CASE STUDY

Medium-Sized Combined-Cycle Power Plant Achieves Over $15M in Sustainable Annual Cost Reductions

Solomon employs Comparative Performance Analysis™ to optimize performance improvement across the plant

CHALLENGE
A power producer in a competitive electric wholesale market wanted to be more competitive and improve profitability.

SOLUTION
The utility participated in Solomon’s Comparative Performance Analysis and used Solomon’s proprietary analytical tools to identify areas in which its plant could improve performance.

RESULTS
The company achieved more than $15M in reduced annual fuel and maintenance expenses.

Identifying performance goals
A medium-sized power generation company was faced with operating in an increasingly competitive wholesale electricity-generating market. To boost its place in that market, the company decided to transform its middle-of-the-pack performance (Figure 1 and Figure 2) to excellent performance, producing power reliably and safely at the lowest possible cost.

Figure 1. Total Cash Less Fuel and Emissions

Figure 2. Combined Cycle - Electric Only Peers
Understanding cost and risk

The utility engaged Solomon to perform its Comparative Performance Analysis™, a proprietary benchmarking study, to identify performance improvement goals that would take the company to the next level among its peers. Solomon’s patented Equivalent Generation Complexity (EGC™) calculation, along with its Maintenance Index (Figure 3) and Maintenance Risk (Figure 4) performance measures, resulted in specific insights that enabled the company to optimize performance by deploying the right resources to the right process areas.

Figure 3. Maintenance Index Performance Measure

Figure 4. Maintenance Risk Performance Trend

Notes:
C-17 = Client-2017
PS = Pacesetter
EUOF = Equivalent Unplanned Outage Factor
kEGC = thousand units Equivalent Generation Capacity
Building a sustainable process

With an understanding of the need to achieve reliability first, the utility prioritized achieving a repeatable operating performance that could then be optimized. In the area of overall plant efficiency, the company also achieved reductions in fuel cost through improved plant operations. Following these reliability and efficiency improvements, the company also achieved reductions in maintenance costs.

Solomon’s patented “Total Cash less Fuel and Emissions per kEGC™” curve (see Figure 5) was used to set the utility’s spending targets, reducing costs in some areas without negatively affecting performance. Solomon knows from extensive study that if too much planned maintenance work is deferred or eliminated, plant reliability suffers and costs eventually skyrocket.

Using Solomon’s tools and analysis, the company achieved $15M in sustainable cost reductions while maintaining reliability. Contributing to this success was the client’s renegotiation, based on Solomon data, of its original equipment manufacturer long-term service agreement (OEM LTSA) as well as its awareness of its position on the risk curve. By optimizing spending and operating processes, the plant has seen substantial cost savings and is poised for continued excellent performance.

Figure 5. Equivalent Generation Complexity Curve

https://www.solomononline.com/benchmarking/power-generation