



# Sun and Sparks

Sustainability Summit

June 14, 2019

# Speakers (in order of presentation)

- Andrea Friedman, NJ Department of Environmental Protection
- Alex Torpey, Business Administrator, Lambertville, NJ
- Cathleen Lewis, NJ Board of Public Utilities
- Ryan Gergely, NJ Department of Environmental Protection
- Christine Symington, Sustainable Princeton



# Municipal Program Energy Actions

	Climate Planning and Energy Efficiency	Renewable Energy	Alternative Fuel Vehicles
<b>Municipal Operations</b>	<ul style="list-style-type: none"> <li>• Carbon Footprint</li> <li>• Energy Tracking and Management</li> <li>• Energy Efficiency for Facilities</li> </ul>	<ul style="list-style-type: none"> <li>• On-Site Solar Energy</li> <li>• On-Site Geothermal</li> <li>• On-Site Wind Energy</li> <li>• Purchase Renewable Energy</li> </ul>	<ul style="list-style-type: none"> <li>• Fleet Inventory</li> <li>• Purchase Alternative Fuel Vehicles (AFV)</li> </ul>
<b>Community Energy Use</b>	<ul style="list-style-type: none"> <li>• Community Carbon Footprint</li> <li>• Climate Action Plan</li> <li>• Residential Energy Efficiency Outreach</li> <li>• Commercial Energy Efficiency Outreach</li> </ul>	<ul style="list-style-type: none"> <li>• Wind Ordinance</li> <li>• Renewable GEA</li> <li>• Make Your Town Solar Friendly</li> <li>• Community-Led Solar Initiatives</li> </ul>	<ul style="list-style-type: none"> <li>• Make Your Town EV Friendly</li> <li>• Public EV Chargers</li> </ul>

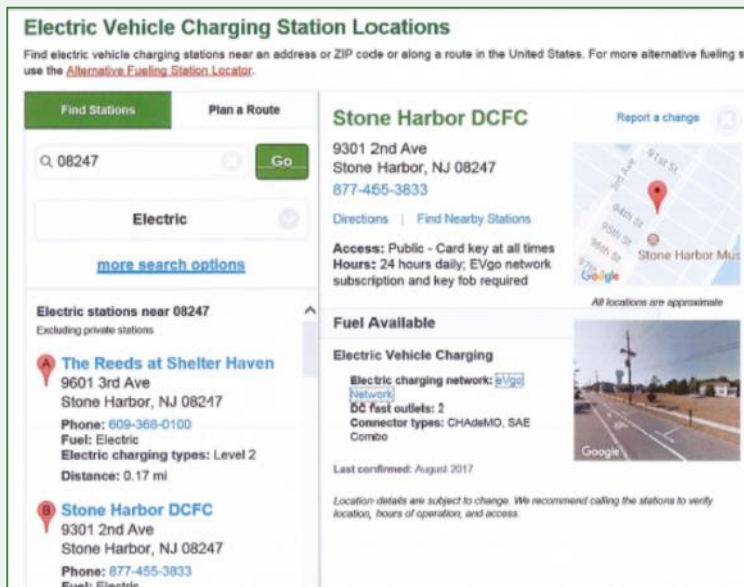
# Sustainable Jersey EV Actions

## Public EV Charging Infrastructure

- Municipality instrumental in the project
- Publicly available
- Listed on “public directory”
- Signage/Promotion of Charging Stations

## Make Your Town EV Friendly

- Zoning -- EV charging stations as accessory use
- Design standards for EVSE parking spaces
- Training for local officials
- Outreach activities
  - Incentive for pre-wiring
  - Awareness event
  - Commitment from 3 local partners
    - for workplace chargers
    - for multi-family chargers



The screenshot shows the 'Electric Vehicle Charging Station Locations' website. The search bar contains '08247' and the results list two stations:

- The Reeds at Shelter Haven**  
9601 3rd Ave  
Stone Harbor, NJ 08247  
Phone: 609-368-0100  
Fuel: Electric  
Electric charging types: Level 2  
Distance: 0.17 mi
- Stone Harbor DCFC**  
9301 2nd Ave  
Stone Harbor, NJ 08247  
Phone: 877-455-3833  
Fuel: Electric

The Stone Harbor DCFC entry includes a map showing the location at 9301 2nd Ave and a photo of the charging station. It also lists details such as 'Access: Public - Card key at all times', 'Hours: 24 hours daily', and 'Connector types: CHAdeMO, SAE Combo'.





# Municipal Planning and Zoning for EVs

- PEV Parking Ordinance
  - Parking spaces / ratio
    - e.g., 1:1 vs 3:1
  - Protection around charging infrastructure, e.g. bollards
  - Lighting – type and hours of illumination
  - Signage
  - ADA accessibility
- EV Charging Infrastructure
  - Pre-wiring in redevelopment projects
  - EV Charging stations in redevelopment projects
  - Waive permitting fees
  - Award plaque or recognition



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# Municipal Fleets

- Fleet Inventory Action
  - Evaluate current vehicle use
  - Fleet planning exercise
- Assess Municipal Duty Cycle
  - Code enforcement vehicles
  - Police vehicle fleet
  - Light and heavy duty trucks
  - Bus fleet
- Purchase Alternative Fuel Vehicles



<http://www.hyattsville.org/733/Electric-Police-Vehicles>



<https://transportation.columbia.edu/news/columbia-university-electric-shuttle-buses-hit-road>

# Make Your Town Solar Friendly Action

## Supportive Solar Zoning Ordinance

- Adopt Solar Zoning Ordinance
- Amend Permitting Fee Ordinance



- Note: [Solsmart](#) *Silver* designation qualifies for 30 points for this action

## Streamlined Permitting

- Post requirements online
- TWO additional activities:
  - Train first responders
  - Cross-train codes and permitting staff
  - Expedited permitting
  - Offer narrow inspection timeframe
  - Expedite or eliminate zoning review

# Community Led Solar Initiatives Action

## Group Purchasing Program

- Group purchasing models
  - Sustainable Jersey Solar Challenge
  - Solarize campaign
  - Solarize campaign for businesses
- Performance based criteria
  - % of residents participating
  - % of businesses participating
  - Overall kW installed per capita

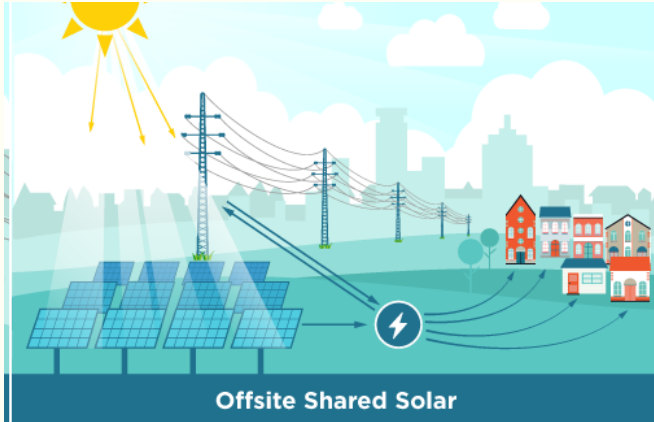
## Activities and Incentives

- Awareness building and outreach
  - Financial institutions
  - Chamber of Commerce
  - Realtors
- Incentives
  - ‘Solar ready’ checklist for builders
  - Waive permitting fees
  - Utilize local workforce trainees





# Community Solar



Images: [www.nrel.gov/docs/fy11osti/49930.pdf](http://www.nrel.gov/docs/fy11osti/49930.pdf)  
[www.energy.gov/eere/solar/community-and-shared-solar](http://www.energy.gov/eere/solar/community-and-shared-solar)



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# Municipal Roles in Community Solar

- Zoning
  - large scale ground mount solar
  - large scale rooftop solar
  - reduce zoning barriers
- Permitting
  - help developers understand local permitting requirements
  - permitting fee structure to incentivize community solar



[betterbuildingsolutioncenter.energy.gov/sites/default/files/attachments/On\\_Site\\_Solar\\_Decision\\_Guide.pdf](https://betterbuildingsolutioncenter.energy.gov/sites/default/files/attachments/On_Site_Solar_Decision_Guide.pdf)



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# Sustainable Jersey Supporters & Sponsors

## Program Underwriters



## Grants Program



## Corporate Sponsors



# Sustainable Jersey for Schools Supporters & Sponsors

## Program Underwriters



## Grants Program



## Corporate Sponsors

### Platinum



### Gold



### Silver



### Bronze





# Electric Vehicles and EV Infrastructure: Incentives & Resources for Local Governments and Schools

New Jersey Sustainability Summit  
June 14, 2019

Andrea Friedman, Supervisor of Electric Vehicle Programs

New Jersey Department of Environmental Protection  
Air Quality, Energy and Sustainability

