

# SEnergy

## An IoT Solution for Energy and Sensor Data Intelligence

### Case Study for A Chocolate Factory

**Energy can neither be created nor be destroyed – *Let's Conserve It!*  
A nations priority and ours too!**





## Situation

- A leading confectionary brand engaged in manufacturing & exporting candies, eclairs, ice creams & frozen deserts.
- Manufacturing plant spread across UAE, equipped with multiple machines for processing raw material to finished goods.
- Facing challenges in monitoring the operation of chocolate mixing tanks, which is very important in maintaining the quality of finished product.
- In-built HMI of chocolate mixing tanks not easily accessible, because of
  - ❖ Huge area of plant
  - ❖ No. of machines in operation
  - ❖ Hygienic reasons



## Task

- To design and implement a solution which is capable of monitoring the operation of chocolate mixing tank “Any Where, Any Time” irrespective of the location.
- Core area of focus should be,
  - ❖ The operation of internal stirrer, which is very important to keep the chocolate mixture uniform & lump-free
  - ❖ Temperature inside the tank, which should be maintained optimal to ensure even melting to have perfect consistency of chocolate
  - ❖ Level indicators to maintain the level of chocolate which helps to manage the volume.
  - ❖ Lid/cover of the tank. It should be always closed to ensure the chocolate is free from any contamination
  - ❖ Open/Close status of discharge valve, to ensure smooth flow of molten chocolate.



## Action Taken by SEnergy

- Site survey done to collect the detail of targeted equipment.
- Technical discussions done with the stake holders to understand their pain points.
- Designed, supplied, installed, tested and commissioned,
  - IoT based smart remote monitoring system by SEnergy for each chocolate tank.
  - Installed IoT based smart Digital Input Modules to connect the status & sensor inputs and networked to SEnergy Secure Cloud.
  - Configured the SEnergy's Data Collection Unit to collect the data from the sensors and push them to cloud in every 15 seconds.
  - Collected
    - ❖ on/off status of internal stirrer
    - ❖ temperature inside the tank
    - ❖ high & low levels of the mixture inside the tank
    - ❖ open/close status of tank cover
    - ❖ open/close status of discharge valve.
  - Configured SEnergy software to
    - ❖ be able to access the captured data any where, any time
    - ❖ send near real time alerts thru E-mail & In-App, for any threshold changes of temperature, status etc, with escalation so that the alerts will be escalated to the next level, in case the first recipient misses to acknowledge them.
    - ❖ generate customized reports on hourly, daily, weekly, monthly & yearly basis
    - ❖ provide analytics with time stamps



## Result of SEnergy Implementation

- SEnergyIoT with its Industry 4.0 methodology made possible
  - For their maintenance team to take timely action to ensure smooth & problem-free operation of chocolate tanks, which in turn helped them to,
    - ❖ ensure a seamless transition of raw material to finished product
    - ❖ maintain quality of finished product
    - ❖ minimize wastage
    - ❖ avoid opportunity costs of down time
    - ❖ enhance the process efficiency
    - ❖ adhere to their core policy of EHS & Sustainability.
    - ❖ add value to their brand image

# Thank You



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