YLBC) System* consists of the refurbishment of the 113km YLBC itself, the Link Canal (5.2km) and the Water Supply Canal (34km) which discharges into the Kanithi Balancing Reservoir of VSC's plant. Purpose was to reduce water loss, improve transmission capacity and establish long-term sustainability for increased transmission capacity of the YLBC System and all related works.

Phase 2: *Construction of Godavari – Yeleru Pipeline and Operation of Godavari Pipeline and YLBC system* – Comprising a diversion pipeline and pumping system to lift up to 5 Billion m<sup>3</sup> of water from the Godavari River to the Yeleru Reservoir (56 km) and augmentation of storage reservoir capacity in the vicinity of the industrial development area at Parwada for supply to new prospective customers.

All distribution facilities were to be completed via separate facilities investments undertaken by consumers at their relevant offtake point. (Figure 1 on the following page provides a simplified schematic diagram of the Project)

The first phase called for the rehabilitation and operation of the Yeleru Reservoir and the associated Yeleru Left Bank Canal (YLBC) system. The YLBC system was originally built by the Department of Irrigation (I&CAD) to serve as the primary source of bulk water supply for the Visak Steel Corporation (VSC) steel plant that was commissioned in Visakhapatnam in 1991. By the late 1990's the canal system also served as principal water source for other industrial users in Visakhapatnam including a National Thermal Power Corporation 1,000MW facility (NTPC) and the Visakhapatnam Municipal Corporation (VMC).

<sup>2</sup> Source: IIDC

These three parties currently purchase water from the YLBC canal at rates that range from Rs 0.99/kilolitre for NTPC, Rs 1.21/kilolitre for VSP, and Rs2.09/kilolitre for VMC. These rates are considered to be below cost and are far lower than the non-domestic (i.e., industrial) tariff of Rs 25.0/kilolitre currently charged to relevant customers of VMC and the Hyderabad Metropolitan Water Supply and Sewerage Board (HMWSSB).

### 1.3.1 Water Demand – Current and Forecast

Demand studies conducted by the three primary customers forecast long-range requirements for the additional capacity that the Project could help to provide to Visakhapatnam. Further to the Yeleru Reservoir supply, GoAP had the rights (via agreements relating to interstate river water allocations) to abstract water from the Godavari River would ultimately be needed to augment the supply from the Yeleru Reservoir as demand in Visakhapatnam grew. A summary of the current demand and new demand forecasts for incoming users contemplated by the GoAP for the Visakhapatnam area are set forth in Table 1 below.

**Table 1: Water Demand in Visakhapatnam Area<sup>3</sup>**

<i>Current Customers</i>	<i>Current Demand (MM litres/day)</i>	<i>Prospective Customers</i>	<i>2010 Forecast Demand (MM litres/day)</i>
VSC	113 <sup>4</sup>	AP SEZ	19
VMC	77	Pharmacy/Gangavaram Port	63
NTPC	16		
	206		

### 1.3.2 Base Case Financial Analysis

Base Case financial analysis was developed by IIDC based on the Lahmeyer/Tata Consultancy engineering studies. This financial analysis indicated that the average tariffs required over a 32-year concession term would need to be much higher than current charge rates to generate an acceptable rate of return for private developers<sup>5</sup>. Table 2 below provides a summary of the forecast cost of water derived by IIDC's in its preliminary financial analysis.

**Table 2: Average Delivered Cost of Water – Concession Period (32 Years)**

<b>Offtaker</b>	<b>Average Cost of Water (Rs/kL)<sup>6</sup></b>
YLBC Tail End (e.g., VSP, NTPC)	5.00
Summer Storage Offtake (e.g., Gangavaram Port, AP SEZ)	15.50
At Industry Boundary (e.g., IDA Parwada, Pharmacy)	21.80

Subject to expected demand growth coming to fruition for existing and new prospective customers after the completion of the Phase 1 rehabilitation works, a new capital-intensive pipeline system was to be built as Phase 2 of the Project. The purpose of Phase 2 was to provide the facilities to abstract up to 5 billion m<sup>3</sup> of water annually from the Godavari River to augment supplies for the Yeleru Reservoir.

