



Energy Management & Planning

Client

Alaska Electric Light & Power

Location

Juneau, AK, USA

Privatizing the Snettisham Hydroelectric

Project Description

CH2M HILL prepared the feasibility study supporting a \$100-million bond issue for the purchase of the Snettisham Hydroelectric Project from the U.S. government. The project was purchased through a public/private partnership between the state of Alaska (Alaska Industrial Development and Export Authority [AIDEA]) and Alaska Electric Light and Power Company (AELP).

The analysis included evaluating the production capability of the facilities; costs associated with ownership and operation over the 35-year term of financing for the project; the average cost of power produced by the facility; and the impact of these costs on AELP's retail rates. We also analyzed the financial risks associated with possible prolonged outages and with regulatory conditions. The sale and associated financing were successful, representing one of the first major divestitures of federally owned energy generation facilities.

As part of the project, we performed the following detailed analyses, among others.

Financial Evaluation of Legal Instruments

We examined the financial and economic requirements and implications of legal documents associated with the sale, including

- The Snettisham Project purchase agreement
- The power sales agreement between AELP and AIDEA
- An operations and maintenance (O&M) agreement between AELP and AIDEA
- Federal legislation allowing the sale of the U.S. government asset
- State legislation authorizing AIDEA's purchase of the assets
- The bond resolution for issuance of the \$100 million in bonds

Evaluation of these documents resulted in an understanding of the detailed structure of project financial requirements, obligations, and risk assignment among the various parties in the transfer of ownership and in the future operation of the project.

Engineering and Financial Modeling

Based on available hydrological studies, we estimated a probabilistic distribution of potential electrical output from the project. This information was compared with demand forecasts to forecast a range and expected level of output that would be used during the term of the bonds.

We also developed a financial model to evaluate costs associated with the project. This model included consideration of O&M costs, administrative and general costs, insurance costs, required annual contributions to a renewal



and replacement reserve fund, debt service on the bonds, and a credit for interest earnings on the debt service reserve fund established by the bond resolution. The net cost of project output for each year during the bond term was divided by the projected usage of output to determine an average rate per kilowatt hour per year. This rate was projected to decrease in real terms given that most project costs were fixed and that usage of project output was projected to increase with time.

We also modeled the impact of the project on AELP finances and rate requirements. This work included evaluating the impact of the sizable Snettisham financial obligations on AELP. To carry out this evaluation, we expanded a corporate model for AELP to include 10 analytical modules. The model incorporated the following into the forecast of AELP financial performance with obligation to pay all Snettisham costs: future capital expenditures, depreciation, property tax, generation forecasts (for Snettisham and other generation resources), revenue forecasts with existing rates, O&M expenses, long-term financial requirements, capital structure, and fund balances. Output from the model included a projected AELP income statement and capitalization schedule. The model was used to evaluate future rate changes that would be necessary under diverse projected operating conditions at Snettisham.

Risk Analysis



The primary risks to AELP resulted from the fact that the privatization of the project changed AELP's obligation to cover Snettisham costs from "take and pay" to "take or pay." This meant that rather than paying a unit rate for all power AELP chose to take from the project, it was now obligated to pay for all costs regardless of how much, if any, power was available from the project. Because the project increased the utility's financial obligations by more than 50%, system outages would have a significant impact on the utility and its ratepayers. Risk factors and probabilities for sustained outages were evaluated and impacts quantified in terms of replacement generation costs and the resulting impact on rates AELP could charge its ratepayers. Rate mechanisms to protect AELP from these risks were modeled and used as a basis for rate impact projections.

As part of the risk analysis, we also evaluated environmental conformance, impacts of electric utility industry restructuring, and federal rate reform.

Conclusions

The feasibility study was used as a key component of the official statement for the \$100- million bond issue used to finance the purchase of Snettisham. Output from the project was projected to cost AELP slightly less in the short run and significantly less in the long run. Debt services on the bonds were projected to be adequately covered throughout the term of the bonds. Given required contributions to the Snettisham renewal and replacement fund and projected needed capital expenditures, the project was forecast to be in good condition and debt free in 2033.

The greatest risk to the utility, its ratepayers, and the Snettisham bond buyers was projected to occur during the first year of project ownership.



During that period, AELP would be installing new submarine cables to substantially reduce the risk of a transmission outage between Snettisham and AELP's load center. This risk was for a sustained outage. Although assigned a low probability, such an outage was estimated to result in a doubling of utility rates during a 30-day period before insurance would take effect. We concluded that AELP could cover temporary cash shortfalls with existing lines of credit equal to more than a quarter of its annual revenues.

In return for this risk, AELP and its ratepayers were projected to enjoy decreases in real rates for the long term. AELP real (inflation-adjusted) rates were projected to decrease to a level 12% lower than its 1998 rates in 2003. The real cost of power from Snettisham was projected to continue decreasing for the remaining 30 years of the financing term.