American Council for an Energy-Efficient Economy

CEIP and the Opportunity for Energy Efficiency

ACEEE Webinar Series

July 28, 2016

ACEEE Webinar Series

- "Energy Efficiency and the Clean Power Plan"
- Series of five webinars through July 2016
  - State Policy and Clean Power Plan Outlook
  - Expanding Low-Income EE Programs and Investments
  - Opportunities for the Industrial Sector
  - Paying for Clean Power Plan Compliance
  - CEIP and the Opportunity for Energy Efficiency
- Links to view webinar recordings - aceee.org/topics/clean-power-plan

Webinar Speakers

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Agenda

- Overview of CEIP program design elements
- Demand-side EE project eligibility requirements
- Opportunity for combined heat and power (CHP) in communities
- ACEEE's working comments
- Comment submittal and timeline

Clean Energy Incentive Program (CEIP)

- Voluntary early action program to benefit:
  - Demand-side energy efficiency (EE) and solar in low-income communities
  - Renewable energy (RE): wind, solar, geothermal, and hydropower energy
- October 2015: Main elements of CEIP were finalized along with final Clean Power Plan (CPP) emission guidelines
- June 2016: EPA released additional CEIP design details in proposed rule

Potential CEIP Benefits

- The program brings added benefits such as allowing states to get an early start on compliance by investing in cost-effective and zero-emitting technologies
- Increased incentive for EE and solar projects delivered to low-income communities
- Incentivizes early investment in RE

Program Specifics

- Program years: 2020 and 2021
- Qualifying EE/RE projects receive allowances or emission rate credits (ERCs) from the state
- EPA matches allowances/ERCs awarded by state through 300 million short tons of CO_2 emissions available through the matching pool
    - ERC to allowance conversion: 1 ERC = 0.8 allowance

Program Specifics

- Total available matching incentives
  - Mass-based trading plans: 300 million allowances
  - Rate-based trading plans: 375 million ERCs
- Matching pool split evenly between Renewable Energy Reserve (RER) and Low-Income Community Reserve (LICR)
  - 150 million allowances/187.5 million ERCs per reserve
- Any unused matching allowances will be retired at the end of the program on January 1, 2023

Proposed 50/50 Split for Matching Pool

	Available Matching Allowances (mass-based plan states)			Available Matching ERCs (rate-based plan states)		
	Renewable Energy Reserve (50%)	Low-Income Community Reserve (50%)	Total Share (100%)	Renewable Energy Reserve (50%)	Low-Income Community Reserve (50%)	Total Share (100%)
Alabama	4,683,458	4,683,458	9,366,916	5,854,323	5,854,323	11,708,646
Arizona	2,579,426	2,579,426	5,158,852	3,224,283	3,224,283	6,448,566
Arkansas	3,280,844	3,280,844	6,561,688	4,101,055	4,101,055	8,202,110
California	328,268	328,268	656,536	410,335	410,335	820,670
Colorado	3,334,788	3,334,788	6,669,576	4,168,485	4,168,485	8,336,970
Connecticut	104,122	104,122	208,244	130,153	130,153	260,306
Delaware	207,588	207,588	415,176	259,485	259,485	518,970
Florida	4,845,372	4,845,372	9,690,744	6,056,715	6,056,715	12,113,430
Georgia	4,133,434	4,133,434	8,266,868	5,166,792	5,166,792	10,333,584
Idaho	22,392	22,392	44,784	27,991	27,991	55,982
Illinois	8,953,081	8,953,081	17,906,162	11,191,352	11,191,352	22,382,704
Indiana	8,631,114	8,631,114	17,262,228	10,788,892	10,788,892	21,577,784
Iowa	3,286,774	3,286,774	6,573,548	4,108,467	4,108,467	8,216,934

Source: CEIP Design Details
https://www.epa.gov/sites/production/files/2016-06/documents/state-by-state_reserve_tables.pdf

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Project Eligibility: RER

- Wind, solar, geothermal, hydropower
- Eligible RE projects are to commence commercial operation on or after Jan. 1, 2020
- Projects awarded 1:1 credit:

  0.5 ERC (state) + 0.5 ERC (RER matching pool)

  = 1 ERC for every 1 MWh generated

Project Eligibility: LICR

- Demand-side EE and solar projects in low-income communities
- Eligible demand-side EE projects are to commence operation on or after September 6, 2018
- Eligible solar projects are to commence commercial operation on or after January 1, 2020
- Projects awarded 2:1 credit:

  1 ERC (state) + 1 ERC (LICR matching pool)

  = 2 ERCs for every 1 MWh generated

Definition of Low-Income Communities

- EPA is proposing that states choose their own definition of low-income community (local, state, or federal)
- Definition must have been established before October 23, 2015
- States can choose more than one for state plan that considers:
  - Existing definitions
  - Both geographic and household-based definitions
  - Flexibility to address urban and rural areas
  - Existing utility programs

Definition of Low-Income Communities

- Presumptively approvable federal level definitions:
  - New Markets Tax Credits (NMTC)
  - HUD Qualified Census Tracts
  - Weatherization Assistance Program (WAP) Income Guidelines
  - Federal Poverty Level Guidelines (FPLG)
- EPA is taking comment on other definitions to include as presumptively approvable for state plans

Demand-side EE Projects in LICR

- States have flexibility to determine the types of eligible demand-side EE projects
- EPA recommends that states consider:

  - Residential: single- and multifamily housing, group homes, shelters, temporary housing

  - Transmission and distribution (T&D): projects that reduce consumption on customer side of the meter (e.g. conservation voltage reduction (CVR))

  - Commercial: small businesses, organizations and institutions that work with low-income residents and that provide critical services (e.g. community centers, health clinics, etc.)

