

# **ECONOMIC ANALYSIS OF STEAM PRODUCTION AT THE GEYSERS GEOTHERMAL FIELD, CALIFORNIA**

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## **ABSTRACT**

This paper investigates the economics of steam production at The Geysers from the point of view of a field developer. We present a cash-flow analysis and the calculation of several profitability criteria for steam supply to a hypothetical 55 MM (gross) power plant starting in 1989. This paper assesses in two parts the economics of developing the steam supply: (1) a deterministic economic analysis to establish the sensitivity of the profitability criteria to steam price where each parameter is given a unique value, and (2) a probabilistic analysis to estimate the profitability criteria, and their sensitivity to steam price, when uncertain parameters are allowed to vary. The results of the study indicate that no new commercial project is economically feasible at The Geysers unless the steam price exceeds 2 cents/kwh, because of long payout and extremely low profitability. Only a steam price exceeding 2.7 cents/kwh ensures a reasonably short payout time and the minimum profitability typically expected by field developers. Above a steam price of 3 cents/kwh, the economics of field development are attractive and risks are low. The accelerated decline in well productivity in recent years has increased risks and reduced profitability.

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