

CHAPTER IV

ENERGY MANAGEMENT IN THE FACTORY

Introduction

The purpose of an energy management program for any industry is (1) to utilize fuels in the most effective manner to minimize the amount consumed for system equipment and processes, (2) to use the particular type of fuel or electricity which is available at the lowest costs and to switch from one fuel to another if the relative costs change radically in the future, and (3) to carry out these objectives within the financial capability of the owner in the interests of developing national energy and resources policy.

Status of Energy Management in the Factory

The management attitude towards energy saving in the factory that was studied is quite positive. In 1982, an energy conservation committee was established to initiate an energy saving program. Meetings had been held every month, headed by a University professor who was asked to chair the committee. Reports had been submitted to the committee by individual sections of the factory. Unfortunately, the committee was disbanded three months after its formation as good results could not be expected due to insufficient mutual understanding among the sections involved.

During the six months of this study, December 1985 until May 1986, it was noted that the coordination among the factory personnel was generally satisfactory. Top management does emphasize the economic reasons to conserve energy. However, the employees' cooperation for

suggesting and/or implementing energy saving ideas, within the areas of their own concern was limited to the production departments.

Real interest in cutting energy costs needs to be generated throughout the organization at an early stage. This may be done by means of items in company journals and bulletins, posters and stickers, training programs, films, suggestion schemes and so on. Results achieved must also be communicated and proper recognition given to employees' ideas and contributions. Employees at all levels should know that savings are necessary to offset soaring energy costs and to maintain the organization's viability rather than just increasing profits. Figure 4.1 illustrates posters that may be used to stimulate employees' interest and awareness of the need to reduce the cost of energy.



Figure 4.1 An Illustration of Posters to Stimulate Employees' Interest and Awareness.

Establishment of an Energy Committee

A committee should be formed to handle the energy program. Typically, it consists of representatives from each operating department with an energy conservation (enercon) manager appointed by and reporting directly to management. This committee may be involved in enercon activities on part time basis. One of the possible enercon task forces is shown in Figure 4.2. In this figure, the plant manager may serve as the chairman of the committee.

The enercon task force is expected to look into the energy saving potentials in various functional areas and to initiate a continuous program of activities to stimulate interest and encourage participation in the enercon efforts as well as in the implementation of the energy saving measures.

The energy manager should be a qualified fuel technologist or engineer with some experience of costing methods and the financial evaluation of capital projects. Principally, he needs a questioning mind and ability to command the support of colleagues. He should have free access to all information on energy matters.

Duties of the Committee

The committee after obtaining the commitment of top management will outline their tasks as follows:

1. Get organized and enlist employees support and cooperation by calling meeting to discuss various enercon ideas, activities, programs, and accomplishments.
2. Draw action plans design to stimulate interest in enercon efforts.

