



New Jersey Energy Resilience Bank

November 2015



NEW JERSEY
ENERGY
RESILIENCE
BANK

Building a solid foundation for the future

New Jersey Energy Resilience Bank (ERB)

Overview

The New Jersey Energy Resilience Bank was established as part of the state's effort to minimize the potential impacts of future major power outages and increase energy resiliency. The bank aims to strengthen the resilience of NJ by offering financially feasible distributive energy for critical facilities affected by disaster.

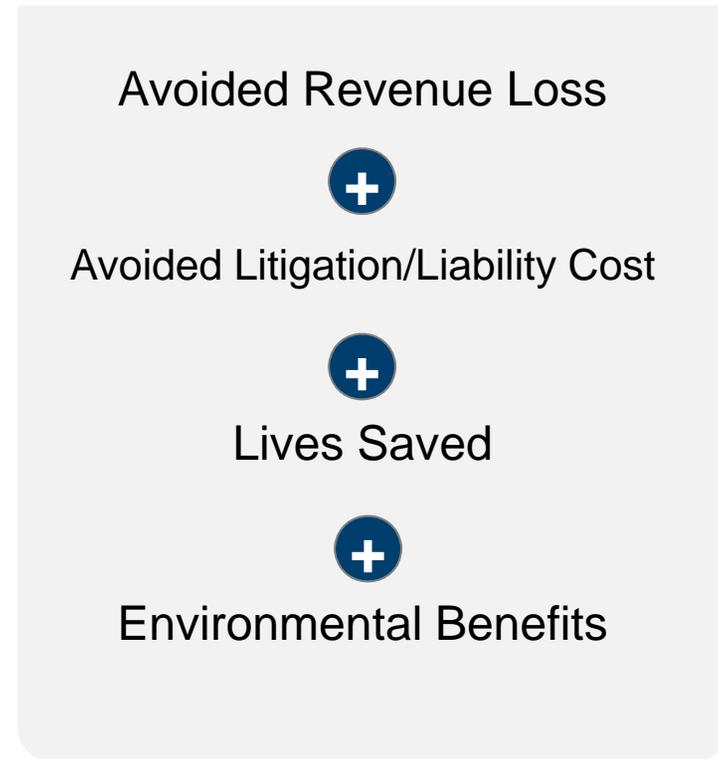
Financing through the Bank will be used to develop or enhance distributed energy resource ("DER") technologies at critical facilities that were directly or indirectly impacted by Superstorm Sandy or directly impacted by other eligible disasters. The bank was created utilizing \$200 million of second round Community Development Block Grant-Disaster Recovery ("CDBG-DR") funds allocated to New Jersey by the U.S. Department of Housing and Urban Development ("HUD").

Product terms will consider resilience benefits in addition to economic benefits

Economically Positive Investment



Resilience Benefits



+

=

Economically healthy and resilient healthcare facility with functionality during a storm or disaster

Energy savings and the CEP grant can make non-resilient CHP systems financially viable

Resilient CHP economics				
	1	2	3	4
Area, sq. ft	663,953	553,970	651,370	3,400,000
Generator size¹, Kw	2,050	2,350	3,600	8,375
Generator capex, \$	6,583,668	8,358,623	10,512,061	21,203,173
Annual Net energy savings², \$	~900k	~800k	~1.6M	~3.1M
Baseline NPV³, \$	525,611	(761,954)	2,846,524	(1,723,681)
ERB baseline NPV⁴, \$	1,514,967	372,185	3,355,161	908,751

1 Sized to average electric load

2 Includes electricity savings and increase in natural gas purchases

3 No islanding cost included; 100% funded by market debt at 5% interest rate with 15 year term

4 40% CHP incentive included; 100% funded by market debt at 5% interest rate with 15 year term