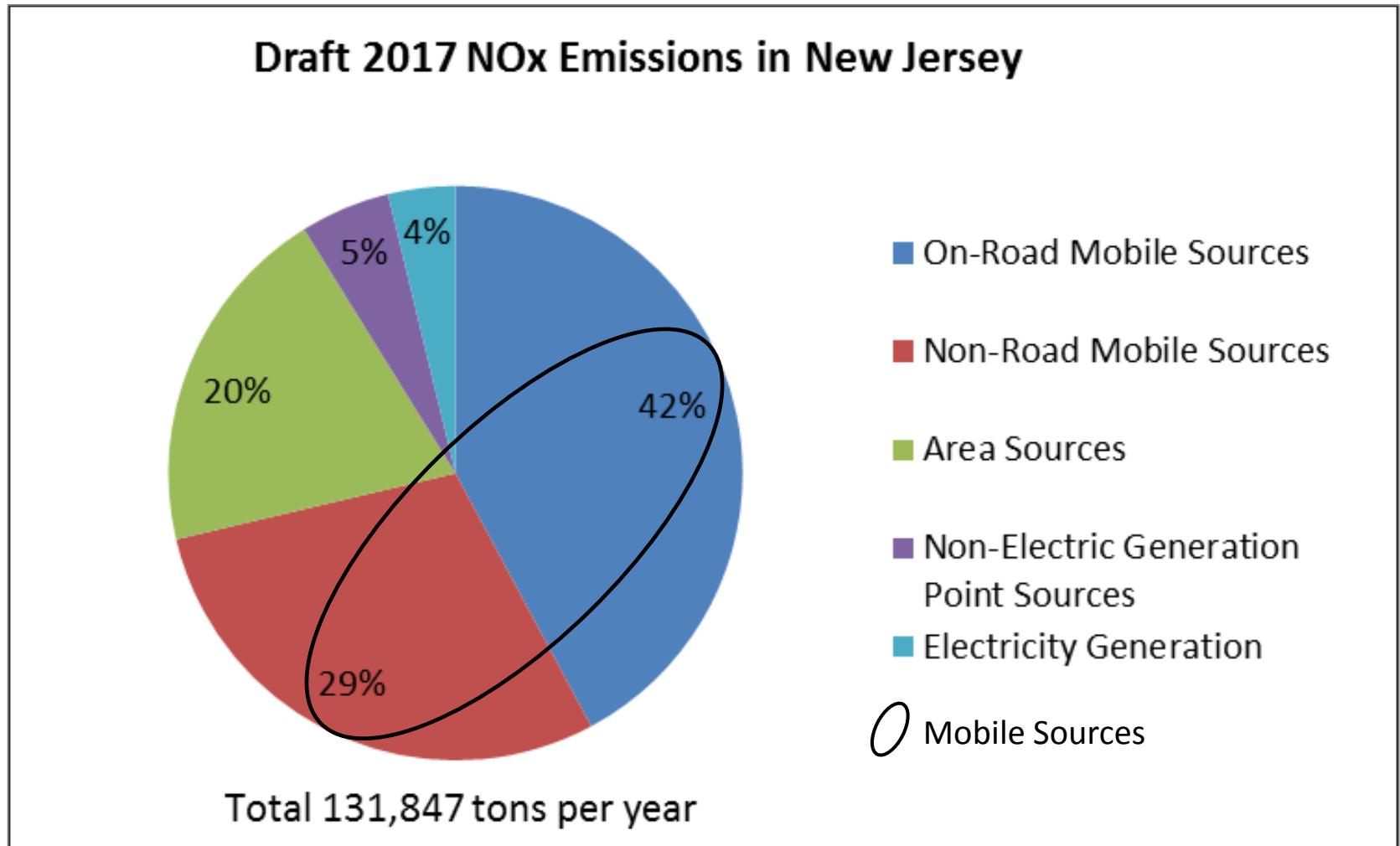




**Vehicles cause air pollution.**

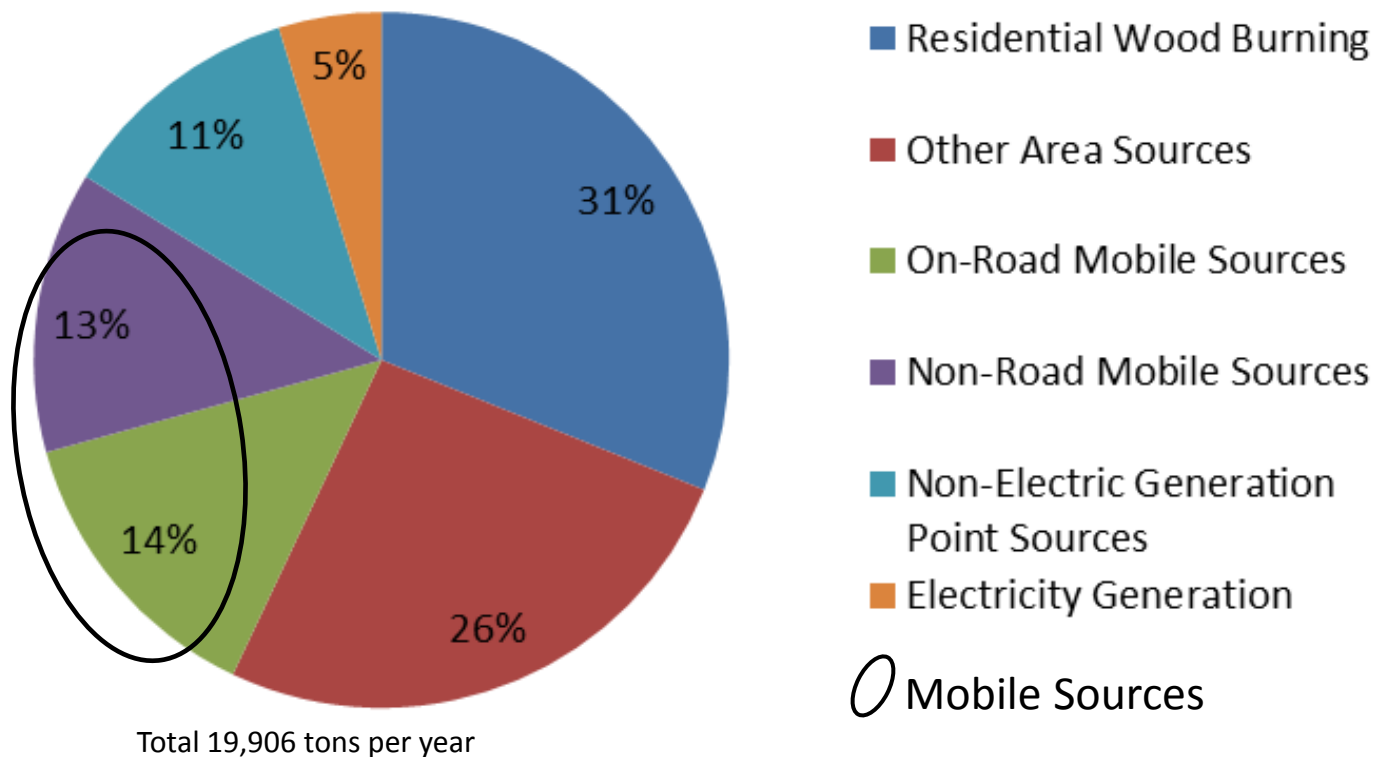
Photo from Getty Images

# 75% of ozone pollution is from vehicles.



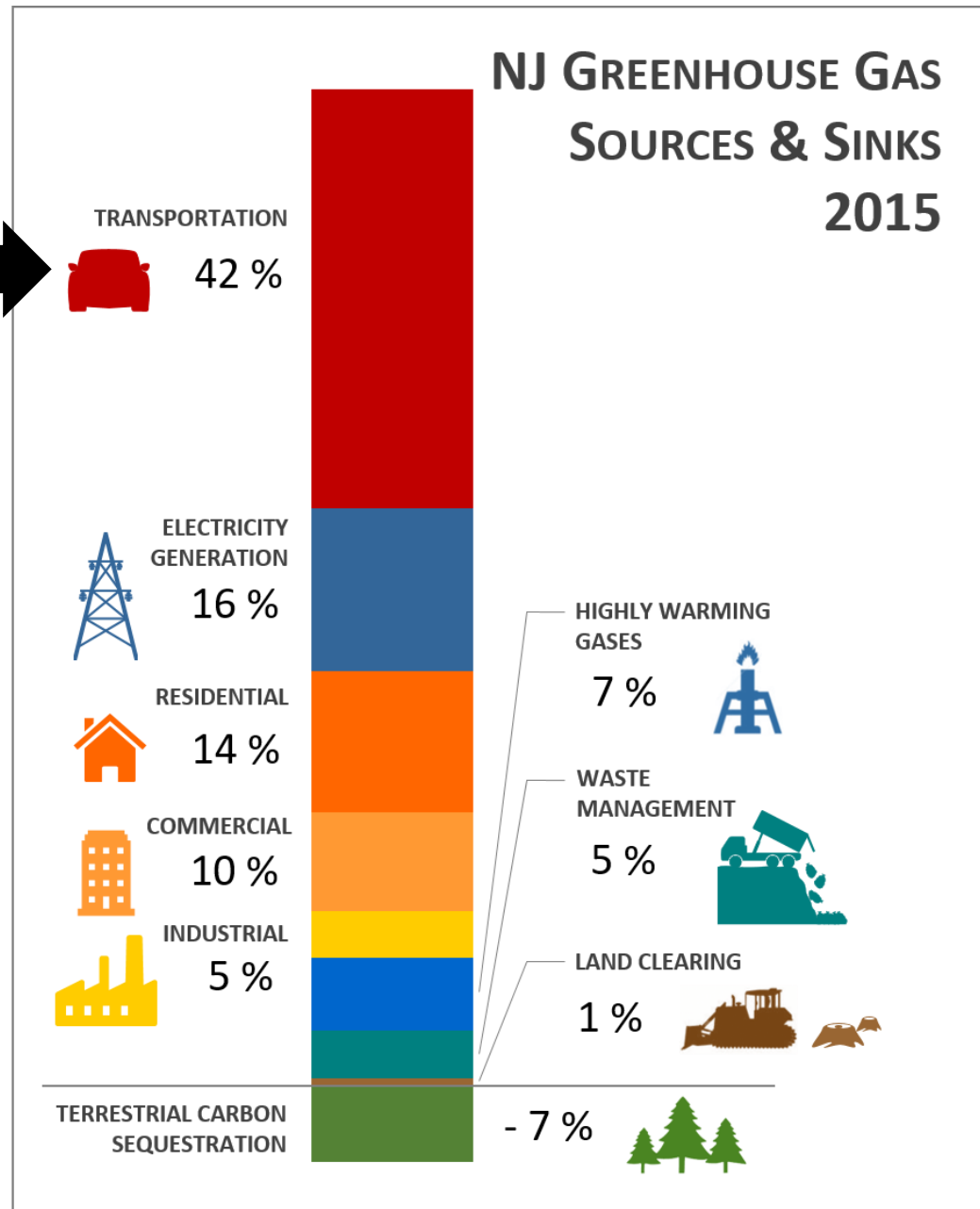
# 25% of fine particulate pollution is from vehicles.

Draft 2017 PM2.5 Emissions in New Jersey





**Vehicles are NJ's largest source of climate pollution.**



Source: New Jersey Statewide Greenhouse Gas Emissions Inventory Report 2015



**Electric Vehicles are 80% cleaner than  
gasoline vehicles.**

That includes power plant emissions.

Photo from Citi.io

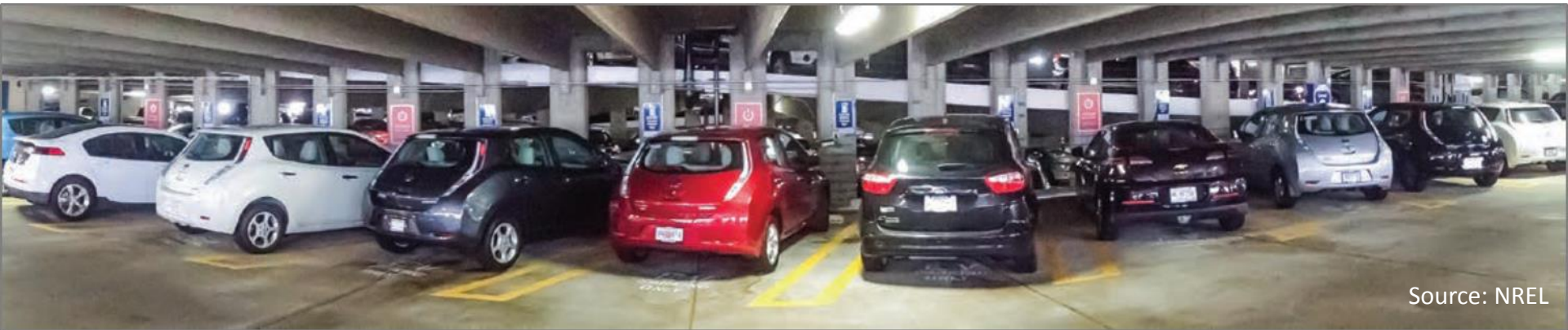
# Incentives and Resources





# ***1. It Pay\$ to Plug In***

## **New Jersey's Grant Program for EV Charging Stations**



***Up to \$6,000 per charging station at workplaces, public places, and multi-family housing.***

- For purchase, installation and maintenance.
- Apply online at: [www.drivegreen.nj.gov/plugin.html](http://www.drivegreen.nj.gov/plugin.html)

## 2. Volkswagen Settlement



Volkswagen installed illegal software in certain diesel vehicles to cheat emission tests. Settlement: VW to provide funds to states and tribes for NOx reduction projects.

**\$72.2 million for New Jersey  
Including \$10.8 million for EV charging**

# Rounds 1 & 2 – NJ's VW Settlement Awards



\$3.2 million Electric vehicle charging stations

\$8 million 8 electric NJ TRANSIT buses in Camden

\$16 million 82 electric heavy-duty vehicles in Environmental Justice Communities:

School buses, garbage trucks, delivery trucks, port trucks and equipment, airport ground support equipment



# Volkswagen Settlement: Next Steps



- DEP will issue a call for proposals for Round 3.
- Join the NJ VW Settlement email list for updates [www.state.nj.us/dep/vw/subscribe.html](http://www.state.nj.us/dep/vw/subscribe.html)
- See [www.state.nj.us/dep/vw](http://www.state.nj.us/dep/vw) for more information.

# 3a. Procurement Tools for Public Fleets

## New Jersey State Vehicle Contracts

- NJ Dept. of the Treasury “will, whenever possible, solicit offerings of EVs...including Hybrid Electric, Plug-in Hybrid Electric and Plug-in Electric vehicles”.
- Plug-in hybrid electric minivan on state contract.
- Treasury issued a bid solicitation for EVs for the state sedan contract in February.
- For updates, sign up for our email list at [www.stopthesoot.org/sts-listserv.htm](http://www.stopthesoot.org/sts-listserv.htm)

# 3b. Procurement Tools for Public Fleets

## Climate Mayors Electric Vehicle Purchasing Collaborative



CONTACT US:  
800-267-7830



HOME


VEHICLES ▾

PROCUREMENT ▾

POLICY GUIDANCE ▾

ABOUT ▾

CONTACT US

COMPARE 



Climate Mayors Electric Vehicle  
Purchasing Collaborative

Unprecedented cooperation of  
cities nationwide to electrify  
municipal fleet vehicles.

BUY NOW

[www.driveevfleets.org](http://www.driveevfleets.org)

# 3b. Procurement Tools for Public Fleets

## Climate Mayors Electric Vehicle Purchasing Collaborative



CONTACT US:  
800-267-7830



HOME


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PROCUREMENT ▾

POLICY GUIDANCE ▾

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Unprecedented cooperation  
cities nationwide to e  
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BUY NOW

[www.driveevfleets.org](http://www.driveevfleets.org)



# 3b. Procurement Tools for Public Fleets

## Climate Mayors Electric Vehicle Purchasing Collaborative

**CLIMATE MAYORS**

CONTACT US: 800-267-7830

HOME VEHICLES ▾ PROCUREMENT ▾ POLICY GUIDANCE CONTACT US COMPARE 🔍

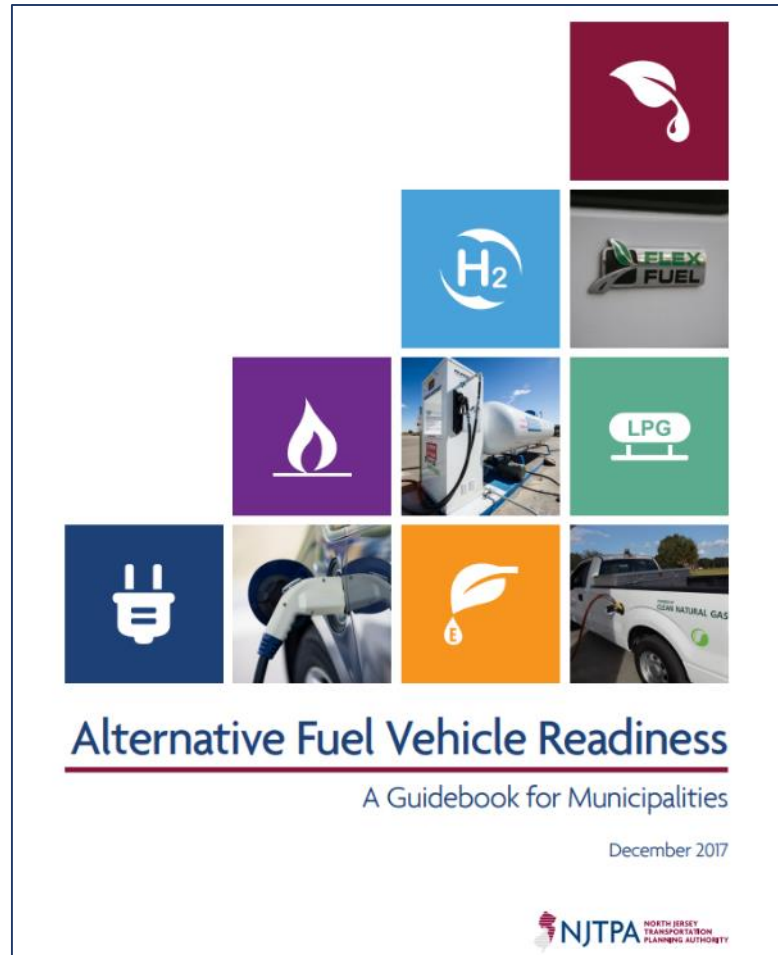
Climate Mayors Electric Vehicle Purchasing Collaborative

**Unprecedented cooperation of cities nationwide to electrify municipal fleet vehicles.**

**BUY NOW**

[www.driveevfleets.org](http://www.driveevfleets.org)

# 4. Alternative Fuel Vehicle Readiness: A Guidebook for Municipalities



[www.njtpa.org/planning/regional-studies/environment/air-quality/alternative-fuels-vehicles](http://www.njtpa.org/planning/regional-studies/environment/air-quality/alternative-fuels-vehicles)



# 5a. Useful EV Website #1: Drive Green New Jersey

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- Electric vehicle basics
- Grants and incentives
- All about charging
- Which EV is right for me?
- Can I afford it?
- Charging station locator
- Maps and data
- Sign up for our email list



[www.drivegreen.nj.gov](http://www.drivegreen.nj.gov)

# 5b. Useful EV Website #2: Drive Change. Drive Electric.



[Driver Stories](#) [Learn the Facts](#) [Explore Electric Cars](#) [About Us](#)

## Drive Change. Drive Electric.

Switch to electric without switching up your everyday life. As with any lifestyle change, your routines will adapt—but we'd venture to say it will be for the better. See how the performance, ease and comfort of electric cars can help you drive change.



**Story: A Day on the Slopes**  
Follow along as Gabriel and his daughter travel to the mountain and back in his electric car without needing to stop and refuel.

[www.driveelectricus.com](http://www.driveelectricus.com)

# 6. Sustainable Jersey EV-Related Actions



- Purchase Alternative Fuel Vehicles
- Public EV Charging Infrastructure
- Make Your Town EV Friendly
- Fleet Inventory

[www.sustainablejersey.com](http://www.sustainablejersey.com)

# Breaking (almost) news

## Partnership to Plug In

[www.nj.gov/governor/news/news/562019/approved/20190603b.shtml](http://www.nj.gov/governor/news/news/562019/approved/20190603b.shtml)



STATE OF NEW JERSEY  
GOVERNOR PHIL MURPHY

Governor Phil Murphy • Lt. Governor Sheila Oliver  
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### Newark, N.J.

## Governor Murphy Announces State Interagency Electric Vehicle Partnership

06/3/2019

The New Jersey Partnership to Plug-In Will Coordinate the Efforts of the Board of Public Utilities, the Department of Environmental Protection, and the Economic Development Authority

**TRENTON** – As part of the state's effort to meet New Jersey's clean energy goals, Governor Phil Murphy today announced the New Jersey Partnership to Plug-In, a first-of-its-kind, statewide partnership to build out the necessary infrastructure to support electric vehicle ownership to improve air quality and reduce greenhouse gas emissions. The partnership, which will be co-led by the New Jersey Board of Public Utilities, New Jersey Department of Environmental Protection, and the New Jersey Economic Development Authority, will create a strategic and streamlined framework to support New Jersey's electric vehicle ecosystem, with the goal of registering 330,000 Zero Emission Vehicles (ZEVs) by 2025. The New Jersey Partnership to Plug-In will be ratified under a Memorandum of Understanding (MOU).

