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# CASE Notes

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## Developing Common Hazardous Waste Treatment Storage and Disposal Facilities (CHWTSDFs):

### *Case Study-Taloja, Maharashtra*

*The hazardous waste management sector in India is currently going through a nebulous phase. It is facing numerous issues such as insufficient infrastructure to manage hazardous waste; untested technologies for managing waste in the Indian environment; an evolving regulatory framework; difficulties in financing of waste management projects; lack of hazardous waste management project development experience, etc. The Maharashtra Industrial Development Corporation (MIDC) is promoting a project for managing hazardous waste, with the help of private sector, at its industrial area at Taloja. It has selected a developer for financing, implementing, operating and managing the Project. This note describes the process and the issues faced during the selection of the developer for the Project.*

#### **Need for the Project**

The total quantity of hazardous waste generated in India is close to 4.4 million tonnes<sup>1</sup>. Increasing awareness of the irreversible and harmful impact of this waste on the natural environment has prompted nodal agencies such as Central Pollution Control Board (CPCB) and State Pollution Control Boards (SPCBs) to take action against waste generators, who are not managing their waste efficiently and as per the Hazardous Waste (Management & Handling) Rules, 1989 and the amended 2000 Rules.

Small waste generators, however, are incapable of absorbing the high capital and operating costs of a Hazardous Waste Treatment Storage and Disposal Facility (HWTSDf), which is run on a stand alone basis i.e. for a single user (waste generator) and thus resort to illegal dumping of their

wastes. CHWTSDFs, on the other hand, are run by independent operators and serve several users. These operators are able to manage the wastes efficiently and at substantially reduced costs (due to the benefits offered by economies of scale).

Realising the need for such a facility, the Government of Maharashtra appointed MIDC as the nodal agency under Hazardous Waste (Management and Handling) Rules, 1989, as amended. MIDC has taken up the pioneering task of developing one such project at its industrial area at Taloja.

<sup>1</sup>Source: Report of the High Powered Committee on Management of Hazardous Waste, submitted to the Supreme Court of India in January 2001.

Note: This figure is expected to be much higher, since waste generators are unwilling to divulge actual waste generation figures.

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It was decided to explore the possibilities of involving private sector in developing the Project. The private developer, in addition to constructing the facility, would be responsible for collection, transportation, treatment (chemical and physical), recovery, landfilling, incineration and storage of hazardous wastes.

Taloja is situated at a distance of 70 kms from Mumbai. It is expected that the CHWTSDF at Taloja would serve the needs of industrial areas of Taloja, Kalyan-Bhiwandi, Dombivli, Ambernath, Badlapur, Trans-Thane Creek (partially), Patalganga and Tarapur, which house numerous hazardous waste generating units (see map).



**Project Preparation**

MIDC appointed an Expert Committee (see table below) comprising members of nodal agencies such as CPCB, Ministry of Environment and Forests (MoEF), Maharashtra Pollution Control Board (MPCB), members of industrial user associations, academicians and other prominent experts to guide on technical and regulatory matters during the process of selection.

Land notification and public hearing was undertaken for the chosen site. This was followed by an Environmental Impact Assessment (EIA) study and a Pre-Feasibility study of the Project.

**Developer Selection Process**

Given the lack of project development experience of CHWTSDF projects in India coupled with the evolving regulatory environment, MIDC decided on a participatory and exploratory two-stage developer selection process for the Project.