<sup>3</sup> Source: Project advisors, IL&FS – Infrastructure Development Corporation (IIDC).

<sup>4</sup> When the detailed engineering work was being conducted, VSP's usage was estimated to be much greater at 182MM litres/day

<sup>5</sup> Assumed by IIDC at the time to be 14% p/a in real Rs. Terms.

<sup>6</sup> Using project cost estimates from the detailed engineering study of Rs2,080MM – Phase 1 and Rs3,960MM – Phase 2 inclusive of a summer storage reservoir and a water distribution system for IDA Parwada area.



## 1.4 Private Developer Selection for the Project

In December of 2001, prior to completion of the first round of detailed engineering study work, APIIC issued a Request for Qualifications (RFQ) for private developers interested in the Project. The RFQ was disseminated in the Indian press and the UNDP Business News.

Prior to the submission date for the RFQ responses, the Principal Secretary of the Irrigation and CAD Department gave a presentation to purchasers of the RFQ documents and took questions on the Project implementation framework and strategy from prospective bidders. Key issues raised at the presentation included:

- What was the demand profile and who would take risk of demand shortfall and would direct government support be made available if necessary?
- Would currently subsidized water rates for YLBC buyers be increased?
- Would developers have special rights to downstream projects?
- What would GoAP's role/shareholding be in VIWSCO?

Seven consortia completed and submitted RFQ documentation of which 6 were deemed to have met all conditions for qualification. The seven consortia are identified in Table 3 below:

**Table 3: Evaluation Results of RRQ Responses**

Company	Qualified (Y/N)
<i>Dodsal Limited, India</i>	<i>N</i>
Essar Project Limited + Essar Construction Limited, India	Y
Gamuda, Malaysia	Y
L&T ECC, India	Y
Punj Lloyd Limited + Progressive Construction, India	Y
SNC Lavalin + Ontario Water, Canada	Y
Vivendi, France	Y

### 1.4.1 Request for Proposals (RFP)

RFP documents comprising technical reports, engineering drawings and specifications, and a standardized financial model (the Model) were issued to the bidders in July of 2002. APIA was just being formed at this time, and one of its first tasks was to review and approve the RFP documentation. APIA would go on to play a key coordinating role among the numerous parties involved in Project's development

Although it had been anticipated that a draft concession agreement (DCA) for the Project would comprise part of the RFP materials, drafts of these would not be circulated until several months after the technical documents were issued. This was largely due to the need to redraft aspects of the DCA to address major bidder and GoAP<sup>7</sup> concerns, including, inter alia:

- Uncertainty in demand and how this would impact upon the developers obligation to fund and begin works on the capital intensive second stage,
- Water charges, both current and the mechanism for future increases,
- Rights to downstream projects that would be given to the developer, if any,
- Provisions for abstraction from Godavari River during shortage periods
- Force Majeure provisions

<sup>7</sup> Internal (GoAP) deliberations on these critical aspects of the transaction would occupy much of the 8-month long bid process and remain on going as of the date of this report.

Final RFP submissions were scheduled for December of 2002. The primary financial evaluation criteria for bids proposed by IIDC included the lowest average cost of delivered water, a parameter generated by the Model and based on bidder supplied input data for forecast demand, capital costs, O&M cost and the bidders proposed a cost of capital (i.e., weighted average cost of debt and equity capital for the Project company).

### **1.4.2 Advancement of the Godavari Pipeline Phase**

In mid-November 2002, five months into the bidding process, and roughly 1 month before final bids were to be submitted, the GoAP took the decision to advance the implementation of the Godavari Pipeline construction works (Phase 2 of the original works), based upon an official request from VSP. VSP's reasoning for the request was that previous years of drought in the region had raised grave concerns over the Yeleru Reservoir's fitness for purpose as the sole water supply source for VSP and the other existing customers. VSP indicated that potential financial losses due to an unexpected plant closure brought about by a water shortfall would be "catastrophic" for the State. In VSP's view, advancement of the Godavari Pipeline works needed to take place within the coming 12 months in order to sufficiently augment supplies accessible from the Yeleru Reservoir.