## Draft 2019 Energy Master Plan

[www.bpu.state.nj.us/bpu/pdf/publicnotice/EMP%20Press%20Release%20610.pdf](http://www.bpu.state.nj.us/bpu/pdf/publicnotice/EMP%20Press%20Release%20610.pdf)





Governor Phil Murphy  
Lt. Governor Sheila Oliver

President Joseph L. Floridino  
Commissioner Mary Anna N. Holden  
Commissioner Diane Solomon  
Commissioner Uspenski Cheskula  
Commissioner Bob Gordon

## NEW JERSEY BOARD OF PUBLIC UTILITIES PRESS RELEASE

**IMMEDIATE RELEASE**  
June 10, 2019

**Contact:**  
Peter Peretzman  
(609) 984-9707

### State of New Jersey Unveils Draft 2019 Energy Master Plan

*New Jersey Board of Public Utilities releases comprehensive draft plan to achieve 100 percent clean energy by 2050;*

*Plan addresses emissions from energy production, transportation, and building sectors*

Today, the State of New Jersey released the [Draft 2019 Energy Master Plan](#) (EMP), which

# Summary: Incentives and Resources

## 1. It Pays to Plug In – NJ’s Grant Program for EV Charging Stations

General info: [www.drivegreen.nj.gov/plugin.html](http://www.drivegreen.nj.gov/plugin.html)

Email list: [stopthesoot.org/sts-listserv.htm](http://stopthesoot.org/sts-listserv.htm)

## 2. NJ Volkswagen Settlement

General info: [state.nj.us/dep/vw](http://state.nj.us/dep/vw)

Email list: [state.nj.us/dep/vw/subscribe.html](http://state.nj.us/dep/vw/subscribe.html)

## 3. Climate Mayors Electric Vehicle Purchasing Collaborative [DriveEVfleets.org](http://DriveEVfleets.org)

## 4. Alternative Fuel Vehicle Readiness – A Guidebook for Municipalities

[njtpa.org/planning/regional-studies/environment/air-quality/alternative-fuels-vehicles](http://njtpa.org/planning/regional-studies/environment/air-quality/alternative-fuels-vehicles)

## 5. Two Useful EV Web Sites

Drive Green New Jersey [drivegreen.nj.gov](http://drivegreen.nj.gov)

Drive Change. Drive Electric. [driveelectricus.com](http://driveelectricus.com)

## 6. Sustainable Jersey Tools [sustainablejersey.com](http://sustainablejersey.com)



**Call me!**

Andrea Friedman  
NJDEP Division of Air Quality  
Bureau of Mobile Sources  
[Andrea.Friedman@dep.nj.gov](mailto:Andrea.Friedman@dep.nj.gov)  
(609) 984-2055



[www.drivegreen.nj.gov](http://www.drivegreen.nj.gov)







# DEPLOYING ELECTRIC VEHICLES IN NEW JERSEY LOCAL

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# GOVERNMENT

ALEX TORPEY

BUSINESS ADMINISTRATOR, CITY OF LAMBERTVILLE

# OUR PROCESS IN LEONIA

1. Collaborative
2. Patient
3. Goals-driven

# OUR OUTCOME IN LEONIA



Thanks Sustainable Jersey!

# ROADBLOCKS - STATE

New Jersey Bond Law  
N.J.S.A. 40A:2-22(g)2.

New Jersey Local Bond Law prohibits capital funds, the primary source of vehicle funding especially in smaller towns, from being used on sedans or station wagons. Because there are only fully electric plug-ins made as these “passenger vehicles” it effectively prevents smaller towns from buying any electric vehicles, Charging infrastructure could be improved, but is also organically growing, and would grow faster if there were more electric vehicles on the road to create demand for more charging stations. From the statute: “The governing body of the local unit shall determine the period of usefulness of any purpose according to its reasonable life computed from the date of the bonds, which period shall not be greater than the following:....  
(g)2.: Automotive vehicles, including original apparatus and equipment (other than passenger cars and station wagons), when purchased new, five years.”

# ROADBLOCKS - LOCAL

1. Funding (see prior)
2. Stakeholder buy-in
3. Charging infrastructure
4. Grant or technical capacity

1. See prior slide about capital funding issues. 2. It's important to have stakeholder buy-in, especially from the departments or agencies that you are planning to deploy them in. Those stakeholders should be involved as early in the process as possible. 3. Ideally, you would have the proper charging infrastructure deployed already so that you can fully take advantage of using these vehicles. If you have privately funded chargers, you might be able to use those, or you can buy them yourself (a dual station level 2 charger is in the \$5,000-\$7,000 range), or look at DEP's grant programs. 4. If you are seeking funding for the vehicle, or need support in writing the specs, or designing or deploying the charging infrastructure, there might be a small amount of technical assistance needed.



# PATHS FORWARD - STATE

## Passage of A4424/S3025

This bill is currently in the Assembly Environment Committee, and although a number of state-wide organizations have formally supported it, and no opposition or downside or cost has been identified, it hasn't yet moved forward. This bill would likely open up tens or hundreds of millions of dollars currently prevented by state law from being used on buying electric passenger vehicles by local government to then be able to do so, by providing a simple exception to current bonding prohibitions if the vehicle is powered by an alternate fuel source.

# PATHS FORWARD - LOCAL

A good process



# DEPLOYING ELECTRIC VEHICLES IN NEW JERSEY LOCAL GOVERNMENT

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ALEX TORPEY

BUSINESS ADMINISTRATOR, CITY OF LAMBERTVILLE

[ATORPEY@LAMBERTVILLENJ.ORG](mailto:ATORPEY@LAMBERTVILLENJ.ORG)



# BPU & EVs

# EV MOU

- On June 3<sup>rd</sup> Governor Murphy announced a Memorandum of Understanding that enhanced the coordination between the BPU, DEP and EDA to encourage EV use and grow the EV infrastructure across the state.



# BPU, DEP & EDA Partnership

- The MOU outlines BPU's role in encouraging Electric Vehicle use in New Jersey
  - BPU will consider how to utilize CEP funds to finance ZEZ charging infrastructure deployment & mapping.
  - BPU will consider how to dedicate CEP funds to create a rebate program to incentivize sale of new and used ZEZs.
  - BPU will track usage and electric consumption from charging infrastructure.

# EVs for Underserved Communities

- Grant from the US Department of Energy
- Focused on how to enhance EV adoption in urban areas and in underserved communities
- Look at EV car sharing options and PEV-based ride hailing
- All Proposals due June 14

# EVs in the Energy Master Plan draft

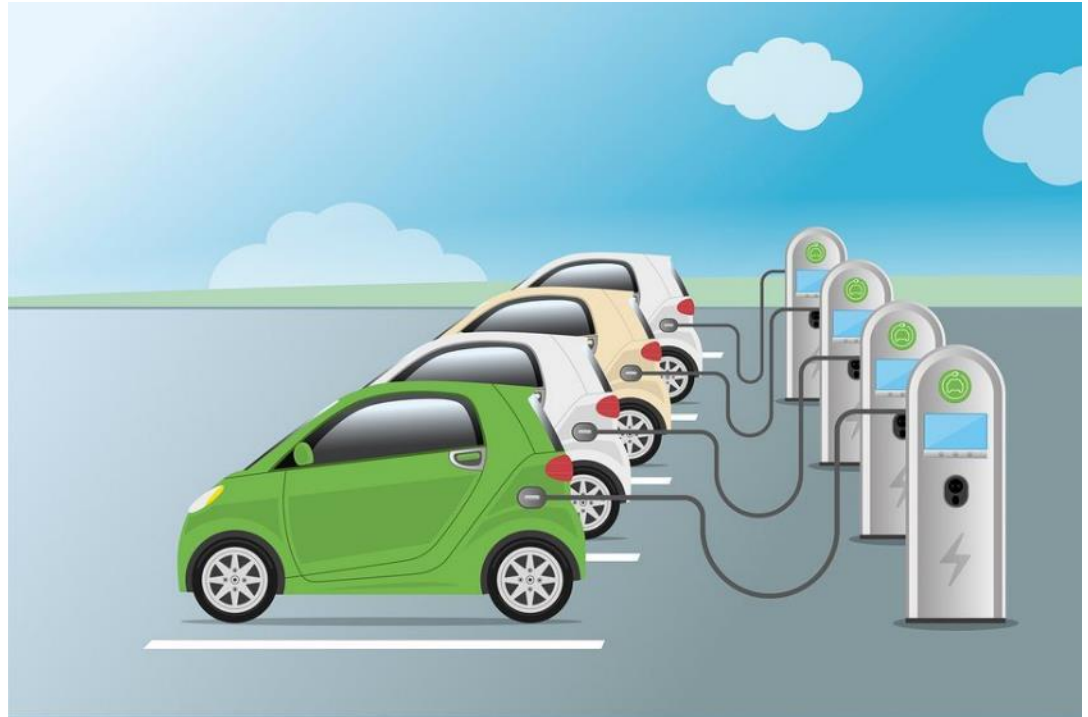
- Draft was released on June 10, 2019
- First strategy and goal is to **“Reduce Consumption and Emissions from the Transportation Section”**

# Draft highlights

- 2025 – 330,000 light duty electric vehicles
- Charging infrastructure
- State light-duty fleet
- Increase transportation options, encourage new options
- Decrease Vehicle Miles Traveled
- Port emissions

## BPU continues to

- Partner with DEP on Pay\$ to Plug
- Review voluntary filings of utilities on EV infrastructure and incentive plans





# New Jersey's Community Solar Energy Pilot Program

# DISCLAIMER

**The information and views in this presentation do not necessarily represent the views of the New Jersey Board of Public Utilities, its Commissioners, or the State of New Jersey. This presentation is provided for informational purposes only and does not provide a legal interpretation of any New Jersey statutes, regulations, or policies.**



# NJCEP BACKGROUND

- Administered by the New Jersey Board of Public Utilities
- Funded from “Societal Benefits Charge” on utility bill
- Program Goals:
  - Promote increased energy efficiency and the use of clean, renewable sources of energy
  - Protect the environment and lower emissions
  - Change the business mindset



# Part I: Is Community Solar Right for You?

Do you....

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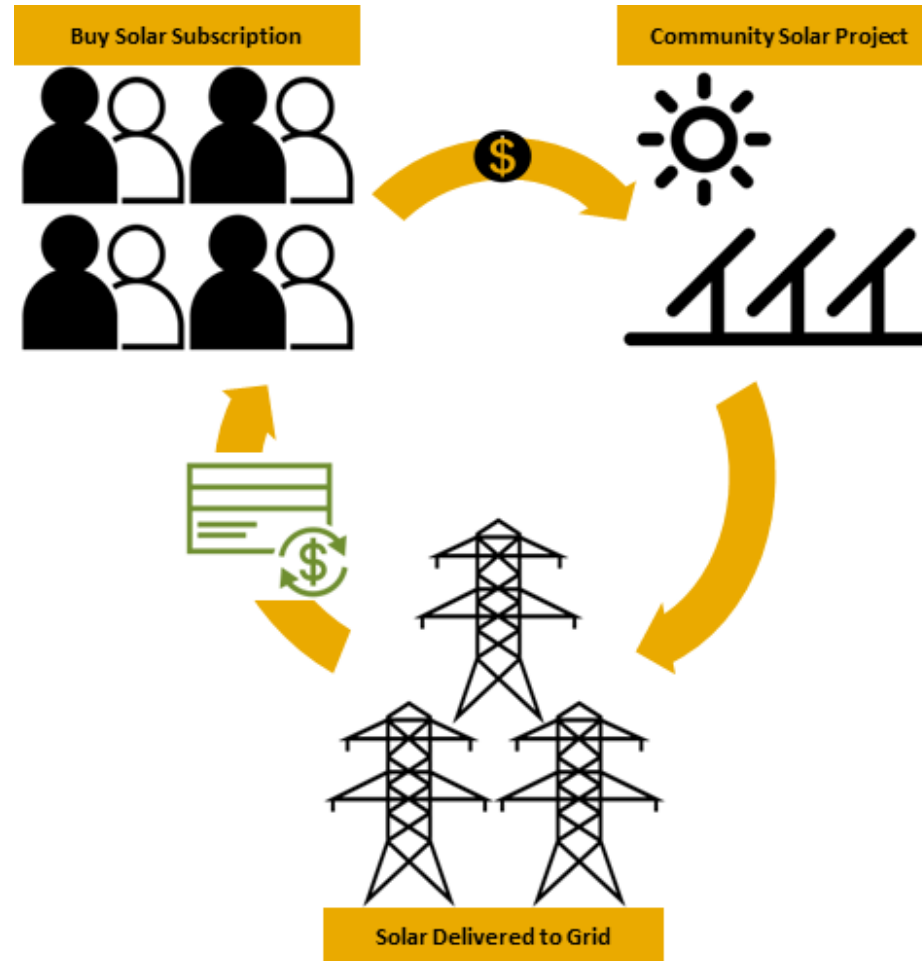
- Want solar but don't have a place for panels?
- Have room for more panels but not the energy use?

# What is Community Solar?

- 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?





