



## Reia s.r.l., Italy

### Key Facts:

**Company:** Reia s.r.l.

**Description:** Reia is an integrated engineering company operating in the energy and environment sectors. The company focuses on constructing thermal and electrical energy production and distribution systems, both in the public and private sectors

**Employees:** 16

**Industry:** Power Plant Engineering

**Country:** Italy

### Products Used:

- CADWorx Plant Professional, CAESAR II, BricsCAD Pro

### Key Goals:

- Fast isometric drawing creation due to Isogen automation
- Enhanced overall project efficiency due to the bi-directional links between 3D design and stress analysis
- Improved accuracy and quality of deliverables

## Reia s.r.l. designs a combined heat and power facility with Hexagon solutions

### Identifying Goals

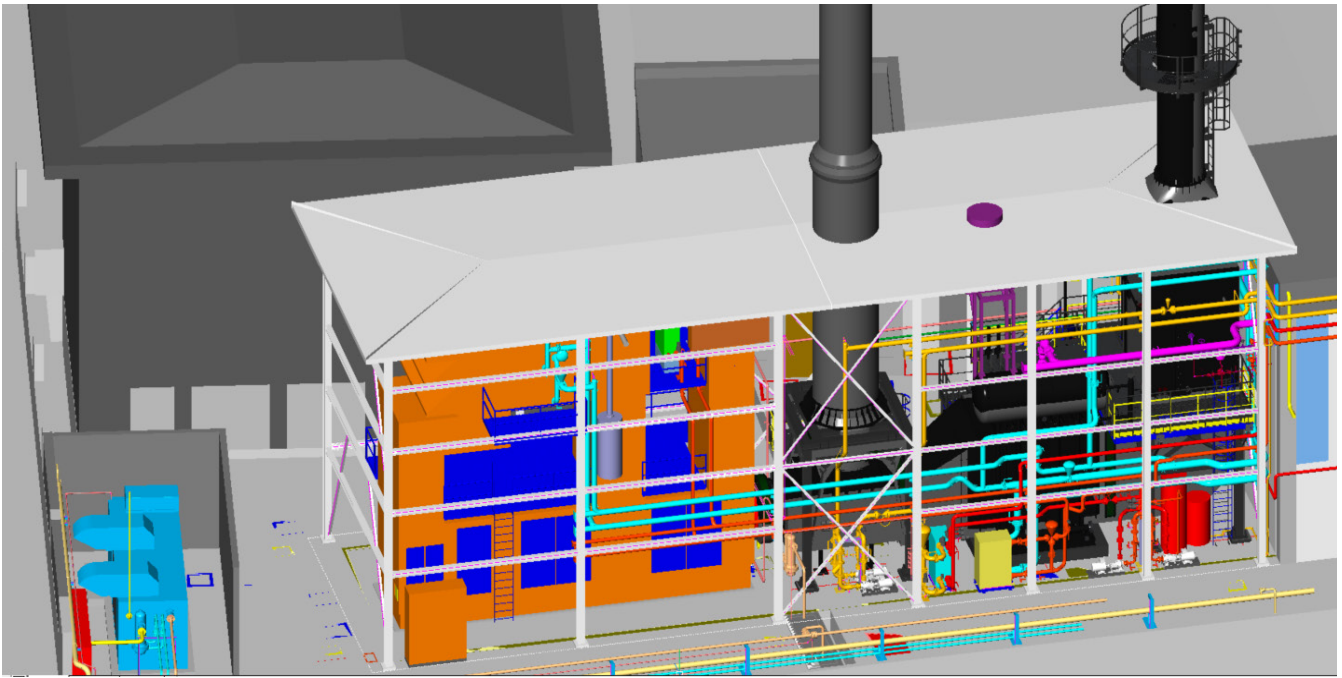
Reia s.r.l. is an Italian engineering company specializing in the power industry, especially in thermal and electrical energy production and distribution systems. The company was hired to design an entirely new combined heat and power (CHP) facility for a paper mill located in northern Italy. The project had a short time frame of 12 months from start to finish.

