Solutions for Sugar Processing and Refining
Maximize efficiency and flexibility across operations

GE Intelligent Platforms’ powerful, open technologies for process control and operations management provide a foundation for reliable, adaptable, and quality processing and refining operations.

Constant fluctuations in demand and price, the consolidation of production, and the explosion of supply chains combine to challenge the profitability of sugar processors worldwide. Managing response to growing interest from consumer, industrial, regulatory, and biofuel markets requires intelligent, agile, and capable manufacturing operations and assets.

GE Intelligent Platforms understands the road you’re traveling. We’ve partnered with sugar producers around the world, tackling challenges like factory modernization, process tuning and streamlining, and cost reduction initiatives. Our advanced technology solutions draw on our successful track record and deep industry expertise to help sustain your competitiveness over the long run.

Areas of expertise

- **Affination**
  To help ensure the quality of your raw materials and improve plant efficiency, GE solutions help optimize production yield and quality by delivering raw material traceability, real-time process visibility, and maximized equipment utilization, eliminating losses from breakdowns and rework.

- **Clarification**
  For maximum flexibility in your equipment and process operations, the modular design of our Proficy Plant Applications software allows you to add functionality over time and mitigate risk when introducing or expanding a new solution in a single plant or across multiple sites. Additionally, with our automated workflow capabilities, you can instantly adapt your recipes to meet demand.

- **Evaporation and Crystallization**
  To help reduce the costs of water and fuel consumption, the unique capabilities of our Proficy software suite help companies expose hidden relationships between asset information, process information and resource consumption data, so that processes can be tuned for optimal resource usage—without compromising efficiency or quality.

- **Packaging**
  To help reduce waste and rework in your packaging operations, Proficy HMI/SCADA interfaces with your equipment to provide immediate feedback on operations and reduction opportunities, and delivers interoperability that can be leveraged for flexibility in the future.

Experience the GE Intelligent Platforms advantage. We deliver technologies that address your challenges today based on key performance indicators to anticipate production changes and drive business growth.
A track record of empowering success

We enable your operations, from the plant to business level, to continuously innovate, adapt, and grow with technologies designed to optimize current processes and sustain independent progress.

Reliable GE brand
From the moment we engage with you to the completion of a successful implementation, we are committed to addressing your needs. With a global presence, we offer prompt, local support for your operations.

Partnerships around the world
To ensure repeatable success with common and sustainable systems and tools, we actively work with technology and service partners around the world, including equipment manufacturers, other enterprise software vendors, and leading engineering and IT services companies.

Operational Excellence
Our portfolio of products supports continuous improvement in key areas of your operations to help reduce manufacturing cost, protect profit margins, and increase yield while protecting product integrity and quality. From local improvements in uptime and efficiency, to digitizing and streamlining production practices, to global production reporting and data analytics, we can help you drive Operational Excellence for a sustainable competitive advantage.

A foundation for the future
Product strategy rooted in invention and novelty is essential, so we provide solutions that allow you to deliver on the vision of your brand managers. Our open and modular software architecture enables you to incorporate next-generation techniques for clarification and crystallization that leverage your current investments, translating into real value.

If long-term, sustainable growth is your goal, GE is the right choice—providing you with a competitive advantage to implement new technologies, integrate engineering efforts and the shop floor, and define the industry standard for business performance.
Maximize revenue in a volatile commodities market

Broaden your business focus, enable production capacity growth, and drive profitability with validated solutions supported on a single, stable platform.

Manage fast-changing priorities

With the ongoing development of non-petroleum fuel sources, many sugar processors have extended their capabilities to include capacity for ethanol production. Confronted with a daily choice of producing sugar as a consumable or as an input for fuel, producers must balance the current price for each against the operational challenges of switching production from one to the other. Our solutions provide critical capabilities to help producers manage market risk and instability:

- Structured control recipe management and program execution enable rapid changeover of grades in processing

- Accurate, real-time quality and process information enable optimum disposition decision

- Contextualized data through a common web client and reporting environment make your plant accessible from anywhere at anytime

Save on tomorrow’s technologies

Our suite of solutions—from GE’s Proficy Process Systems, through the Proficy software suite of industry-leading HMI/SCADA, Manufacturing Execution Systems (MES) and Business Intelligence (BI)—can help address your needs for local optimization and automation through enterprise-wide integration of manufacturing data.

Built on an “open and layered” approach, our solutions allow you to extend capabilities from our modular and scalable technologies to your existing manufacturing technology base. Protect your existing investments and integrate new technologies for improved productivity and performance without the added expense of separate control, automation, and communication systems for each.
Anticipate downtime for equipment effectiveness

From real-time business synchronization of production and maintenance to reduced equipment failures and increased availability, our Proficy Maintenance Gateway software addresses every aspect of equipment inefficiency and loss. This means cost reductions for reliability and virtual elimination of unplanned maintenance!

Combining the power of our data store, Proficy Historian with the Proficy Plant Applications Efficiency module, allow your production management system to track key information like progress to completion of an order or material genealogy, and easily correlate detailed process and machine event data. In addition, with certified integration with leading ERP vendors, Plant Applications can align with your enterprise systems investments for increased ROI.