# Clean Energy Act of 2018

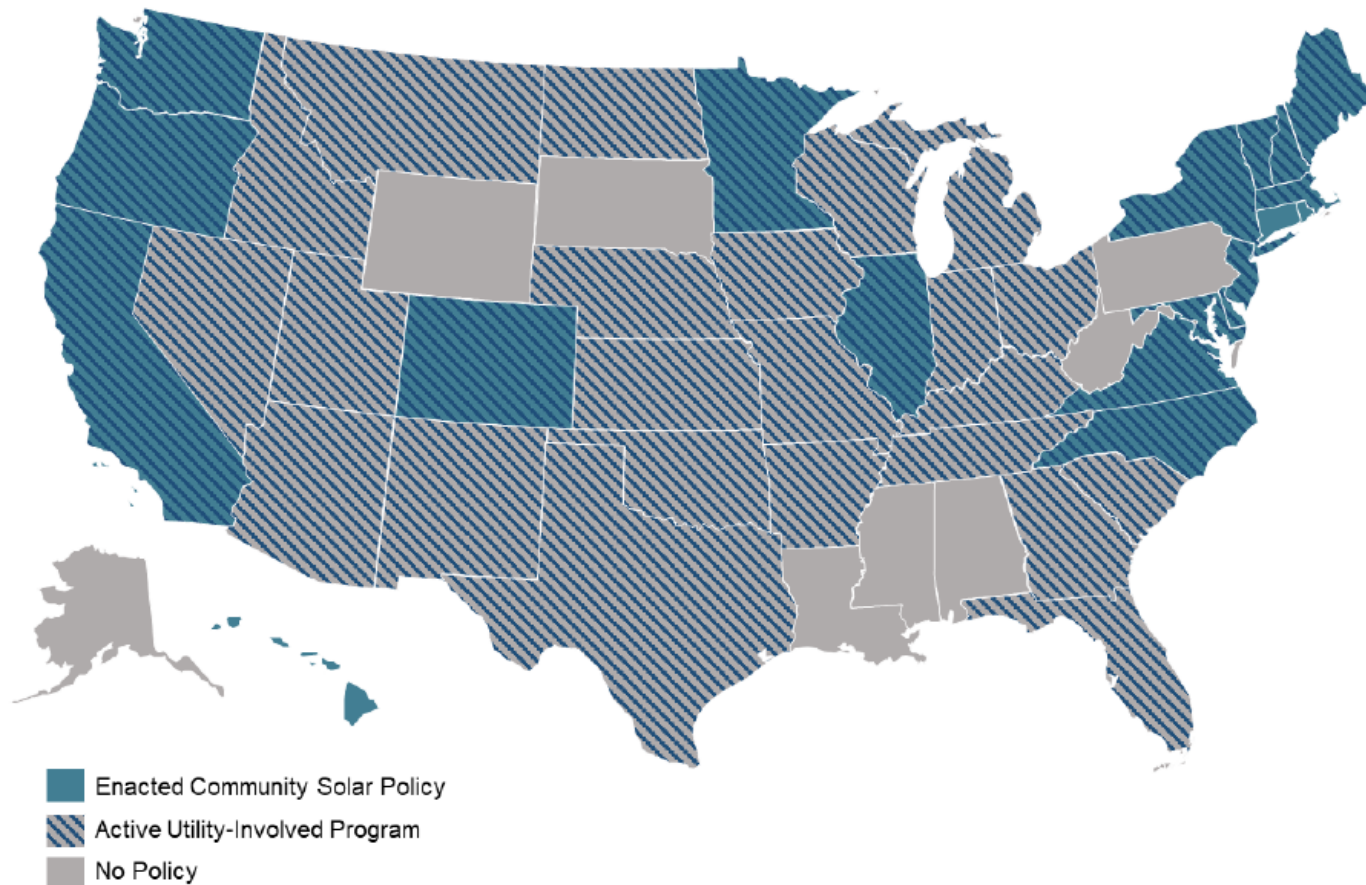
- Signed into law on May 23, 2018
- Directs the BPU to adopt rules and regulations establishing a Community Solar Energy Pilot Program within 210 days
  - Rules adopted at January 17, 2019 Board Agenda Meeting
- Directs the BPU to adopt rules and regulations establishing a Community Solar Energy Program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

# Community Solar in Other States



Source: NC Clean Energy Technology Center; Smart Electric Power Alliance<sup>5</sup>

# Where do I fit in?



**Subscribers:** individual entities who get solar power



**Developer:** primary group organizing the solar project



**Host Site:** location where solar project is installed

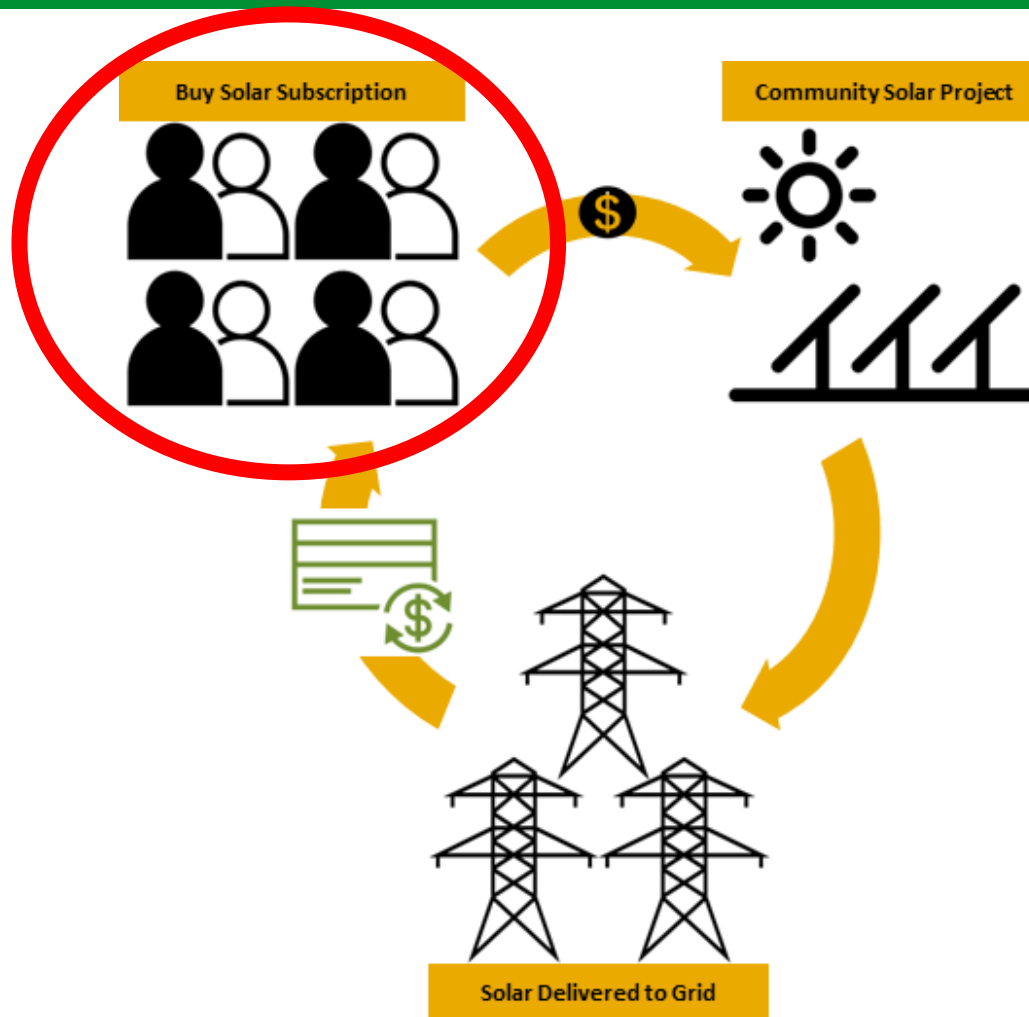


**Utility:** electricity provider where solar project is installed



**Installer:** expert that installs the solar project

# Community Solar Subscribers







# Subscribing to a Community Solar Project

- Participation can be in the form of:
  - **Ownership:** buying a share or portion of the community solar project or panels
  - **Subscription:** buying a portion or share of the electric output produced by the community solar project

# Should I be a subscriber?

- Net Metering vs community solar
  - Net metering – you can only generate as much electricity as you use each year
- Site ownership
  - Do you own your roof?
- Site location
  - Can your building accommodate solar?

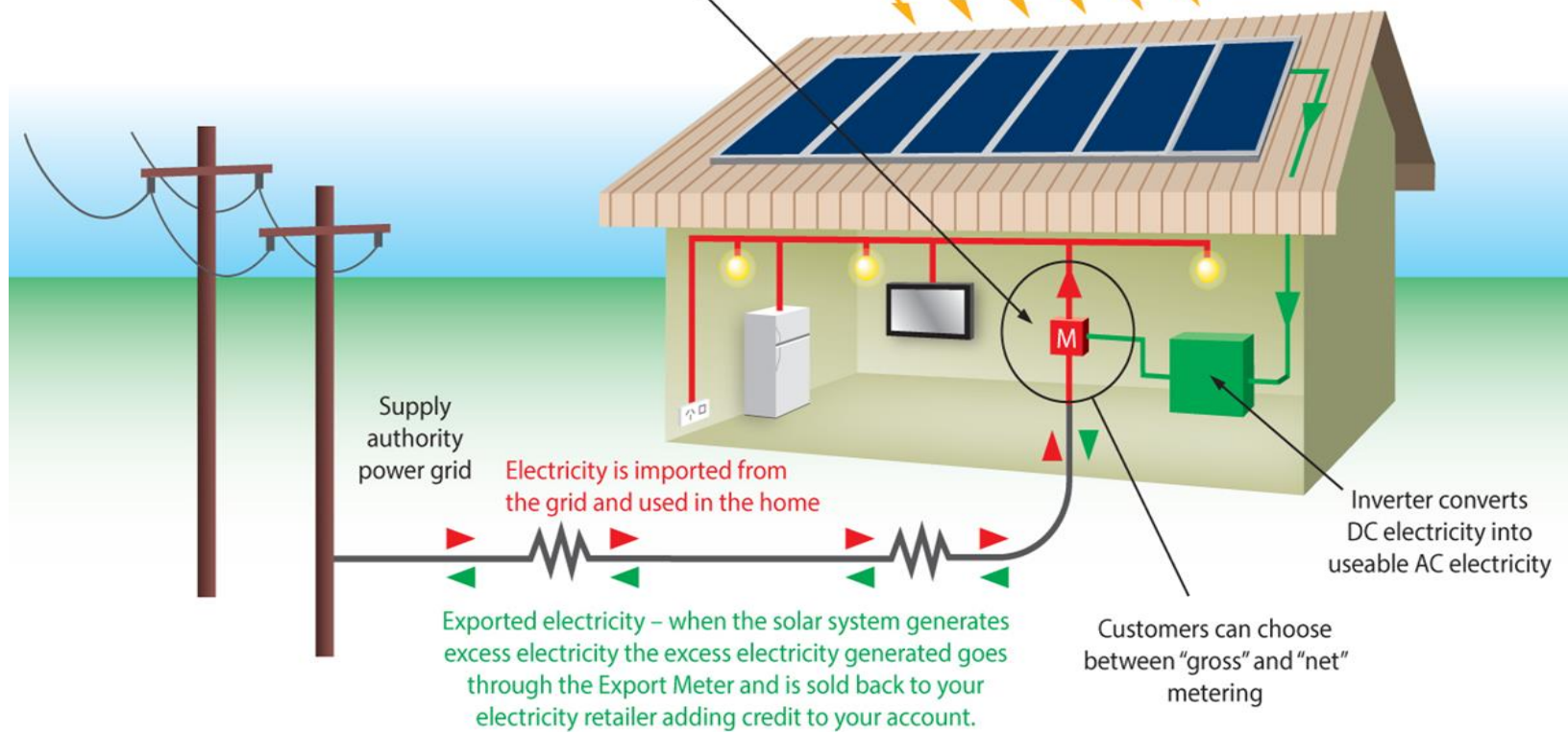
# Net Metering

Electricity is imported from the grid and is metered by a new Digital 'Time of use Meter' known as the Consumption Meter.

New Digital Time of Use Consumption Meter that measures how much power your home uses and any excess power your solar power system feeds back to the grid.



Solar panels convert sunlight into clean green DC electricity



Customers can choose between "gross" and "net" metering



# Pilot Program

## Subscriptions

- ▶ All rate classes are eligible to participate in a community solar project; account holders of a master meter are allowed to subscribe to community solar on behalf of their tenants (specific rules apply).
- ▶ Subscriptions cannot exceed 100% of the subscriber's 12-month historic annual usage.
- ▶ Individual subscriptions cannot be sized at greater than 40% of the project's total annual net energy.
- ▶ Subscriptions are portable and transferable (specific rules apply).



# Pilot Program

## Bill Credit

- ▶ Bill credit set at retail rate, minus non-bypassable charges.
- ▶ Bill credits can be carried over from month-to-month for one year.
- ▶ At the end of the year, excess credits are compensated at avoided cost of wholesale power.
- ▶ Subscribers must agree to a remote read smart meter upon EDC request, purchased and installed at EDC cost.

# Sample Subscriber Bill (from MA)

**Your Community Solar Bill will pay for part of your utility bill**

**nationalgrid**

www.nationalgridus.com

CUSTOMER SERVICE  
1-800-322-3223  
CREDIT DEPARTMENT  
1-888-211-1313

1-800-465-1212  
CORRESPONDENCE ADDRESS  
PO Box 980  
Northborough, MA 01532-0980  
ELECTRIC PAYMENT ADDRESS  
PO Box 11737  
Newark, NJ 07101-4737  
DATE BILL ISSUED  
May 15, 2018

SERVICE FOR  
John Smith  
55 Country Way  
Medfield MA 02052

BILING PERIOD  
April 15, 2018 to May 15, 2018

ACCOUNT NUMBER  
01234-56789

PLEASE PAY BY  
June 15, 2018

PAGE 1 of 2

AMOUNT DUE  
\$87.88

ACCOUNT BALANCE	National Grid Services	Other Supplier Service	Adjustments	Total
Previous Balance	0.00	0.00	0.00	0.00
Payment(s) Received	-0.00	-0.00	-0.00	-0.00
Amount Past Due	0.00	0.00	0.00	0.00
Current Charges	98.02	102.14	-112.28	87.88
<b>Amount Due ▶</b>	<b>\$98.02</b>	<b>\$102.14</b>	<b>-\$112.28</b>	<b>\$87.88</b>
<b>Total before your Community Solar Credits</b>		<b>Total after your Community Solar Credits</b>		
\$200.16		\$87.88		

Your Community Solar Credits

Prior electric bill cost: \$200.16

Community Solar subscriber

Electric bill cost: \$87.88

Subscription fee: \$100.00

Final total cost \$187.88





<https://www.solarpowerauthority.com/how-much-does-it-cost-to-install-solar-on-an-average-us-house/>

Approximately 50% to 70%  
usable space  
Roofs may be less



<https://realestate.usnews.com/real-estate/articles/what-homebuyers-should-know-about-solar-panels>