The plant was to be built in an existing location where the space to accommodate the new facility was dictated by the existing plant structures. Because of this, Reia s.r.l. needed an integrated engineering and design system that would help them create the necessary deliverables for the new plant configuration quickly, efficiently, and error-free. Accuracy of the pipe dimensions was of utmost importance as this needed to fit into the predefined and limited space.

In addition to creating the required isometric drawings and the 3D models of the piping, the company also needed to analyze the piping and equipment connections to avoid over-stress and to avoid problems at the interface between the existing structure and the new facility.

### Overcoming Challenges

“Any engineering project – be it an entirely new design or a revamp of an existing facility – is characterized by the need to create accurate, clash-free 3D models of the new plant configuration. We needed a software solution that would enable us to meet the client’s strict requirements while ensuring accurate and timely delivery of the project”, says Christian Pedrielli, Project Manager at Reia s.r.l.



A view of the gas turbine generator, the heat recovery steam generator and some water heat exchangers of the CHP facility plan.

The key challenges Reia s.r.l. faced during project execution included:

- **Delivering the project within a strict schedule:** using Hexagon solutions allowed Reia to respect the strict project delivery schedule. The ability of CADWorx to support industry standards and universally used file formats, such as DWG, enabled Reia to compare and verify the models and documentation they produced with those created by other teams commissioned by the customer, ensuring clash-free deliverable creation.
- **Compliance with safety and design standards:** designs created during the project had to be compliant with local laws, regulations and design standards for energy plants. Hexagon's Analysis solutions allowed Reia to develop the project in compliance with design codes, and using Hexagon's stress analysis helped to meet the code standards required by the client.
- **Integrating stress analysis with 3D design:** Hexagon solutions allowed Reia to integrate the technical checks concerning the stress analysis with the 3D design file data without remodeling and data re-entry, saving significant time in the process, which helped to speed the project delivery.

## Realizing Results

Reia s.r.l. used the Hexagon solutions CADWorx Plant Professional, running on BricsCAD, and CAESAR II for the CHP plant project. The work scope included designing the piping for the plant, drawing all the machinery, components, and piping routes, and validating the created models. The company was also responsible

for the stress analysis for both the piping and equipment designs.

First, Reia s.r.l. calculated the pipe diameters and component characteristics for the new CHP facility as part of their process design. After this, CADWorx Plant Professional was used to create the specifications for the project, design the 3D routing and, finally, create the isometric drawings for the detailed design of the entire facility.

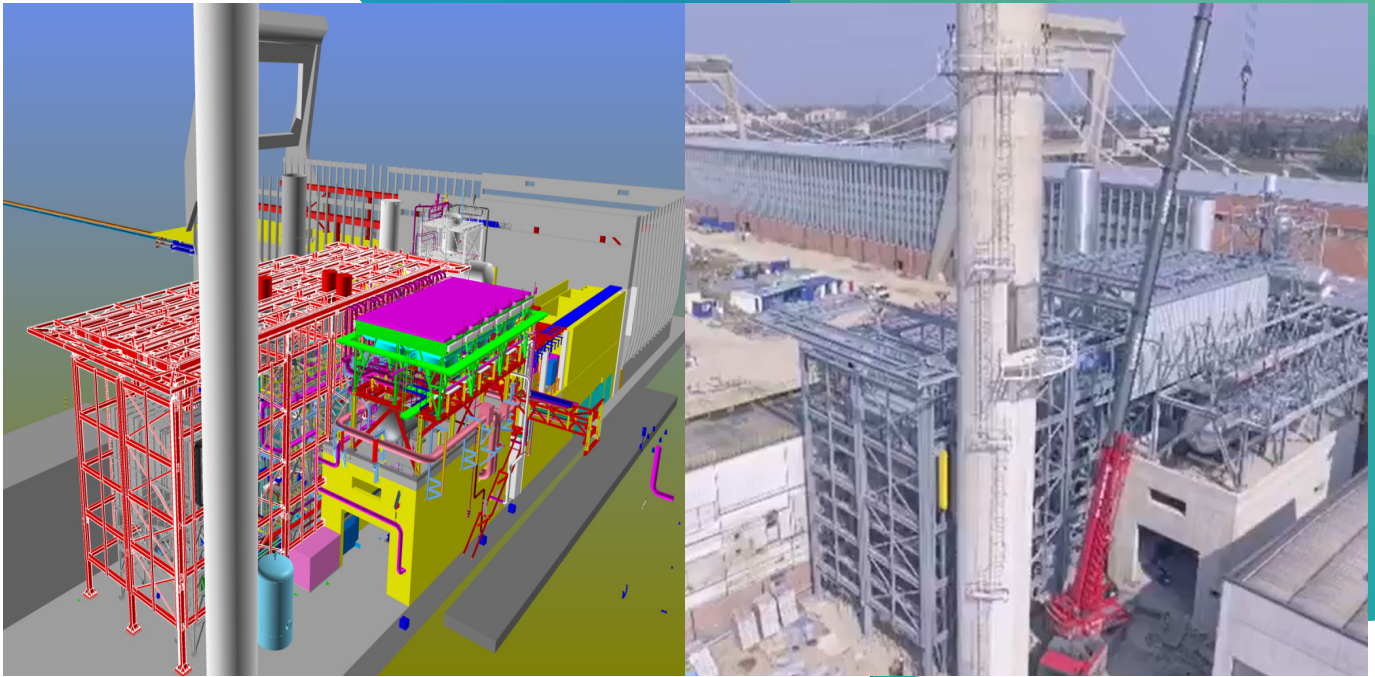
CAESAR II was used to execute the stress analysis on the piping and equipment. The bi-directional links between CADWorx and CAESAR II enabled Reia s.r.l. to quickly import models, reduce the risk for errors, and improve efficiency.

