

EvSum457

JOINT ODA-IBRD EVALUATION OF UK-AIDED DIESEL POWER GENERATING PLANT IN INDONESIA

[The Project](#) - [The Evaluation](#) - [Overall Conclusions](#) - [The Main Findings](#) - [Lessons - Further Information](#)

The Project

In 1985 the ODA made a grant under the Aid and Trade Provision (ATP) to provide £12.5m to reduce the interest rate on bank loans which financed a package of diesel generation equipment and related services provided by the UK firm Hawker Siddeley Power Engineering to the Government of Indonesia. The contract involved the design, construction, installation and commissioning of twenty three medium sized diesel generators with spares and ancillary equipment at 7 sites. The total project cost was £47.8m comprising £36.9m in foreign exchange and 15.244m in Indonesian Rupiahs (approximately £10.9m) from the Government of Indonesia. The grant element of the financing package was estimated to be 25%.

The Evaluation

The evaluation was jointly carried out with the World Bank as part of their Electric Power Utility Efficiency Improvement Study (EPUES). The evaluation team comprised Andrew Barnett (Economist, Sussex Research Associates Ltd.), David Hall (Engineer, Midland Electricity Board) and Arno Tomowski (Engineer, GTZ/IBRD, EPUES). The team visited Indonesia during October-November 1989.

Overall Conclusions

The project was *partially successful*. Although the equipment was mostly installed within budget and on time, in some locations this resulted in excess capacity in relation to demand, and in all cases the evaluators expected a negative financial rate-of-return. The project was adversely affected by the Government of Indonesia's pricing policies and by inadequate operating, maintenance and budgetary systems, partly a result of insufficient funds and training.

The Main Findings

- The equipment supplied was of a high standard and installed competently, largely on time and within budget under difficult conditions. But in some locations excess generation capacity was installed relative to the actual growth in demand for power. This was due partly to inadequate planning; to excessive emphasis on Java; and in particular, in two cases, to overlap between British and German aid.

- In the view of the evaluators an acceptable economic rate-of-return was likely in two of the four locations visited. In all locations, however, negative financial rates of return were expected from the investments.
- The use of high speed diesel was likely to be economically inappropriate in some locations on account of government pricing policies for gas, diesel and heavy fuel oil.
- Inadequate operating, maintenance and budgetary systems, partly a result of insufficient training, gave rise to low plant availability. The training constraints were exacerbated by the Indonesian Electricity Utility not being able to standardise on a specific machine type in particular regions.

Lessons

- Sustainability and quality of aid-financed power sector investments can be improved if attention is given to issues such as management, training and tariff policy rather than to capital equipment alone.
- Bilateral donors are likely to achieve greater effectiveness if they invest in the power sector as part of a sector development plan agreed by the recipient and all other donors.
- The degree to which diesel engine emissions effect the environment depends in large part on the quality of the systems in which the plants are located, and how efficiently they are operated.
- Accurate estimates of power demand are vital for ensuring viability. The investment procedures of utilities and aid agencies need to ensure that such estimates are made with considerable care, local knowledge and skill.
- Increasing the availability of funds for spare parts over the lifetime of power plant may increase the quality of aid without necessarily reducing the benefits to UK suppliers.
- Power plant performance is likely to improve if the contractor provides additional services, for example more training and other inputs during operation and maintenance during installation and commissioning, and provision to each power station of copies of the technical bulletins prepared by the manufacturers.

Further Information

The report is available from Evaluation Department for official use only as it is a joint report with the World Bank and not therefore available for unrestricted distribution. The EPUES Core Report is available for general release.