

New Jersey's Clean Energy Program™

Energy Efficiency Opportunities for Commercial, Industrial and Institutional Buildings



Commitment to Clean Energy

- In the last 2 years, Governor Murphy has repeatedly shown his support for moving New Jersey to the forefront on Clean Energy
 - o Clean Energy Act of 2018
 - Draft Energy Master Plan that aims for 100% Clean Energy by 2050
 - Largest Single-State Solicitation for Offshore Wind

Commitment to Renewable Energy





- Establishment of an Interagency Taskforce on Offshore Wind: February 2018
- Launch of the Offshore Wind Strategic Plan: August 2018
- Released Solicitation for 1100 MW:
 September 2018
- Adoption of OREC funding rules: December 2018
- Supply Chain Registry: April 2019

NJCEP Background



ADMINISTERED by

New Jersey Board of Public Utilities

FUNDED from

Societal Benefits Charge (SBC) on utility bill

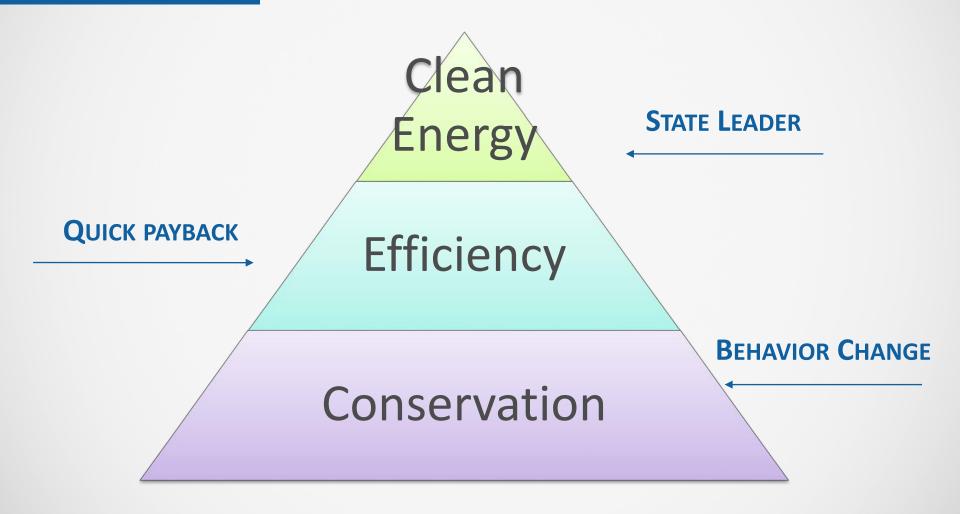
PROGRAM GOALS

- Save energy and lower operating costs
- Protect environment and lower emissions
- Change the business mindset



100% Clean Energy by 2050





Program Portfolio FY 2019



ELIGIBLE SECTORS

Commercial, Industrial, Government, Schools, Non-Profit, Institutional and Multifamily

Audits:

- Energy Benchmarking
- Local Government Energy Audits

Comprehensive Projects:

- Direct Install
- Pay for Performance Existing Buildings
- Pay for Performance New Construction
- Large Energy Users Program

Equipment Rebates:

- Smart Start Existing Buildings
- Smart Start New Construction

Distributed Energy Resources (DER) – Energy Generation:

- Combined Heat and Power
- Electric Storage Closed at this time

PROGRAMS

Program Portfolio FY 2020



- Increased budget
- Simplified program options with increased incentives
- New Community programs
- Focus on ensuring that low-income families can participate in energy savings

Commitment to Energy Innovation



- Community-based programs to encourage new ways of thinking about energy use and generation
- Electric Vehicle Investment
- Energy Innovation Fund

What's New in 2020





Energy Master Plan

Community Solar

Community Energy Grants

Multifamily Housing Program

New & More Incentives











Battery Storage

- The Clean Energy Act also requires the Board to conduct an Energy Storage Resource analysis for submission to the Governor and the Legislature. In doing so, the Board is required by law to consult with various stakeholders, including PJM
- Rutgers (RU-LESS) is retained to complete the study



