

ENERGY MANAGEMENT IN COMMERCIAL FOOD SERVICE OPERATIONS

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ABSTRACT

Asia has experienced the world's fastest economic growth, accompanied by rapid urbanisation. This remarkable growth has led to twin energy challenges namely sustainability and energy security and this study explores the possible energy conservation methods in the selected food service operations and hence the study was undertaken with objectives to study the different types of energy used in selected food service operations, assess the renewable and non renewable resources used in various sections of the food service operations and develop the various energy conservation methods adopted at food service operations. A total of five food service operations with three commercial and two non-commercial food service operations at Coimbatore were selected for the study. An energy audit programme was conducted for three sessions at each food service to understand the existing pattern in energy management using a checklist. Based on the results of the energy audit, the guidelines were planned and implemented for two days at each food service operation using flash cards, power point presentation and face to face to discussions. A total of forty employees with eight from each food service operations were deputed to participate in the programme. The energy management programmes planned and implemented to the selected Commercial Food Service Operations and Non Commercial Food Service Operations when interpreted with statistical 't' test a significant improvement at five percent levels both at the selected Commercial Food Service Operations and Non Commercial Food Service Operations.

Keywords: Conservation, efficiency, management.

1. INTRODUCTION

Energy Management in food service operations is the practice of controlling procedures, operations and equipment that contribute to the energy use comprising electricity, gas, water and other natural resources. The common sources of energies are non-renewable, such as all fossil fuels (coal, petroleum and natural gas) are formed millions of years ago and cannot be reproduced and they emit carbon di oxide when burned.

The sources of energy which have accumulated in nature over a very long time and cannot be quickly replaced when exhausted are termed as non-renewable source of energy. The renewable source of energy are the alternative form of energy which can save us from the energy crisis and become the major source of energy in the future (Prabhakar, 2001).

Waste to Energy (WtE) conversion is a approach to resolve two issues including waste management and sustainable energy. Waste represents an increasingly important fuel source. Using waste as fuel can have important environmental benefits. It can not only provide a safe

and cost ineffective way of waste disposal but can also help reduce carbon-di-oxide emission (Bose, 2009).

"Energy Management in Selected Commercial Food Service Operations" was undertaken with the objective to study the different types of energy used in selected food service operations, asses renewable and non renewable resources used in various sections of the food service operations, to develop the various energy conservation methods of food service operations.

2. METHODOLOGY

A total of five food service operations with three commercial food service operations were selected on judgement sampling. The sample was selected using judgement sampling. In judgement sampling, the judgement or opinion of some experts forms the basis of the sampling method. it is expected that these samples would be better as the experts are supposed to know the population (Bhattacharyya, 2009). Energy audit programme was carried out for three days to observe the efficiency of fuel utilisation and the steps followed for energy conservation using a checklist. Imparting

guidelines for efficient energy management was based on the results of the energy audit.

The guidelines were planned and implemented for two days at each food service operation using flash cards, power point presentation and face to face to discussions. A total of forty employees with eight from each food service operations were deputed to participate in the programme. Evaluation on energy management in selected food service operations was done with the estimation of improvement was done with the help of checklist for post observation. The impact of the energy management programmes was statistically analysed to find the levels of significance using 't' test.

3. RESULTS AND DISCUSSION

3.1. Findings of the study

The findings of the study on energy management in commercial and non commercial food service operations is discussed.

3.2. Energy consumption

As energy consumed is directly proportional to the area of the operation. Larger the area higher is the energy consumption and it calls for more number of equipment especially for lighting and ventilation. Hotels consume more energy when compared with other non commercial food service operations. The commercial food service operations including hotels that provide lodging and boarding, was observed full occupancy of 75 per cent on all the days

3.3. Kinds of cuisines served in the food service operations

The fuel consumption and the cooking time of each cuisine different. South Indian cuisine needs more time followed by north Indian in par with the time for Chinese cuisine.

3.4. Type of energy used and consumption per day in food service operations

The type of energy used states that there was increased energy consumption in commercial when compared to non commercial food service operations

3.5. Transition of fuels

There was a transition of fuels seen in hotels because of Increase in cost, easiness to use the energy sources were the reasons reported for the

transition of fuels by the selected food service operation.

There was more usage of non renewable than renewable resources. The renewable sources used mostly consisted of biomass which also releases carbon-di-oxide. So clean energy options were given such as solar, wind and hydro power.

3.6. Details of employers in the food service operations

Energy conservation is the responsibility of each and every employee and mainly for the employees working in industries. The larger the number of employees, there are more chances of overlooking. Food service industry is a fast growing industry and now it needs to watch out on its fuel consumption. To check and to control any situation, man power is the major resource, therefore employees play a major role in controlling energy wastage.

The energy management programmes planned and implemented to the selected Commercial Food Service Operations when interpreted with statistical 't' test a significant improvement at five percent levels both at the selected Commercial Food Service Operations

4. CONCLUSION

Energy Management practices adopted by the food service operation showed that the awareness existed among the management and the employees of the selected Commercial Food Service Operations in the use of energy saving equipments such as vegetable cutter, mixer grinder, potato peeler and lacunae was noticed in the utilization of energy in different section of food service operation. Hence more number of training programmes has to be planned and implemented at regular intervals for adoption of eco-friendly and energy management practices. The energy conservation practices in customer centric business practice will help to fight the energy crises and save the energy and environment for the future generation.

SAVE ENERGY, SAVE ENVIRONMENT

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