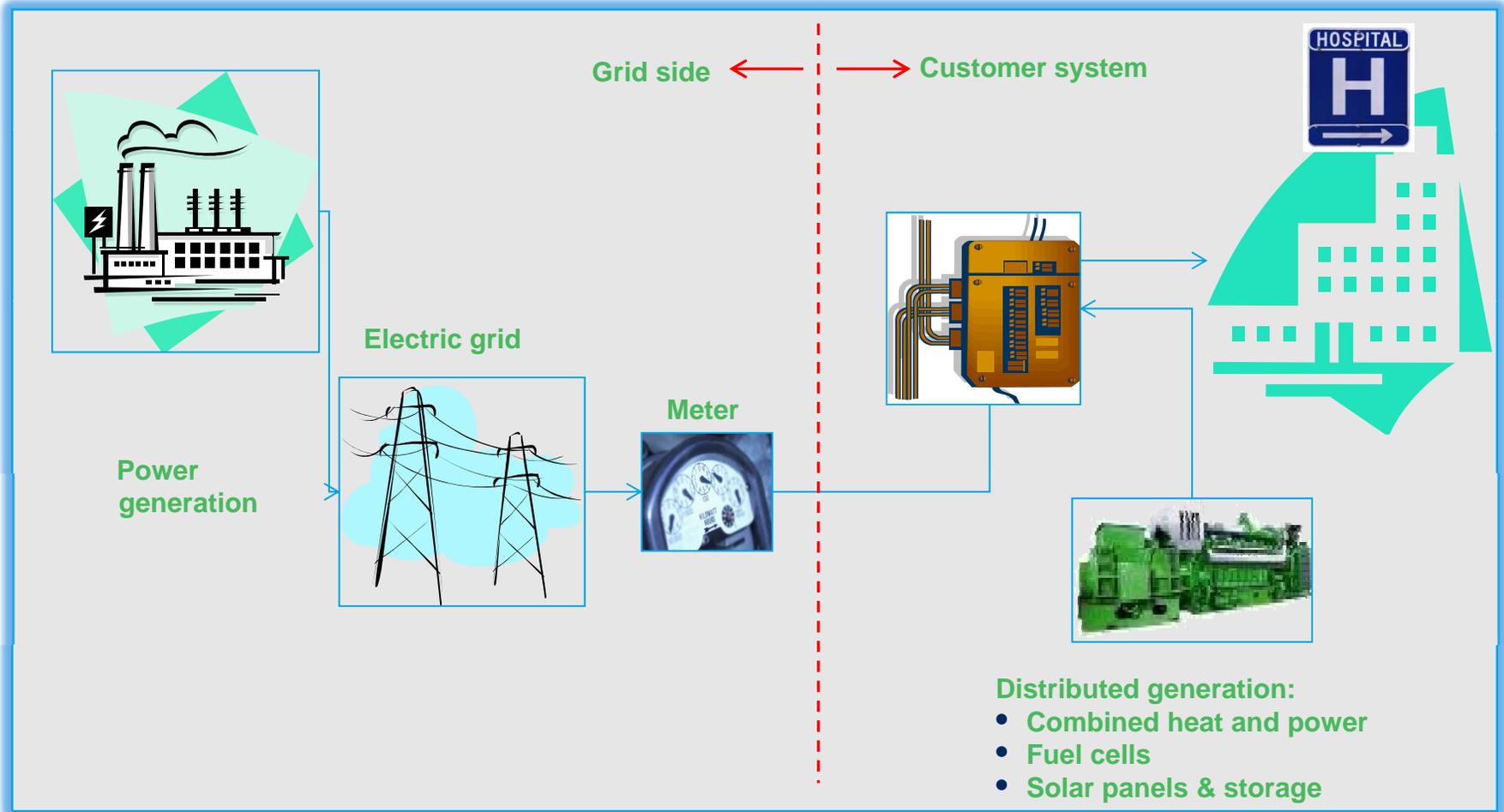
SOURCE: Team Analysis; CEEEP, DOE, CEP

ERB Financing

Overview of Proposed Total ERB Funding	
Program size	<ul style="list-style-type: none">▪ \$200M Combined for all Industry Products
Eligible facilities	<ul style="list-style-type: none">▪ Water and Wastewater Treatment Facilities▪ Hospitals and Related Healthcare Facilities
100% unmet funding	Grant/ Forgivable Loan: <ul style="list-style-type: none">▪ Percentage will be determined during underwriting process and based off of program criteria which may include, but not limited to ownership structure, project economic feasibility, rate of return, and other policy considerations.
	Loan: <ul style="list-style-type: none">▪ Balance of unmet need after determination of Grant/Forgivable Loan amount.
Terms	<ul style="list-style-type: none">▪ Interest rate: Standard rates as low as 2% fixed interest▪ Collateral: Unsecured▪ Term: Up to 20 years, based on useful life of majority of assets▪ Principal Moratorium: Up to 2 years' principal moratorium

ERB Support for Critical Facilities will Support Distributed Generation at the Customer Site

ILLUSTRATIVE



The ERB will Fund Resilient Energy Systems for Critical Facilities

RESILIENT TECHNOLOGY IS...

RESILIENT TECHNOLOGY IS NOT...

...distributed generation or other technologies...



CHP plants can use a reciprocating natural gas engines



Gas Turbine CHP Plant

...emergency backup generators



Generator

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



Inverter system



Black Start Controls



Fuel Cells

The ERB can Cover a Range of Costs for New Systems

ELIGIBLE COSTS

New Resilient Systems

- Core system
- Piping & wiring
- Islanding controls
- 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 Notes

- **Eligible ERB Applicants**
 - Public facilities including municipal and county authorities
 - Not-for-profit entities
 - For-profit businesses, subject to certain HUD alternative requirements
 - Privately owned utility, subject to certain HUD alternative requirements
- **Location:** Per federal regulation, CDBG-DR funding may not be used within a Coastal Barrier Resource Area (CBRA)
- **Timing:** Project system must be installed at a facility and be operational within two years of the closing of the ERB funding.