- Study to address:
 - Resiliency
 - Effects on ratepayers
 - Impacts on renewable energy and EVs
 - Optimal amount of storage
 - Technologies
 - Optimal points of entry (customer sited, utility scale)
 - o Cost-benefit



Battery Storage

- Draft report due May 3, 2019
- Final report accepted by the Board in June 2019
- CEA requires Board to initiate a proceeding within six months of completion of report to establish a process and mechanism for achieving energy storage goals



Microgrids

- NJBPU Town Center Distributed Energy Resources (TCDER)
 Microgrids Program
 - 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
- Board funded 13 feasibility studies
- Feasibility studies completed and being reviewed



Microgrids

- EDCs fully engaged in program
- Barriers to TCDER Microgrids
 - Regulatory
 - ROW crossings
 - Tariff structures
 - o Funding
- To address funding issue, Board, with NJIT and Rutgers, received DOE Grant of \$300,000 for a microgrid financing study
 - Result will be a public "financing tool" for use by microgrid developers
 - Study to begin this month, completed within 2 years

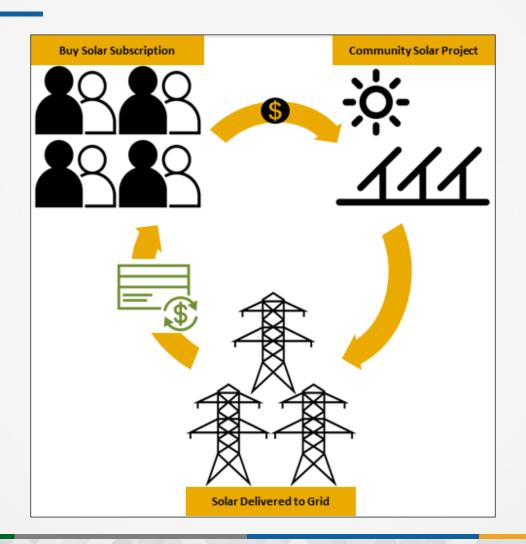




- A larger, remotely located solar array or facility that is virtually divided among multiple participants ("subscribers") by means of a credit on their utility bill
- Provides access to solar energy to renters as well as households, institutions, or businesses whose roofs aren't appropriate for solar installation



What is Community Solar?







- Signed into law on May 23, 2018
- Directs NJBPU to adopt rules and regulations establishing a Community Solar Energy Pilot Program within 210 days
 - Rules adopted at January 17, 2019 Board Agenda
 Meeting
- Directs NJBPU to adopt rules and regulations establishing a Community Solar Energy Program within 36 months of the enactment of the Pilot Program

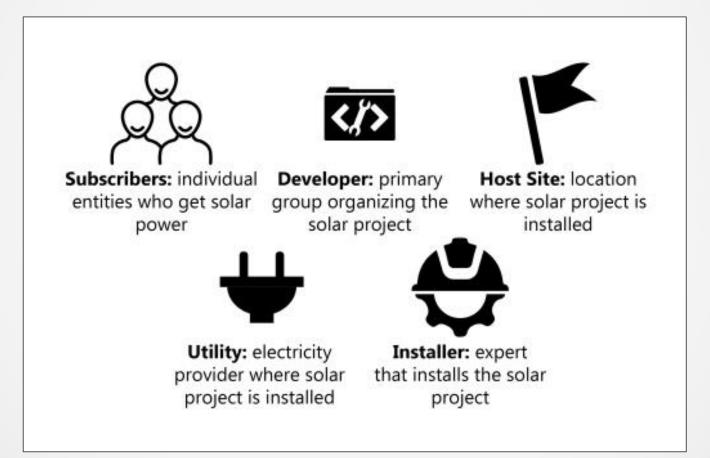
Program Benefits



- Enable access to solar energy for electric utility customers who have previously been unable to go solar
- Enable low- and moderate-income households and environmental justice communities to access clean energy and save on their electricity bills
- Pursue local clean energy development that is tied to the communities without materially compromising the preservation of open space or protected lands in New Jersey

Where Do I Fit In?