Amazon Solar Warehouse

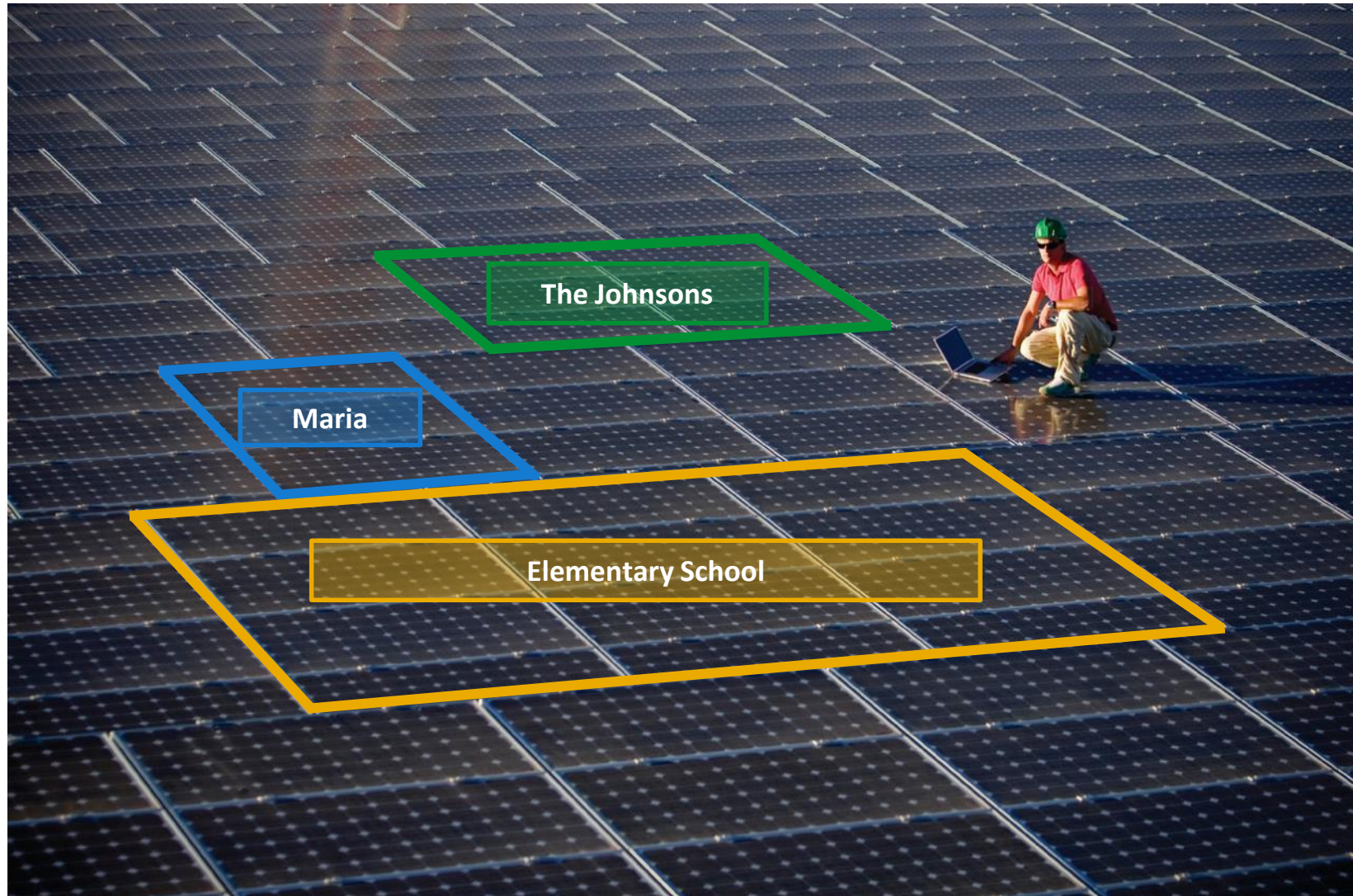




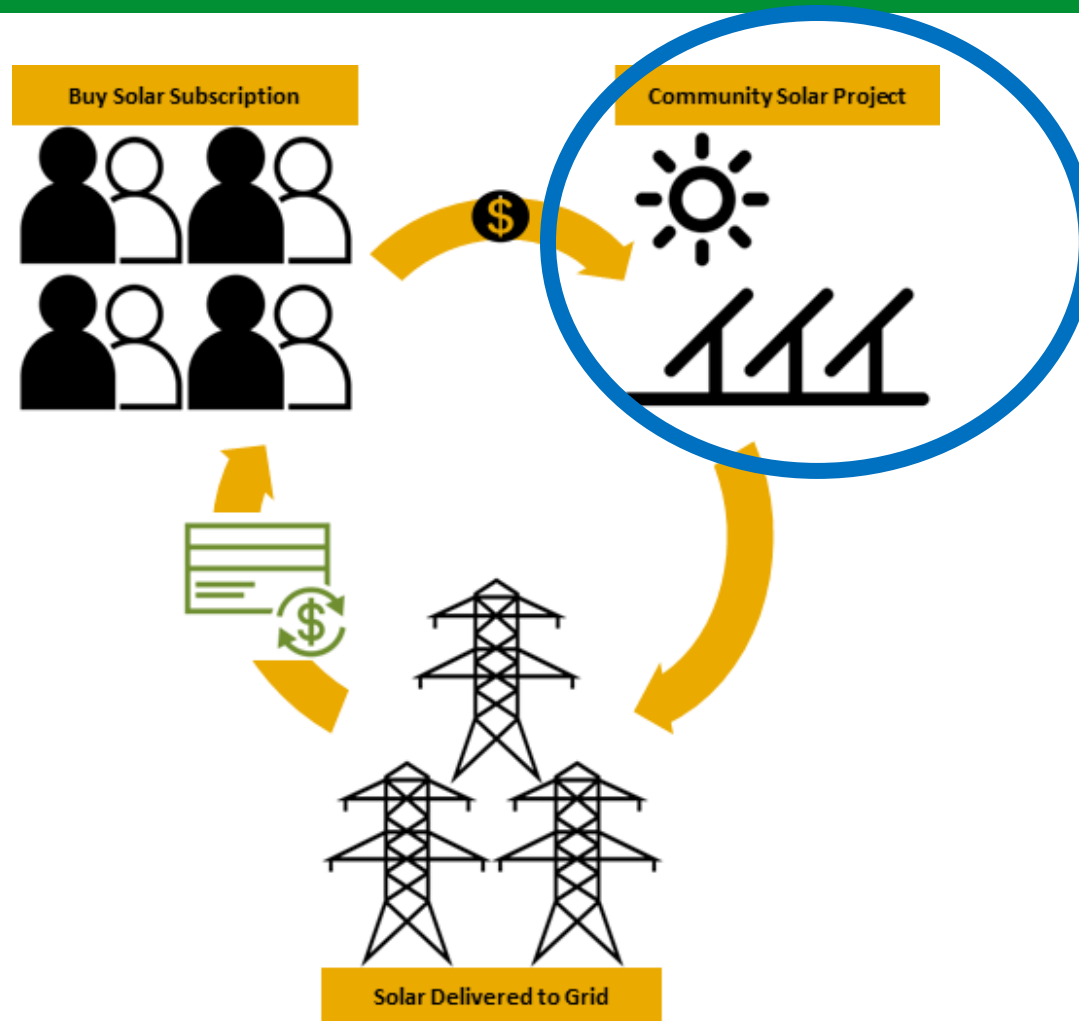
Vineland, NJ



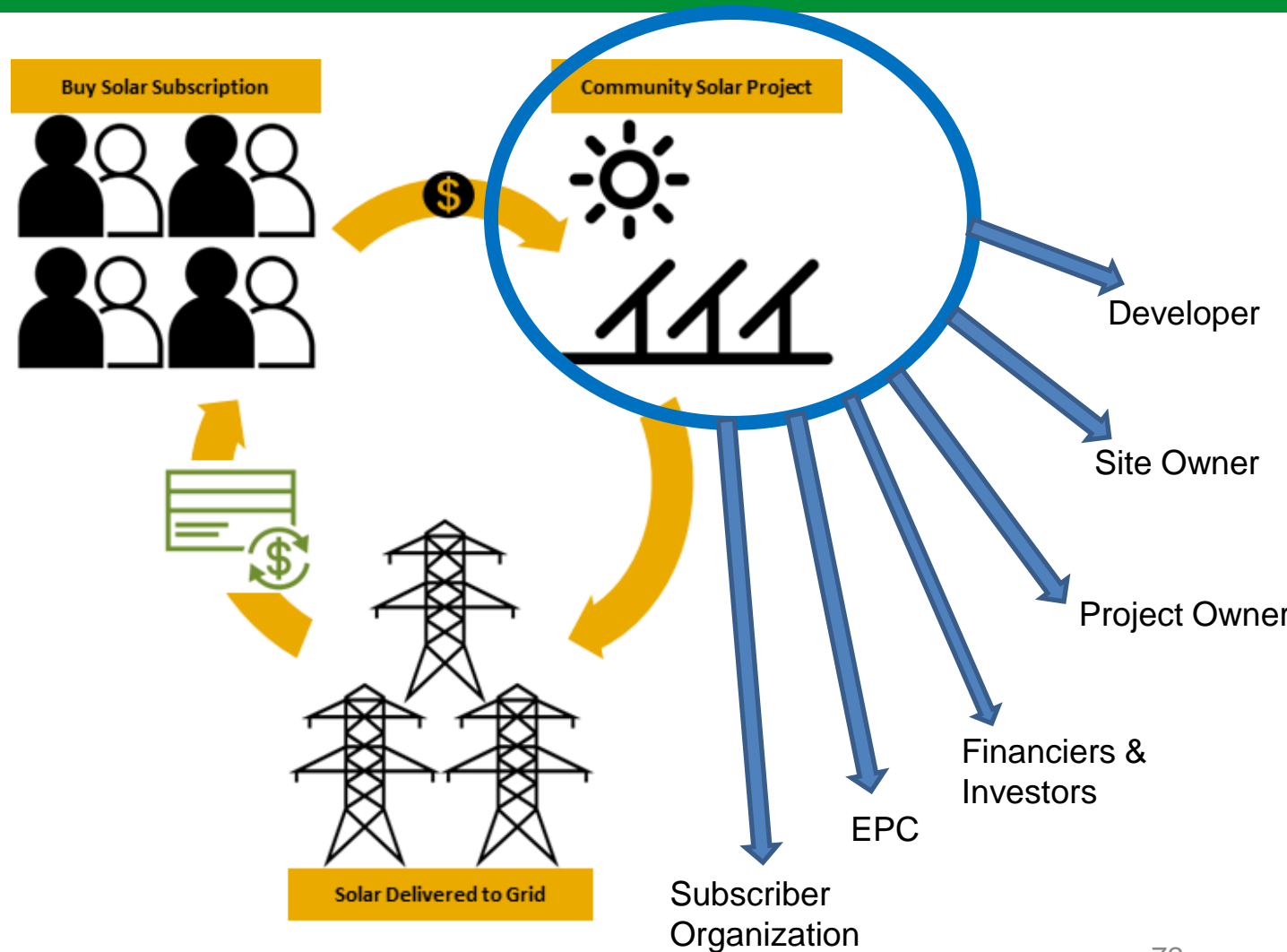
# Community Solar



# Community Solar Projects



# Participating in Community Solar





# Options for moving forward

## Potential role of government or business entities:

- Become an “anchor” subscriber for a community solar project.
- Provide land/rooftop for siting of a solar array.
- Conduct a competitive procurement on behalf of the community.

## Potential role of affordable housing:

- Become an “anchor” subscriber for a community solar project.
- Put all LMI properties into a community solar project.



# Pilot Program Characteristics

## Structure

- 3-year Pilot Program
- Projects selected via an application and competitive scoring
- Application Period: April 9, 2019 – September 9, 2019

## Size

- Individual community solar project capacity limit: 5MW
- Annual capacity limit: 75MW for PY1, at least 75MW PY2&3
- Min. 10 subscribers, max. 250 subscribers per 1MW capacity

## Siting

- Prohibition of community solar on preserved farmland
- Siting on Green Acres open space subject to DEP approval
- Preference for projects on brownfields, landfills, areas of historic fill, etc.

## Credit Value

- Bill credit set at retail rate net metering, minus non-bypassable charges

## Low & Moderate Income (LMI) Access

- At least 40% of program capacity reserved for LMI projects
- Option for further 10% reserved for LI projects

# Application Form

- Application Form for Program Year 1 released on March 29, 2019
  - Application Period Opened: April 9, 2019 at 9:00 A.M.
  - Application Period Closes: September 9, 2019 at 5:00 P.M.
- Application Form available at:  
<http://njcleanenergy.com/renewable-energy/programs/community-solar>
- FAQs available at: <http://njcleanenergy.com/renewable-energy/programs/community-solar/FAQs>



Evaluation Criteria	Max. Points
<b>Low- and Moderate-Income and Environmental Justice Inclusion</b> Higher preference: LMI project	30
<b>Siting</b> Higher preference: landfills, brownfields, areas of historic fill, rooftops, parking lots, parking decks Medium preference: canopies over impervious surfaces (e.g. walkway), areas designated in need of redevelopment No Points: preserved lands, wetlands, forested areas, farmland  Bonus points for: landscaping, land enhancement, pollination support, stormwater management, soil conservation	20       Max. possible bonus points: 5
<b>Product Offering</b> Higher preference: guaranteed savings >10%, flexible terms* Medium preference: guaranteed savings >5% No Points: no guaranteed savings, no flexible terms*  *Flexible terms may include: no cancellation fee, short-term contract	15
<b>Community and Environmental Justice Engagement</b> Higher preference: partnership with municipality, partnership with local community organization(s), partnership with affordable housing provider Medium preference: letter of support from municipality, project owner is a government and/or public and/or quasi-public entity, project owner is an affordable housing developer	10
<b>Subscribers</b> Higher preference: more than 51% project capacity is allocated to residential subscribers	10
<b>Other Benefits</b> Higher preference: Provides local jobs/job training, demonstrates co-benefits (e.g. paired with storage, micro-grid project, energy audit, EE measures)	10
<b>Geographic Limit within EDC service territory</b> Higher preference: municipality/adjacent municipality Medium preference: county/adjacent county No Points: any geographic location within the EDC service territory.	5

Application Form released on March 29, 2019

Available at:  
<http://njcleanenergy.com/ren-ewable-energy/programs/community-solar>

# Pilot Program

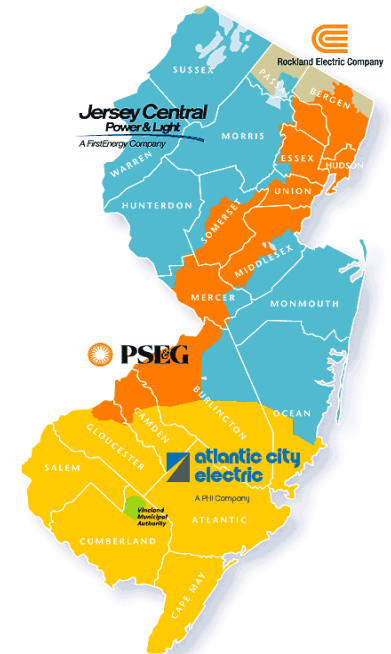
## Size

- Annual capacity limit: 75 MW for Program Year 1, at least 75 MW Program Years 2 and 3
- Maximum size of individual community solar projects: 5 MW. No minimum size.
- Minimum 10 subscribers (possible exemption for multi-family buildings with a community solar project located on their property)
- Maximum 250 subscribers per 1MW capacity

# Pilot Program

## Siting

- Projects may have subscribers anywhere in the EDC service territory in which they are located, unless they have indicated otherwise in the Application to the Board.
- Prohibition of community solar on preserved farmland
- Siting on Green Acres open space subject to DEP approval
- Preference to projects on marginal or low-value lands (e.g. brownfields, landfills, areas of historic fill, rooftops, parking lots, ...)





