

# Municipal solid waste



There is little doubt that the sufficient energy, immense wealth and revenue streams can be obtained from the municipal dumpsites of solid wastes. This research will look at the waste-to-energy projects conducted by the Omega Power Groups with a view to ensuring environmental sustainability and tapping renewable energy. Although, people tend to think municipal solids waste are useless stuff that should be burned down to ashes, they have the potential of reducing the levels of environmental degradation in the earth and in effect global warming. According to the literature, solid waste is any waste product that is not gaseous or liquid. They, basically, accumulate in the environment, as they are continuously released from the households. If not properly reused or recycled, these solid wastes can cause de-gradation of the environment, both in terms of aesthetic beauty and air pollution. That is certainly why focus has shifted to wisely using the solid waste to make other useful resources, like energy or electricity (Horstman, 2007).

Different approaches have been adopted in conserving the environment from the solid waste. For instance, the use of landfills has become quite popular in America as one of the superior techniques for recycling solid wastes.

According to the Omega Power groups, modern landfills are facilities that are basically well designed, according to the regulations of the Federal Regulations. These are strategically located and their progress monitored to ensure that they absolutely comply with the federal regulations. Basically, the focus is to rid the environment of any contaminants that may be found within the mass of the solid waste. In doing so, landfill sitting system is put in place to ensure that that the solid waste does not get to sensitive areas of the environment which are used to limit environmental pollution. In addition,

the systems usually have monitoring systems for the environment to provide the additional protection against the contamination of underground sources of water. However, landfills are themselves potential sources of contaminations, as they harbor dangerous gas emissions and perhaps contain some of the gases to energy. This conversion process can produce even more toxic gases and should be adequately controlled. According to a research by Lalmba Agricultural Associates, these gaseous emissions have become the worry of the agriculturalists, as they prove too hard to control, considering that most of the landfill projects are carried outdoors. However, this has formed a part of the modifications that should be pursued to make the project more sustainable. Although, controlling gas emissions could be too costly, implementers of municipal solid waste have been urged to bear the cost, so as to harness the potential success of the project (Beychok, 1975).

In most cases, the municipal solid waste landfills are used as receiving points for the household wastes, as well as other sludge. In addition, the landfills receive industrial solid wastes, demolition debris from different places, thereby implying that they contain materials of varied nature that can yield many forms of degradation products. However, municipals guard against excessive pollution by following a set of guidelines that are meant to curtail the release of harmful products. For instance, the locations of the landfills are keenly regulated to prevent them from seeping into the waterbeds. This means that their geographical areas of location are situated away from wetlands or places with numerous faults through which the decomposition products of the wastes can seep into underground water systems. In order to

provide a greater protection, composite liner requirements are in place to provide the extra protection. For instance, they usually form a double layered membrane at the bottom, as well as the sides of the landfills to guard against contaminating underground waters. Although, this is never efficient, it almost sufficiently ensures that landfills are controlled (Novice, 1999).

The other functions carried out by the municipal solid waste projects include the setting up ideal operating procedures. For instance, it is a popular thing to have the landfills slightly covered with a layer of soil, purposely to prevent the excessive odor from waste decompositions. Indeed, this aspect of the project is at the greatest interest of public health, and the composition of the soil itself usually matters great deal. This is due to the fact that when the soil is contaminated, its protective purpose is lost, and its waste components are degraded into the harmful compounds that could cause greater public health risks. In addition, the project handlers usually employ groundwater monitoring systems to ensure that underground waters remain free of waste contamination. According to research, more sophisticated instruments have currently been invented that accurately determine the rate of escape of products of the waste products from the landfills into the underground water bodies. Moreover, the system requires ideal closure to provide for long-term care and ensure that the soil layer cover, as well as the support at the bed, is not interfered with over time. Indeed, this provides the opportunity to correct the flaws that could develop in the landfill over time. However, this should be combined with correction systems, so that such flaws are corrected, as soon as they are realized. Nonetheless, all these undertakings require adequate

funding, as most of the protective devices are very expensive. This explains why funding is an important aspect of environmental control using the landfills (Beychok, 1975).