

## **Best Practice: Smart Energy Management System**

### **1. Objectives of the Practice**

Monitor SIIB's real-time energy consumption, forecast demand, and reduce usage while optimizing the DG set's operation.

### **2. The Context**

SCCN aims to achieve SDGs through campus-wide collaboration. Phase 2 expanded monitoring with additional meters for solar rooftops and DG sets, implemented a new dashboard for comprehensive data analysis, and enhanced data security with extra storage.

### **3. The Practice:**

SIIB emphasizes energy conservation through the Smart Sense platform. A dedicated Energy Team, comprising students and faculty, monitors energy consumption, analyses data, and generates reports. The team proactively addresses energy issues through daily updates, alerts, and regular meetings, fostering a sustainable campus culture.

### **4. Evidence of Success:**

The SIIB campus has an energy meter that reports quarterly, monthly, and daily consumption. Daily consumption data is shared with all stakeholders to raise awareness. High consumption analysis led to retrofitting appliances. Example:

- 42.19% of total lighting systems are LEDs.
- The old AC units in the auditorium and office have been replaced with new 5-star rating AC units.

### **5. Problems Encountered and Resources Required:**

- The authenticity of the data generated from the meters or the MSEDCL meter needs constant monitoring and analysis by an experienced team, which we could do successfully.
- There is no provision to calibrate the meters other than analyzing the output.
- Multiple sensors need to be installed within the campus to understand the distribution of the total consumption more accurately, and then we can act accordingly toward minimizing consumption.

### **6. Other Information:**

#### **6.1 Future Plans:**

Additional SMART SENSE meters will be installed across SIIB to enhance energy analysis. Benchmarking energy consumption patterns and forecasting appliance health will be prioritized. Integrating the 87 kW solar rooftop data with SCCN is crucial. A broader initiative to install Smart Energy Meters across SIU campuses will promote a holistic energy saving, consumption, and conservation approach, fostering a sustainable campus ecosystem.

