### BIGHER TECHNICAL INSTITUTE

## MECHANICAL ENGINEERING DEPARTMENT

# DIPLOMA PROJECT

# ENERGY MANAGEMENT IN AN INDUSTRY

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### **ABSTRACT**

This project as title implies deals with energy management in "DP LONDON".

In chapter 1, the processes for the production of the different sprays, shampoos and other liquids were described.

In chapter 2, the various energy using processes were discussed.

Chapter 3, is a complete energy survey.

In chapter 4, various energy conservation measures were suggested.

Finally, in chapter 5 a cost appraisal of the above measures was done.

### INTRODUCTION

#### ENERGY MANAGEMENT IN A MANUFACTURING INDUSTRY

Energy in sufficient quantities is necessity for maintaining industrial production and for enabling a modern society.

The consumption of fuel, which is the main source of energy, has been increased during the last years.

The ability of any government to survive in the long term depends upon its ability to produce and properly manage low cost and safe energy.

In any operating system levels of performance should be dearly defined, examined in detail and criticized in relation to the energy.

Universities and institutes have been encouraged to initiate courses to conserve energy.

In addition to that many organizations in the materials manufacturing retail sectors, have created energy management departments to monitor energy consumption.

In Cyprus there are not any other physical sources of energy such as natural gas, coal so all the energy needed is imported in the form of petrol products. The low prices of petrol products seem to belong to the past.

The last nine years there is a constant increase in the price. It is obvious that this increase will considerably affect negatively the economy of Cyprus.

During the year 1990, 1,043,000 metric tones oil costing 139 million Cyprus pounds were imported. From this, 35%were used for electricity production,

18% was consumed directly by the industry for transportation, 32% were used whereas for domestic and commercial applications 8% and finally for agriculture 7%.

It is obvious that with today's increasing energy prices more attention must be given to the energy input.

Some experts have stated that less than 50% of all the energy consumed through out the world is used effectively, the rest is wasted in conversion losses, heat radiation, cooling water and in other ways.

Simple procedures can reduce considerably overall system energy requirement, whilst smoothing load factors and selecting podical tariffs can result in substantially lower energy bills. The greatest saving has been accomplished by improving efficiencies and enhancing heat flows and by making use of reject energy.

Alternative designs should be compared on the basis of running costs coupled with long life and low maintenance criteria.

In spite of this, decisions whether to modify an energy-consuming system to reduce its rate of consumption what measures should be adopted and what quantities of each measure should be installed must always be based upon economic factors presently prevailing and predicted future economic and technical scenarios.

Forecasts must be made as to projected real costs of fuel over the systems expected lifetime the reliability of the arrangement adapted, materials consumption and the necessary frequency of maintenance and replacement. Cyprus is fully dependent on imported fuels to overcome its energy needs.

This leads to the fact that new ideas must be developed and this will lead to economic development.

"A barrel of oil saved is more valuable than a new barrel of oil produced". Everyone should adopt this principle.