<u>Expert Committee</u>	
Mr. Jayant Kawale	Maharashtra Industrial Development Corporation
Mr. R.K Das	Maharashtra Industrial Development Corporation
Dr. B.Sengupta	Central Pollution Control Board
Dr. D.B Boralkar	Central Pollution Control Board
Dr. M.Sengupta	Ministry of Environment and Forests
Dr. Shyam Asolekar	Indian Institute of Technology, Mumbai
Dr. S.K Gupta	Indian Institute of Technology, Mumbai
Shri K.H Mehta	Maharashtra Pollution Control Board
Dr. Ms. Parikh	Indira Gandhi Institute for Development Research, Mumbai
Dr. S.L Patil	Thane Belapur Industries Association
Dr. Prasad Modak	Independent Expert
Dr. A.D Patwardhan	Independent Expert
Shri Surendra Jadhav	Environment Department, Govt. of Maharashtra

- ROLE OF CRISIL ADVISORY SERVICES**
- Develop Project Structure
  - Define Project Scope
  - Prepare Bid documents
  - Evaluate Bids
  - Select Successful Bidder
  - Negotiate with Successful Bidder

**Preliminary Shortlisting**

In the first stage a Request for Qualification (RFQ) document was advertised through a global tender, inviting experienced developers of similar projects to participate in the process. The document, besides seeking information on the technical capabilities and experience of the Bidder, sought their views on the development process and technical issues concerning the

MIDC, with assistance of the Expert Committee, studied various locations for setting up the CHWTSDF and finally chose a site at its industrial area at Taloja, New Mumbai for setting up the Project.

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Project. The submission of Bids was followed by presentations from all Bidders on the technologies proposed to be used by them. On the basis of their Bids and presentations, MIDC made a shortlist of developers considered capable of developing the Project. The Expert Committee played a crucial role at this stage of the process, which was largely focussed on evaluating the technical strengths of the developers.

#### **Developing the Project Structure**

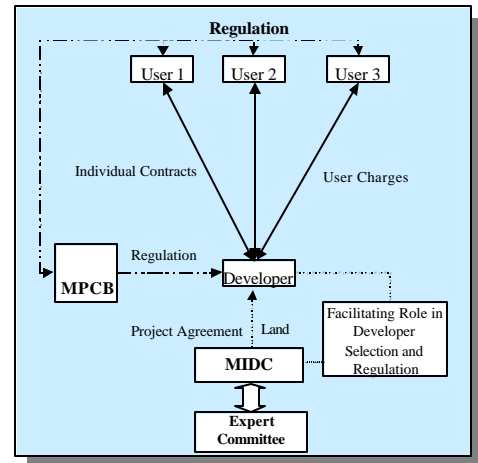
MIDC then appointed CRISIL Infrastructure Advisory to assist in addressing the commercial issues facing the Project. Some of the tasks for CRISIL Infrastructure Advisory were, developing the Project structure; finalising the Project scope; preparing a contract document; final selection of the developer; and negotiating with the Successful Bidder<sup>2</sup>.

MIDC with the assistance of the Expert Committee and CRISIL Infrastructure Advisory chose a quasi-BOO structure for the Project. The Project Structure was developed through a series of discussions with the user associations of Taloja and other nearby industrial areas. A workshop was also organised to incorporate the feedback of developers shortlisted during the RFQ stage. The discussions revolved around assessing the roles and risks associated with the Project. A detailed study of international as well as domestic project development experience by CPCB and CRISIL Infrastructure Advisory preceded these discussions. The final Project structure was decided by analysing the responsibilities as per statutory requirements and the risk management abilities of all stakeholders associated with the Project.

In the final Project structure MIDC's role is limited to providing land at negligible lease rates and making available linkage infrastructure for the Project. MIDC also has a regulatory role to ensure implementation of the project as per the agreement with the developer and fair resolution of disputes arising between users and the developer. Further, MIDC decided not to take equity stake in the Project because of legal liabilities that may be associated with developing and operating such a facility in India. The developer on the other hand is responsible for

financing, developing, operating and managing the facility for a period of twenty years (i.e. the active life of the Project) followed by maintaining and monitoring the facility for a period of thirty years during the Closure and Post-Closure phase of the Project. The developer is to directly enter into contracts with individual generators and collect payments for the services offered to them.

