



Lecture 12 summary: WASTE to ENERGY PROJECTS with reference to Municipal Solid Waste

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The lecture tells about the overall scenario of Municipal Solid Waste (MSW), international status, technology options, financial viability, barriers and the need for looking at Waste to Energy options. The process of converting Waste to Energy (W2E) basically involves capturing energy from processing of waste, in the form of electricity or heat. It is also termed as Thermal and Biochemical Recovery. In Indian scenario, India reports high recycling rate of 70% though most of it happens in informal sector. High moisture content and low calorific value of organic fraction of Indian MSW makes it more amendable to biochemical conversion. However there are problems in adopting W2E technologies to MSW, e.g. Variability in composition, High moisture content, fouling of equipment if inerts are high and use of unsegregated waste can also lead to emission of toxic heavy metals. Therefore, there is a need for improvement in present waste management practices. In policy framework of India, NEP, 2006 and NAPCC, 2008 also give emphasis to the need for W2E projects and the need for indigenous development and customization of W2E technology. Depending upon the available waste resource, different W2E conversion technologies are available e.g. Landfilling with gas recovery, Incineration, RDF based power generation, AFR (Alternate Fuel and Raw Material), Biomethanation process, Pyrolysis/gasification, Plasma arc pyrolysis. Besides economical and environmental benefits, W2E practice can also help in improving the livelihoods of ragpickers. There exist technical barriers e.g. high energy generation cost, high capital cost for the technology and non-technical barriers e.g. lack of public acceptance, unavailability of source segregated waste, poor database exist in implementing W2E. It is suggested that an integrated model of MSW management which covers commercial availability of technology, capital and Operational & maintenance cost, MSW Rules would be useful for W2E projects.