

# AspenTech's Asset Optimization Software for Operational Excellence in Refinery Processes



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CATEGORY: PROJECT SUCCESS STORY

**Customer Profile:** JXTG Nippon Oil & Energy is a fully integrated petroleum products company, headquartered in Tokyo, Japan. It is the largest oil company in Japan, and in recent years it has been expanding its operations in other countries. Through partnerships with world class customers, it produces technologically advanced motor oils and transmission fluids that reduce carbon emissions, improve fuel economy, and reduce wear on critical components. Its products are sold under the brand name ENEOS, which is also the name used for its service stations.

**Challenges and Objectives:** To remain competitive and thrive in an uncertain and volatile energy market, characterized by major shifts in supply and demand dynamics, refiners must find innovative ways to increase operational efficiencies, maximize productivity, and produce refined products at reduced costs for long-term business sustainability. Most importantly, they must address operational challenges to reduce risks that can impact profit and safety. The main challenges are:

- Crude and feedstock variability
- Stringent environmental and product regulations
- Maintaining equipment reliability

In order to sustain their profitability, refineries must focus on leveraging new technologies and capabilities to achieve operational excellence. The focus must shift to controlling operating costs, minimizing the risks of variability, operating with higher reliability, and maintaining a safe and environmentally compliant workplace. The twin objectives of the company are to optimize refinery profitability and reduce product quality giveaway. Considering all these factors and requirements, JXTG Nippon Oil & Energy selected AspenTech's accurate planning and advanced scheduling tools, which protects against declining profitability while helping to mitigate the issue of skills shortage.



**Solution Implementation:** JXTG Nippon Oil & Energy chose aspenONE Petroleum Supply Chain software as its preferred optimization solution for economic and operational planning. The company deployed Aspen PIMS-AO, Aspen Petroleum Scheduler, and Aspen Multi-Blend Optimizer products to optimize refinery profitability and reduce product quality giveaway. With the ability to perform key refinery planning and scheduling activities from a single integrated AspenTech platform, JXTG Nippon Oil and Energy can now optimize its entire operations asset lifecycle. This single platform provides best-in-class solutions that leading refineries and olefins plants around the world use for feedstock selection, product slate optimization, and production planning. This solution enabled the company to see the plan and schedule simultaneously; run more scenarios faster than ever; optimize decisions; align inventory and distribution with market demand; and create integrated workflows.

**Quantifiable Benefits:** JXTG Nippon Oil & Energy has deployed this solution in four refineries locally. According to the company, AspenTech's support and collaboration throughout the deployment process of the asset optimization software was the key to achieve reliability and operational excellence. The software helped to increase productivity and profitability across the entire asset lifecycle by:

- Performing one-stop scheduling through integrated refinery planning, scheduling and blending
- Accurately tracking incoming and outgoing pipeline movements
- Managing incoming and outgoing shipments down to the docks

*Keywords: AspenTech Asset Optimization Software, aspenONE Petroleum Supply Chain, Refinery, JXTG Nippon Oil and Energy, ARC Advisory Group.*