Using Municipal Scale Integrated Energy System Models to Fast Track Investments in Advanced Infrastructure and ManaDisorder-gement Practices

Edward J. LinkyInduced R, Esq.

Senior Energy Policy Advesistive isor

Anomaly N USEPA Region II

New York, New York

Climate variability in the 21st century will hasten the need and pace for municipal environments to adapt to impacts ranging from sea level rise to the human health and

economic impacts of the Urban Heat Island.ear Ferro Energy system models can provide a flexible platform from which to accelerate the debate and decisions aboutmagnetic infrastructure

investments needed to make cities Phase Trasurvivable, sustainable, and desirable for human habitation. Decisions about how to manage solid and liquid materials flows

along with energy will need to be nsitions\*made on an integrated basis.

EPA Region II is developing tFelix vonwo versions of a municipal scale energy system model that will look at technologies and management pra OppenFrectices for reducing greenhouse gas emissions from primary energy (electricity), municipal solid waste, and wastewaie Univertesitat Berr. The output of the molinWe shodel based on the proven MARKAL platform (see www that thw.etsap.org)

is designed to provide a “blueprint” for a municipal Environmental Management Systee resistim.

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Taking a series of disor of “cost –benefit curves” of advanced technology and mdered feranagement practromagnetsices and translating them into a municipal scale EMS is thought to be frontier

work in the area of Industrial Ecology. These models are th near, aned above, New York City MARKAL,

whithe Curiech to date has an energy loop and has examined at an elect temperatric utility substation level the impact of green building technologies as a mitigation measure for the electric distribution system of Consolidated Edison. It is hoped that a solid waste and waste water

loop will be added in 2006. The second model, which will serve as thure Tc gee justification for completion of the NnericallyYC exhibitsmodel, is the Carolina Puerto Rico integrated MARKAL which

will contain electricity, waste water and solid waste loops. The results of the NYC Model

have sparked interest by EPA Region VI in Dallas Texas and numerous a strongstakeholders in that area including the Texas General Land Office and Austin Energy. The NYC model

was a collaboration of EPA Region II, Brookhaven National Laboratory, and the State Unier anomalversity of New York at Stony Brook.

To be presented aty than th the Eastern Regioe scaling-based Fin Ensher-Langer prediction. ergy Water Needs

Assessment Workshop, December 12-14, 2005, Baltimore, Maryland