

## TECHNICAL ASSISTANCE COMPLETION REPORT

Division : SAEN

TA No./ Country and Name			Amount Approved: \$995,000	
TA 4182-IND : Preparing the Urban Clean Fuel Project			Revised Amount: \$995,000	
Executing Agency: Gas Authority of India		Source of Funding: Government of United Kingdom	Amount Undisbursed: \$146,391.27	Amount Utilized: \$848,608.73
TA Approval Date: 24 Sep 2003	TA Signing Date: 06 Jan 2004	Fielding of First Consultant{s}: 08 October 2003	TA Completion Date Original: 30 June 2004	Actual: 30 Sep 2005
			Account Closing Date Original: 30 June 2004	Actual: 19 July 2007
<b>Description:</b>				
<p>The TA is to carry out a study for implementing a clean fuel project with components in six cities, namely, Agra, Faridabad, Kanpur, Kolkata, Lucknow and Pune. It is also designed to develop a strategic plan on the use of compressed natural gas (CNG) to improve urban air pollution, including investment plan, to provide the required clean fuel supply. Likewise, the TA will assess existing laws and policies relating to ambient air quality and vehicular and indoor pollution in India. The TA's objective was in line with the Government's strategy to decrease the pollution levels in the six key cities mentioned above which will be implemented by Gas Authority of India Limited (GAIL).</p>				
<b>Expected Impact, Outcome and Outputs:</b>				
<p>The Project was expected to reduce emissions from vehicular, indoor and industrial sources, thus making a substantial contribution in protecting the health of the residents of these cities, especially the poor. Improved air quality was expected to reduce the costs of pollution to society. Furthermore, the strategic plan might also provide the initial stock of cleaner vehicles, so enough of them are available to attract private sector investments to increase the outreach of the Project. To promote the required private sector involvement, the TA will study the conditions required for private sector participation and the bulk use of natural gas/CNG.</p>				
<b>Delivery of Inputs and Conduct of Activities:</b>				
<p>During processing, it was estimated that the TA would require about 20 person months of international and 57 person months of domestic consulting services to be provided by a firm with expertise in energy economics and energy planning, gas infrastructure development and natural gas transmission and marketing, transport economics and planning, environment and safety issues related to CNG vehicles. In addition, 4 person months of individual international consultant for stakeholder mobilization and policy support for the air quality management dimension of the Project.</p> <p>The TA international consulting firm was engaged and commenced services on 10 March 2004. The actual consulting firm time spent for international experts was 22.95 person months and 58.76 person-months of domestic experts over 18 months for a total contract amount of \$841,208. The actual input of individual international consultant was 1 person-month. While the actual input of person months and costs were very close to the original projection, the completion period of the TA was extended four times to accommodate some initial delays in implementation, collection of data to complete the reports and submission of final statements of eligible costs.</p> <p>The design of the Project was adequate, the terms of reference were appropriate and the Project was completed within the original budget although there was a 15-month extension of the TA completion. The consultants did satisfactory works and produced high quality reports. They also interacted well and was able to gain the confidence of the Gas Authority of India Limited (GAIL). Overall, the performance of the consultants is rated satisfactory.</p> <p>ADB had fielded several review missions to supervise the TA progress and implementation with the participation of consultants and executing agency.</p>				
<b>Evaluation of Outputs and Achievement of Outcome:</b>				
<p>The TA delivered the following reports: (i) inception report in April 2004, (ii) mid-term report in August 2004, (iii) draft final report in January 2005 and (iv) final report in November 2005. The consultants interacted closely with the EA and ADB. Findings and recommendations were supported by the EA.</p>				
<p>As with any major gas pipeline project, the Urban Clean Fuel Project possesses two distinct aspects to the environmental issues:</p>				

- Construction phase – temporary disturbance to the environment lasting up to 2 years
- Operational phase – ongoing impacts, typically of a much more limited nature, throughout the operating life of the project

The extent of any environmental impacts can be minimized by appropriate consideration during the design of the project and in planning the construction and it is important that this be done based on the findings of a full environmental impact assessment that will need to be undertaken before detailed design is finalized.

Environmental management plan must be developed, updated and executed by the project proponent as project progresses from design to implementation.

The TA was supposed to formulate an economically viable project to promote the widespread use of natural gas in the target cities. There were initial discussions on the matter between the Government, ADB, and the consultants. However, the ensuing loan was dropped on the request of the Government of India due to some internal constraints.

#### **Overall Assessment and Rating**

The TA supported the Government's strategy on using CNG to minimize the pollution in the pilot areas. The EA supported the consultants' recommendations.

Since the ensuing loan was dropped on Government's request, the TA is rated partly satisfactory although the Government became fully aware of the advantages that the country will benefit from the study. Changes to the current laws, rules and policies to facilitate project development have been passed by the Indian Parliament which will create a great impact on the development of the urban clean fuel project, if approved.

#### **Major Lessons**

A number of vehicles were required to convert to using CNG by the Supreme Court directives. However, initially, there were a number of production constraints (i.e. high conversion cost, limited CNG stations) which limited the production of CNG vehicles and conversion equipment which led to delays.

The lesson learned should be that the private sector needs time to develop the necessary capacity to implement large-scale changes.

#### **Recommendations and Follow-Up Actions**

In India, various policies and strategies have been framed to integrate economic and social objectives with the environmental objectives. Continued institutional monitoring and support to ensure that the Urban Clean Fuel Project developed in a sustainable manner would benefit the environment and human health.

The implementation of the Petroleum and Natural Gas Regulatory Board Bill, when it is finally approved and passed by the Indian Parliament, will have an important impact on the future development of the Urban Clean Fuel Project in each of the five targeted cities. The main impacts of this bill are expected to cover the terms and conditions of transmission and distribution of the gas to be supplied to these cities and the pricing of these gas supplies. However, it is not clear yet, what the final version of this bill will include with respect to the gas transportation and pricing aspects.