



# New Jersey's Clean Energy Program™

NJBPU Town Center DER Microgrid  
Program – Phase 1 and 2



December 3, 2019



# New Jersey's Town Center DER Microgrid Program

Final MADRI Meeting  
Washington DC

December 3, 2019



# Agenda

- Introduction to New Jersey's Clean Energy Program
- NJBPU's TCDER Microgrid Program

# NJCEP Background

## ADMINISTERED BY:

NJBPU's Office of Clean Energy

## FUNDED BY:

Societal Benefits Charge (SBC) on electric and natural gas IOU bill

## PROGRAM GOALS:

- Education
- Change behavior
- Provide opportunity for ALL NJ residents to reduce energy and lower operating cost
- Protect the environment and lower emissions
- Meet Governor's goal of 100% clean energy by 2050



# Town Center Distributed Energy Resources (TCDER) Microgrid Program

## TCDER MICROGRID

TCDER Microgrid is a cluster of critical facilities within a municipal boundary that may also operate as shelter for the public during and after an emergency event or provide services that are essential to function during and after an emergency situation.

These critical facilities are connected to a single or series of DER technologies that can operate while isolated and islanded from the main grid due to a power outage

Level 1 -Single DER/building – one meter

Level 2 -Multiple DER/buildings – one meter (may cross multiple private ROW)

**Level 3 Multiple DER/buildings –multiple meters crossing multiple ROW**



# Town Center Distributed Energy Resources (TCDER) Microgrid Program

## TIMELINE

- October 29, 2012 - Superstorm Sandy



Superstorm Sandy told us that “business-as-usual” – with respect to the overall electric distribution system and backup generators at critical facilities – was inadequate for resiliency but the microgrid has to be cost-effective and run 24/7



# Town Center Distributed Energy Resources (TCDER) Microgrid Program

## TIMELINE (CONTINUED)

- 2013 Developed the Energy Resiliency Bank (ERB) with NJEDA to provide \$200 M in CDBG funds to develop microgrids for public critical facilities
- 2014 - NJBPU funded New Jersey Institute of Technology to conduct a TCDER Potential Study
  - An analysis of potential locations for distributed energy resources in the Sandy-affected region of New Jersey
- 2015 - Energy Master Plan Update: Increase the use of microgrid technologies
- November 2016 - NJBPU Microgrid Report issued
  - Provided information for the Board's consideration for establishing New Jersey's initial microgrid policies
  - Stakeholder input received
  - Report is available on NJBPU website <https://nj.gov/bpu/>



# Town Center Distributed Energy Resources (TCDER) Microgrid Program

## TIMELINE (CONTINUED)

- 2017 – NJBPU initiates TCDER microgrid stakeholder proceeding to develop program
- 2017 NJBPU awards grants for TCDER Feasibility Studies (Phase I)
  - Approximately \$2 million in grants awarded to 13 public entities (municipalities, counties, authorities)
  - Goal to work with utilities to find TCDER that could benefit utilities and TCDER as well as ratepayers
- 2018 – NJBPU receives Feasibility Studies
  - Upon review, 12 studies were found to be eligible for next round of funding (1 participant withdrew from further consideration)
  - Feasibility studies also available on NJBPU website <https://nj.gov/bpu/>
  - No real support from EDC unless they could build and operate TCDER <sup>1</sup>
- 2019-2020 – Next round of funding anticipated (Phase II)



# Town Center Distributed Energy Resources (TCDER) Microgrid Program

## PHASE II PROGRAM

- \$4 million available for detailed TCDER Design
- Program design is in development
  - All 12 feasibility study participants will be eligible
- Parallel Track - Identify and address potential barriers
  - Regulatory and Statutory Barriers
  - Tariffs
  - Development and Construction Financing
    - DOE Grant
    - Energy Public Privat Partnership P3



# Town Center Distributed Energy Resources (TCDER) Microgrid Program

## US DOE GRANT - FINANCING ADVANCED MICROGRIDS IN NEW JERSEY

- Overview
  - DOE Funding: \$299,840
  - Cost Match: 29%
  - Partners: New Jersey Institute of Technology, Rutgers University
- Project Goals
  - Utilize “real-world” data from the 13 TCDER microgrid feasibility studies as they enter the procurement and financing process
  - Develop a local government procurement guide to financing advanced community microgrids
  - Guide stakeholders through the process to maximize the economic and resiliency benefits of the microgrid
- Impact
  - Jurisdictions across the U.S. will have access to a guide grounded in legal, economic, and regulatory realities that improves understanding of the process for procuring and financing advanced community microgrids
  - Advancement of shovel-ready projects that need financial options for construction and economic optimization.



# Town Center Distributed Energy Resources (TCDER) Microgrid Program

NJBPU Energy Master Plan Draft 2019

- 100% clean energy by 2050
  - Carbon neutral electricity
- 80% reduction in 2006 GHG emission by 2050
  - NJ total GHG emissions 124 MMT – 25 MMT



# Town Center Distributed Energy Resources (TCDER) Microgrid Program

Developed the Roadmap to achieve the 2019 EMP goals through an Integrated Energy Plan (IEP) that evaluated all the energy fuel types for all aspects of generation, transmission distribution and use from 2020 through 2050.

- Can meet the EMP goals with a minimum cost – net \$2.1 B
- Electricity usage 2X from 75 MMWH to 165 MMWH
- Peak Load increase 120% and shifts to winter
- DER grows by 200%
- Electricity generation 85% Renewable – 94% carbon free  
15% nuclear, 6% biogas, 34% instate solar, 23% instate OSW,  
19% OOS OSW, 2% OOS solar
- 75% decrease in natural gas and liquid fuels.

# Town Center Distributed Energy Resources (TCDER) Microgrid Program

- Regional approach to clean energy similar to establishing the competitive energy markets
- Modernize IX process
- Expand Hosting Capacity mapping to be iterative vs static
- Develop DER tariffs for the value of DER – Clean Energy Standard
- Within 1 year - using the MADRI Integrated Distribution Plan as guidance develop NJBPU IDP regulations through a proceeding
- Require utilities to file IDP 90 days after final NJBPU IDP rules

# More Information

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