

January 9, 2014

From: James Finlay, MRICS,
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To: Sandy Fazeli, NASEO
NASEO Finance Committee

RE Microgrid Overview

MARKET DRIVERS

World before and after Sandy & Irene superstorms. Economic impact of service interruption, including tax base losses
Building energy management systems, Net Zero goals, designs - driving microgrid development

Utility – TOU pricing, demand response, power price arbitrage

Natural Gas CHP/cogen – alternative to #2 fuel heating oil. Ecopower micro-CHP unit from Marathon Engine Systems
Amer Gas Assoc – Opportunities report May 2013: 12 states with <5 yr payback CA, CA, CT, FL, HI,MA, NH, NJ, NY, RI, TX, VT

Vehicle to house power –
from Japan, Fukushima reaction
scale and improving tech of car batteries, economic life (# power cycles)

Microgrid Case studies

Food Drug Admin White Oak Labs, Silver Springs MD – business continuity
Co-op City, Bronx, NY – 14,000 apartments, three shopping centers
Santa Rita Jail, CA – energy pricing
Borrego Springs – example of a segmented grid
Princeton Univ, Princeton NJ – hospital operation during Sandy
DOD military bases efficiency plus isolation from cyber attack to electric grid
US Virgin Islands – replacement to diesel
CERTS – [Consortium for Electric Reliability Technology Solutions, formed 1999, <http://certs.aeptechlab.com/>] efficient on
and off grid tech design, Robert Lesseter Univ of Wisconsin

Hybrid DC Microgrids – alternative to AC power (Navigant report), diesel power replacements

COMPANIES, PEOPLE

Navigant Research - Peter Asmus
Recent report - <http://www.navigantresearch.com/research/microgrids>

Microgrid Institute - Michael Burr, Fortnightly Magazine, public utilities
Shift with some utilities viewing microgrids as partner not competition
Interconnect standards,

General Microgrids, San Diego – Terry Mohn CEO

Homer Energy, Boulder, CO – microgrid energy analysis software, Peter Lilienthal. Was Sr Economist at NREL

States

CT Microgrid Pilot – DEEP [Dept of Energy and Environmental Protection] – 9 projects, \$18MM first year, 3 years
New York State Energy Research and Development Authority (NYSERDA)
New Jersey – transit lines
Minnesota – state report Sept 2013, energy assurance, employment development

UN Foundation, Sustainable Energy for All Microgrid Workgroup
Off grid, Africa, India, Asia, island nations

UN Foundation , Energy Access for All Microgrid/minigrd workgroup : Investment Risk Paper