

COLUMBIA UNIVERSITY

IN THE CITY OF NEW YORK

EARTH ENGINEERING CENTER

Comments of Prof. Nickolas Themelis of Columbia University at April 1, 2009 meeting of Sub-Committee on Renewable Energy of New York State Assembly (Mr. Andrew D. Hevesi, Chair)

First, I would like to thank Mr. Hevesi for inviting me to this important meeting. As the Committee is seeking ways to increase the production of Renewable Energy (RE), it should examine the current picture of RE in New York State and develop legislation and other means that will help to increase generation from methods that are already large contributors to RE generation in the State as well as encourage the implementation of new renewable energy technologies.

Table 1 summarizes data provided by the Energy Information Administration of the U.S. (www.eia.doe.gov/cneaf/solar.renewables/page/state_profiles/new_york.html). It shows that, excluding hydroelectric power, 54.1% of the Renewable Energy generated in NYS in 2006 was due to the combustion with energy recovery (also called waste-to-energy or WTE) of municipal solid wastes (MSW) and the capture and utilization of landfill gas (LFG).

Table 1. Current sources of Renewable Energy in the State of New York (2006, EIA)

Source of Renewable Energy	RE generated, MWh	% of Total RE	% of power used in NYS
Combustion of biogenic MSW and from LFG recovery	1,410,000	54.1%	1.0%
Wood and wood wastes	530,000	20.3%	0.4%
Wind	655,000	25.1%	0.5%
Solar	7,000	0.3%	0.05%
Total RE, excluding-hydro power	2,606,000	100.0%	1.9%

For several years, the Earth Engineering Center of Columbia University has been engaged in detailed analysis of various aspects of waste generation and disposal in the U.S. and abroad. Table 2 shows the potential for increasing the production of Renewable Energy from post-recycling municipal solid wastes (MSW) by combustion and by landfill gas (LFG) capture in New York State. A detailed spreadsheet of the data and calculations leading to these numbers is available to the Committee.

Table 2. Potential for increasing power generation from the currently largest source of Renewable Energy in the State of New York: MSW combustion and LFG Utilization

Source of Renewable Energy	RE generated, MWh	As % of power used in NYS (2006)
Energy generated presently from MSW combustion in the ten NYS WTE facilities	1,914,000	1.35%
Potential for RE from combustion of only 50% of MSW that are now landfilled	3,150,000	2.22%
Energy generated presently from LFG recovery in NYS landfills	380,000	0.27%
Potential for additional RE by increasing LFG capture	490,800	0.34%

The above data indicate that New York State should join several other states of the Union, and all developed nations of the world, by conferring Renewable Energy Status to energy recovered from **post-recycling municipal solid wastes**, by means of combustion as well as by landfill gas recovery and utilization. This measure has been opposed in the past by people and organizations that choose to believe, against all scientific and practical evidence to the contrary, that all solid wastes can either be avoided or recycled and, therefore, there is no need for either landfilling or combustion with energy recovery.

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