



1. Project Data :
OEDID: L3364
Project ID: P010381
Project Name: Gas Flaring Reduction Project
Country: India
Sector: Oil & Gas Exploration & Development
L/C Number: L3364-IN
Partners involved : Asian Development Bank and Japanese Export-Import Bank
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2. Project Objectives, Financing, Costs and Components :

The project's main objectives were to (a) eliminate the flaring of natural gas associated with oil production from the Bombay High oilfield; (b) improve reservoir management practices for the Bombay High oilfield so as to reduce the decline in oil production and improve the amount of oil ultimately recovered; and (c) improve energy use efficiency in India's western region; (iv) promote greater private sector involvement in India's oil and gas industry .

Total project cost was \$2,099 million. The components were: (a) construction of two offshore processing platforms and modification of 18 existing platforms to improve their gas recovery capacity (\$810 million); (b) gas collection and gas transmission pipelines (\$822 million); (c) expansion of onshore gas processing plant (\$165 million); (d) optimization study for reservoir management (\$86 million); (e) safety and environment programs (\$14 million); and (f) assistance for promotion of private sector participation (\$1 million). A third platform (\$66 million) and drilling of 9 wells (\$35 million) were added during project implementation .

The project was financed by IBRD (\$450 million), ADB \$241 million Japan Ex-Im Bank (\$55 million), export-supplier credits (\$574 million) and internal resources (\$779 million).

3. Achievement of Relevant Objectives :

- The physical components of the project were implemented effectively, although with a delay of about two years, primarily due to delays in signing a credit agreement with the Japanese Ex -Im Bank. Gas flaring of associated natural gas was completely eliminated by early 1994. Reservoir management was improved, substantially extending the productive life of the field .
- Institutionally, the project failed to meet its objectives . There is no evidence that energy utilization efficiency has been improved. India has, as yet, failed to make any significant progress in obtaining private sector participation in petroleum exploration and production activities .

4. Significant Achievements :

- The introduction of better reservoir maintenance practices quickly reduced the amount of gas produced and flared, and resulted in improved reservoir pressure maintenance . As a result, oil production from the Bombay High field is about 4.5 million tons per year greater than it would have been without the improvements .
- To make up for the greater than expected decline in the production of associated gas, the project was expanded to include the drilling of new wells in a separate gas field . Gas production reached 12 billion cubic feet per day, as originally planned .

5. Significant Shortcomings :

- Gas prices were not increased until 1996, and then to only 55% of their opportunity cost based on replacing fuel oil.
- Improvements in the incentives for private sector participation in exploration and production were finally introduced in 1997, but so far have not achieved any significant results .
- The Government's program for divesting oil service companies and some oilfields, which was initiated in 1994, is still in its start-up phase.

6. Ratings :	ICR	OED Review	Reason for Disagreement /Comments
Outcome :	Highly Satisfactory	Satisfactory	Physical objectives were met, but institutional and sector objectives were not.
Institutional Dev .:	Substantial	Negligible	Progress on pricing, private participation and divestiture was negligible.
Sustainability :	Likely	Likely	Improved reservoir and safety practices
Bank Performance :	Highly Satisfactory	Satisfactory	gas sector policy dialogue was not adequately followed through
Borrower Perf .:	Satisfactory	Satisfactory	
Quality of ICR :		Satisfactory	

7. Lessons of Broad Applicability :

- Every effort should be made to ensure that co-financing agreements become effective in parallel with Bank loans, because delays can constrain project implementation performance, and thereby negatively affect the project's economic viability.
- Improving the legal and fiscal framework to promote private sector participation in petroleum exploration and development may not be enough to get desired results. The negotiation process also needs to be streamlined and strengthened.

8. Audit Recommended? ☒ Yes ☐ No

Why? Needed as a component for the India Energy Sector Review.

9. Comments on Quality of ICR :

Overall satisfactory, but:

- The ICR is overly sanguine about the achievements of sector policy objectives, particularly with respect to accepting that GOI as implemented a market based gas pricing policy.
- Reasons for believing that sector policy objectives (as defined by key indicators) would be achieved in the near future could have been spelled out in greater detail.