Localizing the 2020 Energy Master Plan Goals





Community Energy Grants

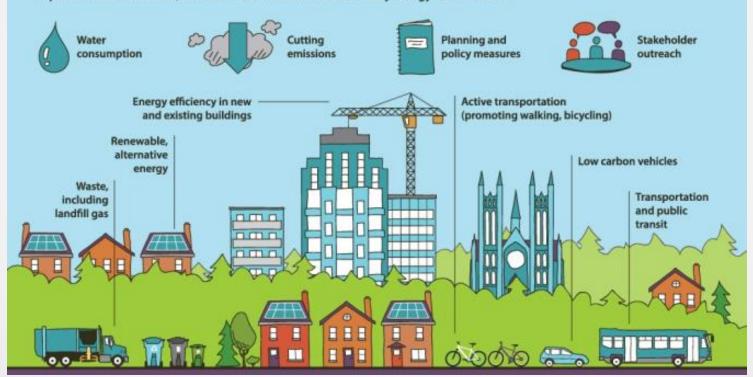
- Planning grant
- Look at energy use as a whole
 - o Residential
 - o Business
 - o Government
- Identify areas for improvement
- Create a plan to reduce energy use, increase renewables and meet the 2020 EMP goals



A COMMUNITY ENERGY PLAN

The Community Energy Plan is a tool that will enable Guelph to define community energy priorities.

In addition to community energy inventories, energy and emissions reduction targets, and implementation timelines, there are clear actions related to many energy-relevant areas.



From Guelph, Canada

https://www.ourenergyguelph.ca/about-us-old/energy-planning/energy-planning-overview/community-energy-content

Why now?



- Need local buy-in to reach 2050 goals
- Encourages a more holistic approach
- Not building-specific
- Encourages partnerships and collaboration





- Application is available at NJCleanEnergy.com
- Grants are based on population size





- Comprehensive Roadmap to meet our goals
- Created after significant stakeholder input throughout the last year
- Seven strategies to get New Jersey to 100% Clean Energy by 2050

EMP Draft comments



- Written comments will be accepted until noon (12 p.m.) on Monday,
 September 16, 2019 via emp.comments@bpu.nj.gov
- Stakeholder meetings:
 - Trenton Wednesday July 17
 4:30 p.m.
 - Newark Thursday August 8
 1 p.m. 4 p.m. & 4:30 p.m. 7:30 p.m.
 - o Camden Thursday Sept. 12 1 p.m. 4 p.m. & 4:30 p.m. 7:30 p.m.
 - Must register at www.nj.gov/emp/getinvolved



For More Information

Visit:

www.NJCleanEnergy.com

Call:

(866) NJSMART

State Energy Office (609) 777 3338

Stay Informed:

To join the Energy Efficiency listserv, email webmaster@njcleanenergy.com

Connect:

@NJCleanEnergy F



Multifamily Program

June 14, 2019



New Multifamily Program

- Currently, the multifamily market is served by several programs within NJ's Clean Energy Program
- The new program will create one point of entry and increase incentives to perform multiple energy efficient measures





- Provide energy savings for underserved markets
- Provide flexibility in customer participation to better meet customer needs
- Simplify participation through a single point of entry
- Provide enhanced outreach and assistance
- Focus incentives on the needs and specificities of multifamily properties
- Increase participation and maximize energy savings

What is a Multifamily Building?



- Five (5) or more dwelling units
- Includes existing buildings & new construction
- Incentives for in-unit & common area measures
- Single-Room Occupancy (SRO) buildings are eligible, with scaled incentives based on unit square footage





Building owners/managers participate on behalf of entire premises

Multifamily Program

PATH A*

Includes one or more prescriptive Energy Efficiency measures

Lighting Project

HVAC Upgrade

Appliance Upgrade

PATH B*

Added incentives for installing multiple Energy Efficiency measures at once. Choose a "Bundle" and save

+10% Incentive

Lighting Bundle

Exterior Lighting+Lighting Controls

DHW Bundle

EE Hot Water Heater+Low Flow+Pipe Insulation

Unit Turnover Bundle

Lighting+Appliances+HVAC+DHW

HVAC Bundle

Heater+Cooling Equipment

Envelope Bundle

Insulation+Air Sealing

Custom Measures

PATH C

Being Rolled out in Q2 FY20.

