

Building New York's Low Carbon Future

Renewable Energy From Sustainable Resource Recovery

Federation Conference, Sagamore

May 17, 2016

Agenda

- Introduction to NYBSG & biogas power
- REV
 - What it is
 - Why it matters to you
- Path forward

NYBSG Membership

Leading developers, technology providers, operators & professional services delivering renewable energy innovations for:

- Organic solid waste
- Water resource recovery
- Green infrastructure
- Agriculture

NYBSG Membership (in formation)

- AB Group Biogas
- BIOFerm Energy
- CH4 Energy
- ClearCove Systems
- D&B Engineering
- EnviTec Biogas
- HDR Engineering
- Martin Energy
- Methuen Construction
- Milton CAT
- NY SWANA
- Pannone Lopes Devereaux & West (PLDW)
- PlanET Biogas

Societal Benefits of Biogas Power

- Reduces methane emissions from manure, organic waste, food scraps
- Improves environmental performance of farms (odor reduction, cleaner water)
- Diverts organic waste from landfill to a beneficial use
- Improves the economic performance of agriculture & food processing

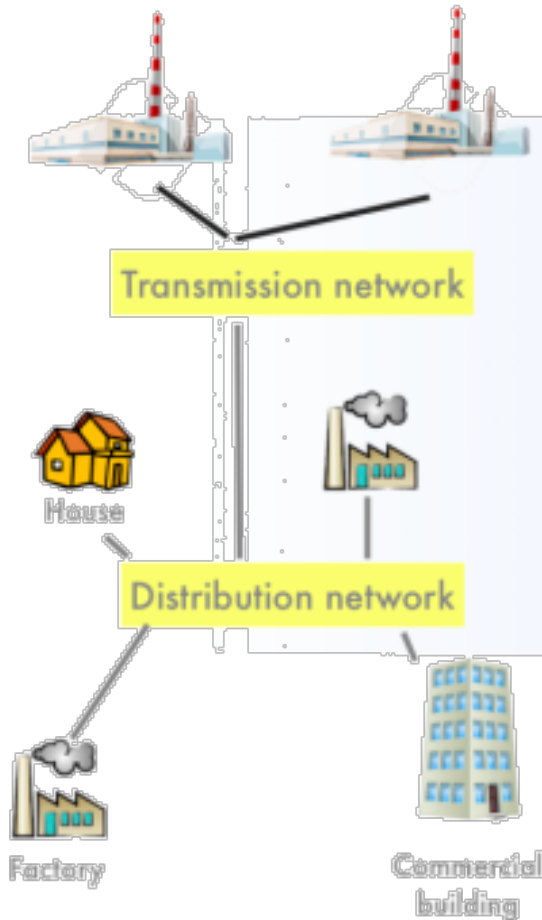
Electric Grid Benefits of Biogas Power

- Baseload renewable power
 - Solar & wind are intermittent
- Reliable capacity factor >75%
 - Wind is 33%; Solar PV is 29%
- Improved grid resiliency
- Potential demand reduction at WWTP up to 171 MW (approx. 1% of total NYS demand)

