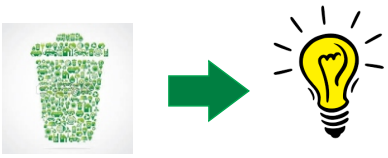

Ubuntu Urban Waste to Energy Project

Our cities are expanding at an alarming rate due to population explosion. This rapid increase in urban living has resulted in excessive use of plastics, thus creating an enormous quantity of waste-plastics that litter our streets, earth and water-ways. Canals, drainage, side-walks and even fields are contaminated by plastic bags, PET bottles and packs of foils.

A small proportion of the plastic waste is separated. But in most cases it is burnt or stocked in refuse dumps or landfills. These constitute an environmental nuisance. Because of this, our team decided to take action so as to remedy the situation and proffer a solution to the problem. The result of our long-term effort is to provide a unique technology that is able to produce electrical energy from the plastic waste through an eco-friendly method.

The Ubuntu Waste to Energy Project in Partnership with Enersec

Our project is focused on electric energy production from the plastic waste. The project presents new, eco-friendly technology for plastic waste conversion into the electrical energy.

The technology is based on electric power generation unit consisting of two basic technological parts. The first one is depolymerisation line uses a nature-friendly method of processing and adding value to plastic material, in two stages. The first stage includes mechanical crushing of the plastic waste to suitable form for further processing. The second stage is the low-temperature depolymerisation process when the long molecular chains of the plastic are broken down into short chains of oil carbohydrates so called plastic oil. The second technological part of the power generation unit is standard generator set consisting of combustion engine using plastic oil as a fuel and synchronous electric generator driven by the engine and producing electric energy. The significant fact is that the plastic oil is ultra clean kind of fuel thus this part of the technology is friendly to the environment too.

This power generation unit represents an unlimited method for disposal of plastic waste and electric power generation and within that offering cost effective and long-term success of the process. The technology is delivered as a modular container set that provides a high degree of mobility and flexibility. Thanks to this technical feature it is easy to install. The technology is easy to operate too, as it is fully automatized. One power generation unit is able to utilize 2000kg of plastic waste each day (app. 720ton/Year) and continuously produces 300kW of electric power (app. 2600MWh/Year from which app. 600MWh is used for self-consumption of the technology). The number of the units installed within one place is limited (besides the site land size) only by plastic waste availability and the grid ability to absorb amount of produced electric energy. Modular concept of the technology with its mobility allows simple extending (installing of another unit or units) or moving it to another place if necessary.

In general the most convenient location of the technology should have proximity to a refused dump site where the plastic waste is sourced and the grid connection possibility is not at a far distance (up to a few hundreds of meters). One of the very attractive possibility is to place the technology within Lagos State (Nigeria) where the plastic waste generated on a daily bases is enormous (the estimate is up to 3000 ton).

In the light of the above, the amount of investment is flexible and depends on the number of power generation units proposed for installation. For one unit the economical brief assessment should meet the following parameters:

- Investment
- Running costs
- Internal Rate of Return (IRR)
- Annual Revenue
- Payback Period
- Technology lifetime
- Net Profit

Social and Developmental Benefits:

- Increase in employment opportunities
- The only eco-friendly and quick solution for plastic waste disposal with subsequent production of plastic oil
- Sustainable eco-Electricity production from the plastic oil

Our project can be found attractive for:

- Waste management companies
- Municipalities
- Companies processing plastic waste
- Governments and organizations dealing with plastic waste
- Companies dealing with electric power generation

Business Model

Concerning the project, our company offers all necessary work and services:

- Feasibility Studies
- Design (realization level and as-built level)
- Engineering
- Technology delivery
- Realization, final inspection, commissioning and staff training
- After sales services (i.e. operation, administration work, maintenance, reparations or upgrades if needed)

In our case the project structure is mainly determined by inputs and outputs of the technology. The only input of the technology is separated plastic waste, thus the key partners of our technology system are waste management companies operating in respective locations. The focus will be to acquire a long term supply agreement with waste companies to supply plastic waste in sufficient quantity to the depolymerisation plant location.

Ubuntu
HDI Project

Powered by Africulture GBC

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