ASPEN HYSYS®

The industry standard process modeling application for simulation and optimization in the petroleum and oil & gas industries

Aspen HYSYS is an integrated steady-state and dynamic process simulation application that brings new levels of productivity and profitability throughout the plant lifecycle. Based on the experience of AspenTech's team of world-class simulation and modeling development experts and AspenTech's 23-year heritage of applying process engineering know-how to building simulation solutions, Aspen HYSYS helps engineers to create simulation models for:

- Plant design
- Performance monitoring
- Troubleshooting
- Operational improvement
- Business planning
- Asset management

A part of aspenONE™ Simulation & Optimization for Petroleum and aspenONE Simulation & Optimization for Oil & Gas, Aspen HYSYS offers an integrated set of intuitive and interactive simulation and analysis tools and real-time applications.

Benefits Demonstrated throughout the Plant Lifecycle

- **Rapid evaluation of the safest and most profitable and reliable designs** through quick creation of interactive models for "what if" studies and sensitivity analysis
- **Optimal equipment performance** through early detection of equipment performance, troubleshooting of plant operations, and assessment of equipment deficiencies
- **Reduced engineering costs** through creation of models that can be used throughout the plant lifecycle – from conceptual design to detailed design, rating, training, and optimization
- **Maximized investment** through integration with other AspenTech applications, including Aspen HYSYS Upstream™ for handling petroleum fluids and Aspen RefSYS™ for multi-unit modeling and simulation

Industry-Leading Functionality

- **Comprehensive thermodynamics foundation.** Aspen HYSYS ensures accurate calculation of physical properties, transport properties, and phase behavior; and contains an extensive component database with the ability to add user components.
- **Clear and concise graphics.** Aspen HYSYS provides PFDs that offer a graphical representation of the process flowsheet, productivity features, and graphics that depict comprehensive unit operations.
- **Integration with other AspenTech and third-party applications.** Aspen HYSYS interfaces easily with applications such as Microsoft Excel and Visual Basic, and features Active X compliance.

Our simulation models are integral to our operation because they monitor and optimize the performance of our operating units so that we can minimize energy consumption and maximize throughputs and yields. The end result is that bottom line profitability of our refineries improves.

Doug Evans
Director, Process Technology and Reliability
Petro-Canada

Options

With Aspen HYSYS, complex design processes can be automated through an open architecture that enables integration with other commercial and custom applications and data sources. This architecture provides maximum flexibility and power, and lets users enhance Process Lifecycle Management (PLM) with a set of options that can be integrated with Aspen HYSYS:

- **ACM Model Export™** enables users to simulate models created and compiled in Aspen Customer Modeler® (ACM) within Aspen HYSYS

- **Aspen HYSYS Amines™** simulates and optimizes sweetening processes involving single, blended, or activated amines

- **Aspen HYSYS Crude Module™** enables users to simulate crude oil assays and crude columns

- **Aspen HYSYS Dynamics™** provides a dynamic simulation capability that is fully integrated with the Aspen HYSYS environment

- **Aspen HYSYS Neural Net™** enables specialized processes or operations that are difficult to simulate using first-principle models to be incorporated into Aspen HYSYS by "training" them using actual plant data

- **Aspen HYSYS OLGAS™** incorporates industry-standard multi-phase pipeline flow correlations within Aspen HYSYS to calculate pressure gradients, liquid holdups, and flow regimes

- **Aspen HYSYS OLI Interface™**, based on a technology developed by OLI Systems Inc., experts in aqueous chemistry, enables analysis within Aspen HYSYS complex aqueous electrolyte systems

- **Aspen HYSYS Optimizer™** provides a tool for both design optimization and online/offline performance monitoring and optimization applications within the plant

- **Aspen HYSYS PIPESYS™** enables users to accurately model single and multi-phase flows to design, debottleneck, and optimize pipeline systems

- **Aspen HYSYS Tacite™** provides a tool for multiphase flow modeling for onshore, offshore and deep offshore environments

About aspenONE for Petroleum and aspenONE for Oil & Gas

aspenONE for Petroleum is an integrated, comprehensive set of software solutions, professional services, and partnerships designed to help the downstream petroleum industry achieve operational excellence, both in the refinery and across the entire supply chain.

aspenONE for Oil & Gas helps oil & gas producers make decisions based on visibility into corporate assets and the interactions among them, manage production portfolios, build cost-effective facilities and transmission systems, predict and maximize profits of assets as whole and operate entire systems profitably.

About AspenTech

Aspen Technology, Inc. provides industry-leading software and professional services that help process companies improve the efficiency of their business processes, optimize their operational performance and enhance their financial results. The new generation of integrated aspenONE™ solutions gives manufacturers the capabilities they need to model, manage and control their operations, enabling real-time decision making and synchronization of the plant and supply chain.

For nearly a quarter century, AspenTech has established a track record of partnering with customers to deliver sustainable value. Our large installed base of satisfied customers includes 23 of the top 25 oil companies, 47 of the top 50 chemical companies, and all of the top five engineering, procurement and construction firms.