## Phase 2 Activities

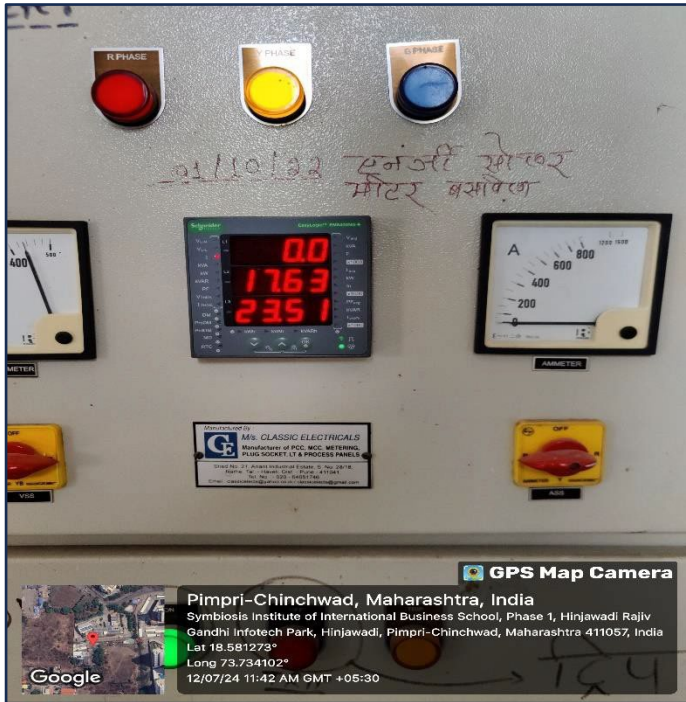


Fig 1. Solar Energy Meter at the metering panel of SIIB



Fig 2. Grid Energy Meter near MSEB panel for input for EMS



Fig 3. D.G. Meter



Fig 4. The Energy Monitoring System in the panel room

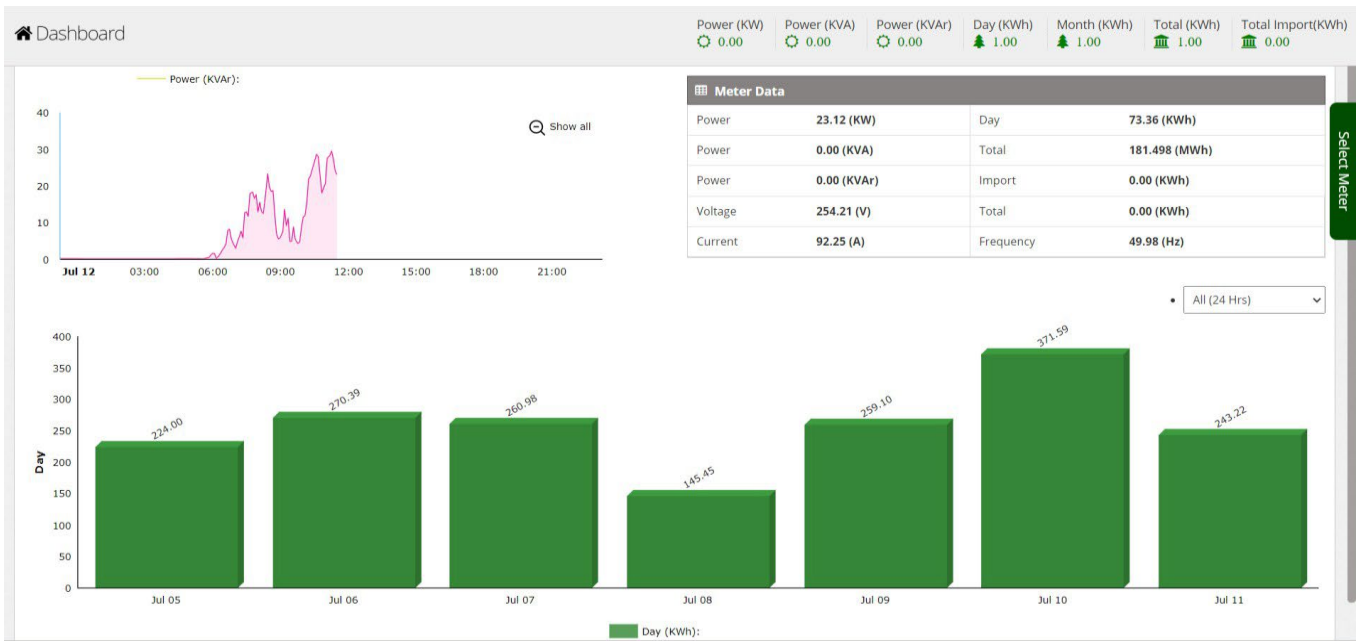


Fig 5. Dashboard for reviewing energy consumption data through the cloud-based internet system

Energy Consumption for 5th January 2024

**energy siib** <energy@siib.ac.in>  
to Asmita, Faculty, Staff, Batch, Batch, Dipen

Dear All,  
Good Morning from the Energy Team.  
Below are the energy consumption details for 5th January 2024.



Energy Consumption for 10th March 2024

**energy siib** <energy@siib.ac.in>  
to Asmita, Faculty, Staff, Batch, Batch, Dipen

Dear All,  
Good Morning from the Energy Team.  
Below are the energy consumption details for 10th March 2024



