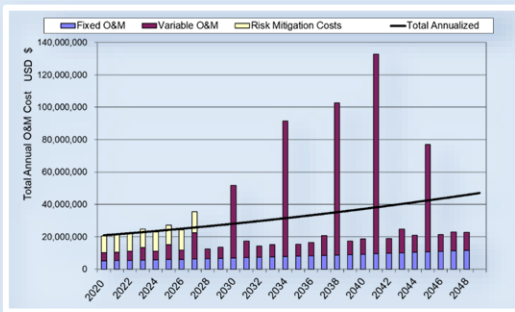


O&M COST ESTIMATES FOR GAS TURBINE AND COMBINED-CYCLE PLANTS



Example of O&M cash flow that includes contract maintenance costs in early years, and scheduled inspection/overhaul costs in later years

PROJECT HIGHLIGHTS

- Quantify life-cycle costs to operate and maintain an existing or new gas turbine or combined-cycle plant
- Establish annual cash flow budgets based on detailed estimates for O&M labor, component repair/replacement, and inspections/overhauls
- Review costs, technical aspects, and terms of existing or proposed long-term maintenance or parts agreements

Background, Objectives, and New Learnings

How much does it cost to operate and maintain a gas turbine or combined-cycle power plant over its expected life? How does a self-managed approach to maintenance compare with a contractual long-term maintenance, or parts agreement with an equipment manufacturer, or third-party service provider? What is the maintenance cost per start to dispatch the unit (when inspection intervals are based on starts)? What is the impact of turbine upgrades on O&M costs? If considering purchase of an existing plant, what additional maintenance costs should be anticipated to bring the gas turbine unit up to current standards? Under this services project, the funder will gain a much more comprehensive understanding of where costs are incurred and their relative impact on the economic viability of a gas turbine or combined-cycle plant.

Objective

Provide annual cash flow for O&M costs based on detailed estimates. Review costs, technical aspects, and terms of existing or proposed long-term maintenance agreements. Identify issues, costs, and benefits associated with updating gas turbine components to the current configuration.

Approach

The scope of services offered under this project is customized to meet a funder's needs. In general, a comprehensive estimate of O&M costs for gas turbine or combined-cycle power plants that follows the framework outlined in EPRI's

well-established O&M costing software will be provided. The plant configuration and dispatch characteristics form the basis of the analysis. For a specific model of gas turbine, the component repair and replacement costs, component life estimates, and scheduled inspection intervals will be established. Cash flow accounts for fallout (scrap rate) and rotation sparing. An allowance may also be estimated for unplanned maintenance. Budgetary cash flow can be anticipated for future years. Costs may be identified for use in pricing dispatch of gas-fired plants with either starts-based or hours-based maintenance.

Results of the analysis include an annual cash flow over project life. Costs are segmented based on fixed and variable cost categories. A present value economic analysis is applied over the project life. Initial values are refined based on inputs from the funder. The costs for a long-term service agreement (LTSA) and review of a maintenance contract technical scope may also be included.

Deliverable

Summary report to funder

Price of Project

Project cost is scope-based and depends on the unit configuration and number of plants, life-cycle analysis timeframe, specific focus of the O&M cost estimates, and the extent that long-term maintenance agreements are included. Price is estimated to range from \$20,000 to \$45,000 per plant. This project qualifies for Self-Directed Funding (SDF).

Project Schedule

The performance period is typically eight to 20 weeks, depending on the scope and degree of interaction with the funder.

Who Should Join

Gas turbine and combined-cycle plant owners/operators who desire a detailed estimate of future O&M costs over the plant life cycle, as well as companies considering a change in their long-term maintenance strategy may be interested in this project.

Contact Information

For more information, contact the EPRI Customer Assistance Center at 800.313.3774 (askepri@epri.com).

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