

Using NYSERDA's Anaerobic Digester Gas-to-Electricity Program to Harness CHP Potential at NYS WWTPs

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NYSERDA

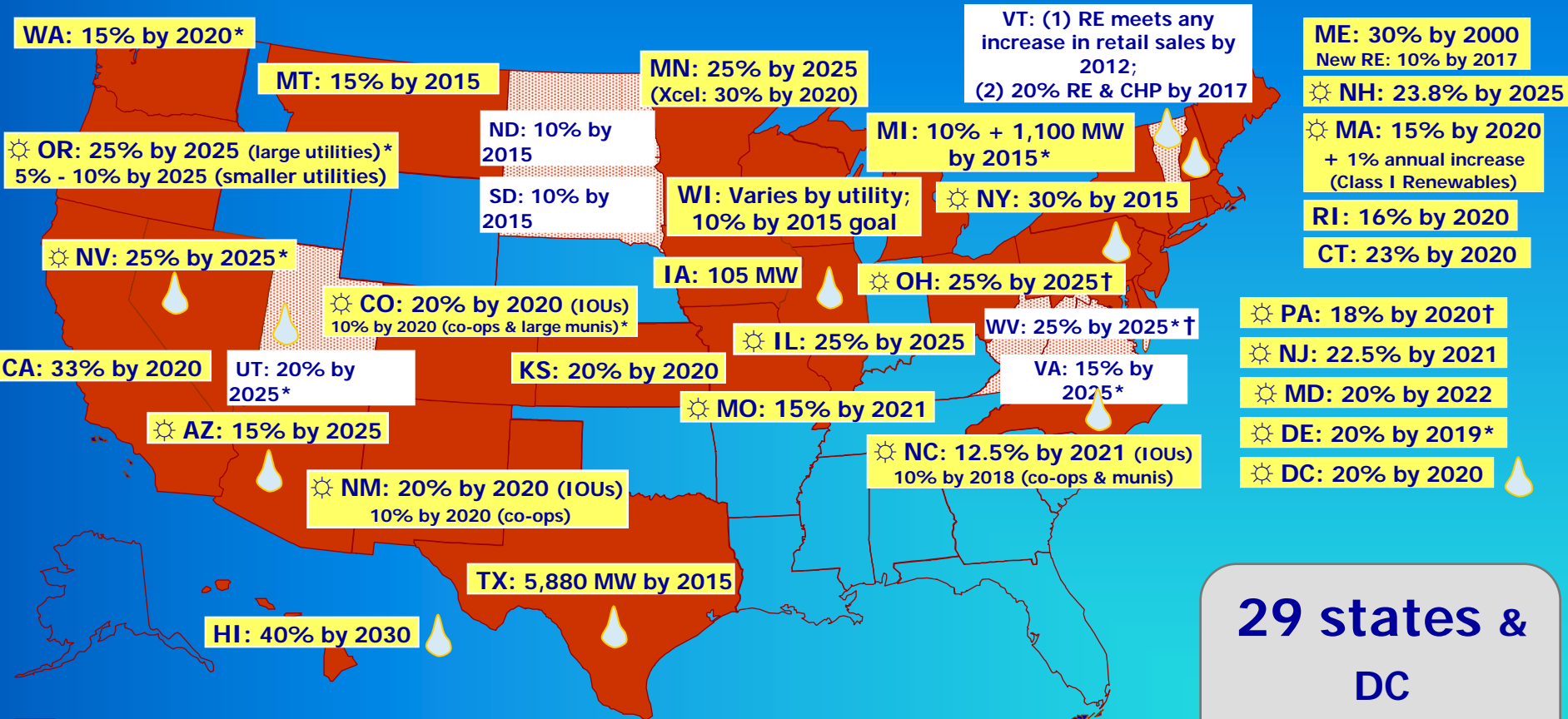
New York State
Energy Research and
Development Authority

What is NYSERDA?

- NYSERDA established in 1975 by New York State Legislature
- Mission: Identify solutions to the State's energy challenges in ways that benefit the State's economy and environment
- Responsibilities: R&D; Energy Planning & Analysis; Public Awareness of Energy Efficiency; SBC/RPS Administrator; Position on State Power Siting Board; Oversee EO 111, which addresses energy use by State agencies

U.S. Renewable Portfolio Standards

www.dsireusa.org / January 2010



29 states & DC have an RPS

6 states have goals

- State renewable portfolio standard
- State renewable portfolio goal
- Solar water heating eligible

- Minimum solar or customer-sited requirement
- Extra credit for solar or customer-sited renewables
- Includes non-renewable alternative resources

NYS's Renewable Portfolio Standard (RPS)

