



Spray Engineering Devices Ltd., India

# Production sweet spot

**With variable-frequency drives from Siemens, Spray Engineering Devices Ltd. found the perfect solution for a new low-temperature evaporator module that helps improve energy efficiency in the sugar industry.**

**E**stablished in 1992, Spray Engineering Devices Ltd. (SEDL) is a leading provider of energy-efficient and cost-effective integrated technology solutions for the process industry. One of SEDL's areas of expertise is the redesign and engineering of processes and equipment, together with the coordinating process automation systems. With many satisfied customers in India and abroad, the company has introduced energy-efficient processes in a variety of industries. One industry in which energy efficiency has recently gained momentum as a key performance indicator is sugar.

#### **Adoption of better technologies**

Owing to a decline in the price of sugar and an increase in sugarcane prices, the sugar industry's focus

has recently revolved around cost reduction, quality improvement, and energy conservation. Conserving energy and identifying new or renewable energy sources has emerged as the need of the hour.

In sugar production, reducing process steam consumption is a key lever to reduce production costs. Evaporators generally use 2 to 2.5 bar pressure steam in four to five effects. Using a power and heat cogeneration process, SEDL was able to use the available enthalpy and temperature of vapors for evaporation prior to condensation. Eliminating evaporation processes above 100°C increased plant capacity and decreased the cost of evaporation. This low-temperature evaporator module (LTEM), a unique, innovative product from SEDL, can reduce scaling, inversion, color formation, and heat loss. With LTEM, a plant can reduce the process steam flow rate, pressure, and

The production of sugar is a resource- and energy-intensive process, where energy-saving solutions can make a large contribution to overall process efficiency

temperature to a suitable level. LTEM also helps reduce process heat requirements, making power generation more efficient. However, in LTEM, system efficiency depends on precise motor control.

### Search for a high-quality drive solution

For this project, SEDL was searching for a reliable, energy-efficient, and high-quality drive solution for its evaporator module. After evaluating the available systems, the company opted for technology from Siemens. Vivek Verma, co-founder of SEDL, said: "Having experienced Siemens' range of high-performance automation products, we decided to use Sinamics variable-frequency drives on a Profibus network for the evaporators. Not only did the product help achieve commendable control of pressure and all motors, making the LTEM system efficient, but prompt customer service also ensured smooth installation and streamlined internal processes."

For ease of use, all field device data gathered by the control system are available on a single screen. Profibus communication ensures reliability and better control. Additionally, BICO technology (with binectors for digital signals and connectors for analog signals), along with system configuration and programming that includes a built-in PID (proportional-integral-derivative control loop feedback mechanism), provides ease of use and improves process control.

### Excellent performance

In addition to better control and higher efficiency, the Siemens drive systems provide energy savings, increased durability, higher efficiency, and better monitoring of errors with the Profibus network. The cost-effective solution prevents overflow by controlling the speed based on the tank level. Thanks to the Profibus network, the solution provides easy plug-and-play performance with minimal maintenance. Better accessibility for remote locations is provided by built-in web servers.

Impressed with the on-time execution and success of the project, SEDL has become a loyal Siemens customer and regularly uses Siemens' process instruments, Sinamics G130 and G120 drives, and low-voltage motors as well as switchgear. ■



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Vivek Verma, Co-founder, SEDL

#### INFO AND CONTACT

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