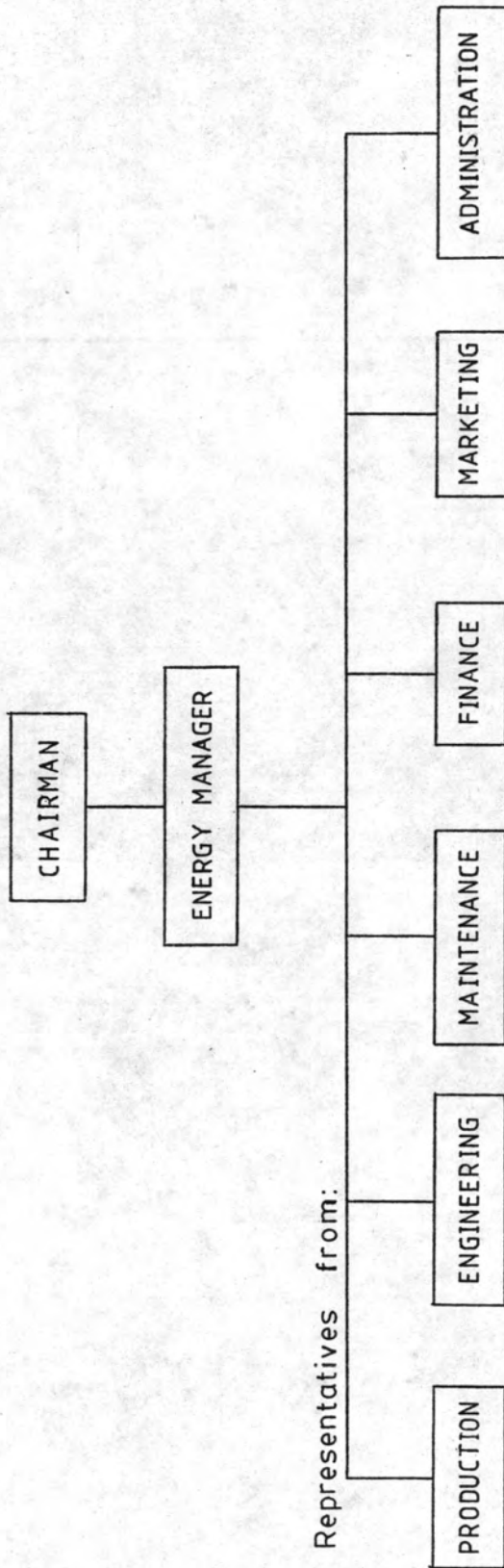


Figure 4.2 The Proposed Enercon Committee.

3. Set energy saving targets. Figure 4.3 provides an instance of the targets.

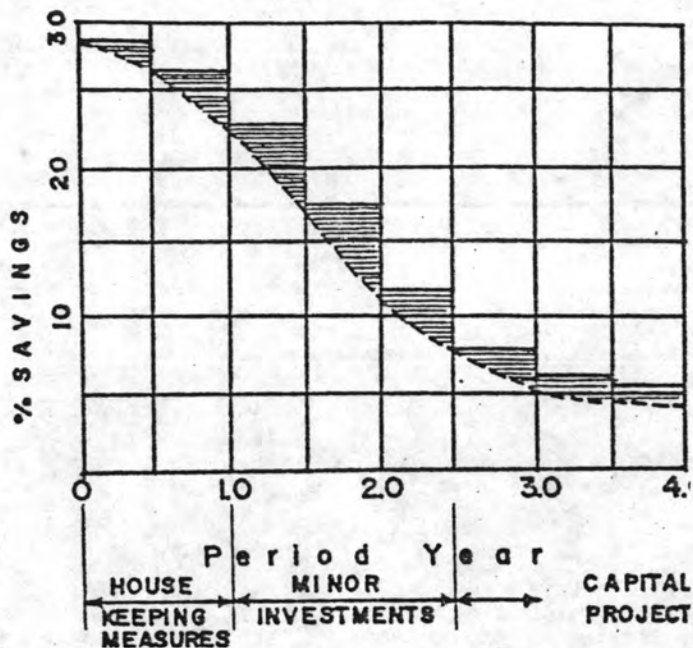


Figure 4.3 An Example of Enercon Targets.

4. Improve fuel utilization.
5. Keep the employees and management informed of the latest developments on enercon program.
6. Avail of technical service assistance from professional associations, institutions and government agencies in energy surveys and evaluating enercon measures or projects, conducting energy briefings, sponsoring orientation and on-the-job training courses, demonstration, and so fort.
7. Set up a system of controlling, reporting, and evaluating the program.

Duties of the Energy Manager

The energy manager's duties should include some or all of the following:

1. To generate interest in energy conservation and to sustain this interest with new ideas and activities. To lecture to training courses and to outside organizations and to give short practical talks on various technical topics.
2. To maintain essential summaries of energy purchases, stocks and consumption. Regularly to review energy utilization performance and trends and to advise senior management.
3. To be the focal point for departmental records of energy use and to ensure that the records and accounting systems are uniform and in consistent units.
4. To coordinate the efforts of all energy users and to set tough but realistic targets. To give technical advice on energy-saving equipment and techniques, or to identify suitable sources of sound technical guidance.
5. To identify where major energy waste is occurring, to quantify the losses in financial terms and to put forward practical recommendations for reducing them.
6. To identify areas of activity which required detailed study and to concentrate efforts on these. To maintain a record of all in-dept studies and to review progress.
7. To provide a basic manual or handbook of good energy practice, using published material or, if this is unsuitable, to produce material specifically to meet the needs of his own organization.
8. To give specialist advice to purchasing, planning, production and other functions on the longer-term aspects of energy

conservation.

9. To ensure that, in making improvement or implementing suggestions from any source, health and safety are not jeopardised.

10. To liaise with committees and working groups within his own industry and with his company's approval, to exchange idea on cost-cutting techniques and performance figures in similar processes.

11. To maintain contact with appropriate research organizations, equipment manufacturers and professional bodies to ensure that he remains up-to-date on all significant developments in the field of energy conservation.

12. To remain up-to-date on world and national energy developments and to advise senior management on energy matters generally.