The 123 of CHP **Grants and Financing**

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Highlights

- Project Costs
- Incentives
- · Project Financing Mechanisms
 - Traditional / Debt Finance
 - Energy Savings Improvement Program (ESIP)
 - Public Private Partnership



Simplified CapEx Components

Digester CHP Sample CapEx

Engineering Design

CHP Equipment - Engines, Heat Recovery, Emissions, etc. Digester Gas Conditioning

Electrical SwitchGear

Other Equipment

ermitting / Interconnections onstruction / CHP / Distribution Pipelines / Building(s)

Project Manageme

Risk Management & Insurance

Total Capital Expenditures

Range of Project Cost (Digester CHP): \$3,000-6,000/kW













Simplified OpEx

Operations

- FTE operators
- · Back office staff
- Compensation and benefits
- Overtime
- Insurance

Maintenance

- · Repairs & maintenance
- Vendor service agreements
- EH&S Compliance
- Consumables
- Parts inventory





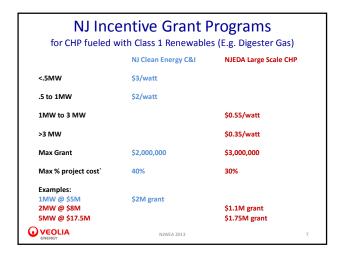


Incentives

- Incentives reduce capital costs and improve the project's financial metrics
 - Lower payback period
 - Improved IRR
- · Where can we get free/cheap money?
 - - · NJ Clean Energy Program
 - NJ EDA Large Scale CHP Program
 - Tax credits, accelerated depreciation, etc.



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Federal Tax Incentives

- · Investment Tax Credit
 - CHP w/natural gas = 10%
 - CHP w/digester gas = 10%, maybe 30%
- Accelerated 5 yr asset depreciation (MACRS)
- Must be a taxable entity in order to take advantage



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Other Benefits

- · Demand Response
 - Payments for ability to remove electrical from gird
 - · 100% load first year
- · Renewable energy credits



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Financing Mechanism #1 Traditional Debt Financing

- Bonds
 - Revenue bonds
 - tied to revenues/rates of utility
 - General Obligation
 - · Obligated to pay the debt before anything else
- · Environmental Infrastructure Trust
 - Combination of 0% interest loans and revenue bonds
 - 50+% below traditional bond rates
 - 20 years max term



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Financing Mechanism #2

Energy Savings Improvement Program (ESIP)

- · What is ESIP?
 - Enables public entities to engage in multi-year performance contracts
 - Funding: future value of energy savings pays for the upfront cost
- · Advantages of ESIP for CHP
 - Many public facilities are well suited for CHP (WWTPs, etc.)
 - 20 year contract for CHP
- · Disadvantages of ESIP for CHP
 - Restrictive development process
 - $\bullet\,$ ESCO doesn't control energy audit, bidding process, M&V, etc.
- No knowledge of ESIP/CHP projects to date



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Financing Mechanism #3

Public Private Partnership (P3)

- · What is P3
 - Permits private entities to construct, finance, own, operate and maintain facilities for public entities.
 - Projects are privately financed (100%)
 - Public entity retains ownership of land



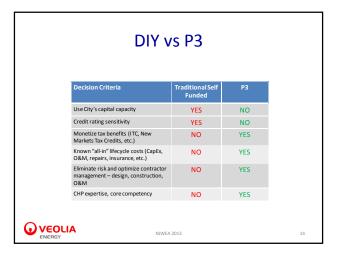
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Why P3 for Water/Wastewater

- · Aging Energy/Water Infrastructure
- Financial pressures
 - Pensions, debt obligations, ratings downgrade
 - Lack of Funding: Capital Improvements, O&M
- · Regulatory Compliance
- · Public sector needs solutions



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P3 Precedents

- Bayonne MUA
 - 40 year P3, private operator to manage BMUA
 - \$175M concession payment (\$120M to retire Bayonne debt)
 - Revenue certainties via upgrades for efficiency, metering, billing
- NJ Economic Stimulus Act
 - Legislation making P3 applicable to colleges
 - Montclair State, and more to come
 - E.g. CHP, dormitories, etc.
 - May soon extend to other public segments?
- Solar PPAs



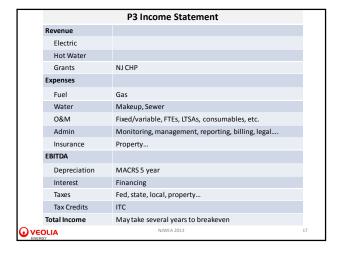
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Other Possible P3 Options

- Utility Services Agreement (USA)
 - No up front costs or minimum payment obligation
 - Client pays for energy received on a unit price basis
 - Electricity: \$ /Kwh
 - Hot water: \$ /mmBtu
 - Possibility for off balance sheet treatment



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