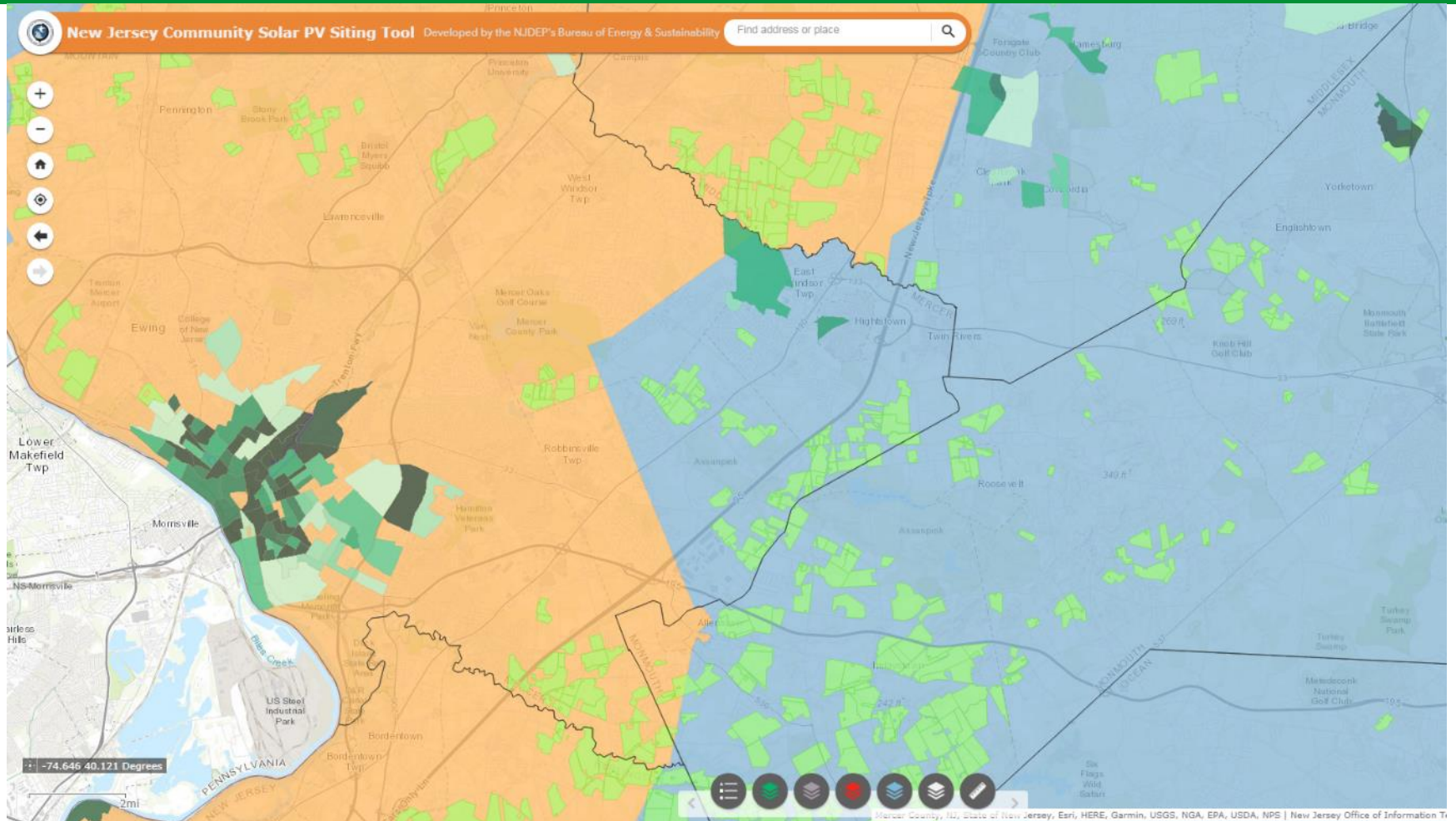


Solar Carport Rendition



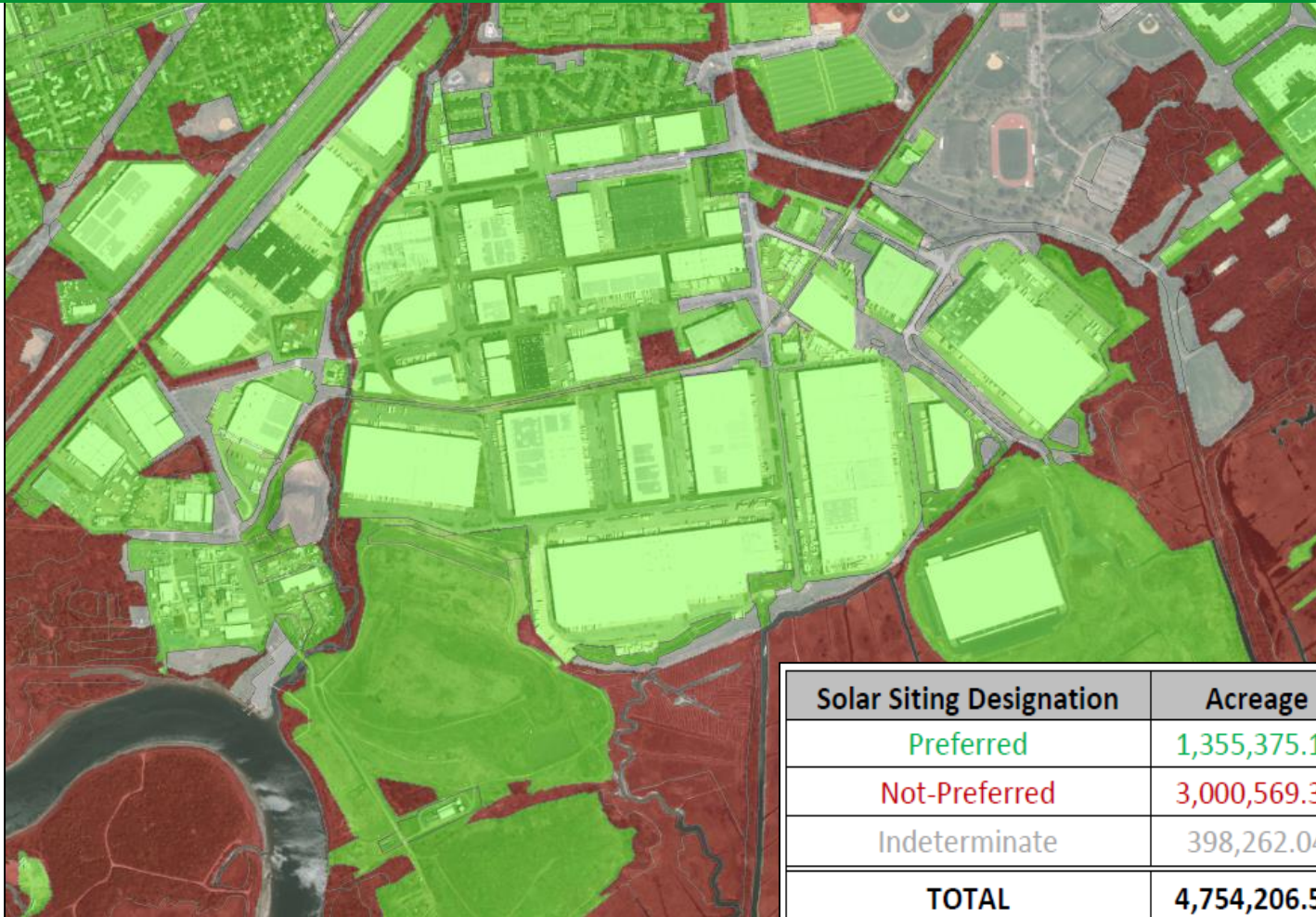
Mars Chocolate Headquarters  
18-acre Solar Garden  
Hackettstown, NJ

# NJDEP PV Solar Siting Tool 2019





# NJDEP Solar Siting Analysis 2017 Update



Solar Siting Designation	Acreage	Sq. Mi	% Total
Preferred	1,355,375.11	2,117.77	29%
Not-Preferred	3,000,569.36	4,688.39	63%
Indeterminate	398,262.04	622.28	8%
<b>TOTAL</b>	<b>4,754,206.51</b>	<b>7,428.44</b>	<b>100%</b>

# NJDEP GIS Links

- NJDEP Bureau of Energy & Sustainability PV Siting Tool: <https://www.state.nj.us/dep/ages/solar-siting.html#cstool>
- NJDEP Bureau of Energy & Sustainability GIS Webpage: <https://www.state.nj.us/dep/ages/gis.html>
- NJDEP Bureau of Energy & Sustainability GIS Data Downloads: <https://www.state.nj.us/dep/ages/gisdownloads.html>
- NJDEP Open Data: <https://gisdatanjdep.opendata.arcgis.com>



## FOR MORE INFORMATION

**Visit:** NJCleanEnergy.com

<http://njcleanenergy.com/renewable-energy/programs/community-solar>

**Contact:** [communitysolar@njcleanenergy.com](mailto:communitysolar@njcleanenergy.com)

**Stay Informed:** Sign up for community solar updates by emailing [webmaster@njcleanenergy.com](mailto:webmaster@njcleanenergy.com)

**@NJCleanEnergy**



# Contact info

Cathleen Lewis

Outreach Coordinator

Division of Clean Energy, NJ BPU

(609) 292-0689

[Cathleen.lewis@bpu.nj.gov](mailto:Cathleen.lewis@bpu.nj.gov)

# NJDEP Solar Siting Tool

Ryan Gergely, NJDEP



<https://www.nj.gov/dep/aqes/solar-siting.html>



@SJ\_Program • #DecadeofImpact





© EnergySage

## Community Solar from the Community Perspective



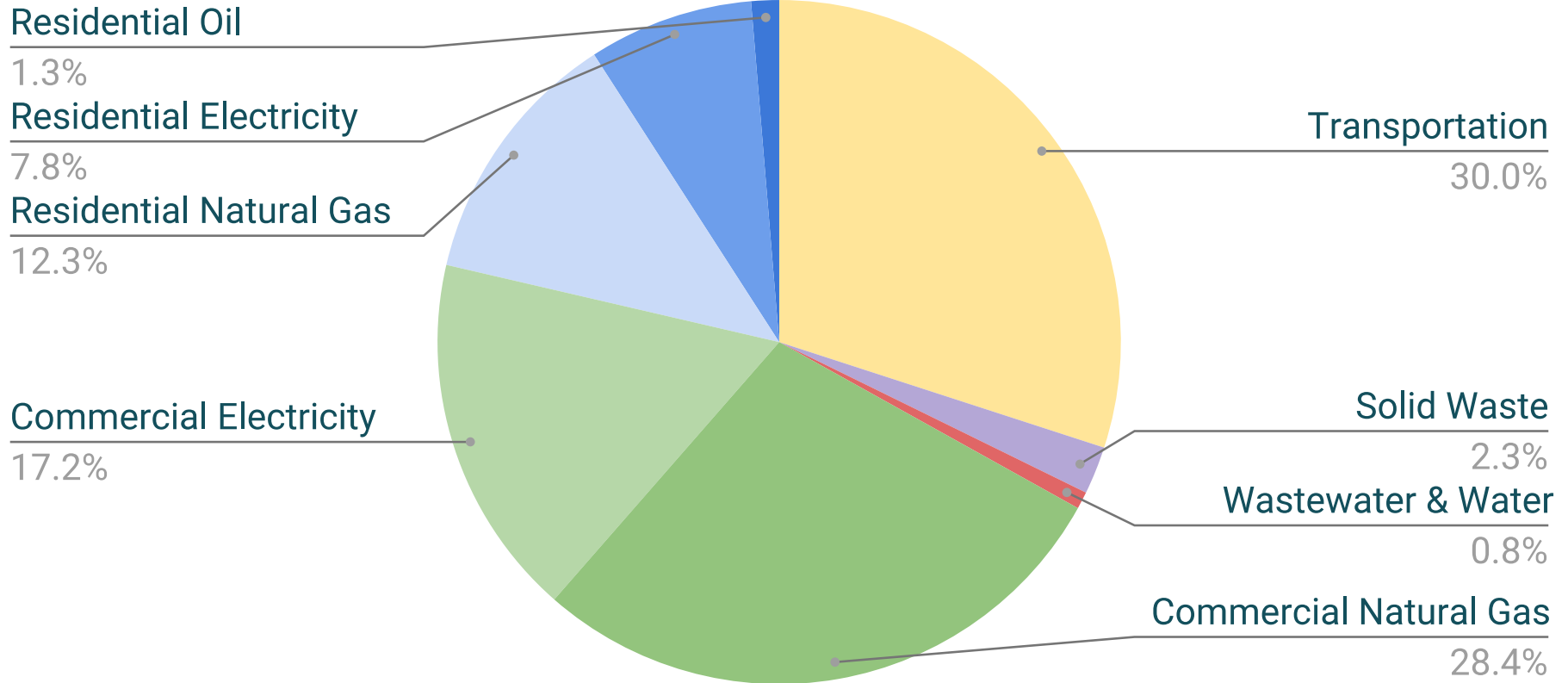
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Sustainable Jersey Summit  
June 14, 2019

# Why Community Solar for Princeton? Our Collective Emissions

## Princeton's Sector-Based GHG Inventory - 2017



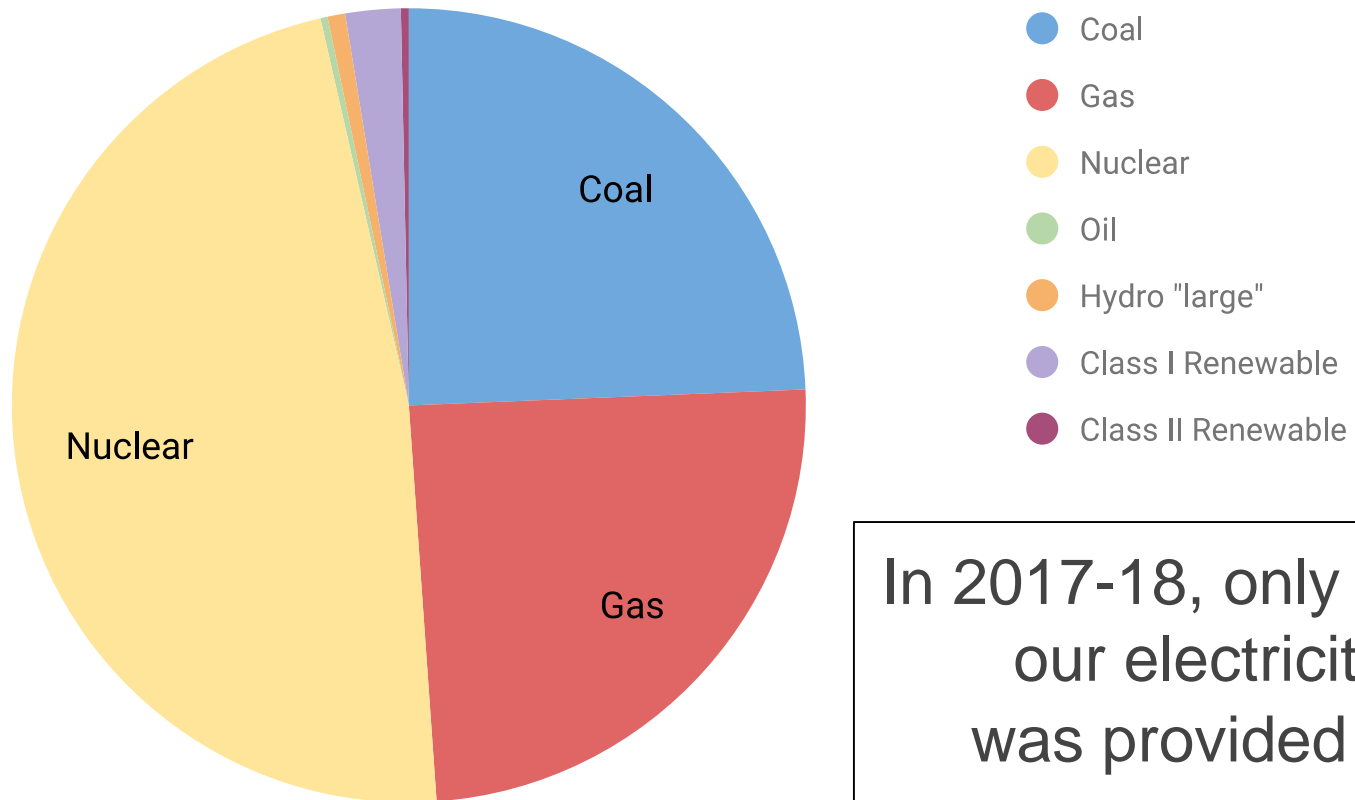
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**Source:** Princeton's GHG Inventory. Available at:  
<https://www.sustainableprinceton.org/reports>

# Energy Use Is the Biggest Source of Emissions

Princeton's Energy Sources June, 2018 to May 2018



In 2017-18, only **3%** of our electricity was provided by renewable sources.

