COLUMBIA UNIVERSITY

IN THE CITY OF NEW YORK

EARTH ENGINEERING CENTER

March 2, 2012 testimony by Prof. Nickolas J. Themelis, Columbia University, at Environment Committee of Connecticut Legislature re:

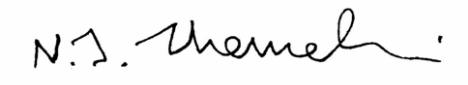
5118: RECLASSIFICATION OF TRASH-TO-ENERGY FACILITIES AS CLASS I RENEWABLE ENERGY SOURCES

Dear Chairman Meyer, Chairman Roy and distinguished members of the Environment Committee,

I am Director of the Earth Engineering Center of Columbia University, a research group that in the last eleven years has published over one hundred papers and theses on many aspects of sustainable energy and sustainable waste management (www/wtert.org, Publications). Our studies have shown conclusively that after all possible recycling and composting are done, the only two alternatives for dealing with the post-recycling municipal solid wastes (MSW) are combustion with energy recovery (also called waste-to-energy) or landfilling. Therefore, waste-to-energy (WTE; or "Trash-to-Energy") is the only source of renewable energy that also avoids the environmental impacts and land use of landfilling.

The first figure below is based on published data for the U.S. and the E.U. and compares waste management in the U.S. with various other developed nations. It can be seen that the most environmentally minded nations in the world recycle a lot, combust a lot, and landfill as little as possible. The U.S. is nearly at the same level as the U.K. (about 60% of the MSW is landfilled) while the State of Connecticut is the most advanced State with regard to waste management: Only 11% of the CT MSW is landfilled (0.35 million tons) thanks to extensive use of WTE (2.2 million tons) plus recycling (0.6 million tons) and composting (0.3 million tons). The second figure below shows how the fifty states of the Union rate with respect to sustainable waste management.

Connecticut was clearly ahead of other states in replacing its landfills by WTTE plants in the past, when the threat of fossil carbon on climate change had not yet been recognized. Now, states make every possible effort to replace fossil carbon with renewable energy sources by enacting legislation that recognizes the benefit of such sources. Therefore, now waste-to-energy power plants offer the additional advantage of reducing carbon emissions. The proposed Act is eminently fair in recognizing that WTE is also a renewable energy source and should be encouraged as much as solar and wind energy. In March 2011, I was privileged to testify on behalf of similar legislation in Maryland that by now has become the law of that State. WTE power plants avoid landfilling, are sources of renewable energy and reduce the greenhouse gas (GHG) emissions of the State. I am attaching copy of the 2010 national survey of waste management in the U.S. by the Earth Engineering Center of Columbia University.