Details TBD. The program will increase incentives for projects that do Whole Building Measures and make Energy Efficiency upgrades from multiple path B Bundles

Incentives are increased to reward a more comprehensive approach

*For details on all incentive programs & options go to www.NJCleanEnergy.com

- Additional Options:
 - Energy Savings Verification (Path C only)
 - Bulk Appliance Recycling



For More Information

Visit:

www.NJCleanEnergy.com

Email:

Multifamily@NJCleanEnergy.com

Call:

(866) NJSMART

Stay Informed:

NJCEP Outreach Team, Case Manager & Multifamily Program Manager available to assist

To join the Energy Efficiency listserv, email webmaster@njcleanenergy.com

Connect:

@NJCleanEnergy









- Provides low-income families in New Jersey access to energy savings measures
- Offers a free energy savings and energy education program for qualified low-income customers

What's Included?



- Free home energy audit
- Personalized Energy & Appliance End-Use Education
- Free installation of energy-saving home improvements like:
 - Insulation
 - Air sealing
 - o Efficient lighting
 - Duct sealing & repair

- EE appliances and hot water conservation measures
- Heating and cooling equipment upgrades and maintenance

Who is Eligible?



- New Jersey residents with income at or below 225% of the Federal Poverty Guidelines
- Or participate in one of these programs
 - Home Energy Assistance Program (HEAP)
 - General Assistance (GA)
 - Medicaid
 - o SNAP
 - o Lifeline
 - o PAAD

- o Section 8 Housing
- Federal Supplemental Security Income (SSI)
- Temporary Assistance to Needy Family (TANF)
- Universal Service Fund (USF)

Requirements



Participants must:

- Have owned their home for a minimum of one year (if a homeowner)
- Be a customer of record with an individually-metered electric or gas account
- Live in a building with 1-14 units that are individually metered
- Heat with electricity or natural gas from a participating public utility



Energy Saving Improvement Program

Mike Thulen – Coordinator for the ESIP Program
State Energy Office

aka: ESIP; ESCO; P.L. 2012, c. 55



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 - NJ SMARTSTART BUILDINGS
 - PAY FOR PERFORMANCE
 - **MULTIFAMILY PROGRAM**

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ENERGY SAVINGS IMPROVEMENT PROGRAM (ESIP)

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New Jersey's Clean Energy Program offers financial incentives to create a more efficient New Jersey. Learn more about the energy use of businesses like yours to see how your business is performing. Integrate energy efficient, new technology into your buildings and equipment upgrades, make your facilities more efficient and receive big dividends on efficiency investments. Questions? Give us a call at 866-657-6278. Need help finding a contractor or trade ally? Use our Find a Trade Ally tool to help you get started!

Program Updates

 New Jersey Clean Energy Learning Center

Other updates posted.

Program Literature



Applications and Brochures

Download the Latest Program Materials

Find a Trade Ally

Select a contractor for an energy efficient upgrade today!



Success Stories



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Local Government Energy Audit

LEAD BY EXAMPLE

All across New Jersey, residents and business owners are looking for ways to save energy and the environment. In order to understand how they can save, the Local Government Energy Audit (LGEA) Program allows local government agencies, state contracting agencies, public agencies, state colleges and state universities, and select non-profit agencies, to examine their facilities and see how they can improve their energy use. The program can help you identify cost-justified energy-efficiency measures, as well as subsidize the full cost of the audit. The entire audit process including customer assistance, application processing and auditing will be performed by TRC, the Program Manager for New Jersey's Clean Energy Program (NJCEP). More details are available about the LGEA program in this Video Overview, Program Guide and FAQs.

