

NJ Energy Resilience Bank

A State-Based Financial Approach to Support Energy Resiliency Efforts

December 2, 2014



Building a solid foundation for the future

New Jersey Energy Resilience Bank (ERB) Overview



- Damage and outages caused by Superstorm Sandy prompted the state to prioritize efforts to minimize the potential impact of power outages and increase energy resiliency
- BPU and EDA have committed \$200 million in funding for the ERB to assist critical facilities with securing resilient energy technologies that will make them - and the communities they serve – less vulnerable to severe weather and other emergencies



Mission: “Realizing energy resilience for New Jersey’s critical facilities through financing and technical assistance”



Illustrative Pro Forma CHP Economics

Our assumptions

Engine / system size (kW) **2050**

Average electric load (kW) **2000**

Our best understanding of your critical load (kW) **2000**

Estimated capex for system (\$/kw) **\$3,200**

Estimated islanding costs (\$/kwh) **\$400**

Operating and maintenance (\$); yearly cost for 15 years **\$200K**

Summary of Project Costs

Generation cost (\$) **\$6.5M**

Islanding cost (\$) **\$0.9M**

Total system cost **\$7.4M**

Summary of Project Benefits

Annual electrical savings **\$1.8M**

Annual resiliency benefits **\$100K**

Benefit cost ratio

1.14

ERB Financing – Waste Water Treatment Plants and Water Treatment Plants Product Overview (1/2)

Funding Allocation: \$65 million

Total ERB Funding:

100% unmet funding

Incentive:

40% of unmet funding need:

- **Grant:** 20% after equity contribution, if applicable
- **Loan Forgiveness:** 20% after equity contribution, if applicable
 - Principal forgiveness based on proof of successful operation of equipment and evidence of minimum required performance
 - Forgiven in equal percentages over five years (4% per year)
 - If project does not meet required performance level in any year, forgivable portion of that year's loan will not be forgiven. In following year, if performance level returns to required level, then forgivable portion of current and previous year's principal will be forgiven.

Loan:

60% of unmet funding need

ERB Financing – WWTP/WTP Product Overview (2/2)

Terms

- **Interest rate:**
 - 2%, fixed interest rate for bond rating of BBB- or higher at the time of approval
 - 3% fixed interest rate for applicants with bond rating lower than BBB- or which are not rated at time of approval
- **Term:** Up to 20-year term, based on useful life of majority of assets

Principal Moratorium

- Up to 2 years' principal moratorium, according to the following:
 - Based on length of construction period, subject to the lesser of construction period and 2 years
 - Up to two, six-month extensions may be provided
 - Interest during construction period will be based on disbursements of loan capital
 - Disbursement – grant funding disbursed before loan capital
 - Based on milestones with evidence of cost incurred and site visit to verify
 - First milestone will be purchase and delivery of equipment and feasibility study, if applicable

The ERB will fund resilient energy systems for critical facilities

Resilient energy technology is ...

... distributed generation or other technologies ...



CHP plants can use a reciprocating natural gas engine



Gas Turbine CHP Plant

... that is islandable, capable of blackstart and can operate at critical load



Inverter system



Black Start Controls



Fuel cells

Resilient energy technology is not...