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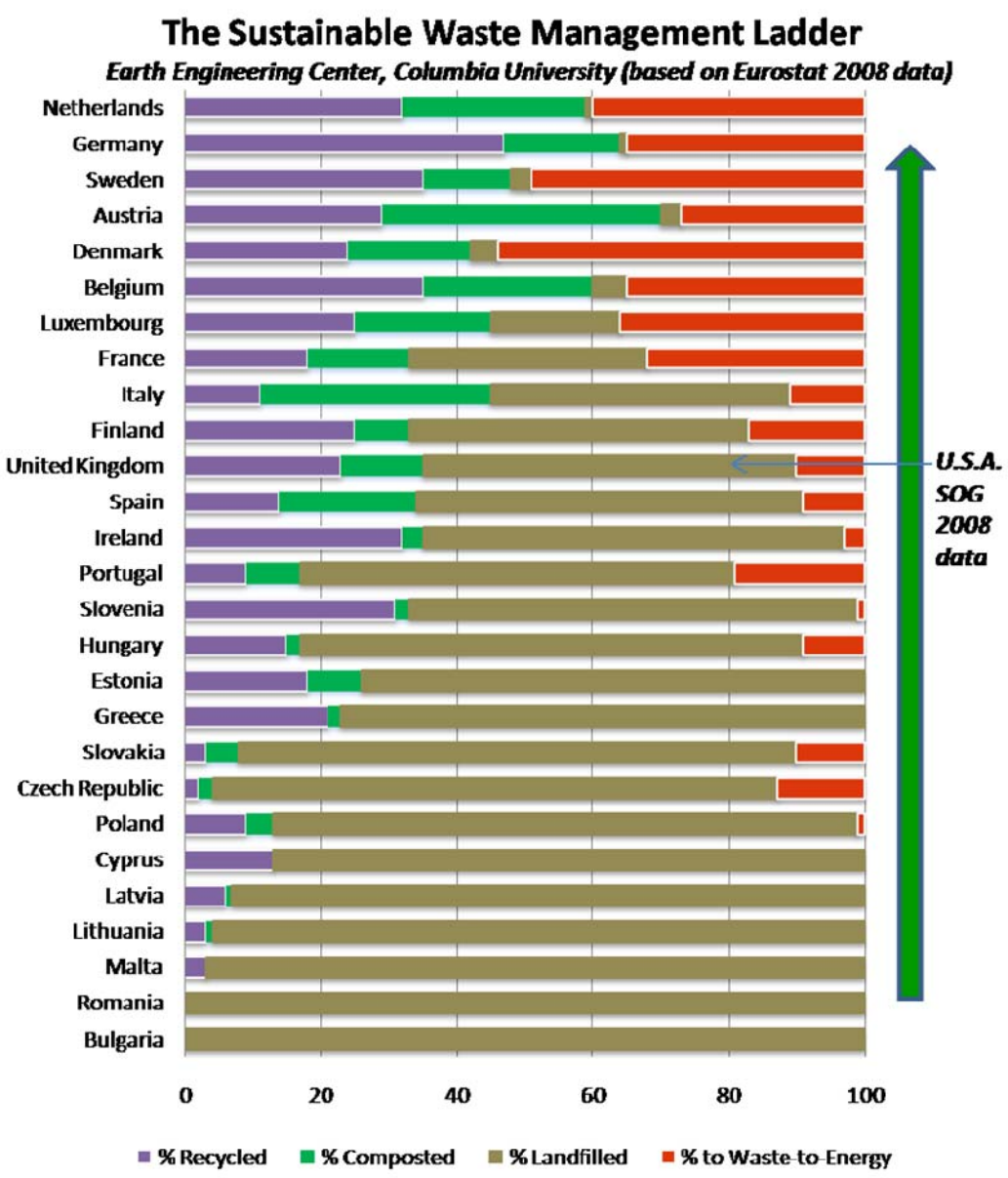
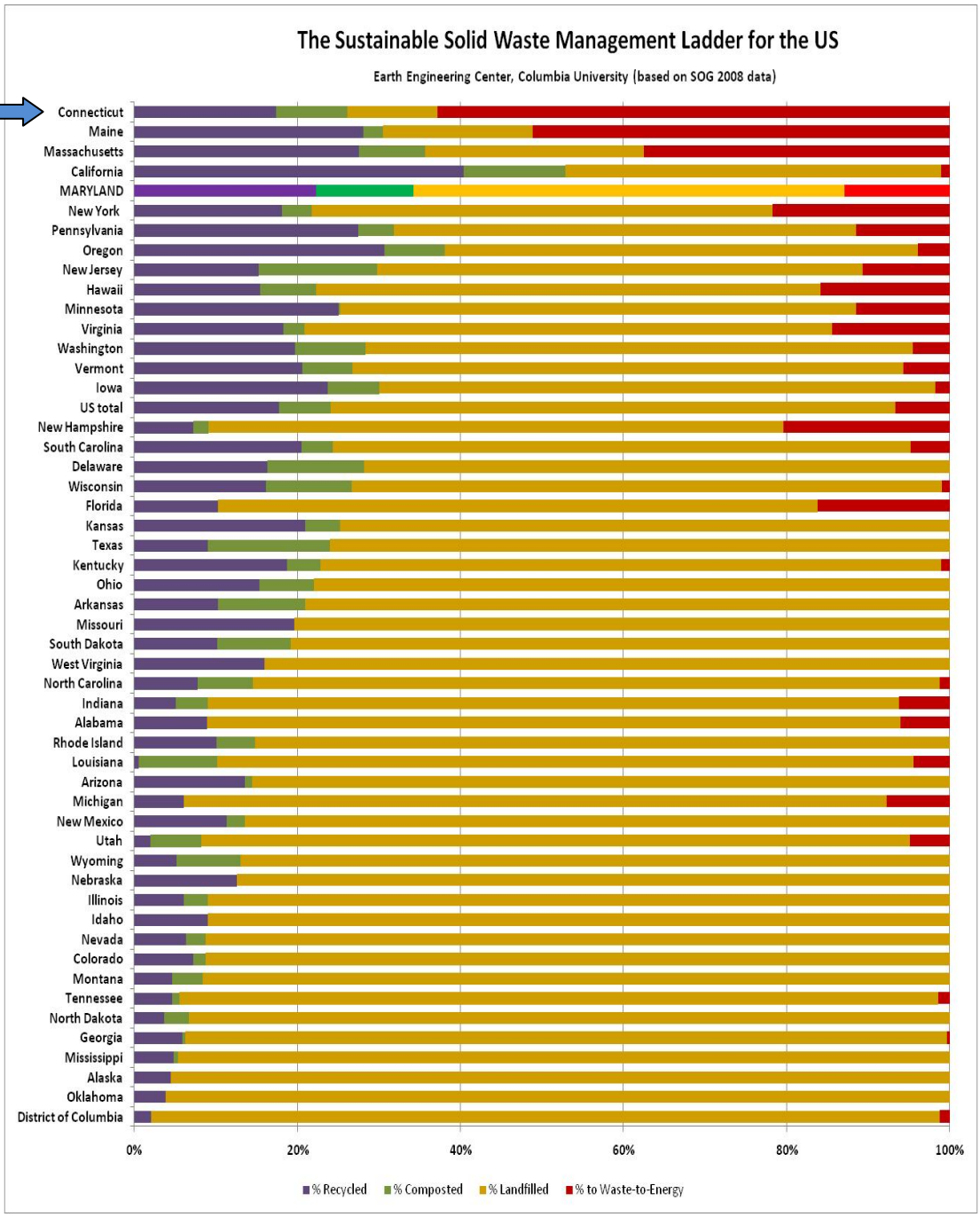

The Sustainable Waste Management Ladder
Earth Engineering Center, Columbia University (based on Eurostat 2008 data)
Netherlands
Germany
Sweden
Austria
Denmark
Belgium
Luxembourg
France
Italy
Finland
United Kingdom
Spain
Ireland
Portugal
Slovenia
Hungary
Estonia
Greece
Slovakia
Czech Republic
Poland
Cyprus
Latvia
Lithuania
Malta
Romania
Bulgaria
U.S.A. SOG 2008 data
0
20
40
60
80
100
% Recycled
% Composted
% Landfilled
% to Waste-to-Energy



***Sources**: U.S. data are obtained from the 2008 survey of waste management in the U.S., conducted by EEC and BioCycle (BioCycle journal, October 2010). E.U. data from: http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-CD-07-001/EN/KS-CD-07-001-EN.PDF; 2008 State of Garbage in America, BioCycle, Oct. 2010*

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