TEAM
028

Smart Energy Audit System (SEAS)

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ICS EE 3 ME

Problem statement

The Smart Energy Audit aims to provide a compact, affordable, and intelligent device that enables users monitor and manage energy consumption in real time. It integrates sensor data, IoT connectivity, and data analysis to promote efficient energy usage.

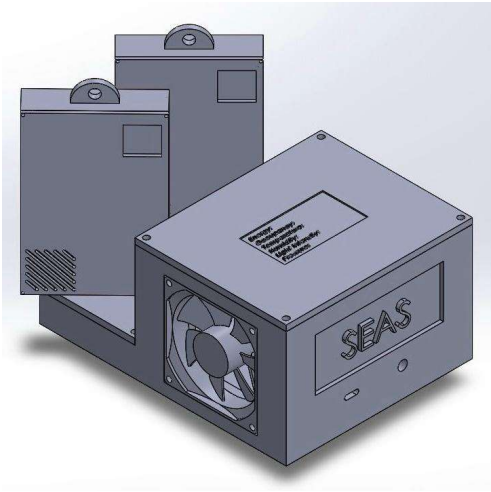
Constraints

Power source: 220V, 60Hz
Limited space for sensor placement
Limited Storage of ESP32 ≤ 16MB
Using friendly materials.
Cost-effective and portable design

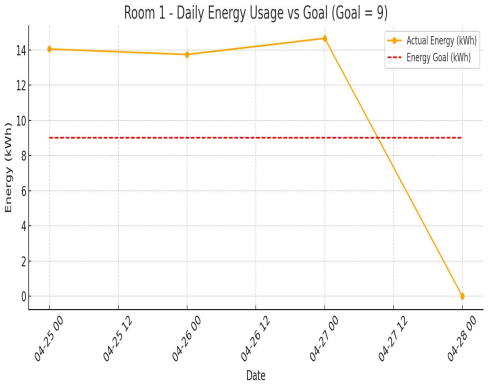
Specification

Sensor Coverage Area <100m^2
Weight ≤ 3Kg
Volume ≤ 0.009m^3
Sensors Acquisition accuracy ± 10%
Accuracy of benchmarking ≤ 80%
Charging time of modules < 2 hrs.
Operation Span ≤ 2 days

Prototype Design



Testing & Validation



Conclusion

The Smart Energy Audit successfully demonstrates a practical solution for real-time energy monitoring. By integrating affordable sensors, IoT technology, and statistical analysis, the system empowers users to make data-driven decisions that promote energy efficiency and environmental responsibility.