Advancement of the pipeline works brought with it a number of substantial changes to the nature of the Project and its financial profile. For example, front-ending Phase 2 more than doubled the capital investment required in the initial years of the project without increasing revenues. This, warned the financial advisors, would bring about the need for a steeper increase in tariffs and give prominence to the concerns already voiced by bidders regarding the accuracy of current demand forecasts and the prospective need for direct government subsidy to mitigate the fears of financiers relating to demand/tariff shortfalls.

### **1.4.3 Bidder Reaction to Advancement of Godavari Pipeline Works**

The decision to advance the Godavari Pipeline works was taken in mid-November 2002 pursuant to consultations among key GoAP officials including the Chief Minister. The six bidders were then invited in for discussions to gauge their interest to continue with a bid for the Project under the BOOT format. Final submission date for bids was extended by 4 weeks to 31<sup>st</sup> January 2003.

Bidder meetings were held within days of the decision to revise the work phasing. These were attended by only three of the six bidders (L&T, Essar and Vivendi) with the other three endeavouring to respond in writing. In summary, the bidders concluded that GoAP's requirements and timetable for the Godavari Pipeline works could be met, albeit with great difficulty. However, as pre-conditions to proceeding with the bid, the GoAP was requested to take the following actions:

- Detailed engineering, designs, specs and bills of quantity be completed and delivered by year end 2002
- GoAP agree to make available all necessary funding and subsidies on terms to be agreed with the winning bidder
- GoAP place an advance order for all pumping machinery by January 2003
- Land acquisition to be completed by February 2003
- LoI issued to preferred bidder by mid-February 2003
- Independent design approval capacity in place prior to start of works
- Draft concession to be issued immediately with flexibility to accept and incorporate lender comments prior to execution

All bidders appeared to have had reservations about their capabilities to undertake the re-phased Project on a full PSP basis within the GoAP's stipulated timeframe. This reaction may have resulted from a number of uncertainties surrounding key aspects of the transaction including: (i) scope and timing of advance construction works and construction performance obligations, (ii) tariffs and tariff setting mechanisms, (iii) lack of clarity on the topic of government financial and administrative support, (iv) specific funding arrangements for the advanced construction works, and (v) scope of

private sector obligations in the concession (particularly for the rehabilitation now back-ended rehabilitation works) and other commercial documents (namely offtake obligations).

#### 1.4.4 Results of Competitive Bid

Ultimately a single bid was submitted by L&T Group. Provisions in the AP IDEAct for accepting and processing sole bids were employed by APIA giving GoAP leverage to negotiate terms of the proposed construction and materials costs.

### 1.5 Structure for the Winning Bid

A fast track EPC contract was carved out for the Godavari Pipeline works. L&T ECC (an L&T Group company) was nominated as the contractor by the VIWSCO after preferred bidder status was awarded to and accepted by the L&T bidding consortium in March of 2003. L&T was able to meet the GoAPs immediate mobilization requirements and commence works on the river intake structure (in advance of the monsoon) prior to the date when all financing was confirmed to be available. The Godavari Pipeline works officially commenced in April 2003 and continue today. Completion and commissioning is scheduled for May of 2004.

GoAP plans to enter into a 32-year concession agreement with VIWSCO to implement the entire Project on a BOOT basis. Provisions for implementation, oversight, performance security and dispute resolution are consistent with international practice. Regulatory oversight for the Project has also been incorporated into the draft concession agreement and its Schedules. This will include, inter alia, the mechanisms for setting and adjusting water tariffs, conveyance of water for non-industrial (i.e., domestic and irrigation) use, as well as environmental and social requirements, performance standards, technical standards and good operating practices to be adhered to by project participants.