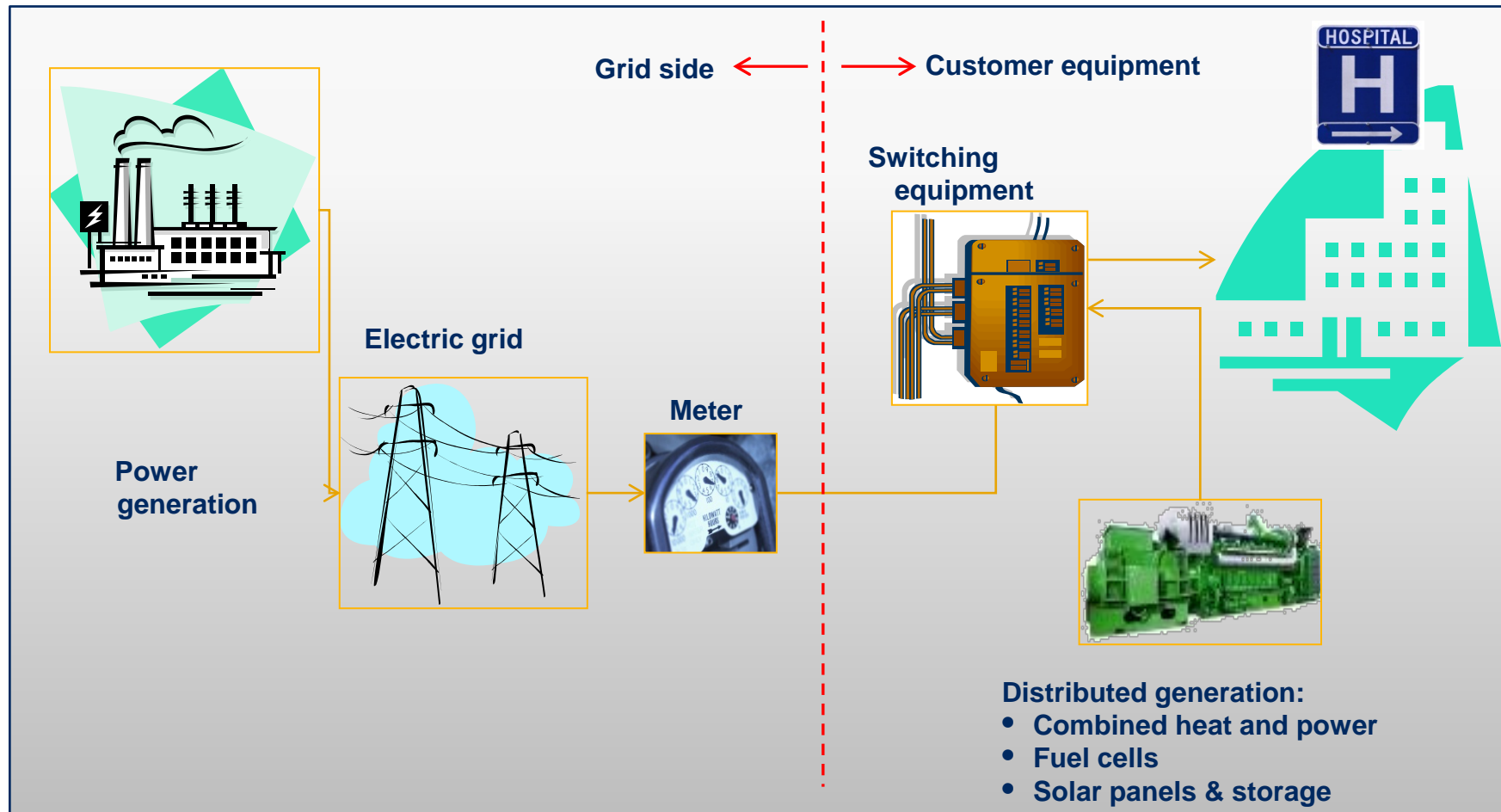
...emergency backup generators



Generator

ERB support for critical facilities will support distributed generation at the customer site

ILLUSTRATIVE



The ERB can cover a range of costs for new systems

Eligible costs

New resilient systems

- Core equipment
- Piping & wiring
- Islanding equipment
- Interconnection
- Fuel pre-treatment (e.g., biogas treatment, or gas compression)
- Installation
- Site work
- Engineering and project management
- Hardening of resilient energy system (e.g., elevation)

Non-eligible costs

Backup Generators

- Emergency backup generators
- Onsite fossil fuel storage for emergency generators

Other non-energy hardening

- Flood walls
- Elevation

Other

- Used, refurbished equipment
- Solar PV panels

Eligibility Criteria

Eligibility Overview

- Eligible ERB Applicants
 - Public facilities – municipal and county authorities
 - Non-profits
 - For-profit businesses that meet the SBA definition of “small business”

All other entities, and all privately owned utilities, are currently ineligible



BPU/NJEDA are working with HUD toward regulatory flexibility for the ERB that would expand the list of eligible entities

The ERB evaluates all projects on the following criteria

Tech. Efficiency / Economic Cost Effectiveness

LMI National Objective

Most Impacted Communities

Readiness to Proceed

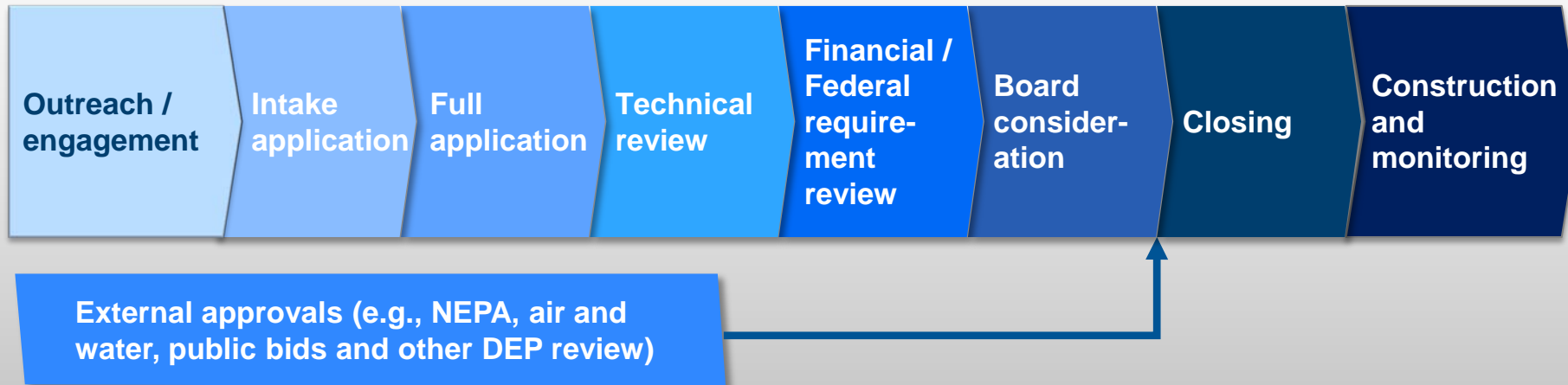
Criticality

Microgrid

Facility Energy Efficiency

**Additional detail on these criteria
available**

Application Overview



Some steps in the application process will take place concurrently

ERB Contacts



Building a solid foundation for the future

Mitch Carpen

36 West State Street
Trenton, NJ
mcarpen@njeda.com

Tom Walker

44 South Clinton Avenue
Trenton, NJ
Thomas.Walker@bpu.state.nj.us

Call toll-free: 1-866-534-7789
E-mail Address: erb@njeda.com
Website: www.njerb.com