

Case study – Smart Energy Management solutions for Manufacturing Industries

Abstract : SiSoC's Smart energy management solution helped out customer to effectively monitor the energy consumption of various machineries and optimize the plant operation effectively thus reducing the cost of power consumption by 20% .



Problem statement

Client had huge energy bills which was shooting up regularly without knowing the cause. Few causes identified were

1. Energy wastage due to un-necessary machines operations.
2. Energy wastage due to defective equipment and machineries.
3. Lack of intelligence to operate the plant effectively during peak hours and avoid peak hour tariff

Client was looking for an Intelligent solution to identify above cause and manage the energy utilization effectively and save the Energy bills as much.



Description of the solution

SiSoC deployed a solution that is a combination of Hardware, Software and AI/ML analytics.

1. Hardware were retro fitted with each machinery.
2. The energy data across the site was collected by cloud server.
3. With history Data , Machinery specification and Time data, our customized data analysis gave clear insight to the customer about the variations.



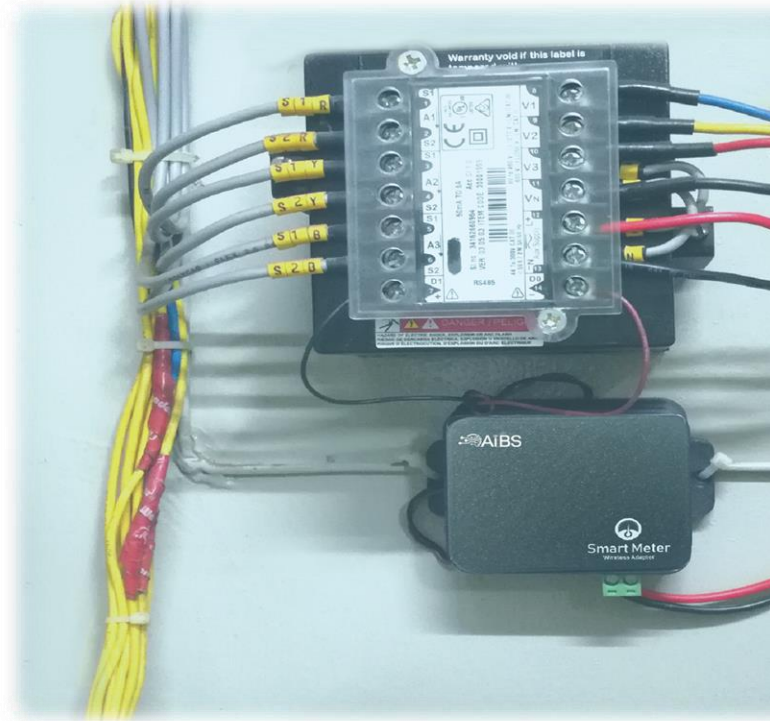
Business impact / RoI

Our solution gave real time energy consumption data across the site. This helped the operators to detect energy wastage, control machines during peak hours etc.

Our system has flexibility to customize the AI algorithm to predict any possible Machinery defects and alerts the customer for predictive maintenance. With the real time monitoring solutions, customer was able to reduce the energy consumption by 15% to 20% , which will increase further in future.