Effectiveness of the concession agreement is conditional on the signing and effectiveness of: (i) all Project loan agreements, (ii) the three initial bulk water supply agreements, (iii) the shareholders agreement and (iv) the site lease agreement. Chapter 2, Section 5 of this report contains additional information on the Visak Project draft concession agreement.

VIWSCO plans to enter into long-term bulk water supply agreements with the three initial offtakers. Each will have specific take or pay provisions that will endure for the term of the agreement. These agreements are expected to have a 32-year term, consistent with the concession agreement. At the date of this report, the agreements had not yet been executed.

The last of the loan agreement signatories for the Godavari Pipeline works (VSP, NTPC, VMC) signed off on the loans to VIWSCO in December of 2003. The loans are counter-guaranteed by GoAP. They carry a 13 year maturity profile with 5 years grace<sup>8</sup> on principal payments and a fixed rate of interest of 10% p/a.

L&T and its strategic partner PSL Holdings will contribute Rs 240 million for a 51% ownership stake in VIWSCO. The balance of equity contributions will be coming from APIIC (32%) in the form of contributed land and VMC (17%) in cash. We understand that these equity injections are not due in full until the concession and shareholder agreements become effective.

The Project equity return is expected to be 15.0% p/a in real (rupee) terms over the 32-year concession life. Revenue payments to the concessionaire are designed to enable it to achieve this real return (or a higher return) so long as its construction and O&M costs do not exceed final bid levels, regardless of the ultimate demand for water from the Project.

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<sup>8</sup> Commencing after construction of the Godavari Pipeline is complete.

The rehabilitation phase works, referred to as Phase 1 in the original bid structure, are to be deferred pending further build-up in demand and other conditions. Based on draft concession contract, commencement of the rehabilitation works should occur on the date when each of the following has occurred:

- (i) GoAP has complied with its obligations make up any deficit between commercial water rates determined under the concession based on the formula and directions set forth in Schedule 9 of the agreement and the actual rates charged to users,
- (ii) VIWSCO's aggregate net profit after tax for the period commencing from the concession effective date is not less than 90% of the projected aggregated net profit for the same period as set out in the Model,
- (iii) Raw water to be supplied pursuant to all bulk water supply offtake contracts is not less than 371 million litres/day, and
- (iv) VIWSCO has through its best endeavours secured commitments for the provision of non-recourse (to shareholders) financing for funding the Project.

Completion of the Rehabilitation works is to be achieved within 48 months of commencement subject to specific schedule extension provisions.

**Table 4: Visak Project Financial Structure – Godavari Pipeline Phase Works**

<b>Project Component<sup>9</sup></b> <i>(All figures in Rs MM)</i>	<b>Cost</b>	<b>Participant</b>	<b>Debt Funding</b>	<b>Equity Funding</b>
Godavari Pipeline (only)	4,105 <sup>10</sup>	VSP	2,400	0
		NTPC	500	0
		VMC	600	75
		GoAP/APIIC	135	155
		L&T Group	0	240
<b>Total</b>	<b>4,105</b>		<b>3,635</b>	<b>470</b>

## 1.6 Direct Support – Subordinated Financing Offered to Concessionaire

Current water tariffs paid by current customers are quite low as noted above. Due to the rephrasing, initial tariffs that VIWSCO would expect to charge VSP, VMC and NTPC would be in the range of Rs 13.0/kilolitre in 2004 absent any subsidies.

To make the transaction amenable to the bidder, the GoAP determined that (i) initial tariffs for the three offtakers would be raised to Rs 7/kilolitre in 2004 and to periodic increases of 4% p/a thereafter, (ii) GoAP agreed to subsidize the initial customers by providing direct financial support to the concessionaire in an amount designed bridge the gap between the Rs 7/kilolitre offtake price that VSP, NTPC and VMC pay for water and VIMSCO's cost of service.

