

HIGHER TECHNICAL INSTITUTE

MECHANICAL ENGINEER COURSE

DIPLOMA PROJECT

**DEVELOPMENT OF A PROCESS FOR THE
PRODUCTION OF SOLID FUEL FROM ORGANIC
SOLID WASTE**

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1.1 INTRODUCTION (Renewable energy-Biomass)

Because of the increase of pollution in the atmosphere and due to the high cost of fossil –fuel people search for new resources and for new renewable solid fuels called biomass.

Development and commercialization of this kind of technologies can reduce carbon emissions to the environment and can reduce the dependence on imported oil of any country, which develop technologies using biomass instead of fossil fuel.

The important thing is that biomass is produced from organic solid waste. This solid waste is useless to everyone and it is not good for the environment.

Organic solid waste become useful when is converted into biomass and is used for the production of power or other types of energy.

The project deals with the development of a system, which could convert organic solid waste into biomass fuel and produce power heat by burning the prepared biomass.

There are many kinds of systems that are used to for the production and the use of the biomass in industries. System which is going to discuss in this project is the production of biomass with shredder which cuts organic solid waste into small pieces, then shredded material passes

through a drier to release its humidity and then compaction occur to solidify the organic waste.

Completed biomass is burned in boiler and convert water into steam. Steam runs a steam engine, which its crankshaft is connected, to a generator and produce power. Steam can also run steam turbines for production of power and heat.