ICRR 10036
Report Number : ICRR10036

ICR Review
Operations Evaluation Department

1. Project Data :
OEDID :
OEDID: L3433
Project ID : P003505
Project Name : Yanshi Thermal Power Project
Country : China
Sector : Thermal
L/C Number : Loan 3433-CHA
Partners involved :
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Reviewed by : Yves J. Albouy
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Date Posted : 04/06/1998

2. Project Objectives, Financing, Costs and Components :
The project, supported by a loan for US$ 180 million, was approved in FY92 and closed in FY98 as scheduled (US$1.1 million remained to be disbursed as of Dec . 31, 1997). Actual project cost was US$405 million, 14 percent higher than appraisal, largely due to an increase in project scope . Primary project objective was to alleviate power shortages in Henan Province through addition of generation and transmission capacity . Other objectives were to: (i) support national development of mine -mouth coal-fired plants; (ii) minimize environmental impact and establish environmental monitoring program; (iii) reform the tariff system; and (iv) strengthen Henan Provincial Power Bureau (HPEPB, later transformed into Electric Power of Henan -- EPH). The project included: (i) addition of two 300MW units at the Yanshi thermal plant and related transmission lines and substations; (ii) installation of environmental monitoring equipment; (iii) consulting services for design /engineering and a tariff study; and (iv) training of HPEPB's staff.

3. Achievement of Relevant Objectives :
Physical components were completed very successfully, ahead of schedule, helping to reduce power shortages .
Environmental program was implemented and agreed environmental standards have been mostly met since commissioning. Technical assistance and training have helped strengthen EPH's project implementation and operating performance and prepare the agency for its commercialization and forthcoming corporatization and restructuring. Financial covenants have been met in most years . The tariff study led to some improvements in tariff structure (incl. tariff unification in most of the Province).

4. Significant Achievements :
Project implementation by HPEPB/EPH was highly satisfactory; in particular, company showed capacity to learn
from initial teething problems with first unit and apply lessons in construction of second one . Company's ownership
of training program was illustrated by its own funding of some foreign training expenditures .

5. Significant Shortcomings :
Mismatch between quality of local coal (ash content) and design value have led to lower -than-expected plant
efficiency and capacity utilization . As a result ex-post ERR is 13.8 percent, lower than appraisal's 15.7 percent but
still acceptable. In spite of some improvements (tariff unification and introduction of time -of-day pricing), tariff
structure remains suboptimal and average level is still below LRMC (by about 20 percent).

6. Ratings :	ICR	OED Review	Reason for Disagreement /Comments
Outcome :	Highly Satisfactory	Satisfactory	Although project implementation was highly satisfactory, physical objectives in terms of actual plant output and operating efficiency are not likely to fully meet appraisal expectations, due to higher-than-expected heat rate and lower capacity utilization (see 5 above).
Institutional Dev .:	Substantial	Substantial	
Sustainability :	Likely	Likely	Lower-than-expected capacity utilization and plant efficiency not considered likely to seriously jeopardize financial sustainability
Bank Performance :	Satisfactory	Satisfactory	Bank performance fully satisfactory throughout project cycle with the possible exception of the apparent insufficient attention paid at design stage to local coal quality (ash content)
Borrower Perf .:	Highly Satisfactory	Satisfactory	Beneficiary's highly satisfactory performance somewhat marred by Government's weaker performance in moving forward with tariff reform (see 5 above)
Quality of ICR :		Exemplary	

7. Lessons of Broad Applicability :
(i) for coal-fired thermal plants, careful analysis of coal quality is critical at design stage; (ii) procurement packaging
should balance need for minimizing contractual interfacing problems (particularly for Borrowers with limited project
management experience) with need to reduce costs through maximum competition .

8. Audit Recommended? Yes No

9. Comments on Quality of ICR :
ICR is considered exemplary, in spite of OED's (minor) disagreement on some ratings. It provides a clear, concise
and candid assessment of project implementation and results . Table 6 on Key performance indicators for future

project operation is a model of what should be included in ICRs for this type of projects . The ex-post IERR
calculation includes a risk analysis . And findings as well as lessons drawn are fully relevant to on -going and future
Bank power projects in China
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