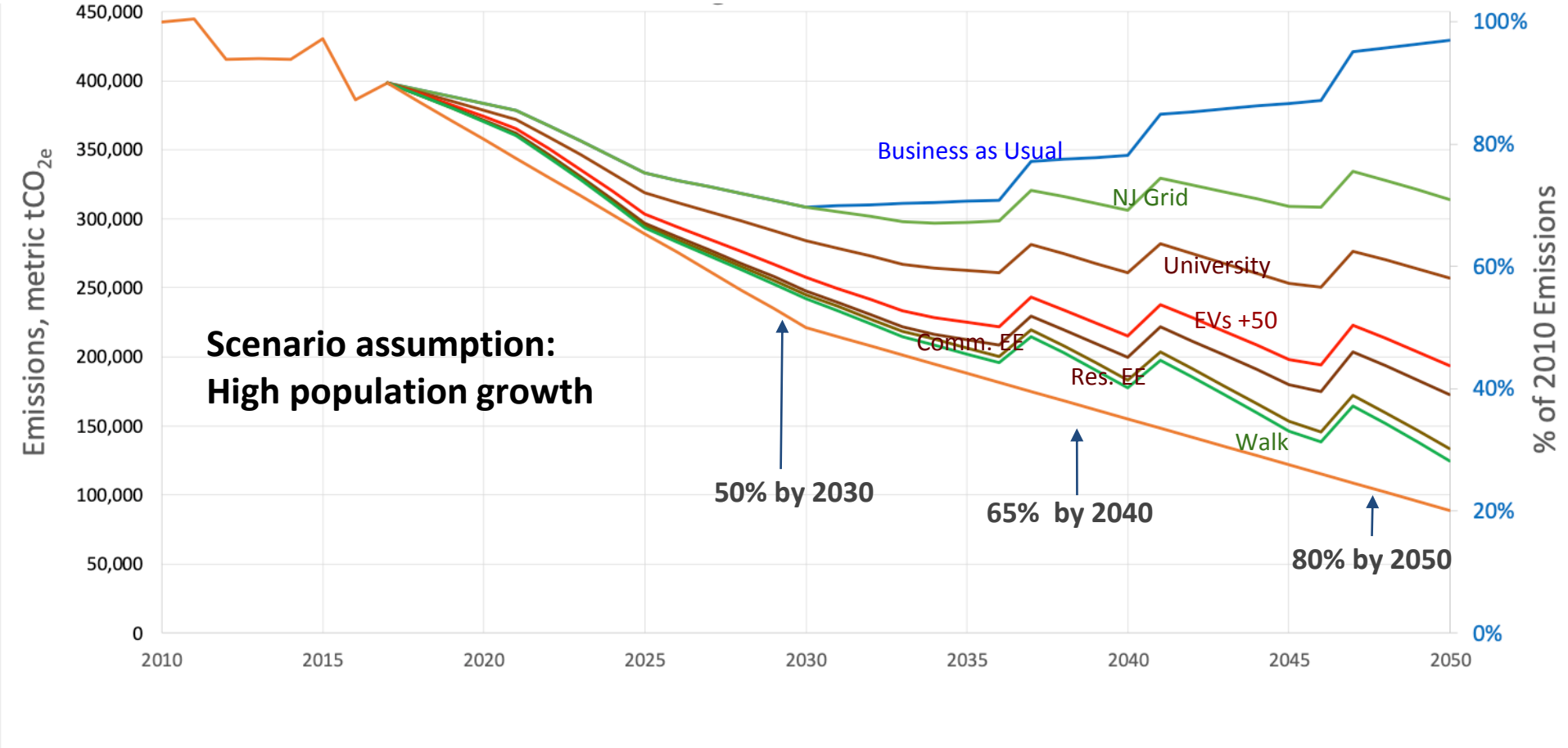


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Source: Environmental Information for Basic Generation Service, PSE&G. Available at: [https://corporate.pseg.com/-/media/pseg/corporate/corporate-citizenship/environmentalpolicyandinitiatives/environmental\\_label2018.ashx](https://corporate.pseg.com/-/media/pseg/corporate/corporate-citizenship/environmentalpolicyandinitiatives/environmental_label2018.ashx)

# We Need Many Solutions to Get to Our Goal



**Princeton's Climate Action Plan has proposed an ambitious goal:  
Reduce greenhouse gas emissions by 80% of 2010 levels by 2050**



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# Why Community Solar

**Why do this? Financially benefits subscribers and increases renewable energy sources in the state**



- Avoids the need for individual installation and individual maintenance of rooftop solar panels.
- Provides access to solar energy to renters as well as households, institutions or businesses whose roofs aren't appropriate for solar installation.
- PSE&G still maintains and operates the distribution system (wire function)

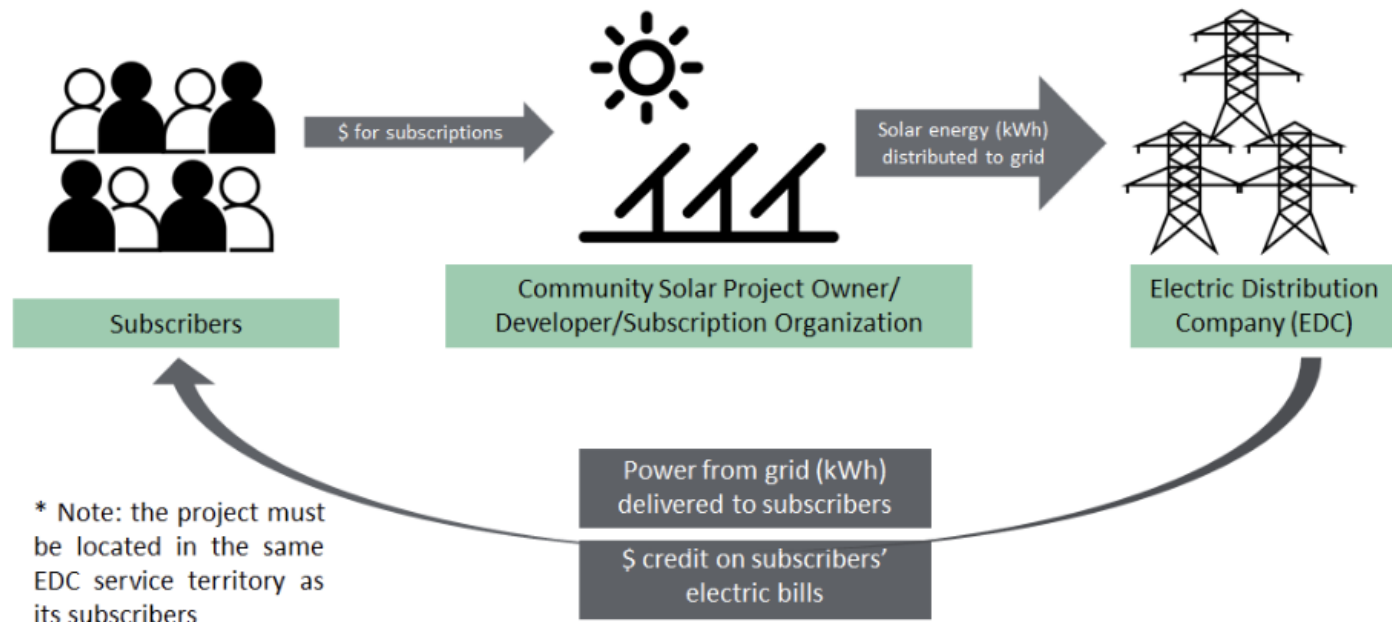


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# Understand the Conceptual Model



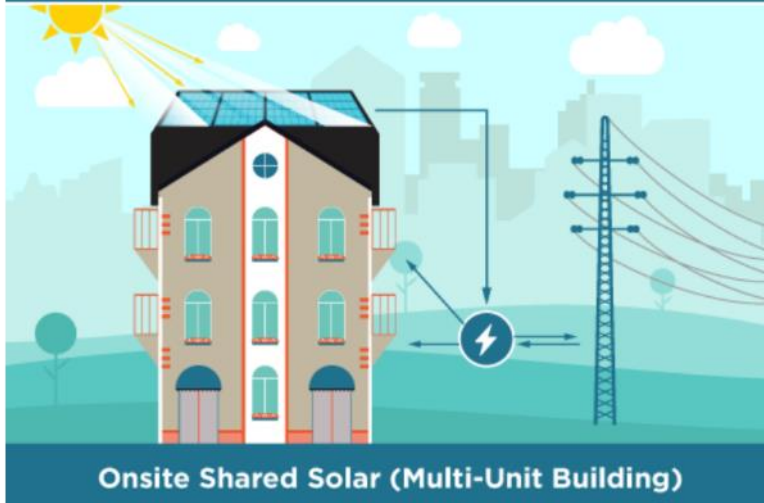
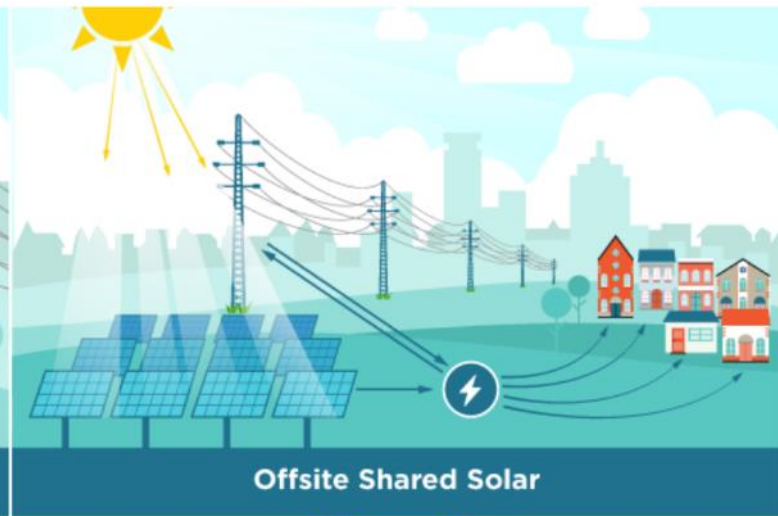
**Community Solar** brings affordable renewable energy to more customers, including low- and moderate- income and renters.



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# Understand the Conceptual Model



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# Community Solar Basics

## HOW DOES IT WORK?



## Three Simple Steps:

### 1 Solar is Installed

Solar PV panels are installed in sunny locations to produce renewable electricity.

### 2 You Subscribe

Individual entities can subscribe to enough solar to cover up to 120% of their annual electricity usage.

### 3 You're Credited on Your Utility Bill

Each subscriber's utility bill is credited with the electricity created by their share of the solar garden.



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# Understand Your Role

As a subscriber, you don't have to worry about every detail. See below for key players.



**SUBSCRIBERS:** individual entities who get solar power



**DEVELOPER:** primary group organizing the solar garden



**HOST SITE:** location where solar garden is installed



**FINANCE:** sources of financing for the project



**UTILITY:** electricity provider \* where solar garden is installed



**SITE ASSESSOR:** expert that studies solar garden location



**INSTALLER:** expert that installs the solar garden



**OUTREACH PARTNERS:** groups that find subscribers



# Understand Your Community Priorities

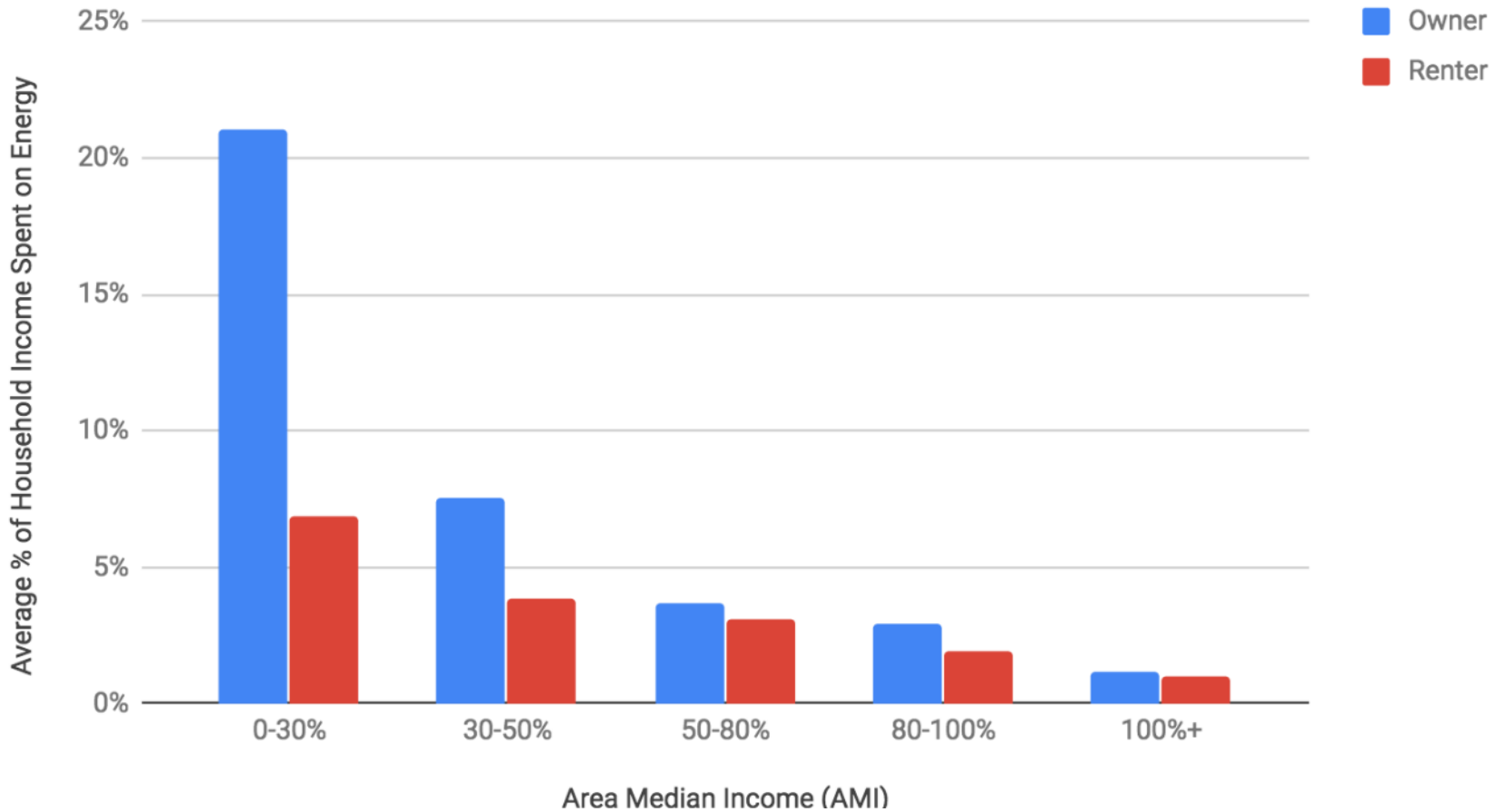


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# Understand the Benefits

## Energy Burden at each Income Level for Princeton Owners and Renters



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# Understand Your Utility Provider and Siting Rules

