

# More than \$30M in annual benefits from AspenTech® planning and scheduling solutions



## Profile

SK Corporation, the energy and chemical affiliate of SK Group, is Korea's largest oil refiner, holding 38% of Korea's refining market share with a capacity of 850 MBBL-per-day crude distillation and operating 3,700 service stations across the country. S.K. Corp. is involved in oil exploration and production in 12 countries. The company imports coal and liquid petroleum gas (LPG), and claims a 40% share of the Korean LPG market. SK Corp. also makes lubricants, low-pollutant gasoline, and a wide range of chemical and pharmaceutical products.

In addition to its substantial energy business, the company runs a petrochemical business capable of producing 4.33 million tons of petrochemical products per year. SK Corp. also has ethylene resolution facilities capable of producing 730,000 tons per year. Through its energy and chemical businesses, SK Corp. has grown into a world-class general energy and chemical company. Revenues in 2001 were \$10.6B.

"Implementing AspenTech's solution for planning and scheduling has been a catalyst for business change at SK Corporation, resulting in tens of millions of dollars in savings annually."

**Y.K. Lee**  
Senior General Manager  
CIM Development Team  
SK Corporation

## Business Challenge

Recognizing that a multi-plant production planning solution could significantly impact profitability, SK Corp.'s top management spearheaded a feasibility study which concluded that there would be significant benefit in optimizing production planning at the company's refinery and petrochemical plants.

SK Corp. had already been using a planning solution, but it had not been widely accepted by users because its wasn't perceived as easy to use and wasn't flexible enough to serve SK Corp's multi-operational business model. Therefore, when the

search for a new planning solution began, the focus was on selecting a leading-edge technology to easily implement model enhancements in accordance with the following four requirements:

1. Delta-based modeling
2. Swing-cut optimization
3. Crude assay for each logical Crude Distillation Unit (CDU)
4. Multi-plant optimization

## Solution

SK Corp. considered several solutions before selecting Aspen PIMS™ to integrate production planning within its Petroleum and Petrochemical/Chemical businesses. "One of the major reasons we selected AspenTech was the willingness of its employees to analyze our requirements and help us find the right solution that made the most sense for our multi-operational business model," said Y.K. Lee, Senior General Manager, S.K. Corporation.

Among the requirements for selection that differentiated AspenTech from the competition were:

- Proven technology
- User friendliness
- Application development capability and flexibility

- Strong customer support
- Number of downstream products

SK Corp. saw the value in linking monthly production planning and scheduling across its refining organization as a subsequent step in optimizing its operations. Scheduling would serve to further enhance monthly planning by providing better visibility into inventory and eliminating any deviations between planned and actual production. Given the success of the production planning model, SK Corp. moved forward with implementing scheduling at its Ulsan complex by capitalizing upon the same Aspen PIMS models being utilized for production planning.

## Business Benefits

SK Corp. has enjoyed significant ongoing benefits from its implementation. "The solutions implemented by AspenTech have been fully integrated into our business process, resulting in larger benefits than we had originally expected. We believe that the success of this project is due not only to AspenTech's technology and domain expertise within both the chemicals and refining arenas, but also the willingness of end users to accept changes to the business process," Lee said.

Recurring financial benefits include:

- Production planning savings for the refinery totaling \$19.2M/year
- Production planning savings for the petrochemical plant totaling \$7.8M/year
- Scheduling savings for the refinery totaling \$4.5M/year

"Implementing AspenTech's solution for planning and scheduling has been a catalyst for business change at SK Corporation, resulting in tens of millions of dollars in savings annually," Lee said.

## Vision

Having enjoyed significant benefits, SK Corp. is motivated to pursue an ongoing relationship with AspenTech. "Our plan is to implement AspenTech solutions within our petrochemicals and refining business as we see the need and benefits," Lee said.

## About AspenTech

Aspen Technology, Inc. is a leading supplier of enterprise software to the process industries, enabling its customers to increase their margins and optimize their business performance. AspenTech's engineering solutions, incorporating Hyprotech's technologies, help companies design and improve their plants and processes, maximizing returns throughout their operational life. AspenTech's supply chain manufacturing solutions allow companies to run their plants and supply chain more profitably, from customer demand through to the delivery of the finished product. Over 1,200 leading companies rely on AspenTech's software every day to drive improvements across their most important engineering and operational processes. AspenTech's customers include Air Liquide, AstraZeneca, Bayer, BASF, BP, ChevronTexaco, Dow Chemical, DuPont, ExxonMobil, GlaxoSmithKline, Lyondell Equistar, Merck, Mitsubishi Chemical, Shell and Unilever. For more information, visit [www.aspentech.com](http://www.aspentech.com).



worldwide headquarters

**Aspen Technology, Inc.**  
 Ten Canal Park  
 Cambridge, MA 02141-2201 USA

**[phone]** + 1 617 949 1000  
**[fax]** + 1 617 949 1030

**[world wide web]** [www.aspentech.com](http://www.aspentech.com)  
**[e-mail]** [info@aspentech.com](mailto:info@aspentech.com)