Eligibility

The LGEA Program targets buildings owned by many local government-related entities, New Jersey Colleges and Universities, and 501(c)(3) non-profit agencies. Such facilities may include, but are not limited to: offices, courtrooms, town halls, police and fire stations, sanitation buildings, transportation structures, schools and community centers.

Your Expense is Covered

NJCEP will subsidize 100% of the cost of the audit, up to an incentive cap, so there are no out of pocket expenses associated with services provided under this program.

Audit Scope

The audit includes an inventory of all energy-consuming

reginment, comprehensive utility hill analysis, facility handbroading, and facsibility for salar and

Program Updates

 New Jersey Clean Energy Learning Center

Other updates posted.

Program Literature



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Success Stories



Flying Fish Brewing Company

NJ's largest craft brewery supports local expansion with energy saving technologies

Clean Energy Learning Center



New Jersey's Clean Energy Program

Local Government Programs

All Opportunities



Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	(MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades	529,366	128.9	-86.0	\$56,928.65	\$308,691.23	\$47,864.00	\$260,827.23	4.6	522,999
Install LED Fixtures	306,792	75.0	-39.1	\$34,171.30	\$245,693.87	\$36,230.00	\$209,463.87	6.1	304,356
Retrofit Fluorescent Fixtures with LED Lamps and Drivers	91,512	26.3	-19.5	\$10,371.91	\$35,534.53	\$5,483.00	\$30,051.53	2.9	89,870
Retrofit Fixtures with LED Lamps	130,607	27.6	-27.3	\$12,331.82	\$27,318.00	\$6,151.00	\$21,167.00	1.7	128,327
Install LED Exit Signs	454	0.0	-0.1	\$53.62	\$144.83	\$0.00	\$144.83	2.7	446
Lighting Control Measures	69,556	15.0	-14.8	\$6,972.29	\$70,212.00	\$8,755.00	\$61,457.00	8.8	68,308
Install Occupancy Sensor Lighting Controls	68,028	14.6	-14.5	\$6,809.75	\$68,002.00	\$8,470.00	\$59,532.00	8.7	66,807
Install Daylight Dimming Controls	146	0.0	0.0	\$15.85	\$500.00	\$180.00	\$320.00	20.2	143
Install High/Low Lighting Controls	1,382	0.4	-0.3	\$146.69	\$1,710.00	\$105.00	\$1,605.00	10.9	1,357
Variable Frequency Drive (VFD) Measures	29,878	9.2	0.0	\$2,801.11	\$33,523.91	\$1,600.00	\$31,923.91	11.4	30,087
Install VFDs on Constant Volume (CV) Fans	21,757	6.1	0.0	\$2,039.75	\$19,441.57	\$1,600.00	\$17,841.57	8.7	21,909
Install VFDs on Heating Water Pumps	8,121	3.1	0.0	\$761.36	\$14,082.34	\$0.00	\$14,082.34	18.5	8,178
Electric Unitary HVAC Measures	4,155	1.0	0.0	\$498.62	\$16,291.98	\$552.00	\$15,739.98	31.6	4,184
Install High Efficiency Heat Pumps	4,155	1.0	0.0	\$498.62	\$16,291.98	\$552.00	\$15,739.98	31.6	4,184
Electric Chiller Replacement	6,477	5.9	0.0	\$777.29	\$20,201.74	\$800.00	\$19,401.74	25.0	6,522
Install High Efficiency Chillers	6,477	5.9	0.0	\$777.29	\$20,201.74	\$800.00	\$19,401.74	25.0	6,522
Gas Heating (HVAC/Process) Replacement	0	0.0	972.4	\$9,390.65	\$283,408.14	\$7,321.65	\$276,086.49	29.4	113,855
Install High Efficiency Hot Water Boilers	0	0.0	652.3	\$6,825.32	\$148,382.65	\$670.25	\$147,712.40	21.6	76,378
Install High Efficiency Steam Boilers	0	0.0	257.2	\$2,138.58	\$127,095.42	\$6,251.40	\$120,844.02	56.5	30,117
Install High Efficiency Furnaces	0	0.0	62.9	\$426.75	\$7,930.07	\$400.00	\$7,530.07	17.6	7,360
Domestic Water Heating Upgrade	20,786	5.4	-10.7	\$2,270.63	\$4,006.37	\$160.00	\$3,846.37	1.7	19,684
Install High Efficiency Gas-Fired Water Heater	6,067	5.4	-20.7	\$435.90	\$3,855.80	\$160.00	\$3,695.80	8.5	3,686
Install Low-Flow DHW Devices	14,719	0.0	10.0	\$1,834.73	\$150.57	\$0.00	\$150.57	0.1	15,999
Plug Load Equipment Control - Vending Machine	1,612	0.2	0.0	\$193.44	\$230.00	\$50.00	\$180.00	0.9	1,623
Vending Machine Control	1,612	0.2	0.0	\$193.44	\$230.00	\$50.00	\$180.00	0.9	1,623
TOTALS	661,830	165.7	860.9	\$79,832.68	\$736,565.37	\$67,102.65	\$669,462.72	8.4	767,263

