SIEMENS

Artificial Intelligence Energy Optimizer

Energy optimization through AI-enhanced analytics in the glass industry.



The challenge

The complexity of industrial process applications is continually increasing. At the same time, demands placed on production targets are intensifying in terms of process reliability, flexibility, product quality, energy consumption and emissions. To meet these changing market demands, all industries need the tools that enhance process and production transparency to identify potential and starting points for optimizing process parameters.

In the glass industry, tin bath electric roof heating is used to maintain a certain temperature profile along the tin bath area. This is done to protect the glass produced and maintain target quality metrics.

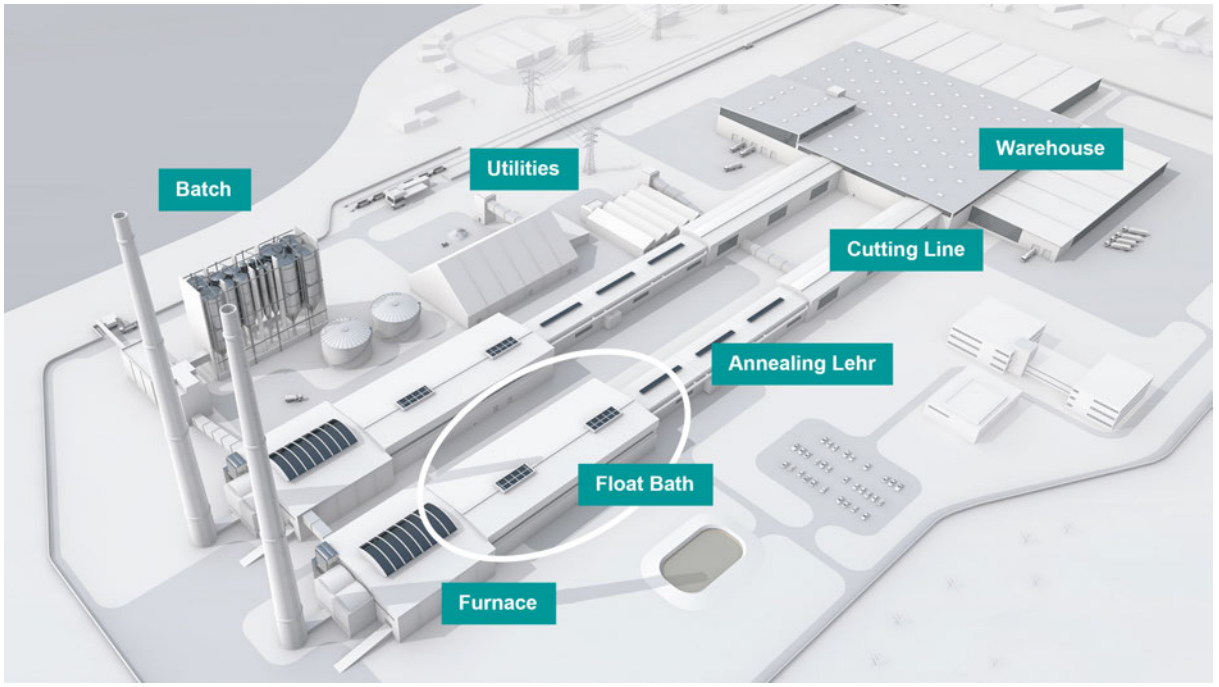
When improper operation of the tin bath electric roof heating occurs, this is likely to result in wasting the energy consumed to heat the tin bath roof heating. This is quantified by calculating the difference between the energy consumed using AI Energy Optimizer and what would happen without the implementation of this solution, i.e. continuing to use the same heating profile.

The solution

Artificial Intelligence (AI) Energy Optimizer collects data from Energy Pro or any other data source using time-series data and transmits it via a secure connection to the Siemens cloud-based IoT MindSphere operating system.
Based on time-series data, the pre-defined tags are read and passed through the developed Machine Learning models. The results are then visually shown using the Asset and Fleet Manager application.

Advantages of AI Energy Optimizer

- recognizes complicated consumption patterns
- maintains assets at their optimum performance levels
- identifies energy-saving opportunities
- assists energy consumption planning
- enables data transparency
- offers alarm capabilities



Rule-based alerts

AI Energy Optimizer reads pre-defined tags in real-time and runs the machine learning algorithm to assign anomaly scores which, if exceed certain thresholds, trigger alarms for operators.

Predication Energy

Prepare standard adapters for data collection (remove dependence on Energy Manager) and platform agnostic (on-premise, cloud-based).

Energy saving and Carbon reduction

Proper operation and the optimization of tin bath electric roof heating results in energy saving opportunities for the glass industry.

Cost saving

Provides early alarms of improper operation allowing users to take rectification actions to mitigate material and other losses in contrast to the late detection of anomalies.

Intuitive interface

Intuitive user interface enables users to use the tool without extensive training.

Open, cloud-based IoT operating system

AI Energy Optimizer is part of our Asset and Process Performance Suite for industrial applications and advanced analytics.

Available product portfolio

Portfolio	Quotation
Application Access Base	On request
Installation and consulting service	On request
MindSphere tenant details	On request
On Premise Server details	Optional

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