- Goal: To increase the fraction of renewable energy consumed by NYS retail electric consumers to 30% by 2015 (from 19.3% in 2003)
- NYSERDA is the central administrator of the NYS RPS, which has two tiers
 - Main Tier
 - Large generation project; sell power to wholesale grid
 - NYSERDA purchases project RECs - "Property rights" to environmental benefits of renewably-generated energy
 - Majority of RPS dollars to be spent on Main Tier
 - **Customer-sited Tier – "Behind the meter" projects**

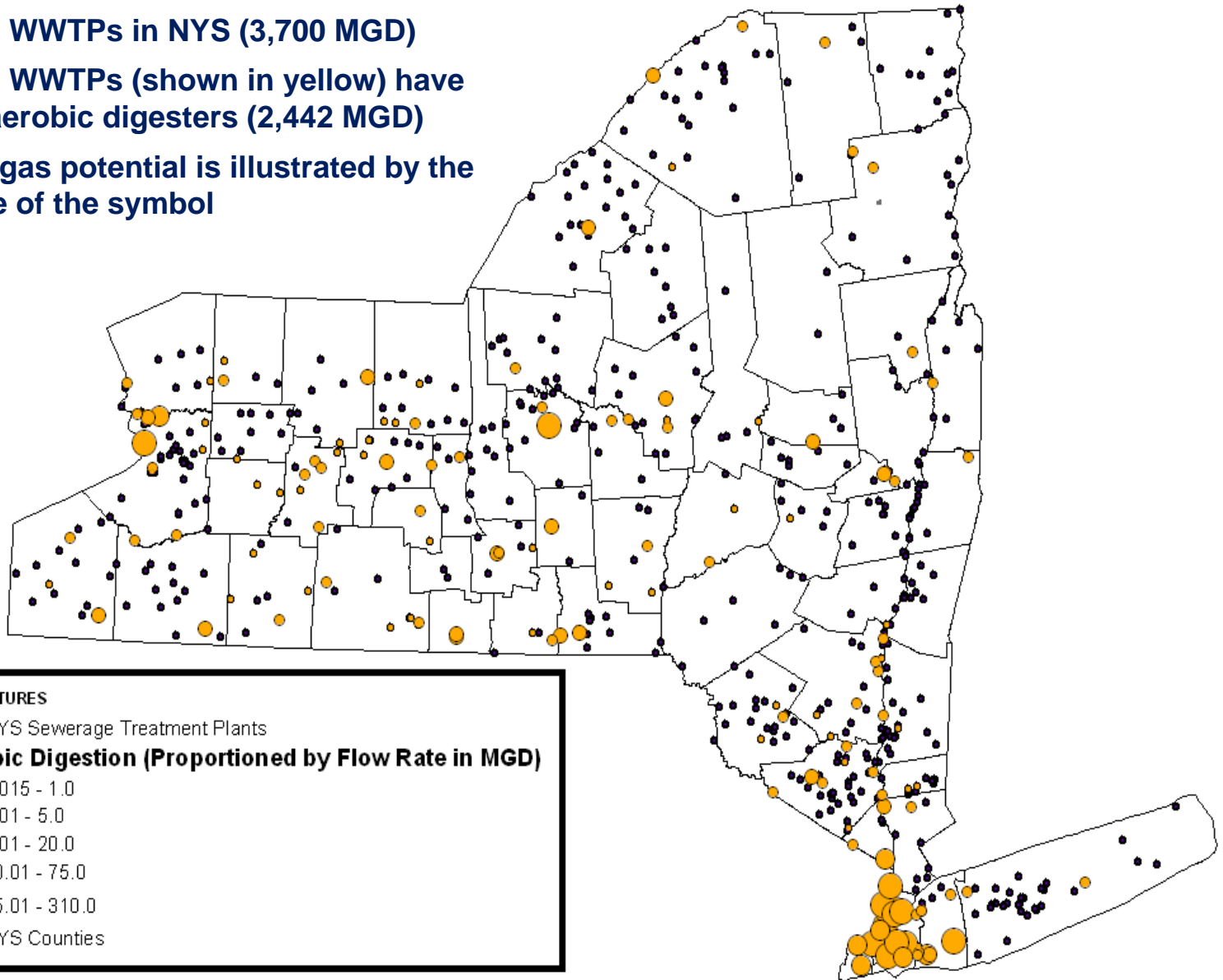
NYS RPS Customer-Sited Tier

Initial Operating Plan Features: 2007-2009