The Project structure does not grant monopoly rights over the area of operation. This is because there is sufficient demand for the Project; Project components and costs are scalable; and finally to ensure freedom of choice to the users. The Project also has the first-mover advantage, with no other projects



being developed so far in the region. The Project structure is graphically depicted below:

#### **Final Selection and Negotiations**

In the second stage of evaluation, the Request for Proposal (RFP) document was issued to the list of developers shortlisted during the RFQ stage. The RFP document had three sections:

1. Request for Proposal: giving instructions to Bidders and describing the selection process;
2. Project Scope: laying out the performance standards and minimum Project requirements; and
3. Draft Project Agreement to be entered into between MIDC and the developer.

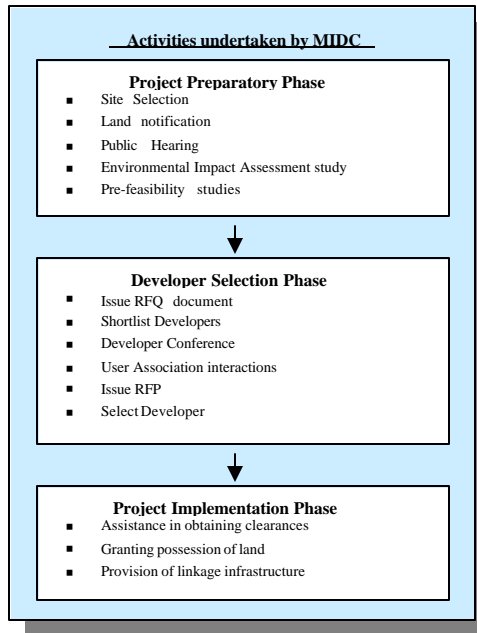
The selection process consisted of four stages of evaluation, which are as follows:

<sup>2</sup> The top ranked Bidder as per the selection process

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- Evaluation of Bidder's<sup>3</sup> Financial Capability,
- Evaluation of Bidder's Techno-Business Plan,
- Evaluation of Bidder's Conditions if any, and
- Evaluation of Bidder's Commercial Offer

In the first step, the Financial Capability of



and the Bidders shortlisted in this stage were selected for the next step of the process.

The third step in the selection process was to evaluate the Conditions submitted by Bidders along with their Bids. This step is generally included in bidding processes to evaluate any innovative Bids. In case the sponsoring agency (MIDC in this case) accepts any of the Conditions, these are made known to all Bidders who then re-submit their Commercial Offers. However, in this case, there were no Conditions imposed by the Bidders.

<u>Salient features of the Project</u>	
PROJECT COST	Rs 45 crores (approx.)
MINIMUM PROJECT SIZE	
<i>Incineration Capacity</i>	<i>20000 MT per annum</i>
<i>Landfill Capacity</i>	<i>1,20,000 MT per annum</i>
PROJECT TERM	
<i>Active life</i>	<i>20 years</i>
<i>Closure and Post Closure period</i>	<i>30 years</i>
USER CHARGES	
<i>Transportation charge</i>	<i>Rs 1.8 per km per MT</i>
<i>Pre -Treatment charge</i>	<i>Rs 108 per MT</i>
<i>Incineration charge</i>	<i>Rs 5265 per MT</i>
<i>Landfilling charge</i>	<i>Rs 715.5 per MT</i>
IMPLEMENTATION SCHEDULE (Tentative)	
<i>Commissioning of Landfill</i>	<i>April 2002</i>
<i>Commissioning of Incinerator</i>	<i>September 2002</i>

the Bidder vis-à-vis the Project costs was evaluated. Some of the parameters for evaluating Financial Capability were Tangible Network, Net Tangible Assets, Bridge Financing capability, etc. Scores were given to Bidders by the Expert Committee based on a pre-determined scale. Bidders who achieved a certain cut-off score were then shortlisted for the next stage of evaluation.