Subsidy monies will be distributed to VIMSCO at the same time that scheduled water payments are being made by the three initial customers. The GoAP subsidy is to be in the form of a subordinated loan<sup>11</sup>, with each payment to the concessionaire being accounted for as a drawdown on the loan. Subsidies will be paid out to the concessionaire without interruption until such time that the tariffs

<sup>9</sup> Current estimates of the YLBC Rehabilitation works are Rs1,720MM. These may be adjusted prior to starting the rehabilitation works, but the draft concession agreement is not complete on this point.

<sup>10</sup> Including capitalized interest, development costs and success fees. EPC price equivalent to Rs 3,520MM according to IIDC records.

<sup>11</sup> The subordinated loan will carry a fixed rate of interest of 10% per annum.

charged to the three initial users and VIMSCo's commercial charging rates reach a point of equilibrium. Once tariffs charged to the initial users exceed VIMSCo's commercial charging rates, such excess above the commercial charging rates received will be paid back to the GoAP to service the subordinated loan.

The aggregate subsidy extended to VIWSCO is not expected to exceed Rs1,600MM. As a precaution, the Finance Department has acknowledged an allocation of up to Rs2,000MM for the subsidy. Water charge equilibrium referenced above is forecast to occur by the seventh year of operations of the concession (2011) according to IIDC. Water supplies to each of the offtakers can be curtailed for any failure to pay in accordance with the newly established rates as set forth in the concession agreement and bulk water supply agreements.

## 1.7 Environmental and Social Requirements

The consultants were not provided with a detailed status report on these important topics. However, we do understand from financial advisors IIDC that: (i) the Project is in full compliance with GoAP mandated environmental requirements and (ii) land acquisition and relocation/resettlement (R&R) programs have been designed and undertaken in a manner and to a standard that exceeds the practice mandated under the Land Acquisition Act (LAA) which has been the bottom-line benchmark for the state of AP for the past several decades.

For reference, land acquisition and R&R for the Godavari Pipeline works is expected to comprise an 8 metre wide path for the pipeline and service roads. Temporary right of way access of an additional 72 metres (36 either side of the permanent site) will be needed during construction and initial operation stages only. These acquisition and R&R activities are expected to affect 970 landowners and 22 revenue villages according to the draft concession.

With respect to the land acquisition costs incurred by GoAP for Project site, Rs155MM will be structured as equity contributions to the VIWSCO. In addition, VIWSCO will pay an annual lease fee of Rs5.44MM during the term of the concession.

It is important to note that Schedule 6 of the draft concession agreement provides a comprehensive overview of each of various environmental and social requirements that the concession parties are expected to meet in the implementation of the project.

## 1.8 SWOT Analysis

### *Strengths*

- A Triumph of Inter-Agency Coordination – Projects are easy to derail, but generally quite difficult to bring to fruition in the absence of a catalyzing sponsor. APIIC initially alone and then later in conjunction with APIA kept key participants focused, enabling the Project to be brought to completion. This experience will help the GoAP participants to manage other complex PSP projects with greater ease and efficiency in the future.
- Water Supply Solution – Despite the disruptions brought about by re-phasing, the first phase of the Project is heading for physical completion. This will relieve concerns, particularly at VSP and other core users over the sufficiency of industrial water supply in Visakhapatnam for the next several years.
- Capable Private Sector Partner – Only one party submitted a bid although 6 were short-listed. A sole bid is seldom ideal from an owner's perspective, but it did give GoAP leverage to negotiate down certain construction/equipment costs proposed by the bidder. In addition, the winning bidder (the L&T Group) is widely considered to be one of the best qualified in India for this undertaking, and we understand that complicated and time sensitive works obligations to date have been administered professionally and without incident.

- Tariff Increase – The Project was responsible for catalyzing an industrial tariff increase in Visakhapatnam. This achievement should facilitate greater private sector participation in the sector (for wholesale supply and eventually in distribution).