## Project siting

- Projects do not need to be in the community where subscribers live
- For Mercer County residents, projects need to be located within PSE&G territory
- Prohibited to site on preserved farmland
- Need DEP approval for siting on Green Acres open space



# Understand the Consumer Experience

**Your Community Solar Bill will pay for part of your utility bill**

**nationalgrid** SERVICE FOR: John Smith, 55 Country Way, Medfield MA 02052 BILING PERIOD: April 15, 2018 to May 15, 2018 ACCOUNT NUMBER: 01234-56789 PLEASE PAY BY: June 15, 2018 AMOUNT DUE: \$87.88

www.nationalgridus.com  
 CUSTOMER SERVICE: 1-800-322-3223  
 CREDIT DEPARTMENT: 1-888-211-1313  
 1-800-465-1212  
 CORRESPONDENCE ADDRESS: PO Box 980, Northborough, MA 01532-0980  
 ELECTRIC PAYMENT ADDRESS: PO Box 11737, Newark, NJ 07101-4737  
 DATE BILL ISSUED: May 15, 2018

ACCOUNT BALANCE	National Grid Services	Other Supplier Service	Adjustments	Total
Previous Balance	0.00	0.00	0.00	0.00
Payment(s) Received	-0.00	-0.00	-0.00	-0.00
Amount Past Due	0.00	0.00	0.00	0.00
Current Charges	98.02	102.14	-112.28	87.88
<b>Amount Due ▶</b>	<b>\$98.02</b>	<b>\$102.14</b>	<b>-\$112.28</b>	<b>\$87.88</b>
<b>Total before your Community Solar Credits</b>		<b>Total after your Community Solar Credits</b>		
\$200.16		\$87.88		

*Note: In the original image, red circles highlight the \$98.02 and \$102.14 values, with an arrow pointing to the \$200.16 total. Another red circle highlights the \$87.88 value, with an arrow pointing to the \$87.88 total. The text 'Your Community Solar Credits' is placed between the two totals.*

Prior electric bill cost: \$200.16

Community Solar subscriber

Electric bill cost: \$87.88  
 Subscription fee: \$100.00

---

Final total cost \$187.88



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# Understand the Decision Makers

- Governing authority and administration
- Affordable housing agencies
- Affordable housing advocates
- Potential site hosts



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# Understand Community Roles

## Potential role of municipal governments:

- Become an “anchor” subscriber for a community solar project
- Provide land for construction of a solar array
- Conduct a competitive procurement on behalf of the community

## Potential role of affordable housing:

- Become an “anchor” subscriber for a community solar project
- Put all LMI properties into a community solar project



# Understand Municipal Procurement Process

**New Jersey**  
**Local Public Contracts Law**  
**and Regulation**  
**Reference Manual**  
**With Related and Supporting Information**

**N.J.S.A. 40A:11-1 et seq. and**  
**N.J.A.C. 5:34**

*Current as of April 1, 2014*

**Prepared by:**  
**Bloustein Local Government Research Center,**  
**Rutgers, the State University**  
**and**  
**New Jersey Division of Local Government Services**



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# Understand the Your Population of LMI

Mayor Lisa Lempert

Calendar Contact Services Departments

DEPARTMENT

## Affordable Housing

**Contact Information**

Contact: Person  
Maureen Pullaway, Affordable Housing Manager

609-886-2029  
609-886-2053  
m.pullaway@princetonohg.gov

**Department Location**

1 Monument Drive  
Princeton, NJ 08540

**Department Hours**

Monday - Friday  
9 am - 5 pm

50th Anniversary  
Princeton Community Housing  
Provides, manages and advocates for affordable housing  
Celebrating 52 Years of Leadership

About PCH Communities 2019 Home Springs Eternal Gala Support PCH News Resources Contact Us

Resident Events Find out what's happening at PCH Learn more about PCH Find out more about PCH

Apply Now Donate Today Sign Up for Emails Volunteer

Thank you for Celebrating with Princeton Community Housing at our 2019 Home Springs Eternal Gala!

Click Here to View Pictures of PCH's Gala and for a Recap of Our Celebration.

**MEET OUR RESIDENTS**

Shelley Howard  
Originally from Princeton, Shelley Howard qualified for a studio apartment and moved to Elm Court over two years ago.

HOME Springs Eternal

PRINCETON HOUSING AUTHORITY  
1 Redding Circle, Princeton, NJ 08540

Home Eligibility Emergency Housing Information for Residents Developments Applications Waiting List Bylaws, Policies Board of Commissioners/Staff Contact

## Welcome!

**Introduction**

The Princeton Housing Authority was established in 1938 as a governmental, public corporation created under the laws of the state of New Jersey to provide housing for qualified individuals and families in accordance with rules and regulations prescribed by the United States Department of Housing and Urban Development. A board of seven Commissioners, five appointed by the town council, one by the town Mayor and one by the NJCHA, is responsible for oversight and establishing policy. It is also a requirement that one commissioner must be a Princeton Housing Authority resident. The Authority is independent from the Municipality of Princeton and is regulated by the Federal Department of Housing and Urban Development and the NJ Department of Community Affairs.

The Authority's mission is to provide safe and decent affordable housing to qualified low-income families and individuals. The Authority also aims to promote self-sufficiency initiatives and improve the quality of life and economic stability of its residents.

The Authority owns and manages 236 family and senior/disabled apartments within five developments throughout Princeton.

**The monthly Board of Commissioners meeting is held on the third Tuesday of each month at 6:15pm at the Henry F. Pannell Learning Center, 2 Clay Street, Princeton, NJ 08542.**

**Affordable Housing Fact Sheet English**  
**Affordable Housing Fact Sheet Spanish**



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# Understand the Evaluation Criteria

Evaluation Criteria	Max. Points
<b>Low- and Moderate-Income and Environmental Justice Inclusion</b> Higher preference: LMI project	30
<b>Siting</b> Higher preference: landfills, brownfields, areas of historic fill, rooftops, parking lots, parking decks Medium preference: canopies over impervious surfaces (e.g. walkway), areas designated in need of redevelopment No Points: preserved lands, wetlands, forested areas, farmland  Bonus points for: landscaping, land enhancement, pollination support, stormwater management, soil conservation	20      Max. possible bonus points: 5
<b>Product Offering</b> Higher preference: guaranteed savings >10%, flexible terms* Medium preference: guaranteed savings >5% No Points: no guaranteed savings, no flexible terms*  *Flexible terms may include: no cancellation fee, short-term contract	15
<b>Community and Environmental Justice Engagement</b> Higher preference: partnership with municipality, partnership with local community organization(s), partnership with affordable housing provider Medium preference: letter of support from municipality, project owner is a government and/or public and/or quasi-public entity, project owner is an affordable housing developer	10
<b>Subscribers</b> Higher preference: more than 51% project capacity is allocated to residential subscribers	10
<b>Other Benefits</b> Higher preference: Provides local jobs/job training, demonstrates co-benefits (e.g. paired with storage, micro-grid project, energy audit, EE measures)	10
<b>Geographic Limit within EDC service territory</b> Higher preference: municipality/adjacent municipality Medium preference: county/adjacent county No Points: any geographic location within the EDC service territory.	5



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# Understand Consumer Protections

[NJ Clean Energy Program logo]

[Optional: Logo of community solar subscriber organization]

## New Jersey Community Solar Disclosure Form

**Document Overview:** This document is designed to help you understand the terms and cost of your community solar contract. In the event that the terms in this Disclosure Form conflict with terms appearing elsewhere in your contract, the terms on this statement are controlling. Read this document and the contract carefully so that you fully understand your community solar contract. Complaints may be addressed first to your community solar provider and, if the issue remains unresolved, to the Board of Public Utilities.

CUSTOMER INFORMATION		COMMUNITY SOLAR PROVIDER INFORMATION	
Customer Name:		Company Name:	
Address:		Address:	
City, State, Zip:		City, State, Zip:	
EDC electric service territory:		Contact Name:	
Phone:		Phone:	
Email:		Email:	

SUBSCRIPTION INFORMATION		Reference Page or Section
Subscription Size	[Fixed XX kWh/year, or XX kWh/month] [Fixed XX kW] [XX% of community solar project nameplate capacity. Total nameplate capacity is XXX. Estimated energy produced by this % share is XXX kWh/year.] This subscription represents approximately [XXX%] of your annual historic electricity usage.	
Subscription Model	[Your total subscription cost is a one-time fixed payment of \$XX.] [Your subscription cost is a monthly fixed payment of \$XX/month.] [Your subscription cost is a variable payment of approximately \$XX/month.] [Description of other subscription model]	
Prices and Fees	[Plain language description of the price paid by subscribers per month for their subscription in \$ or \$/kWh, and total cost per month in \$. If price includes both fixed and variable components, identify fixed and variable cost components separately. Identify any one-time charges separately. Identify any recurrent charges, and how often they are to be paid.  If price is variable or not known, include: 1) A plain language description of the method that will be used to calculate price. 2) A reasonable and good faith estimate of that price, along with a clear disclaimer regarding possible variations to that estimate.  Specify whether any charges may increase over the course of the contract, the conditions under which the increase may occur, and how much notice will be provided. If there is a cost escalator or rate, clearly identify that escalator and provide calculations for escalated price in three month increments from the contract effective date until the contract end date.]	

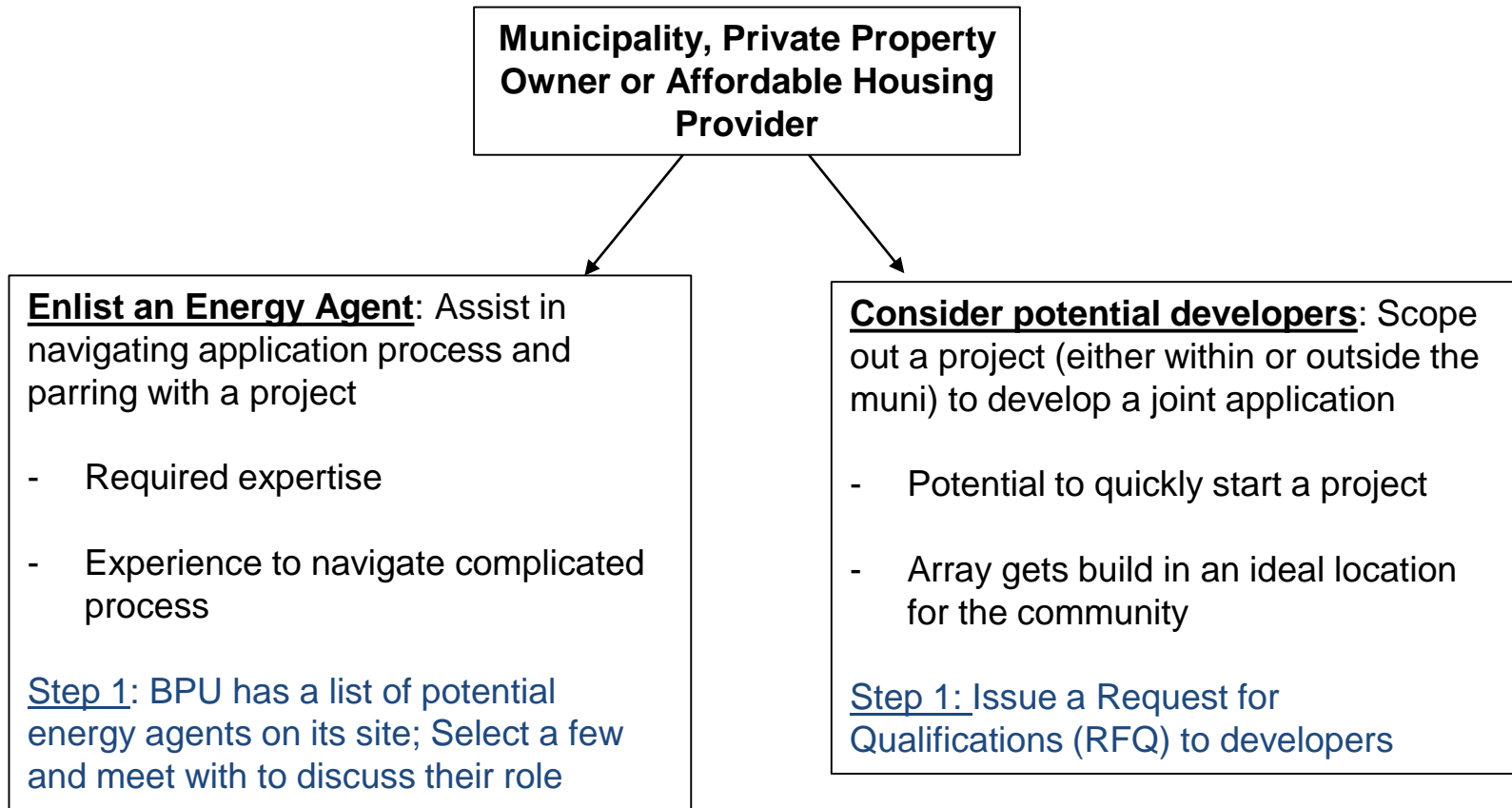
Community Solar Subscriber Disclosure Form DRAFT



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# Understand the Paths to Pursue Project Partner(s)





# Questions About the Path Forward?







# Thank You!

Christine Symington, Program Director  
christine@[sustainableprinceton.org](mailto:christine@sustainableprinceton.org)  
[sustainableprinceton.org](http://sustainableprinceton.org)