

Concentrated solar power leader supports ongoing development with IFS



As a new, well-capitalized venture, Torresol Energy had a unique opportunity. It had no installed base of technologies or applications. With a “clean sheet” in hand, it could choose the industrial software applications that best suited its diverse operations. Needed functionality included that normally associated with engineering, procurement and construction (EPC) companies, as well as that needed by plant owner-operators.

“We spent several months looking at software,” Alberto Vázquez, planning and cost controller, Torresol Energy, says, “before deciding that enterprise resources planning would give us the standardized processes we needed.”

Torresol Energy chose IFS because it is a single, integrated system that has relevance throughout a global asset’s lifecycle—from design and development through operations and maintenance. Torresol Energy is using IFS components for financials, project management, document management, asset management and supply chain.

Today and tomorrow

Concentrated solar power (CSP) systems produce electrical power when concentrated solar radiation heats up a fluid. The heat is transferred to water that drives a steam turbine connected to an electric power generator. At Torresol Energy’s plants, this hot fluid, primarily of molten salt, is stored in tanks used to maintain steam production when there is no solar radiation.

Torresol Energy’s ambition is to develop solar power globally through investment in solar concentration plants, and pioneer new thermosolar technologies to reduce the cost of future plants. It is also pioneering technology solutions for the central tower and heliostat plants used, including the high-concentration receiver system and high-temperature molten-salt storage system, based on SENER-developed technology. The molten-salt storage tanks permit independent electrical generation for up to 15 hours without any solar feed. This capability addresses a major challenge to increased solar power use.

About Torresol Energy

The Torresol Energy Co. develops, constructs, operates and maintains large concentrated solar power plants. The Bilbao, Spain-based company formed in 2008 through an alliance between SENER Grupo de Ingenieria, S.A., a Spanish multinational technology leader, and MASDAR, an alternative power company in Abu Dhabi. Torresol Energy’s first plant is already in operation in Spain; it has another two that will soon start commercial operation in that country; and it is actively developing plants in the Middle East and the United States.



Torresol Energy
reinventing solar power

In the south of Spain, Torresol Energy operates Gemasolar, the first commercial plant to generate electricity with solar technology using a central tower receiver, a heliostat field and a molten-salt heat storage system.

“That IFS supports operations and maintenance, following project management of development, construction and commissioning, was the big difference for us,” Vázquez says. As Torresol Energy assembles its asset portfolio it will have a firm handle on the finances related to its construction projects, the huge mass of associated documentation, its vendors and suppliers, the status of ongoing work, and maintenance of its high-tech facilities.

Having what’s needed

Gemasolar is just one example of a wave of ongoing capital construction investment in energy sectors. Whether done “in-house” or outsourced to third-party EPCs, the tremendous expense of having stove-piped systems for different project stages can be a significant constraint on the economics of the resulting capacity and its ongoing operational costs.

Asset owner-operators and contractors turn to project-based solutions, such as IFS, to deal with the complexities and risks of these huge undertakings. Most especially, these systems help manage information-sharing and collaboration with contractors and suppliers. Vázquez cites an example that has proved especially helpful for Torresol Energy. “All of our projects have similar structures. Purchase orders must be associated with an activity, giving us a better view of estimated, committed, used and real costs.”

Torresol Energy makes intensive use of this kind of document management functionality. Documents are stored in IFS Document Management and are connected to the relevant application objects. “Connecting documents to purchase orders and invoices is very important for authorizations, because project managers and legal representatives can easily access the documents and get the details. Anyone needing the information knows where to search for it,” Vázquez says.

Putting all project data into one system during design, engineering and construction ensures good information management and quality, but it also makes transition to operations smoother. Those responsible for specifying the plant and those charged with operating it share a common data repository, and equipment data is available from the start.

IFS has helped Torresol Energy clarify its own structural organization and business processes. “The system helped us to clarify our resources, priorities and focus,” Vázquez says. “We examined our business processes in light of the standardizations IFS offered. On the other hand, we have been able to automatically identify custom events and alerts based on our particular needs. It has brought clarity to our processes and made us more agile.”

Benefits seen using IFS

- More agile operations
- Clearer operational and business processes
- Complete control of all aspects of its projects
- Enhanced information management and quality
- Easy access to documentation
- Greater business transparency



Final words

Complex automation in production plants is most often managed by distributed control systems (DCS). The DCS at Gemasolar includes more than 70,000 tags, or input/output points. “We needed an enterprise system able to incorporate aggregated data taken from the DCS. We make great use of KPIs. We need that data to monitor KPIs relevant to the plant’s operation and maintenance, including systematic inspection, detection and correction of incipient failures.”

IFS was a pioneer in the use of OPC, an open integration standard, to achieve this type connectivity. Today OPC is the most common method for achieving such integrations. But IFS also has experience working with the major automation vendors.

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Further information, e-mail info@ifs.com, contact your local IFS office or visit our web site, ifs.com

