



## SOLUTION SHEET

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# Operational agility

The oil and gas market is volatile now and will continue to be so in the future. These ever-changing market pressures mean that oil and gas companies must prioritize agility and resiliency. Not only will this allow teams to capitalize on short-term market changes and disruptions, it will increase competitive advantage. To achieve long-term success, oil and gas companies must enable an orderly transition to sustainable energy production that meets net-zero targets. Executives and employees understand the urgency and feel the pressure – and technology holds the key to enabling short-and long-term success.

Technology is continually pushing the boundary of what's possible. However, in the midst of a vast ecosystem of solutions, it's often difficult for oil and gas teams to determine which systems will have the biggest impact on their unique refinery.

# Overview

In the new era of energy, any technology solutions must empower the workforce to make quick, informed decisions and accelerate the shift to lower-carbon solutions. Real-time data, artificial intelligence, and machine learning give users the tools they need to rapidly analyze refinery information. Cloud deployment gives teams everywhere access to the same software and information. Edge computing reduces time to action, and other industrial software solutions all pave the way for companies to meet goals in a volatile industry.

AVEVA's value chain optimization approach helps you react to volatile market conditions to maximize the profitability of your value chain. Integrated production planning, scheduling and execution capabilities and edge-to-enterprise visibility in the cloud enables collaboration across your operational planning, supply chain management, and plant execution teams. With our complete software portfolio, you can continuously improve your asset and operations reliability and profitability.

## Challenge: React faster than a volatile market


Companies cannot afford to rely on disparate legacy systems to achieve profitable, sustainable industrial operations. Today's volatile market requires companies to deploy unified solutions that enable digital twins and dismantle industrial data silos to increase visibility across the value chain.

As the industry and workforce change, these systems will continue to enable teams to make critical decisions quickly and efficiently. Using real-time, comprehensive insights, teams can quickly adapt to meet demand, pivot when markets change, and proactively move towards environmental and sustainability goals.


One way to increase agility is to create a process digital twin of the entire value chain to provide operational insight in real time.

This allows enhanced decision-making, so that the business can make the correct decisions, faster, allowing you to remain competitive in a volatile market. Idemitsu Kosan optimized the enterprise-wide value chain to maximize economic opportunities for its integrated multi-plant business.

It developed robust, multi-refinery models to reliably evaluate complex profit scenarios previously impossible to analyze. The process digital twins increased margins between one and three cents per barrel through initial enterprise value chain optimization and simplified business processes with cloud deployment for seamless data integrity and traceability to ensure business continuity.



Quicker, more robust decisions



10% improvement in energy consumption



70¢ margin improvement per barrel



## Solution: Value chain optimization

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AVEVA can help accelerate the reduction of waste and elevate your operational efficiency with a digital platform that connects assets from edge to enterprise.

Integrated planning, scheduling, and execution capabilities help redefine processes, enable deeper collaboration, reduce value leaks, sustain productivity and innovation, and ultimately enable you to make better and more robust decisions.

AVEVA is combining cloud technology and digital twin innovations with the analytics to deploy consistent key process indicators (KPIs) and reporting standards

across the business, supported by the collection and centralization of data that feeds predictive analytics and machine learning.

Translated into economic value, regardless of industry, AVEVA can help you exceed your operational goals by reducing refining costs by up to \$0.70/barrel for energy companies.

AVEVA works with over 400 refinery and petrochemical sites around the world, over 100 mining and metals sites, and over 900 food and beverage and consumer packaged goods manufacturing sites worldwide.



## Case study: Astron Energy

Astron Energy transforms crude assay management process and reduces assay creation time by 50%.

Astron Energy, a leading independent refiner in South Africa, re-architected its crude assay management process in three months to take over crude analysis and assay database maintenance previously managed by its super major parent company. AVEVA™ Unified Supply Chain, a cloud-based solution, enabled enterprise crude knowledge management by streamlining crude analysis and new workflows for improved collaboration across diverse teams.

Astron Energy unlocked new competitive advantages and maximized profitability by deploying a single application for crude oil evaluation, tracking cargo quality and variability, exploring potential blends, and accurately characterizing the oil crude feed to the refinery. With AVEVA Unified Supply Chain, Astron Energy gained enterprise enterprise crude knowledge managementmanagement, so it can deliver on customer expectations.

[Read the case study](#)

# How AVEVA can help

Through integrated planning scheduling and execution, AVEVA connects the power of information and artificial intelligence (AI) with human insight to enable faster and more precise decision-making, helping industries to boost operational delivery and sustainability.

Our cloud-enabled operational data management solutions, combined with software that spans design, engineering, operations, asset performance, monitoring, and control, deliver proven business value and outcomes to over 20,000 customers worldwide, supported by the largest industrial software ecosystem, including 5,500 partners and 5,700 certified developers.

## Software offerings to optimize your value chain and improve your operational agility

**AVEVA™ Unified Supply Chain:** Ensures security and visibility of supply chain knowledge, with simple, consistent access to data and easy integration to external business systems.

**AVEVA™ Process Optimization:** Uses first-principle simulation models and process data to sharpen plant performance and profits.

**AVEVA™ APC:** Extracts maximum value from your processes by reducing control fluctuations.

**AVEVA™ Offsites Management:** Provides accurate, reliable, and accessible inventory and movement information, movement automation, and off-line/on-line multi-blend optimization.

**AVEVA™ Refinery Reactor Models:** Used rigorous kinetic models to optimize the operation of the reactor units.

**AVEVA™ Production Accounting:** Addresses the pressing issue of unaccounted losses for refineries, petrochemical plants, and other processing facilities.

For more information on how AVEVA can help you achieve operational agility in oil and gas, visit [aveva.com/en/solutions/performance/value-chain-optimization](https://aveva.com/en/solutions/performance/value-chain-optimization) or to talk with one of our experts please contact us [at aveva.com/en/contact](https://aveva.com/en/contact)