What is combined heat and power (CHP)?

CHP is an integrated system that:

- generates electricity
- recovers waste heat
- is located near the point of use
- can use a variety of technologies and fuels

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Benefits of CHP to communities

- Fuel efficiency
- Cost savings*
- Reduced emissions (CO_2, SO_2, NOx)*
- Avoided T&D losses
- Avoided infrastructure investments
- Improved reliability and resiliency*

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Combined heat and power (CHP) applications

Commercial buildings - office buildings, hotels, health clubs, nursing homes

Residential - condominiums, co-ops, apartments, planned communities

Institutions - colleges and universities, hospitals, prisons, military bases

Municipal - district energy systems, wastewater treatment facilities, K-12 schools

Manufacturers - chemical, refining, ethanol, pulp and paper, food processing, glass manufacturing

Source: EPA CHP Partnership: https://www.epa.gov/chp/what-chp

CHP in critical infrastructure

Examples of critical facilities

- Hospitals
- Community centers
- Police and fire stations
- Nursing homes
- Schools
- Water and wastewater treatment plants
- Places of refuge (university campuses)

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Case Study: South Oaks Hospital

Background

- Psychiatric hospital, nursing home, and assisted living facility
- Amityville, NY
- 1.25 MW CHP system

Benefits

- Uninterrupted care for patients
- Place of refuge for community
- 24-hour emergency operation center
- Cost savings over life of project

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CHP in multifamily buildings

- Significant growth in multifamily CHP in last 5 years
- Typically used for space heating and hot water
- DOE estimates more than 19,000 sites with technical potential for CHP (4,200 MW)

Customer Site Type	5-Year Growth in Capacity
Multifamily Building	46%
Hospitality	41%
Hospitals/Healthcare	19%
Office Buildings	16%
Utilities	8%

Sources: Greentech Media, *The Changing Face of CHP Customers:* *http://www.greentechmedia.com/articles/read/the-changing-face-of-chp-customers*;
DOE, *CHP Technical Potential in the United States (March 2016):* http://www.energy.gov/sites/prod/files/2016/04/f30/CHP%20Technical%20Potential%20Study%203-31-2016%20Final.pdf

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Case Study: Roosevelt Landings

Background:

- Mixed-income residential development
- Roosevelt Island in Manhattan
- 300 kW CHP installed in 2014

Benefits:

- Reduced costs for energy
- Affordability for tenants
- Operates during grid outages
- 1,600 tons of annual CO2 reductions