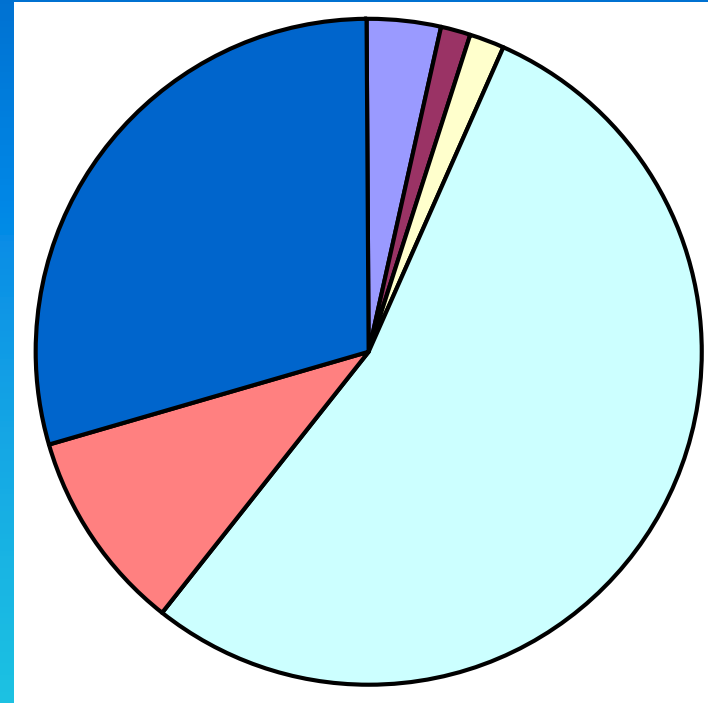
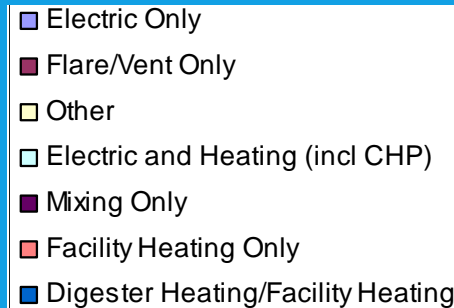
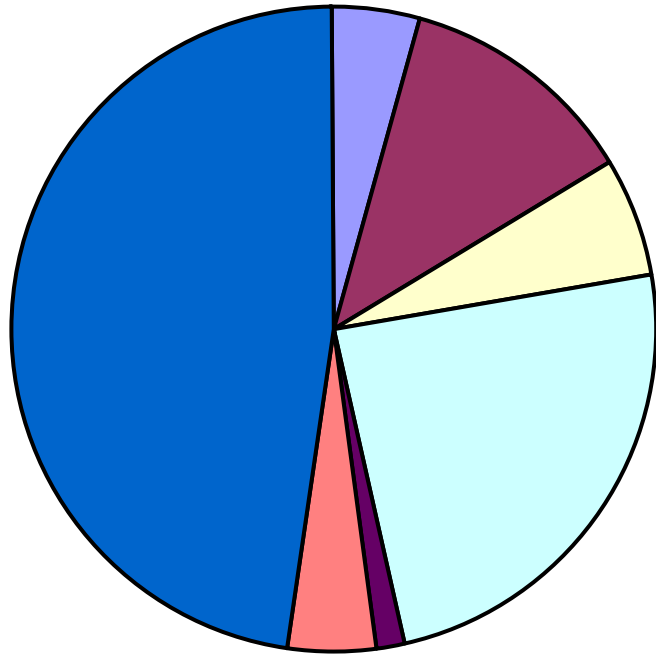
Resource Type	Total Approved Funding (millions)	Expected Production (MW)	Expected Production (MWh)
Photovoltaics	13.8	3.5	4,533
Fuel Cells	11.2	2.7	18,700
Anaerobic Digesters	11.0 ----- Increased to \$20,100,000; additional funding expected	3.7	25,700
Small Wind	4.5	1.8	1,800
Discretionary	4.5		
Total	45.0	11.7	50,733

WWTPs in New York State

- 702 WWTPs in NYS (3,700 MGD)
- 145 WWTPs (shown in yellow) have anaerobic digesters (2,442 MGD)
- Biogas potential is illustrated by the size of the symbol