Reia s.r.l. had used CAESAR II for previous projects and chose CADWorx Plant Professional because of the ease of use, quick implementation, and the ability to share models bi-directionally with CAESAR II. Because CADWorx includes Isogen, they could create the isometric drawings quickly without manual drafting or touch-up being necessary afterward, providing a high-quality and accurate submission of the design to pre-fabrication. The ease of use of CADWorx made modifications to the models quick and easy to make.

**CADWorx is a great, integrated solution covering plant, structure, and equipment design. The software makes it easy to draw every component of a power plant quickly and accurately”**

**Stergios Katsikoudis**

Project Engineer  
Reia s.r.l.



A general view of the new CHP plant, in CADWorx Plant Professional vs. under construction on site.

“The ability to change the name and characteristics of components on the go is beneficial. We could design with precision and check the accuracy of the drawings easily – simply put, with CADWorx you make fewer mistakes, and if you did make any, they are easier to notice and fix”, said Stergios Katsikoudis, Project Engineer at Reia s.r.l..

Mr. Katsikoudis continued: “The main overall benefit we have experienced when using Hexagon solutions is the capability to see in advance the problems regarding overstressing, inaccurate dimensions resulting in clash situations, or completely unsuitable designs. Previously, we could only see these issues during the later stages of a project. With the correct implementation of Hexagon software, we can now easily avoid exceeding budgets or being delayed when delivering our projects.”

## Moving Forward

Reia s.r.l. is looking to invest in more Hexagon solutions in the future to create a fully integrated engineering and design environment. “CADWorx is a great, integrated solution covering plant, structure, and equipment design. The software makes it easy to draw every component of a power plant quickly and accurately”, Mr. Katsikoudis summarized.

“The integration between Hexagon solutions enables optimization of project schedules by allowing quick checks of the piping routes to ensure that there are no safety hazards. Both the design and stress analysis is done easily, and with greater accuracy and efficiency”, said Gian Carlo Picotti, CEO at Reia s.r.l..

“CADWorx Plant Professional together with Cloudworx enables us to work with point cloud data easier than ever before – comparing the as-built status with the designs is fast and helps us to avoid rework during installation and fabrication.” Mr. Picotti summarized.

**“The integration between Hexagon solutions enables optimization of project schedules by allowing quick checks of the piping routes to ensure that there are no safety hazards. Both the design and stress analysis are done easily, and with greater accuracy and efficiency.”**

**Gian Carlo Picotti**  
Chief Executive Officer  
Reia s.r.l.



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Our technologies are shaping urban and production ecosystems to become increasingly connected and autonomous — ensuring a scalable, sustainable future.

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.

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