

Renewables Case Studies

Case Study #1 (Due Diligence and Operational Performance Assessment)

The client was interested in acquiring an operational renewable fuels plant and needed an assessment of the performance and reliability of the facility. TAS visited the site, reviewed the maintenance and operations documentation, and interviewed key operating personnel. TAS completed an assessment of the facility, including areas of strength and potential problem areas to be addressed. This insight allowed the client to recalibrate their offer (asset value ~\$300MM). As a result of this initial engagement, TAS was retained to evaluate additional sites for this client.

Case Study #2 (Due Diligence, Scope Development and Cost Savings)

The client facility had significant operating costs that it wanted to reduce. In performing a due diligence review, TAS identified a 3 MW power demand and significant waste heat stream as a source of potential value creation. TAS developed a scope for the installation of a steam turbine generator and associated boiler upgrades to allow the site to produce its own power at a substantial savings. The project resulted in a 1.25-year payback on a \$5MM project investment.

Case Study #3 (Operability Review, Technical Due Diligence, Performance Improvement)

Client site was not reaching production targets due to frequent operability problems. TAS performed a technical review to identify root cause in fermentation section and remedy. Due diligence included operations interviews and external expert reviews which identified root cause. TAS developed a project scope and execution plan for a \$2MM project to modify the Clean-In-Place unit (piping, systems and procedural modifications). TAS oversaw onsite completion, including management of engineering and construction contractors. Post re-start, the facility run rates increased to design capacity.

Case Study #4 (Pilot Plant Design, Code Review, Cost and Schedule Development)

The Client wanted to design a new pilot plant in conjunction with ongoing efforts to develop process conditions, manage technical constraints, and optimize reactor configurations. TAS provided 3D piping and equipment CAD models to allow an interactive and iterative layout process. TAS developed cost and schedule projections and completed NFPA code review. Final package included all equipment and structures, constructability analysis, and modular construction to minimize risk of business interruption.

Case Study #5 (Due Diligence, Operability, Reliability, Risk Mitigation)

Client requested an operational due diligence review of a potential investment, with TAS reviewing the technology being utilized to generate power at a prospect facility. The use of alternative power generation was key to the investment valuation and thus its operational reliability was the subject of our study. TAS did a deep dive of the technology, the operational history and the associated risks. TAS highlighted key viability concerns to be addressed during the negotiations, giving the investors a full view of downside risk and potential mitigation to enable risk weighting their offer prior to close.

Case Study #6 (Due Diligence, Scope Development, Early Stage Design, Transaction Support Analysis)

Client wanted to expand US production in the East and needed objective due diligence of possible sites as well as scope development for the engineering design. TAS's recommendations led to identification of an advantaged site. The TAS team developed a project scope in conjunction with selected technology provider to leverage their unique expertise and knowledge. TAS prepared a Total Installed Cost estimate of \$110MM for client's Board to compare as a build vs. buy for an acquisition opportunity also under consideration. Following the initial assignment, TAS completed additional site, technical, equipment, operational, and commercial evaluations for the client.

Case Study #7 (Scope Development, Facility Repurposing, Investment Transaction Support)

Client wanted to evaluate other possible uses for facilities as their market was changing. TAS's team performed technical and commercial due diligence in conjunction with operations leadership and technology experts to identify bio-butanol as a possible alternative molecule for the sites to produce. TAS provided early stage scope and investment ranges for facility conversion as well as a risk-based strategic assessment to client's executive team. TAS's team then provided subsequent technical and commercial support to client for the resulting technology licensing negotiations with 3rd parties.