Biogas Use at NYS WWTPs

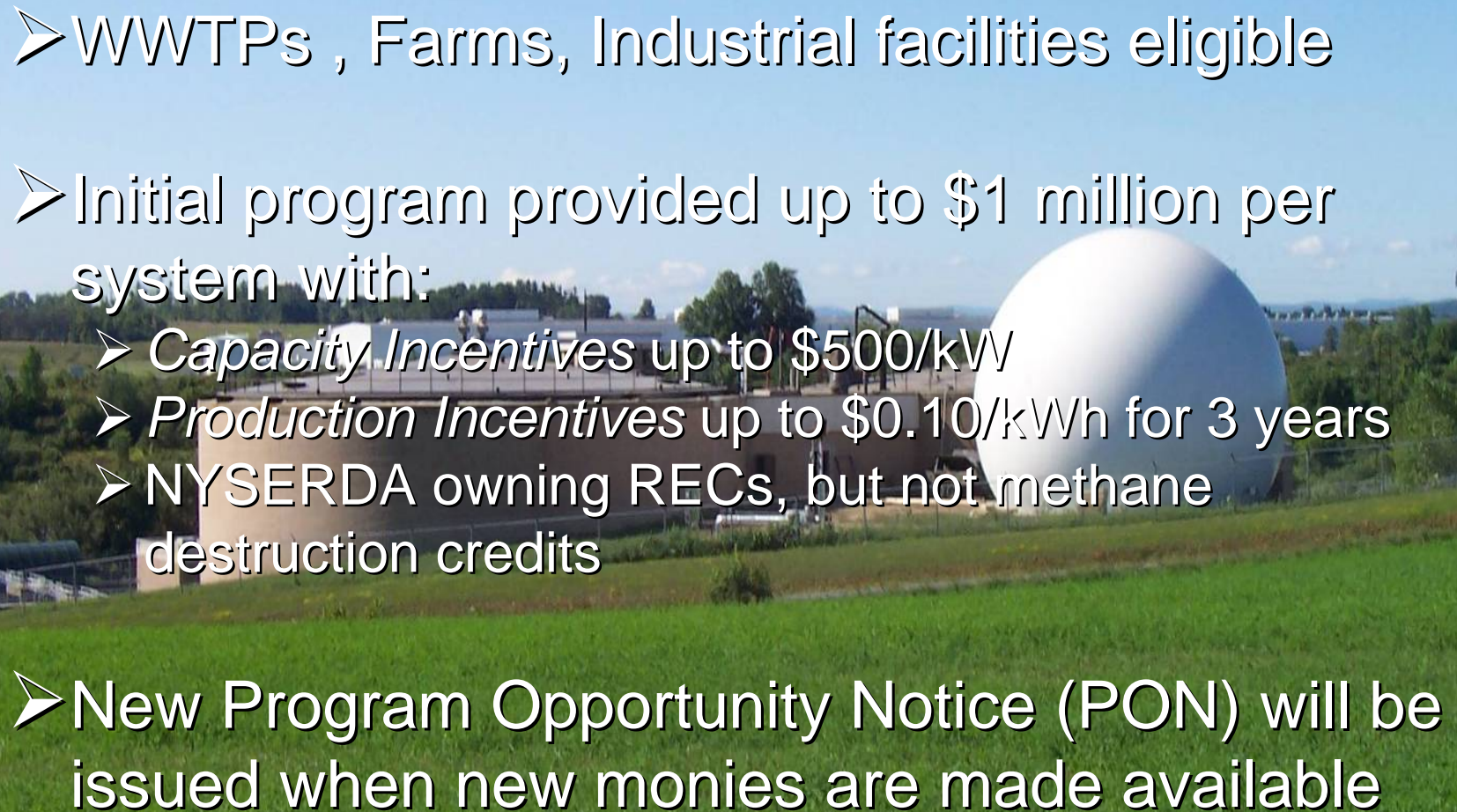


Breakdown by Number of Facilities

Breakdown by Total Biogas Potential

- At nearly all 145 WWTPs, some biogas is recovered for thermal use
 - However, biogas production typically exceeds thermal needs of WWTP
- 17 of 67 WWTPs responding to NYSERDA biogas survey reported producing electricity using biogas
 - Equipment included IC engine-generators (majority), microturbines, and fuel cells; however, many facilities operating at less than 5% of installed capacity
- Obstacles to increasing generation include:
 - Perceived long payback, operator resistance, air permitting requirements

NYSERDA's Anaerobic Digester Gas (ADG)-to-Electricity Program

- WWTPs , Farms, Industrial facilities eligible
 - Initial program provided up to \$1 million per system with:
 - *Capacity Incentives* up to \$500/kW
 - *Production Incentives* up to \$0.10/kWh for 3 years
 - NYSERDA owning RECs, but not methane destruction credits
 - New Program Opportunity Notice (PON) will be issued when new monies are made available
- 



Other NYSERDA Programs Supporting Implementation of CHP Systems

- **DG/CHP Program:** Competitive solicitation; cost-sharing for demonstration of innovative CHP systems and technology transfer
- **FlexTech Program:** Cost-sharing for feasibility studies; 3-dozen pre-qualified engineering consultants on list
- **Existing Facilities Program:** Incentives for pre-qualified equipment and “pay for performance” options
- **Multifamily Performance Program:** Incentives for equipment as part of comprehensive energy reduction strategy
- **Clean Tech Manufacturing Program:** Incentives to expand the level of manufacturing of renewable, clean, and energy-efficient products

QUESTIONS?

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