The next step involved Evaluation of Bidder's Techno-Business plan for all the four phases of the Project i.e. Pre-Establishment Phase; Establishment Phase, Operations Phase, and Closure & Post Closure Phase. The evaluation process also involved presentations by shortlisted developers before the Expert Committee. The scoring was done on a pre-determined scale, which had weightages for various parameters. This, too was a shortlisting stage

The last step in the selection process was evaluation of Commercial Offers of shortlisted Bidders. Since this was one of the first CHWTSDFs to be developed through private sector participation, there were no established precedents for developing the Tariff Structure of the Project. CRISIL Infrastructure Advisory evolved a Tariff Structure, which balanced the commercial concerns of both the developer as well as the users. The Tariff Structure proposed a cap on the user charges to be collected by the developer, this provided a safeguard for the users against arbitrary tariff escalations by the developer. In addition, a Tariff Escalation Schedule, linked to a suitable index, was established. This took care of developer's concerns regarding operating cost escalations.

<sup>3</sup> Consortiums were also allowed to bid for the Project. In this note Bidder and Bidding Consortiums have been used interchangeably.

Another issue that CRISIL Infrastructure Advisory faced while developing the Tariff Structure was that of the varying waste

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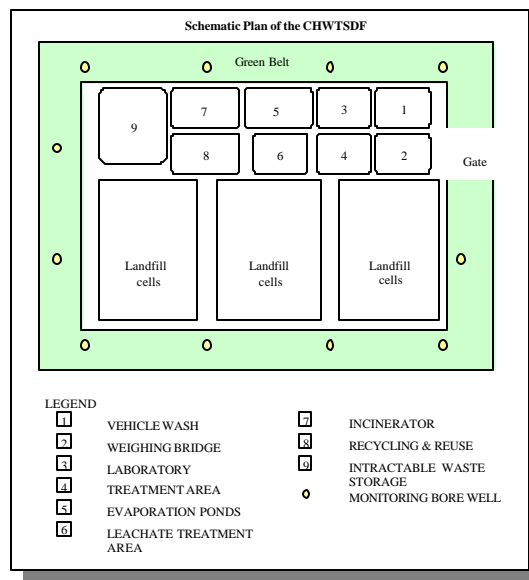
characteristics of individual users. Since the waste characteristics vary across users, the treatment costs required for the same were different for individual users. It was assessed that a single uniform user charge was not an ideal proposition for users whose wastes required a lesser degree of treatment. It was thus decided to go ahead with a Tariff Structure, which had separate user charges for various activities required to treat and manage the wastes such as transportation charge, treatment charge, landfilling charge and incineration charge. The final user charges, subject to the overall cap, would be based on the developer’s assessment of the unique waste treatment and management needs of individual users.

On the basis of the finalised Tariff Structure, Bidders were asked to quote in their Commercial Offers, separate user charges for transportation, treatment, incineration and landfilling of wastes. The user charges quoted by developers were evaluated based on pre-determined weightages by CRISIL