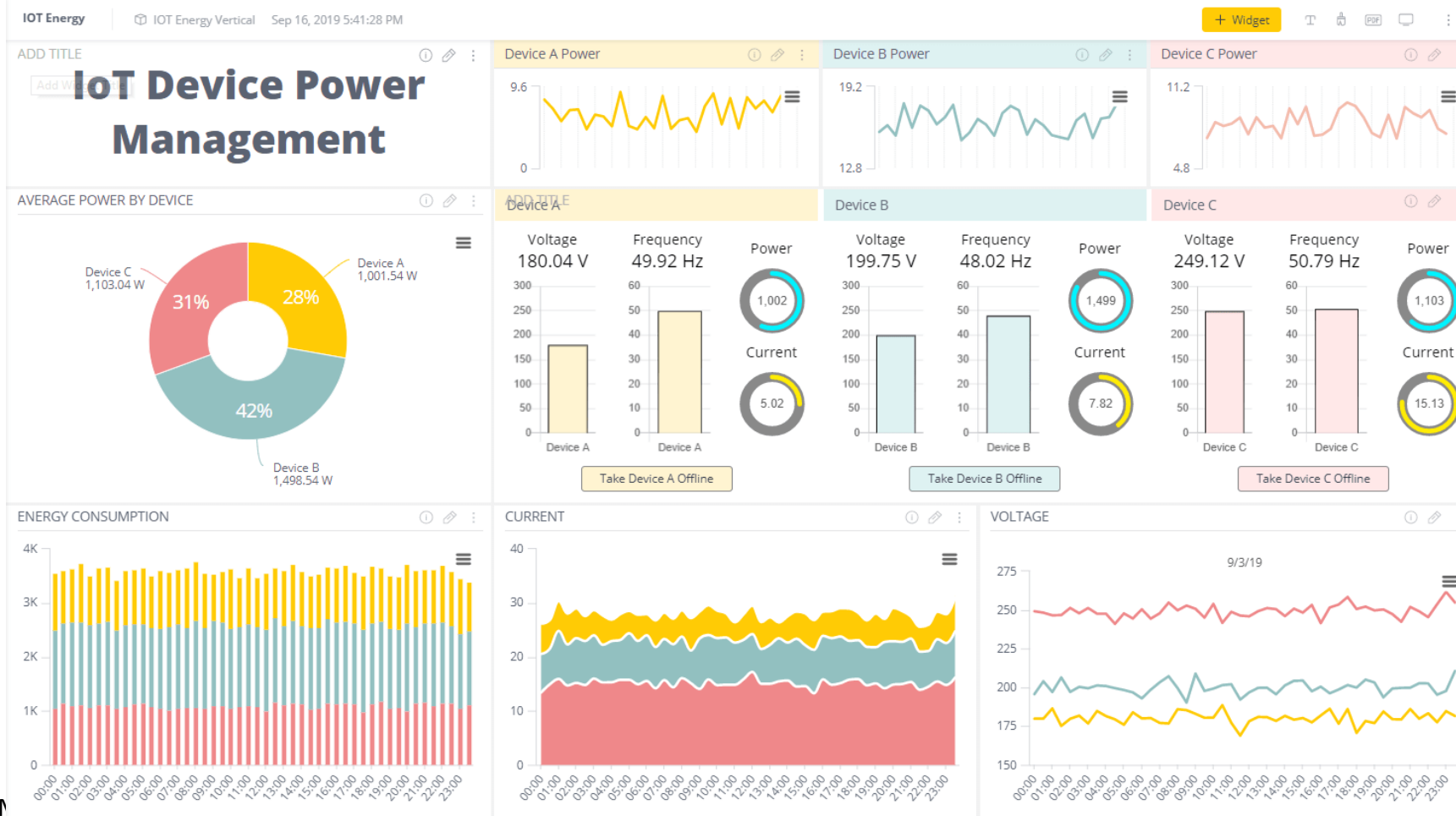
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Photographs / Videos of Solution deployed :



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Top 10 Industry 4.0 Use cases

Manual data & process management

Solution: Shop floor digitisation using AI and analytics
Business benefit: Process improvement, paperless operation, high productivity and efficiency

Manual inventory management

Solution: Paperless inventory management using AI & Analytics
Business benefit: Lower material management cost

Frequent machine failures

Solution: Predictive maintenance using IoT, AI and Analytics
Business benefit: Planned shutdown, lower production loss, lower machine failure cost

High Energy Cost

Solution: Smart Energy Management using AI, ML and IoT solutions
Business benefit: Improved energy efficiency

Product quality issues

Solution: Computer Vision/IoT Solutions for Quality Inspection
Business benefit: Better quality control

Low market reach

Solution: VR based plant visits
Business benefit: Better customer reach

IoT security

Solution: Cybersecurity based solutions
Business benefit: Data protection, User access control, better security

Compliance Management

Solution: Computer vision and AI based solutions
Business benefit: Safety & Compliance

Managing worker health & safety

Solution: AI & IoT based remote monitoring of worker's health
Business benefit: Better worker mgmt.

Remote customer / expert support

Solution: AR/VR based solutions
Business benefit: Quick problem solving, remote outreach

