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ENERGY RECOVERY FROM MUNICIPAL

SOLID WASTES

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**ENERGY RECOUERY FROM MUNICIPAL
SOLID WASTES**

**BY
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Project Report

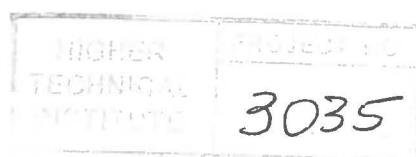
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SUMMARY

A survey on a Town Refuse Disposal Methods

by **Tramontanellis Yiannos (3M2)**

Summarized objectives of the study

The project aimed at:

- (a) Carrying out an investigation into the various viable methods of refuse disposal.
- (b) Critically analyse the characteristics of these methods and select the most appropriate which can meet the Nicosia needs.
- (c) Discuss in detail the selected option and present design calculations, drawings and technical specifications for the plant.

Methodology

The following methodology was used in carrying out this study:

- (a) The relevant literature was studied in detail and an overall appreciation was gained.
- (b) Relevant information was collected using two methods:
 - (i) desk research,
 - (ii) field research using primarily the interview method
- (c) All collected data was classified and analysed
- (d) Conclusions were reached.

Findings

The current investigation supports the view that the most appropriate method for refuse disposal is the incineration. The option of sanitary landfill was rejected because of the negative impact of the environment and the intense sensitivity prevailing in the community.

Incineration entails the following positive features:

- (a) Produces electricity
- (b) Gets rid of industrial waste water
- (c) Eliminates the possibilities of pollution of the ground water
- (d) Some material recovery can be established

INTRODUCTION

Hazardous waste have only come to be regognized as a priority problem over the past 10-15 years. Action to control hazardous has too often been precipitated by an actual or potential environmental disaster.

Hazardous wastes can cause immediate, short-tem, public health problems as well as long term environmental pollution. Proper control of hazardous wastes does not cost money, but experience in a number of developed countries suggest that clearing up the “sins of the past” is much more expensive in the long term. For example in the United States clean up of improperly managed wastes has been estimated to cost 10-100 times as much as proper early management. It is therefore important that all developing countries institute controls over hazardous (and not only) wastes to avoid such excessive costs in the years coming.

The inappropriate and often careless handling of municipal and industrial wastes, including those are hazardous, has very of ten created problems all over the world for human health and environment. Effective control of hazardous wastes is of paramount importance for proper health and environmental protection and natural resource management.

Therefore, coming to the aspect of the project to conduct an investigation into the various methods of town refuse disposal methods. Landfills Composting, Incineration and Pyrolysis will be discussed in the following chapters, aiming to find the most appropriate and useful method that can be established to cover the requirements of the city of Nicosia.

But before concluding the methods of disposal, several aspects shall be concern, in general. Gross Calorific values vary from 9-12 MJ/Kg and obviously it has a continuos rising over the years as paper, plastic, rubber are rising too. Also if we look at the figure 1-1 is obvious of what quantities of refuse and this energy we are dealing with. In Cyprus at the moment that energy is not utilized, neither the method of disposal at kotsiatis covers the needed safetys. That is a major problem which the authorities don't

pay much attention, but my estimation is that, if nothing's done in the following 15 years in order to improve or adopt a new waste disposal method, major problems will begin to rise threading the human life. All those factors lead to an improvement of the waste disposal, or even to take advantage of that huge quantity of energy, with methods which are about to be shown at the following chapters.

Planning of refuse collection and selection of the appropriate method of disposal requires organized preceded work based on accurate and reliable organized preceded work based on accurate and reliable figures. These figures and the disposal methods which are going to be mentioned will help us, to get a full ideal about the problem and the methods used, thus taking the appropriate conclusions.

FIGURE 1-1

Order of Magnitude of Hazardous Waste Production in Individual Countries