### *Weaknesses*

- Project will initially be "Overbuilt" – The Project will initially have 100% capacity redundancy and this in turn requires tariffs to be raised to a level that might otherwise not have been necessary had the works proceeded as originally planned.
- Revised Phasing and its Impact on Bids – While deemed necessary for strategic reasons, the rapid, tail-end decision to advance the Godavari Pipeline works clearly complicated the transaction and the bidding process. This change likely dampened much of the private sector interest at the final bidding stage. With a single bid, it is difficult to assess whether GoAP got the best terms possible.
- GoAP Loan Guarantees – The structure and requirements incorporated in the final transaction necessitated the use of non-bank/government enterprise financing coupled with state guarantees. This was not the outcome sought when the deal was first conceived.

### *Opportunities*

- Established PSP Benchmarks – As one of the State of AP's first PSP transactions, the Visak Project established a framework of precedents and processes that should facilitate future PSP initiatives including those related to: (i) the scope and requirements for adequate project preparation work, (ii) the concept of what constitutes a commercial equity return, and (iii) a process for assessing and quantifying state support among others.
- Refinancing – With the completion of the Godavari Pipeline phase expected to be followed by a successful track record providing commercial services to the offtakers, the Visak Project could become a prime refinancing candidate. This could help GoAP eliminate the current requirement for its financial guarantees.
- Rehabilitation Phase Could be Fully Privatized – After a few years of successful operations, it should be possible to structure the rehabilitation phase of the works as a fully private deal (i.e., with limited or non-recourse financing) without GoAP guarantees.

### *Threats*

- Master Contracts Remain Unsigned – The concession, bulk water supply and shareholder agreements all remain unsigned as of the date of this report. Debt financing for Phase 1 is committed and as the Godavari Pipeline construction works proceed towards completion, the GoAP's leverage in the concession and bulk supply agreement negotiations could diminish to an uncomfortable level.

## **1.9 Lessons Learned**

Formulation of the Visak Project as a PSP undertaking began well before the State's general or specific infrastructure policies (Vision 2020 and G.O. Ms. No. 427) or the AP Infrastructure Development Enabling Act (AP IDEAct) were promulgated. As such, there was little theory or practice for the parties involved in the Project's implementation to have as reference material until quite far along in the Project's development path. The fact that the Project was taken to the first level of closure in such an environment is impressive, and provides a number of lessons for facilitating future PSP developments. The most prominent of these are summarized below:

*Proper Coordination of Participants is Critical* – Starting with a task force comprised of relevant departmental representatives and the Chief Secretary and continuing through the AP Infrastructure Authority after its establishment in 2001, key information on the progress of project development and constraints requiring resolution flowed regularly from the Project's Promoter Sponsors (i.e., APIIC and

the private sector) through to the right GoAP departments greatly facilitating the decision-making and implementation processes for the Project.

*Sufficiency of Project Preparation Funds* – On a number of occasions it appears that the GoAP principals in the Project were forced by circumstances to source funds for development studies from non-government sources (e.g., IPDF). While this may have been unavoidable at the time, it appears that in the absence of such funds there would have been great difficulties moving the Project ahead as a PSP initiative. In the future, after a project has been granted concept clearance, it would be more efficient for the State to allocate the appropriate budget resources for development studies in advance.

*Necessity of Complete and Timely Bid Information* – It was unfortunate that the need to advance the Godavari Pipeline works was not recognized by VSP prior to the issuance of the RFP. However, once the advancement of these works was deemed unavoidable, all efforts should have been taken to: (i) comprehensively package the revised scope of obligations (for both the government and the private sector) including all revised technical and commercial documents for bidders, (ii) make best efforts to ensure that all bidders receive such information and have the chance to make a thorough assessment of it, and (iii) defer the bid submission date for period of time commensurate with the bidder's requirements to assess all materials and prepare a proper bid proposal. Such an approach, while having a longer duration, may have brought in multiple bids on the Visak Project. As the quantum of PSP transaction increases in the future, it will be essential to take all reasonable measures that help to ensure that deals balance the divergent interests of all stakeholders.