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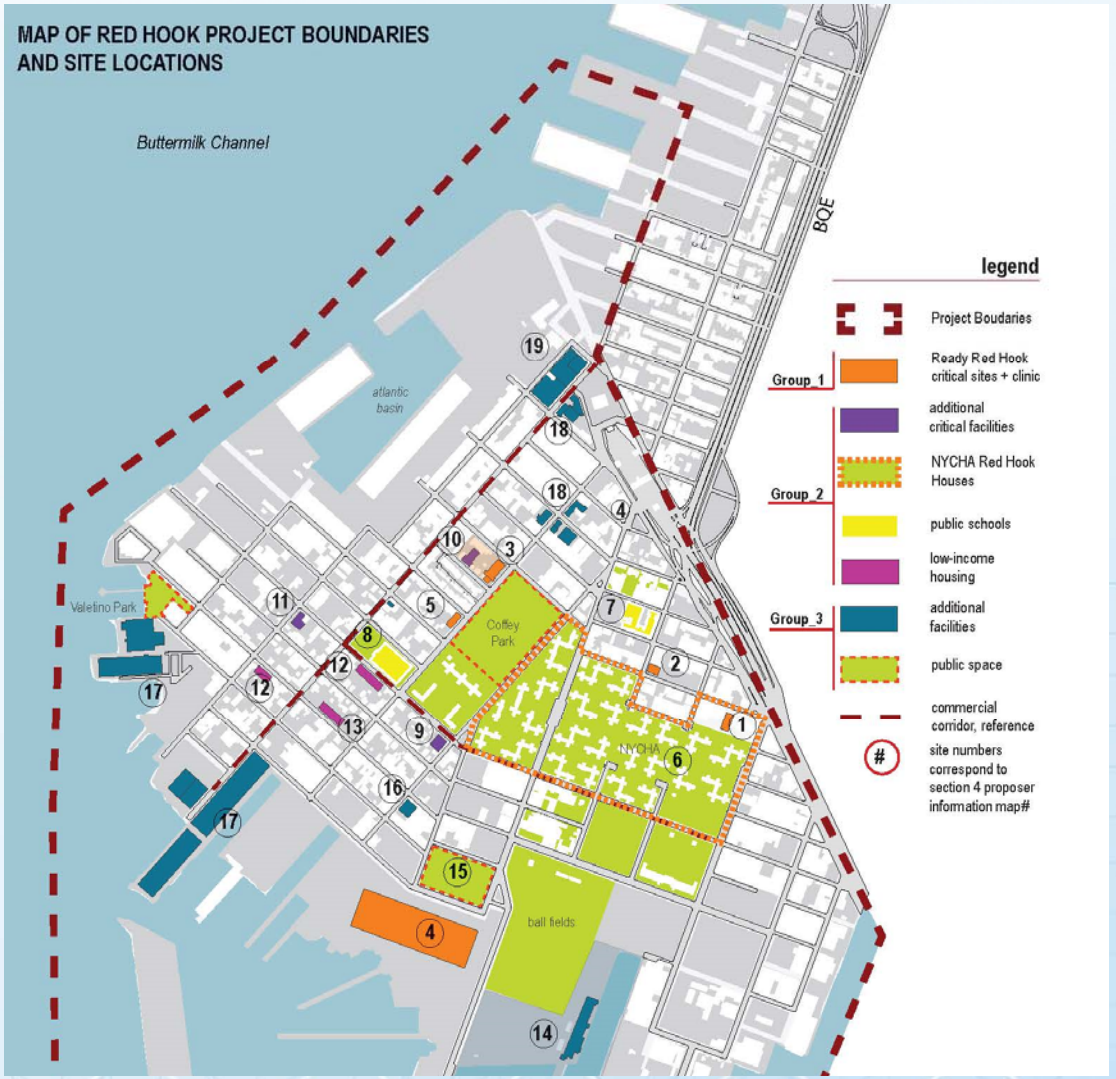
Sources: NYCEEC: http://nyceec.com/wp-content/uploads/Roosevelt-Landings-case-study-NYCEEC-web.pdf; NYSERDA: http://dataint.cdhenergy.com/Fact%20Sheets/Fact%20Sheet%20-%20Roosevelt%20Landings%20-%20CHP.pdf .

CHP can power community microgrids



Source: https://redhookcommunitymicrogrid.wordpress.com/project-map/

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ACEEE's Working Comments

1. Expand the CEIP to include EE policies and measures eligible to receive 1:1 credit.
2. Increase the 2:1 incentive for residential EE and solar projects implemented to serve low-income communities.
3. Support state flexibility for demand-side EE projects serving low-income communities.
4. Support the creation of optional, presumptively approvable regulatory text.

How to Comment on Proposal

- June 30: Proposal published in Federal Register
- August 3: EPA public hearing in Chicago
- September 2: Deadline to submit comments to EPA
- Comment submittal details available here- https://www.federalregister.gov/articles/2016/06/30/2016-15000/clean-energy-incentive-program-design-details#h-4

Additional Resources

EPA Clean Energy Incentive Program
www.epa.gov/cleanpowerplan/clean-energy-incentive-program

Clean Power Plan Resources aceee.org/topics/clean-power-plan

Answers to States Questions (ASQ) cpp.naseo.org/asq

Building Better Energy Efficiency Programs for Low-Income Households
aceee.org/research-report/a1601

Lifting the High Energy Burden in America's Largest Cities: How Energy Efficiency Can Improve Low Income and Underserved Communities
aceee.org/research-report/u1602

Best Practices in Developing Low-income Energy Efficiency Programs and Considerations for CPP Compliance
aceee.org/white-paper/cpp-low-income

Clean Power Plan Opportunities for Energy Efficiency in Affordable Housing: A Primer for the Affordable Housing Community
energyefficiencyforall.org/sites/default/files/CPPBrief.pdf

Additional Resources on the Benefits of CHP in Communities

EPA. 2015. *Energy Efficiency and Renewable Energy in Low-Income Communities: A Guide to EPA Programs.* www.epa.gov/sites/production/files/2016-03/documents/epa_low_income_program_guide_508_2-29-16.pdf

EPA, DOE, and HUD. 2013. *Guide to Using Combined Heat and Power for Enhancing Reliability and Resiliency in Buildings.* portal.hud.gov/hudportal/documents/huddoc?id=CHPSept2013.pdf.

DOE. 2013. *Combined Heat and Power: Enabling Resilient Energy Infrastructure for Critical Facilities.* www1.eere.energy.gov/manufacturing/distributedenergy/pdfs/chp_critical_facilities.pdf

DOE CHP Technical Assistance Partnership: energy.gov/eere/amo/chp-technical-assistance-partnerships-chp-taps

EPA CHP Partnership: www.epa.gov/chp

Questions?

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