



# Complete Engineering Workflow

## Power Industry Solutions

### Proven Success

Many companies from around the world have chosen Hexagon's PPM division for their power and utilities projects for the past 20 years, including EPC and O&M companies such as:

- Fichtner Consulting
- Gelsia Italy
- Richard Design Services

Now more than ever companies are under pressure to drive efficiency by utilizing tools that help increase profit margins. Proven solutions to generate nuclear, fossil, gas and hydroelectric energy are needed to power the world. Maximize your return on investment to bring a facility online, improve plant efficiency, lower operating costs and improve safety margins.

Developing a power plant takes many years and hundreds of millions of dollars. This is a huge investment that requires rigorous solutions to meet many challenges. Choose a solution provider who understands your needs with the solutions designed to address your design and engineering challenges, while complying with government regulations of health, safety and environment.

### 3D Design & Visualization

Hexagon is focused on helping the world's power generation companies fulfill their design needs by providing the most complete, flexible and intuitive CAD-based solutions on the market. By delivering the most up-to-date tools for today's engineering demands, Hexagon solutions enable users to quickly and easily create fully intelligent 3D plant models. One such solution is CADWorx® Plant Professional, a tool that is easy to set up as well as to use and enables for well-organized creation of deliverables. Because CADWorx models are based on BricsCAD® (included with CADWorx) or AutoCAD® platforms, they offer unparalleled flexibility and collaboration.

With an extensive history, the CADWorx Professional bundles have proven themselves to cover all key aspects of plant project execution in the power industry, supporting the user through the complete project execution lifecycle. From the auto-routing capabilities that allow piping designers to intuitively create 3D piping models quickly to the automatic isometrics drawings that can be produced instantly from those 3D models, CADWorx provides the most full-featured and cutting-edge tools for efficient and accurate 3D design.

CADWorx Structure is an integrated CAD modelling structural design software that provides easy-to-use tools, intelligent drawing capabilities and advanced levels of automation, all created with the structural designer and engineer in mind. The software is quick, easy to set up and simple to use, empowering designers and engineers to work efficiently together on large and small projects alike.

## Analysis

High value power facilities require very strict standards, often needing the facilitation of solutions that provide complete integration of design and analysis so that the power facilities operate safer and more reliable. One major differentiator of CADWorx compared to its competitors is the interface between CAD and CAE. CADWorx Plant is integrated with Hexagon's CAESAR II® solution for pipe stress analysis, PV Elite® for analysis and design of pressure vessels and heat exchangers and GT STRUDL® for structural analysis.

After the 3D pipe routing has been completed in CADWorx, it can be exported to CAESAR II for pipe stress analysis with the pipe class information, such as material and pressure, retained. CAESAR II determines whether the piping design is safe and compliant with the relevant piping codes. This increases productivity through the reduction of errors that are introduced in manually duplicating the model and saves time from release to approval. The solution also has the capability to analyze piping systems in accordance with more than 30 International Piping Codes including B31.1 power piping code and ASME Section III; it also meets stringent NQA-1 standards.

The same type of interface applies for the design of pressure vessels and heat exchangers. The modeling of the equipment starts in CADWorx and can then be exported to PV Elite for analysis. Any design changes required after the analysis of the equipment can be directly incorporated into the CADWorx 3D model. PV Elite is a leading vessel analysis product within the power industry, being used by operators, leading EPCs, contractors, notified bodies and many others. PV Elite analyzes pressure vessels in accordance with four international design codes.

## Asset Lifecycle Information Management

A new power plant must be brought to the market rapidly. Defining, recording and auditing the plant's ever-changing operating characteristics can be a challenge. Plus, analyzing and managing the impact of the change must be performed in accordance with regulatory and process quality practices. All of this must be achieved in a global market where capital project delivery must not only be fast and efficient, but accurate.

Plant designers and engineers need software with enhanced decision support capabilities to facilitate global design, production and lifecycle optimization of the plant. The information management software from Hexagon's PPM division maximizes efficiency for industrial and manufacturing plant maintenance and provides plant operation solutions. From concept and design through plant maintenance, operations and decommissioning, Hexagon enables data governance of all the plant's engineering information, integrating information on the physical asset, processes and regulatory and safety imperatives.

## Engineering & Schematics

With plant owners looking at budgets, schedules and operation times, implementation of the latest strategies and solutions that compete in today's environment can provide consistency and synchronization across engineering projects ensuring data accuracy. Learn how you can design and maintain a safe, reliable power distribution system from load identification to plant startup.

Hexagon's CADWorx P&ID software provides productivity tools to create intelligent process diagrams, accurately reflecting the as-built plant. With CADWorx P&ID Professional, 3D plant models can be linked for change management control, synchronizing your 3D models with your P&IDs and avoiding costly field mistakes.

## Procurement, Fabrication and Construction

With Hexagon's efficient and accurate plant control system for procurement, fabrication and construction, plant designers and owners save valuable production time during plant construction. The solutions span the complete project management lifecycle — from materials specification and change management through procurement and tracking to inventories, forecast and material issuing.

Isogen® is the world's leading solution for the total automation of piping isometric drawing production and is the Hexagon standard system for drawing piping isometrics and comes bundled with CADWorx. The solution is also supported by all major piping design solution vendors who will either bundle Isogen with their product or will output one of the two Isogen data files – the PCF or the older IDF.

## About Hexagon

Hexagon is a global leader in sensor, software and autonomous solutions. We are putting data to work to boost efficiency, productivity, and quality across industrial, manufacturing, infrastructure, safety, and mobility applications.

Hexagon's PPM division empowers its clients to transform unstructured information into a smart digital asset to visualize, build and manage structures and facilities of all complexities, ensuring safe and efficient operation throughout the entire lifecycle.

Hexagon (Nasdaq Stockholm: HEXA B) has approximately 21,000 employees in 50 countries and net sales of approximately 3.8bn EUR. Learn more at [hexagon.com](https://www.hexagon.com) and follow us @HexagonAB.