Fig 6. Monitoring daily energy consumption data through SCCN

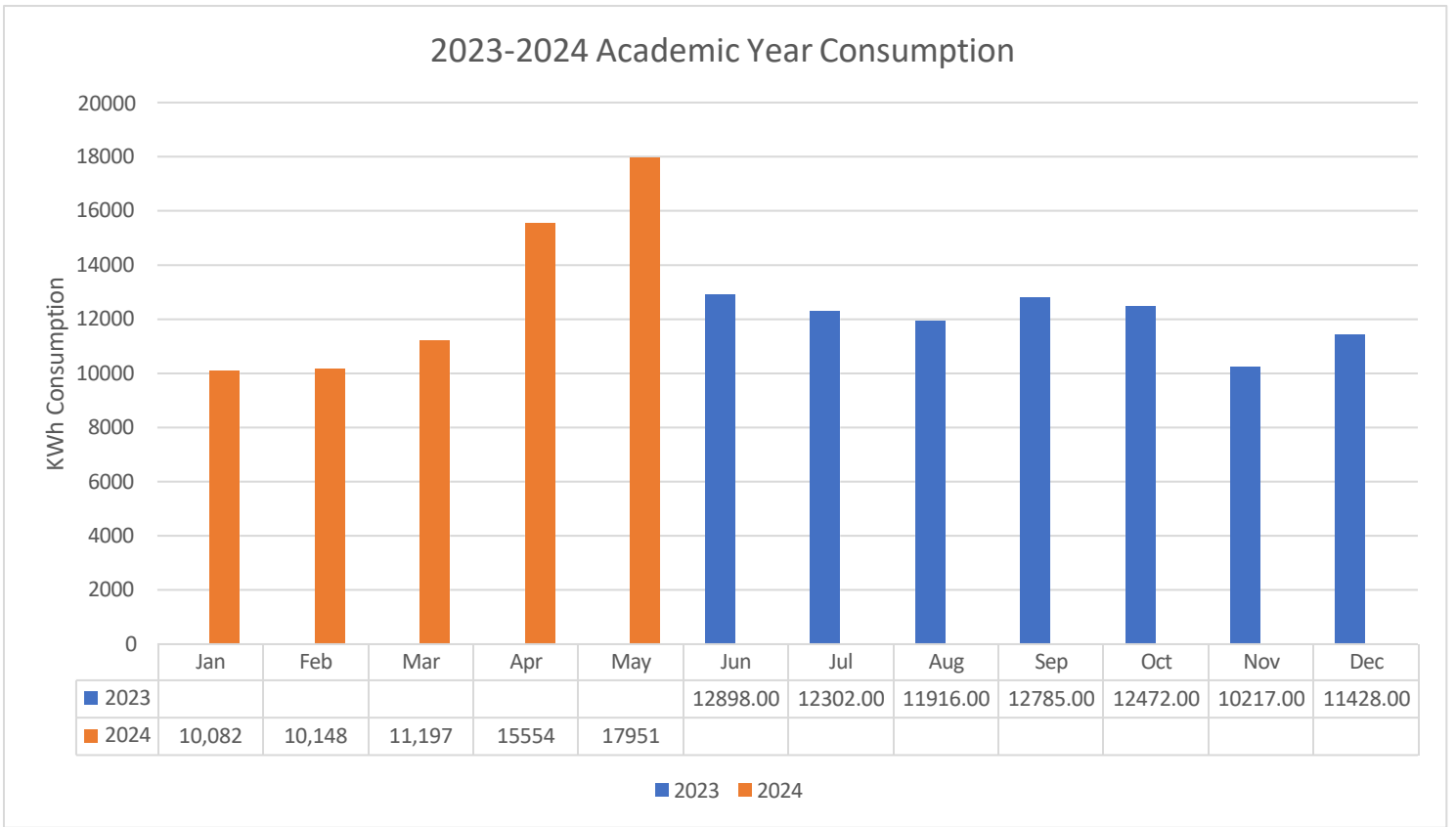


Fig 7. Annual Energy Consumption in KWh at SIIB [2023-2024]

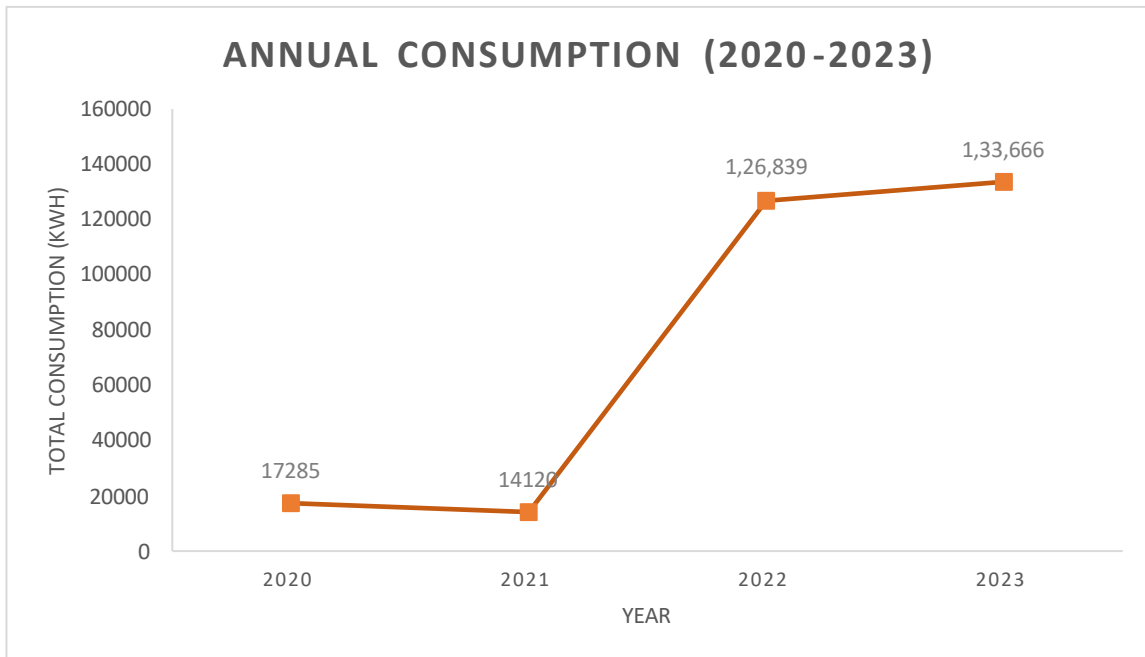


Fig 8. Annual Energy consumption trends at SIIB