Future of Energy

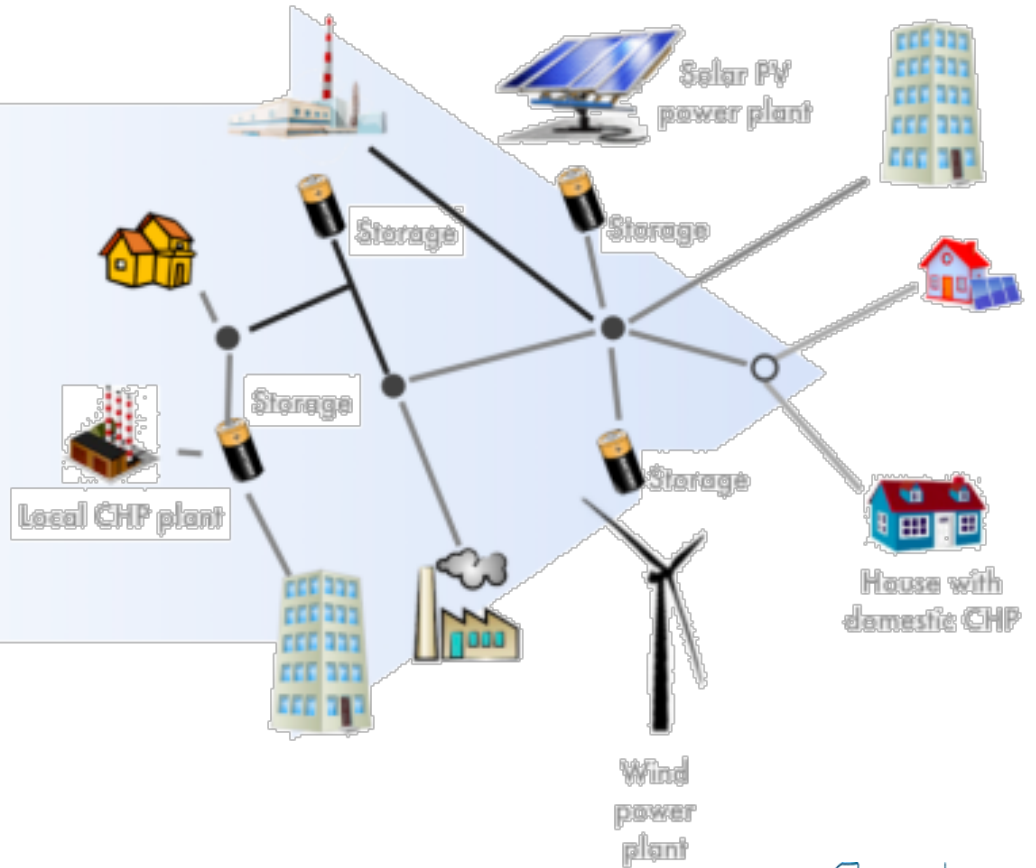
Yesterday

Centralized Power



Tomorrow

Clean, local power



What is REV

- Clean Energy Standard: obligates utilities to purchase 50% renewable energy
- Utility ratemaking reform
- Objectives
 - Stimulate distributed, renewable generation
 - New business models
 - Pricing drives investment w/embedded “societal costs”
 - Enable smart grid
 - Reduce GHG emissions
 - Additional resiliency
 - ‘Prosumers’ animating the market



NEW YORK

Biogas Study Group

What has (and, will) change due to REV

- NYSERDA role change
 - Focusing on impediments to development
 - “Soft cost” barriers to innovation
 - Less subsidies; more market forces
- New entities to support deployment
 - Clean Energy Fund
 - NY Green Bank
 - NY Sun

Biogas Power Potential

Potential New Capacity: 211 MW

- Food waste diversion: up to 80 MW
- Waste water treatment facilities: 51 MW
- Dairy: 40 - 80 MW

Source: PSC, "Draft Generic Environmental Impact Statement"

What We Need to Succeed

- Reimbursement rate suitable for investment
 - \$0.12 per kWh for biogas power
- Divert organic waste from landfill to beneficial use, i.e.,
 - NYC ordinance (Local Law 146, 2013)
 - Massachusetts

What We Need From the PSC

- Conduct a study into biogas power economics like Calif. & Vermont
- Set a fair rate to support investment
- Create biogas power tiers in the Clean Energy Standard (CES)
- Modify remote net metering & community generation to enable innovative business models

Solid Waste & Energy Policy Collide

- High strength organics added improves anaerobic digestion
- Two benefits of organic diversion to power
 - Methane emission reduction
 - More renewable baseload capacity (from biogas power)

Action Agenda

- Educate policy makers
 - Linking sustainable resource recovery policy & renewable energy
 - Legislative agenda: TBD
 - Food scrap diversion & beneficial use
 - Tax incentives for P3 projects, R-NG, CHP & AD power
- Progressively engage regulators
 - Intervene in PSC's REV proceeding
 - Utility interconnection rules
 - Large Scale Renewables / Main Tier RPS
 - Clean Energy Fund & NYSERDA's future
 - DSNY & DEC
 - Organics policy, bio-solids, residuals
- Drive innovation & economic development

Building a Successful Industry

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