# HEXAGON
PPM

# SINOPEC NINGBO ENGINEERING, CHINA

## Key Facts

**Company:** SINOPEC Ningbo Engineering Company Limited

**Website:** www.snec.com

**Industry:** Chemical

**Country:** China

**Products Used:**

- Intergraph Smart® 3D
- Intergraph Smart Review

**Key Benefits:**

- Automation of engineering deliverables for increased work efficiency
- Ability to identify design conflicts easily to minimize errors and improve quality
- Optimized engineering design processes for improved efficiency and productivity

## SINOPEC INCREASES ITS ENGINEERING DESIGN QUALITY AND EFFICIENCY ON CHINA'S LARGEST METHANOL PROJECT WITH INTERGRAPH SMART® 3D

Chinese engineering company implements next-generation Intergraph Smart 3D design solution to support Chongqing natural gas-to-methanol project for enhanced safety, quality and productivity

SINOPEC Ningbo Engineering Company Limited (SNEC) is an engineering company with its business scope covering areas of scientific research and development, engineering design, manufacturing, construction, and inspection and maintenance services. The main area of focus is on EPC services and project management. SNEC holds its own patents and proprietary technologies and renders technical and management services in both domestic and international markets.

### IDENTIFYING GOALS

SNEC was established in 2003 with the merger of the former SINOPEC Lanzhou Design Institute and the former The Third Construction Company of SINOPEC, which was approved by SNEC's parent company, SINOPEC Group. Today, SNEC is an all-around engineering company, providing engineering, procurement and construction (EPC) solutions, as well as project management services. It has rich project management experience, completing the engineering design and/or construction of over 1,000 plants.

SNEC is one of the EPCs involved in the Chongqing natural gas-to-methanol plant, China's largest methanol project. It is responsible for the engineering design of this large-scale and complex chemical plant, which includes multiple process units. SNEC required a comprehensive engineering design solution with advanced technology to tackle such a challenging project.

## OVERCOMING CHALLENGES

- Improve engineering design efficiency and productivity
- Enhance quality and accuracy of engineering design
- Automate generation of large volume of project deliverables
- Accelerate project schedules and reduce operating costs

## REALIZING RESULTS

SNEC selected Hexagon solutions, including the world's most advanced 3D plant design solution, Smart 3D, for this high-profile project. Smart 3D is recognized as the leading 3D engineering design solution in the market, used by global industry leaders. It is proven technology and can handle even the most complex tasks quickly and easily. This was a critical factor for SNEC's selection of Smart 3D as there are about 350,000 objects to be included in the 3D model for this major project, including 138 sets of equipment and a 40-kilometer pipeline.

Smart 3D is the world's first and only next-generation 3D plant design, employing a breakthrough engineering approach that is focused on rules, relationships, and automation. It provides all the capabilities SNEC needs to design a plant, and then keep it as-built throughout its lifecycle. This innovative Intergraph solution captures new and existing engineering knowledge so that it can be saved and reused in the future, which is the key to success in today's competitive global economy. Smart 3D is the most advanced and productive 3D plant design solution that effectively enables optimized design for increased safety, quality, and productivity, while shortening project schedules. Companies using Smart 3D, including SNEC, typically report a 30% improvement in overall engineering design productivity.

Smart 3D has a user-friendly interface with simple operation commands, so it was easy to train SNEC's engineers to use the software, halving the usual amount of time required for such training. Smart 3D's automation capabilities also help to greatly improve design efficiency by optimizing engineering design processes and shortening the design cycle. Engineers could automatically generate engineering deliverables, such as pipeline isometric maps and material tables, delivering both cost and time savings.

Smart 3D features unique, rule-driven technology, enabling SNEC to deliver high-quality engineering design for this major methanol project. Using rules and relationships established in Smart 3D, engineers could easily perform collision checks of components within the 3D model, such as piping, equipment, cable tray, and others, and make any modifications or improvements as required. Accuracy and design quality is greatly enhanced, which improves the safety and productivity of the plant.

## MOVING FORWARD

The implementation of Smart 3D for the Chongqing methanol project has been a great success for SNEC. The Chinese engineering company plans to further extend the use of Smart 3D for other projects.

In addition, SNEC will expand its use of Hexagon technology and adopt other solutions, including SmartPlant® Foundation, Intergraph Smart Instrumentation, Intergraph Smart P&ID and others. This is aligned with SNEC's vision to implement an integrated engineering environment for the whole plant lifecycle to drive its EPC business.