

CASE STUDY



Experienced Engineering Services Provider Achieves Enhanced Productivity in Natural Gas Processing Plant Design

**"Integration of all products and features in the aspenONE® Engineering desktop, including Acid Gas Cleaning, equipment sizing, Relief Valve Sizing, and Dynamic simulation, enables us to provide our clients with optimum designs faster through better engineering efficiency."**

- Umer Qureshi, Senior Process Engineer, Bilfinger EMS GmbH, Germany



## A BUSINESS WITH A VISION

Bilfinger EMS GmbH, Germany is an E&C with over 40 years of experience in servicing process industry clients. Their services range from plant engineering, design, and construction, to plant maintenance and operation. Engineering solutions provided by Bilfinger are customized depending on the client's need.

In order to ensure consistency of data and thermodynamics and reduce the time spent evaluating each design option, Bilfinger has chosen to make the aspenONE Engineering suite their process modeling software of choice. Aspen HYSYS® is their simulator of choice for modeling gas treating processes, including glycol dehydration, condensate stabilization, LTS unit modeling, and other applications. Bilfinger has also taken advantage of the new features introduced in

**The combination of a unified engineering environment and the recent V8 innovations in the aspenONE Engineering suite of products has led to unprecedented engineering efficiency— leading to faster, superior designs.**

### CUSTOMER PROFILE - Bilfinger EMS GmbH Engineering Services - Process Industry

#### CHALLENGE

Produce optimal designs with maximized engineering efficiency.

#### SOLUTION

Use the aspenONE Engineering suite of products, including the V8 innovations, such as Activated Analysis, Acid Gas Cleaning, and Relief Valve Sizing for faster and better designs, optimized for product yield and capital and operating costs.

#### BENEFITS

- Up to 3 times more design options evaluated
- 40% reduction in engineering hours to complete design evaluations
- Expanded the range of services offered

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aspenONE Engineering V8, such as Acid Gas Cleaning, Activated EDR, and the Relief Valve Sizing feature that is integrated with Aspen HYSYS and Aspen Flare Systems Analyzer.

Adopting the aspenONE Engineering V8 suite led to a 40% reduction in engineering hours spent evaluating a design alternative, which has allowed Bilfinger to increase design alternatives screened by a factor of three. Access to new, innovative functionalities has also allowed Bilfinger to expand the range of services offered. They are looking forward to exploring other products in aspenONE Engineering and implementing them in their workflow.

### STRIVING FOR EXCELLENCE AND BEING A THOUGHT-LEADER IN THE INDUSTRY

Over the lifetime of a production fields, the feed composition changes, therefore when designing gas processing facilities, the key technical challenge is to make sure that the plant will be able to process the changing feed with maximized product yield and consistent product quality. Process engineers make sure that the heat and mass balance in the plant adds up, and that equipment is sized appropriately for maximum plant profitability and flexibility with minimal capital investments.

In the past, engineers had to perform many calculations by hand, and rely on vendors for equipment sizing. This slowed the work down, in addition to the manual data transfer being error-prone. Evaluating a design alternative took a lot of time and effort. Typically, Bilfinger would evaluate 2-3 design alternatives to pick the optimal option for their client, but with aspenONE Engineering V8, they can now screen 6-8 design alternatives.

To drive the excellence of the services they offer even further, Bilfinger has implemented the aspenONE Engineering V8 suite of products. In addition to the flagship oil and gas simulator—Aspen HYSYS, they are using additional products and features included within the suite, such as Aspen HYSYS Dynamics, Aspen EDR, Aspen Flare Systems Analyzer,

Relief Valve Sizing, and Acid Gas Cleaning. The integration of all of the products and features has been the key factor for success.

### OPTIMIZING PROCESS ENGINEERING WORK

Integration of the products in the aspenONE Engineering suite has allowed Bilfinger to evaluate more design alternatives faster, taking into account various factors, such as changing operating conditions and feedstock composition, as well as environmental regulations in different geographies of the world. Being able to easily transfer data between a variety of products and product features has not only sped up the time it took to evaluate a design alternative, it has also helped eliminate errors associated with data transfer. The ability to model an entire gas plant within one simulator has improved the understanding of the physics of the plant and how all processes are interconnected. Bilfinger's standard approach is to model the entire plant within one process flow diagram, grouping different parts of the plant into a subflowsheet, which helps to ensure that no information about the plant is lost and facilitates developing a clear understanding of how feed changes affect downstream processes.

**Bilfinger has implemented aspenONE Engineering V8 suite of products.**

Since upgrading to aspenONE Engineering V8, Bilfinger has successfully completed four design projects: a conceptual design

study of a natural gas plant, a pre-FEED of a natural gas plant, a detailed engineering study of a fuel combustion plant, as well as a detailed engineering of a gas processing plant. They have used aspenONE Engineering products to optimize designs based on profit, support acquisition of emission permits, size the equipment, estimate CAPEX and OPEX, and perform safety studies. aspenONE Engineering has allowed them to evaluate different design alternatives and evaluate plant performance under various process conditions, such as weather, multiple operating temperatures and pressures, feed compositions, and location—which was not possible earlier.

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**Bilfinger EMS GmbH is planning on using aspenONE Engineering products in the future to provide their clients with optimal designs produced with ultimate engineering efficiency.**

## EXPANDING THE RANGE OF SERVICES OFFERED EVEN FURTHER

After upgrading to V8, Bilfinger now spends 40% less engineering hours on evaluating design, screening two to three times more design alternatives per project, and expanding the range of services they offer, while continuing to provide designs optimized for profitability with maximized product yield and consistent quality.

Bilfinger EMS GmbH is planning on using aspenONE Engineering products in the future to provide their clients with optimal designs produced with ultimate engineering efficiency. They are also looking into exploring other functionalities, including multiphase hydraulic modeling, sulfur recovery, and economic evaluation.

AspenTech is a leading supplier of software that optimizes process manufacturing—for energy, chemicals, engineering and construction, and other industries that manufacture and produce products from a chemical process. With integrated aspenONE® solutions, process manufacturers can implement best practices for optimizing their engineering, manufacturing, and supply chain operations. As a result, AspenTech customers are better able to increase capacity, improve margins, reduce costs, and become more energy efficient. To see how the world's leading process manufacturers rely on AspenTech to achieve their operational excellence goals, visit [www.aspentech.com](http://www.aspentech.com).

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