Multinational Energy Company Boosts Project Delivery with Digital Engineering Solution

"Aspen Basic Engineering™ saves us money and effort by helping us to create and deliver basic engineering packages faster, more accurately and with fewer resources."

- Company's Special Initiative Team Lead

CHALLENGE

- Countless hours spent performing manual updates from change requests

- Inefficient data transfer between disciplines

- Modification of document templates to align with company standards

SOLUTION

- Aspen Basic Engineering, integrating process data and front-end engineering data in a centralized location

VALUE CREATED

- Single source of truth model, reducing time spent on change requests

- Simplified quality assurance process, making it easier to track inconsistencies across deliverables

- Customized symbol library, datasheet templates and knowledge bases to accommodate client standards
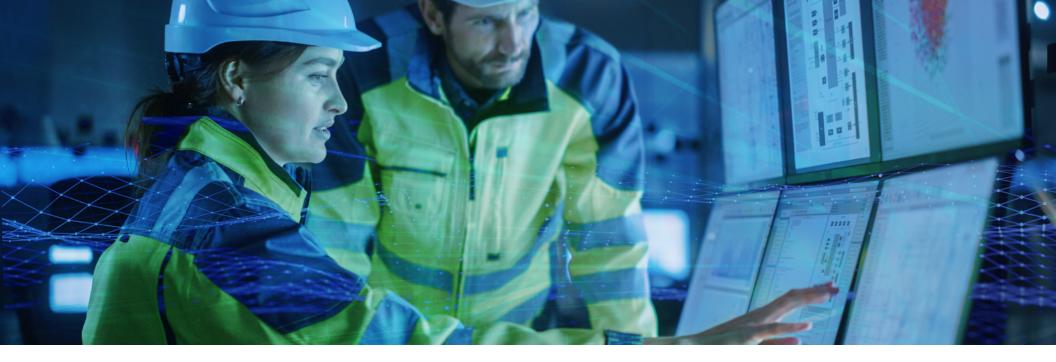
Overview

A multinational energy company provides a range of customized engineering services for development and innovation capital projects, ranging from feasibility studies to detailed engineering and supervision in the field. It focuses largely on projects for upstream and downstream oil & gas customers, including decarbonization, carbon capture, CCUS and energy efficiency. With seven execution centers and over 1,000 engineers at different locations, the provider was looking to improve integration and collaboration between engineers and disciplines across the different locations—and more aligned, more consistent project deliverables.

The Importance of Data Consistency During FEED Execution

A big challenge for the company—typically working on numerous projects at the same time—was the need to streamline its process for creating FEED deliverables and identifying errors in documents that could be easily propagated across all documents. Currently, when receiving a change request from a client, it would have to invest a considerable amount of time in reviewing documents to ensure that all impacted deliverables were correctly updated.

The company wanted to develop a methodology that would expedite and track engineering projects from concept to completion. Its engineering team began searching for a digital solution to develop FEED deliverables. The team learned of Aspen Basic Engineering as a way to streamline engineering projects from the earliest stages, create a workflow to leverage data from process simulations and generate deliverables such as process flow diagrams and equipment datasheets.

A Single Source of Truth

With Aspen Basic Engineering, the company was able to implement a single source of truth workflow. Data changes in one document could be automatically replicated and carried over to and throughout other deliverables upon approval, minimizing rework effort or time. The solution integrated the EPC's disparate data from process simulation to FEED deliverables, enabling multiple process designers to work on engineering deliverables simultaneously and improving data consistency across deliverables.

After deploying and customizing pilot testing, and training its engineers to use Aspen Basic Engineering, the firm successfully developed three Go-Live projects (two from the basic engineering stage and one from the FEED stage) for offshore upstream with approximately ten process engineers per project collaborating on FEED deliverables. These projects allowed the team to complete the customization of Aspen Basic Engineering's libraries, with symbols and labels for drawings, data sheets and equipment summary templates, as well as knowledge bases (scripts) to simplify data filtering and sorting.

Aspen Basic Engineering is a multiuser application that enables data consistency, up-to-date deliverables, multidisciplinary collaboration, and integration with AspenTech process simulation, cost estimation and equipment design.

Fulfilling the Digital Vision

Leveraging Aspen Basic Engineering, the energy provider was able to adopt and implement a digital approach for FEED execution, a key objective for some time. Digitalization enabled the single source of truth model, with minimal time needed to perform change requests. It also improved its quality assurance process for documents and made it easier to track inconsistencies across deliverables. Collaboration has reached new heights for the company, as more engineers in its different offices are working together when developing deliverables.

The firm is now looking to Aspen Basic Engineering's capabilities to meet several future goals: integrating in-house calculation spreadsheets into its centralized database, implementing data transfer workflows with Hexagon's Smart Plant® P&ID and establishing a data reuse from existing projects to greatly reduce drafting time.

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Aspen Technology, Inc. (NASDAQ: AZPN) is a global software leader helping industries at the forefront of the world's dual challenge meet the increasing demand for resources from a rapidly growing population in a profitable and sustainable manner. AspenTech solutions address complex environments where it is critical to optimize the asset design, operation and maintenance life-cycle. Through our unique combination of deep domain expertise and innovation, customers in asset-intensive industries can run their assets safer, greener, longer and faster to improve their operational excellence.

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