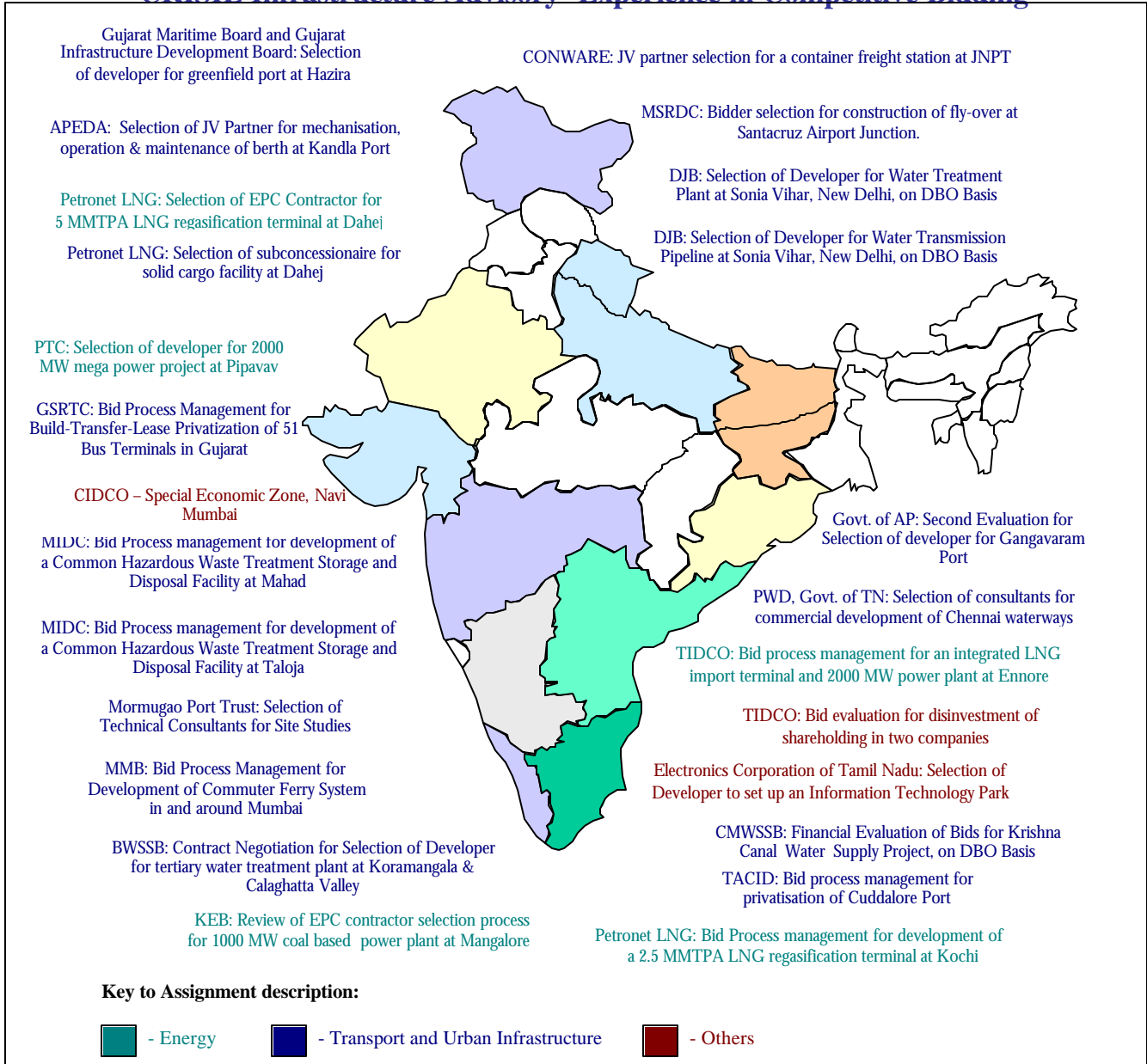
Infrastructure Advisory and the Expert Committee. The principle for establishing the weightages was “least life-cycle costs” for the facility. In addition, a financial model was also required to be submitted by the Bidders. The Bidder whose Commercial offer was the least, was chosen as the Successful Bidder.

In order to address speculative Bids, MIDC in consultation with the Expert Committee and CRISIL Infrastructure Advisory determined an acceptable range of Project costs, before the Bids were opened. Bids having Project costs beyond this range (lower or higher) were considered to be speculative in nature. The Bidders whose Bids were found to be speculative were asked to justify their Project costs failing which their Bids were rejected. MIDC then negotiated and signed the Project agreement with Mumbai Waste Management Limited (the Successful Bidder), promoted by the Ramky Group.

*MIDC is promoting another CHWTSDF project to be developed at Mahad in Raigarh District of Maharashtra. This facility is expected to cater to the needs of approximately one hundred and twenty industries from the industrial areas of Mahad, Roha and Lote Parshuram. CRISIL Infrastructure Advisory has been again chosen as the project advisor for the project.*



## CRISIL Infrastructure Advisory' Experience in Competitive Bidding



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