

Energy Conservation at the Chennai Silks

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Abstract: Studying about the power consumption at Chennai Silks and finding possible methods to reduce energy. Cause and Effect diagram was sketched and the possible solutions were provided after the study. Lighting, Air conditioning, Lift etc., were monitored and solutions were provided by energy auditing by thorough inspection. The Energy Audit provided a brief outlook on the units of power consumption including floor wise calculations. Solutions were provided such as usage of sensor light, switching of the lights/fans when not in use, installation of split AC instead of centralised air conditioning. By using sensor light the energy can be saved up to 30-40% depending on the crowd.

Keywords: Operations Management, Energy Conservation, Management

1. Introduction

The secondary published data sources claims that only 14% of the firms have employed an energy consultant. Energy cost as a percent of total cost of product in the entire industrial sector in India varies from as low as 0.36% to as high as 65%. It is essential to save energy and energy conservation at the Chennai Silks was the project. The main aim is to save energy and minimize the cost effectively and efficiently.

2. Introduction To Chennai Silks

Chennai Silks is a brand. It has its brand and value for textiles. The largest textile outlet which targets all people (mainly mass segment) has its branches spread across several regions. It is having around 1000 employees. The usage and need for electricity is huge in such a large retailing showroom in all its branches.

3. Research Problem

By studying, learning and by implying the conservation of energy and also by doing an energy audit and how the usage can be minimized efficiently. It is in accordance with ISO 50001 and also by monitoring the commonly used devices causing energy like fan, light, air conditioner, lift comprising of electricity charges. The surveillance and energy audit helps in monitoring and controlling the usage and using it effectively as well. Also by studying the current procedures and suggesting the implementations could yield a better efficiency on all aspects tending to conserve the energy at The Chennai Silks.

4. Research Methodology

a) Research Question

1. Electricity consumption (Number Of Units) Daily?
2. Electricity Consumption (Floor wise)?

b) Research objectives

1. To study on the energy conservation at The Chennai silks.
2. To know about usage and reduction of energy in all aspects.

c) Research Design

The researcher has collected both primary and secondary data for the research. Secondary data has been collected by accessing journals, news papers and websites, while primary data has been collected through electricity reading for one whole month. The data has been observed and noted directly from the Maintenance department, EB in Tirupur.

5. Literature Review

The judicious use of energy resources and technology to reduce the negative impacts of energy use are firmly embodied in two concepts namely energy efficiency and energy management. Energy management refers to the strategy of adjusting and optimizing energy, using systems and procedures so as to reduce energy requirements per unit of output while holding constant or reducing total costs of producing the output from these systems. (Chakarvarti, 2011).

Energy management is defined as: —The judicious use of energy to maximize profits(minimize cost) and enhance competitive positions. (Cape hart, Turner and Kennedy, 1997) Therefore, any management activity that affects the use of energy falls under this definition. The primary objective of energy management is to maximize profit and minimize costs.

As per IEEE (1995), Energy management embodies engineering, design, applications, utilization, and to some extent the operation and maintenance of electric power systems to provide the optimal use of electrical energy.

6. Analysis and Discussion

Table 1: Electricity Equipment List apart from Airconditioning and Lift

24W LED
50W LED
TUBE LED
SPOT LIGHT
SWITCH BOX
WATER DOCTOR
SENSORMATRIC
AIR CUTTER
STANDING FAN
FAN
WALL MOUNT FAN

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Inference

The table 2 describes the unit wise electricity details. The cost is directly proportional to the number of units. So the cost increases accordingly.

Table 2: Electricity Unit Details

S.No	Particulars	Frequency	Percentage
Total energy			
1	LED Lights	69816	28.86%
2	Fan	7095	2.93%
3	Lift& Airconditioning	165000	68.21%

By implementing sensor light we can save the energy from 20-30% as the hours of operation varies from 9 hours to 10 hours.

7. Discussion and Conclusion

The existing literature clearly communicates that there is a need to reduce electricity usage. This can be done by implementing sensor lights, split Air conditioning instead of a centralized air conditioning on office rooms. Switching off the fans and electrical devices when not in use . By minimizing the electricity usage a lot of cost cutting can be saved which will substantially yield a better saving for the company.

References

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