Minimize operating costs

In a world where fluctuations in resource availability and price constantly threaten profits, reducing and minimizing energy and utility consumption is a top priority. Crystallization, evaporation, and drying operations inherently require large amounts of heat for extended periods of time, so it is crucial that these processes work efficiently and effectively to lower expenditures and processing costs.

We are committed to ensuring that your operations are designed in a way that is responsible for the business and the environment. Our PACSystems control systems provide tight control and superior, responsive automation capability to monitor and manage your utility consumption inputs quickly and effectively.

Achieve packaging flexibility and efficacy

With more than 20 years of consumer packaged goods experience, our products are uniquely tailored to address your packaging operations. Our Proficy DataMart software provides deep visibility into your current operations and its integrated, data reference model performs relevant analyses to identify root causes for inefficiencies in the context of production events for improvement.
Everything you need to identify and eliminate problems is delivered on a platform with intuitive tools and interoperability with all of your plant’s lines, products, and processes. These advantages result in a faster time to market for new packaging designs and an overall improvement in equipment, personnel, and real-time decision making.

Leverage data to drive supply chain and product quality

Sugar occupies two roles in the food chain, so processors and refiners need to be able to provide different levels of insight into quality and safety. When shipping refined sugar as a packaged final good for consumers, a complete record of genealogy and test data may be needed to satisfy regulators and retailers. Processors shipping raw sugar to a refiner or sending bulk shipments of sugar, syrup or molasses for use as ingredients may need to provide more detailed quality information, which can not only form part of the next producer’s record of quality, but enable them to adapt their processes to accommodate the specific characteristics of a given shipment of ingredients.

To drive performance improvements in complex, high-speed operations, you need to establish a data repository that allows critical process, quality and event data to be captured at a pace that matches production speeds. Proficy Historian is a true process historian, with advanced technology to keep up with high process speeds and data volumes that are part of sugar refining operations. Tightly integrated with the rest of the Proficy suite, Historian provides a window into your production environment, powering process analytics and operational metrics with objective, detailed data. In this way, the Intelligent Platforms portfolio supports the need for rich data all along the supply chain.

YM Krishna SSK Transforms Biomass Into a Renewable Energy Source

In a remote area of Western Maharashtra, India, the YM Krishna SSK 16-megawatt cogeneration plant takes bagasse from the sugar mill and provides energy back to the total plant while using mill waste and carbon credits to provide surplus power back to the market.

GE’s flexible and robust Proficy Process Systems enables YM Krishna to control and automate the captive power plant. The solution provides the ability to measure and analyze various operations within the plant, including steam, power and water consumption, production efficiency, molasses output, steam generation, fuel quantity, and water quality and quantity—improving reliability and overall energy efficiency.
Ensure safety through automated prevention and intervention

A repeatable process is key to maintaining consistent quality and maximizing the output from both processing and refining operations. Based on the ISA-S88 standard for batch execution, our Proficy Batch software ensures that recipes are executed consistently from affination through drying, and that critical quality and process data is directly linked to specific phases of each batch cycle. This is vital to fine-tuning of recipes and setpoints, as well as simplifying reporting on quality and productivity.

Furthermore, with our Proficy Workflow software, you can digitize and streamline production processes—from work instructions and SOPs to corrective action and HACCP monitoring. Built on an SOA platform, Workflow is a user-configurable, dynamic decision-making engine for integrating automated and manual business and production processes across system and departmental boundaries—ensuring reliable, repeatable process execution. You can reduce variability, increase throughput, and minimize recalls across all processing steps and procedures.

Plan, Make, and Deliver

Your operations may need solutions for a larger scope, in which case you can tap into an entire suite of capabilities from GE that leverages our technology and domain expertise in the sugar processing industry—from sugar cane milling and bagasse recovery to molasses handling:

- GE will work with you to develop a strong understanding of immediate improvement opportunities that exist and where value can be added in the future to achieve Operational Excellence
- Proficy Process Systems allow you to incorporate continuous and batch processes on one platform for the most advanced automation and control solution available
- Proficy HMI/SCADA delivers superior visibility into your operations today to drive improvements in productivity, consistency, and efficiency
- Build and interpret a complex data bank for your operations to identify relationships between a complex supply chain and final processing results, closing the gap between process planning and execution variability
- Once you have enabled real-time asset and material management and scheduling, your focus can shift to delivering deep improvements at the local level—providing more yield per batch and optimized resource utilization
- Sustain your operations across your enterprise by reducing deliverable inventories and coordinating short-term material logistics to fully support your processes across organizational and systematic boundaries

Solutions for Steam Cycle Power Generation

GE’s unique steam cycle solution controls and monitors all of your power generation components, from boiler management to combustion to turbine auxiliaries, to deliver reliable and efficient performance. With easy implementation, you can maximize uptime from the start and save on expensive and timely engineering development. The end result is optimized fuel usage and reduced stack emissions for your entire plant and major operational savings that can be realized immediately.