

Excellence in Energy Management...

CASE STUDIES

A case study of an Hilton Abu Dhabi, Abu Dhabi, UAE

Application Note

Hilton Abu Dhabi, Abu Dhabi, UAE is a member hotel under the Abu Dhabi National Hotels (ADNH) group. This group has 16 hotels under it. We contacted Hilton in August 2002 for use of Energy Management System in the hotel for monitoring and control of energy use in the hotel.

This hotel had Siemens BMS installed and functioning. The existing BMS was not covering all the desired electrical parameters in totality, they way it should be monitored for energy efficiency and control.

Pre EMS Installation Status:

The hotel was depending on manual readings obtained from different places. Moreover, enough metering was not present in the hotel other than key areas, which otherwise are important for energy management. Most of the time, the values computed were on estimates and the mathematical formulae. This was creating lot of accuracy issues in arriving at different conclusions.

Post Installation

1. Every hotel has to send the report in a certain format to ADNH and to its own group head office. Hilton used to this by collecting the readings, manually feeding them in the computer and then generating the reports. This was very cumbersome and tedious. Also, there was always an element of human error in the computations. The installation of EMS led to automatic generation of all the desired reports with additional analysis and reports.
2. The loading patterns, distributions, fluctuations etc were not known in details to the Chief Engineer before. The information on the above parameters by the system helped the chief engineer in deciding load pattern, system power factor management etc.
3. There are reports which calculate the savings in energy cost achieved with compared to a reference line.

- Automobiles
- Beverages
- Cement
- Chemicals
- Engineering
- Fertilizers
- **FMCG**
- Glass
- Hotels
- Hospitals
- IT
- Paints
- Paper / Pulp
- Petrochemicals
- Pharmaceuticals
- Textiles
- Shoes
- Steel
- Sugar
- Wind Mills
- Shopping Malls

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4. There is one comparison report, in which the comparison between present and, yesterday readings of present year and past year are done. Here, the savings are calculated and the performances of the costs are then analysed
5. The reports also have the forecasting facility, in which the forecasted value comes after entering the percentage of forecast reduction or increase. The Reports also give the daily node wise readings and the shift wise node wise readings.
6. There are power consumption reports, in which the power consumption of every point is entered. These are then used to calculate the specific energy costs per customer, per food cover used, per meter square of the building area, per meter cube of the building volume, per degree day heating and degree day cooling, per guest room occupied, etc.
7. In the Energy Audit Report, the percentage savings / losses are calculated over the last year, on daily basis. This report also has water, gas and electricity as its components. In this report also, the other non - utility factors are considered, like the guest count, no. of food covers, room occupied, degree days (cooling and heating), etc to calculate the energy costs in respect of each above mentioned reference. These are also compared with the last year's and the savings / losses percentage is calculated. This report also has the MTD and YTD columns to do the total comparisons and analysis. For each utility, the costs of consumption in total, per customer, building area and volume, etc are calculated and then the savings / losses in absolute terms are calculated.
8. There are Utility reports in this application, under which the costs of consumption are calculated in the pre fixed format. These reports are used in monthly and annual reporting of the hotel to the regional office and the ADNH.
9. There are comparison graphs, which compare any parameter with any other parameter. These graphs are used to compare the patterns between different parameters of different years or months, etc.