^{* -} All incentives presented in this table are based on NJ Smart Start Building equipment incentives and assume proposed equipment meets minimum performance criteria for that program.

^{** -} Simple Payback Period is based on net measure costs (i.e. after incentives).



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Energy Savings Improvement Program (ESIP)

A new State law allows government agencies to make energy related improvements to their facilities and pay for the costs using the value of energy savings that result from the improvements. Under Chapter 4 of the Laws of 2009 (the law), the "Energy Savings Improvement Program" (ESIP), provides all government agencies in New Jersey with a flexible tool to improve and reduce energy usage with minimal expenditure of new financial resources.

Please review the New Jersey's Clean Energy Program (NJCEP) and ESIP Interaction memo and flow chart for recommendations on when to submit incentive applications to various NJCEP programs relative to the ESIP timeframe.

This Local Finance Notice outlines how local governments can develop and implement an ESIP for their facilities. Below are two sample RFPs:

- Local Government
- School Districts (K-12)

All RFPs and final Energy Savings Plan (ESP) <u>must</u> be submitted to the Board for approval at ESIP@bpu.state.nj.us.

The Board also adopted protocols to measure energy savings:

- Measuring Energy Savings
- Procedures for Implementation

The FSIP approach may not be appropriate for all energy conservation and energy efficiency

Program Updates

 New Jersey Clean Energy Learning Center

Other updates posted.

Program Literature



Applications and Brochures

Download the Latest Program Materials

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Select a contractor for an energy efficient upgrade today!





70 Columbus Tower

Steps



- Local Government Energy Audit
- ESIP RFP (boilerplate on Clean Energy website)
- Invest Grade Audit
- Energy Saving Plan (actual project scope & Plan)
- Financing
- Construction
- Measurement and Verification

ESIP is a funding program



- Requirements for an Energy Savings Plan
 - No Negative Cash Flow
 - No Capital Cost Avoidance (except on a very limited basis)
 - No use of SREC's in Cost Savings Calculations
 - Independent Third Party Review of Plan
 - BPU required Approval
 - Maximum 15 Year Pay Back Standard Plan
 - Maximum 20 Year Back with Combined Heat & Power Plan

State Facilities



- State Police Headquarters
- Department of Transportation Headquarters
- Marie Katzenbach School for the Deaf
- Department of Corrections Edna Mahan Facility
- Department of Human Services Hunterdon Dev. Facility
- NJ Dep. of Military and Veterans Affairs Vineland Facility
- Department of Human Services Trenton Psychiatric Hospital

School Facilities



- Newark School System
- Paterson School System
- Toms River School System
- Long Branch School System
- New Brunswick School System
- Wayne Township School System
- Middlesex County Vocational System
- Salem County Community College

Municipal Facilities



- Cape May City
- Matawan Township
- Marlboro Township
- City of Newark
- Verona Township
- City of Ventnor

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