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Energy efficiency and cost savings for food and beverage facilities

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Efficiency is the name of the game for Food and Beverage (F&B) manufacturers, and F&B manufacturers are increasingly recognizing that energy is not just a cost that can impact the bottom line, it is also an important driver of sustainability performance. Businesses in the F&B industry that utilize energy-efficient solutions can reduce costs, improve operations, decrease energy consumption, increase reliability, and mitigate operating risks.

F&B manufacturing in the U.S. exceeds \$700 billion and touches everyone. Consequently, the industry is under significant pressure from retailers and customers to increase environmental sustainability. From adaptation of raw ingredients to the finished packaging, there are numerous opportunities to increase energy efficiency within food and beverage.

F&B companies that only apply basic operational practices to their central energy plants will not be able to maximize the value of their investments. It is more beneficial to employ energy management expertise to increase the ROI on the facility's energy and infrastructure systems. Actively optimizing energy performance can achieve material savings, extend the useful life of energy assets, and reduce the environmental impact of the facility, thereby allowing manufacturers to concentrate on their productivity and core business.

F&B facilities use both thermal and electrical energy throughout their manufacturing process. For example:

All forms of the cooking process (blanching, browning, etc.), separation (drying, peeling, moisture evaporation, etc.), and preservation (pasteurization, roasting, etc.) require steam or superheated water.

Safety-critical chilling, production and distribution facilities for food processing and cold chain continuity depend on chilling.

Air treatments require controlled air quality to avoid bacteriological contamination, which is critical for cheese-making, meat processing and packaging, dairy processing, and pre-cooked food preparation.

Compressed air/vacuum ensures specified performance levels of compressed air and suction facilities for a wide variety of food packaging applications.

Microbiologically-controlled rooms instill services for clean room operations and monitoring of levels of air-borne particulates and bacteriological contamination, using high levels of electrical energy to run sophisticated HVAC systems.

Energy expert workwise is required to identify specific opportunities to optimize efficiency in all of these systems, ranging from more efficient motors to LED lighting or super-efficient chillers. F&B managers should also consider technologies such as combined heat and power (CHP), whereby electrical energy is efficiently produced from a dedicated central plant and the waste heat is

captured and recycled back into the manufacturing process as useful thermal energy.

Food manufacturing facilities that actively manage their energy can increase their productivity and reliability, control their costs, and minimize their operating risks, while also reducing greenhouse gas and other emissions.

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