Eligible Disasters

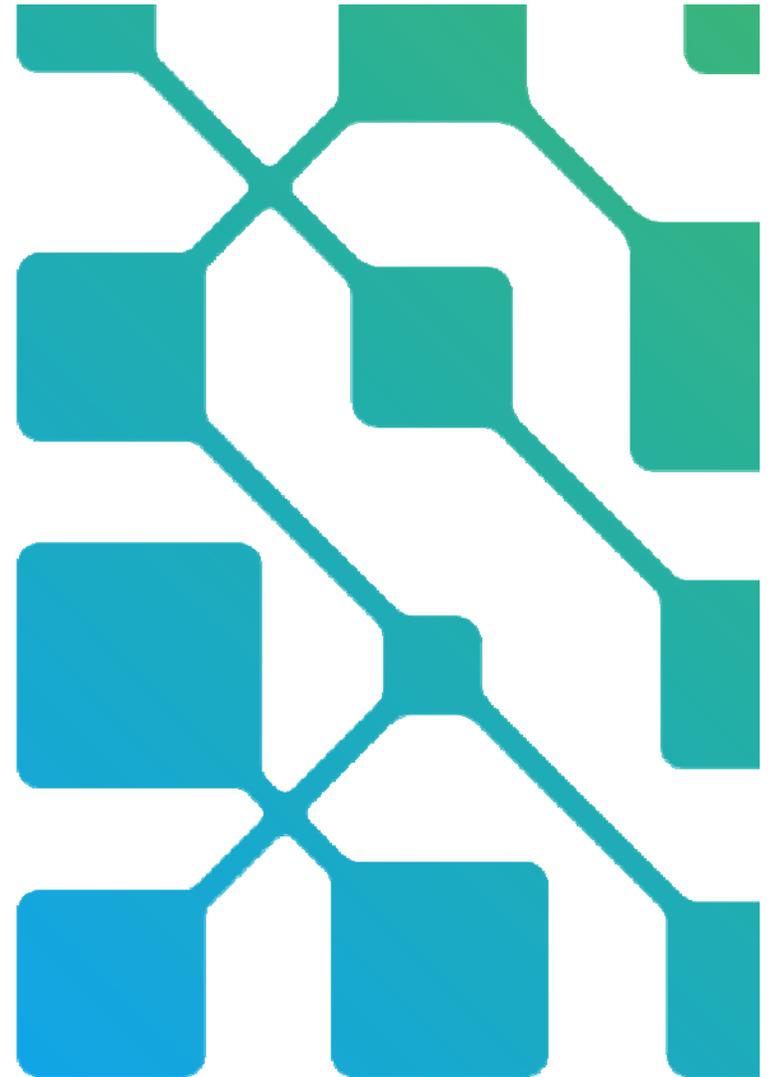
- **To be eligible for funding under the Energy Resilience Bank, according to the Robert T. Stafford Disaster Relief and Emergency Assistance Act (P.L. 93-288), as amended by the Disaster Relief Act of 1974 (P.L. 93-288), projects must:**
 - Demonstrate a direct or indirect tie to Superstorm Sandy, or;
 - Have incurred direct physical damage from one of the six additional nationally-declared disasters dating from December 2010.



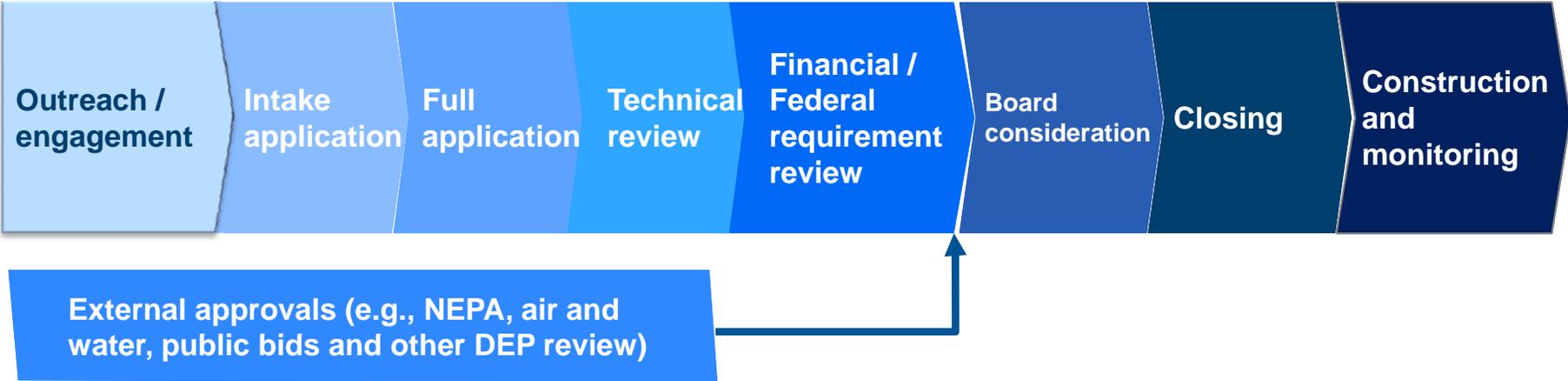
Scoring Criteria

- **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

How the ERB Team can Help You?

- Walk applicants through the intake and full application process
- Provide technical support on feasibility and possible options
- Assist with financial analysis
- Connect you to other sources of funding
- Support you in enhancing the community and improving energy resilience
- Help you communicate with your stakeholders to explain the benefits of energy resilience

Energy Resilience Bank

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