NEW JERSEY BOARD OF PUBLIC UTILITIES

COMMUNITY ENERGY PLAN

TOWNSHIP OF BURLINGTON

Submitted to NJ BPU
Prepared by Triad Associates

July 14, 2026

THE TOWNSHIP OF BURLINGTON
EXPRESSES ITS EXTRAORDINARY GRATITUDE
TO THE MEMBERS OF THE

COMMUNITY ENERGY PLAN COMMITTEE

Council Member Patricia M. Siboczy
Council Member / PSE&G Employee Michael A. Ramos
Township Qualified Purchasing Agent Stacey Schwoebel
Township Engineer Scott Hatfield
Green Team Chair Rachelle Gizinski
Township Resident Jonathan Luyber

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SECTION I

INTRODUCTION

This report was made possible through a grant from New Jersey's Clean Energy Program™. New Jersey's Clean Energy Program is brought to you by the New Jersey Board of Public Utilities.

ABOUT THE NEW JERSEY BOARD OF PUBLIC UTILITIES (NJBPU)

The New Jersey Board of Public Utilities ("NJBPU" or "Board") is the state agency with authority to oversee the regulated utilities, which provide critical services such as natural gas, electricity, water, telecommunications, and cable television. The law requires the Board to ensure safe, adequate, and proper utility services at reasonable rates for customers in New Jersey.

ABOUT THE NEW JERSEY CLEAN ENERGY PROGRAM (NJCEP)

NJCEP, established on January 22, 2003, in accordance with the Electric Discount and Energy Competition Act (EDECA), provides financial and other incentives to the State's residential customers, businesses and schools that install high-efficiency or renewable energy technologies, thereby reducing energy usage, lowering customers' energy bills and reducing environmental impacts. The program is authorized and overseen by the New Jersey Board of Public Utilities (NJBPU).

ABOUT SUSTAINABLE JERSEY

Sustainable Jersey is a certification program for municipalities in New Jersey. Launched in 2009, Sustainable Jersey is a nonprofit, nonpartisan organization that supports community efforts to reduce waste, cut greenhouse gas emissions, and improve environmental equity. It provides tools, training and financial incentives to support and reward communities as they pursue sustainability programs. Sustainable Jersey is one hundred percent voluntary and each municipality can choose whether it wants to get certified and the actions it wants to do in order to achieve enough points to get certified.

I. Introduction

Burlington Township is committed to addressing climate change and reducing greenhouse gas emissions. This Community Energy Plan details the specific strategies the Township will pursue in the coming years to reduce greenhouse gas emissions from the local energy system. The plan covers municipal operations such as the municipal vehicle fleet and buildings, as well as public policies and programs designed to support the community in reducing emissions.

Burlington Township ratified this Community Energy Plan on July 14, 2026. During the creation of this plan, the Township provided several opportunities for public input, taking care to enable low- and moderate-income residents to participate. In-person and virtual public comment sessions were held at different times of day to accommodate different work schedules.

In December of 2025, the Township Steering Committee began reviewing the Sustainable Jersey Guide for Sustainable Energy Communities and Community Energy Plan Workplan Template and meeting with municipal staff to determine how to prioritize and implement the high-impact initiatives. Relevant community data was gathered from the Sustainable Jersey Data Center. The Environmental Commission presented the draft Community Energy Plan at a public meeting on April 14, 2026.

The final Community Energy Plan was adopted by municipal resolution on July 14, 2026. Burlington Township's Community Energy Plan establishes how the municipality will promote the transition to sustainable energy over the next several years. Initiatives were selected based on demonstrated effectiveness, unique local opportunities, and co-benefits for the community as a whole, such as improved local air quality, energy savings for residents, and workforce development.

Climate change is one of the greatest threats to our future prosperity in Burlington Township, and globally. New Jersey is both a significant source of greenhouse gas (GHG) emissions and a state particularly vulnerable to climate change. Increasing heat waves, intense storms, and sea-level rise caused by climate change will dramatically alter our coastal state for many years to come (NJDEP, *Scientific Report on Climate Change*).

According to the New Jersey Department of Environmental Protection's NJ Greenhouse Gas Emissions Inventory Report, New Jersey adds almost 100 million metric tons of CO_2e to the atmosphere annually. New Jersey can mitigate the local and global impacts of climate change with a rapid transition from the current GHG-intensive energy system to one that optimizes energy use and produces energy with minimal GHG emissions.

Recognizing New Jersey's role in climate change mitigation, the State of New Jersey has established a goal of 100% clean energy in the state by 2050. The New Jersey Energy Master Plan: Pathway to 2050 outlines the state's strategies for achieving that goal while also addressing issues of social and economic inequity. To promote action at the local level in support of the state's goals, the New Jersey Board of Public Utilities (NJBPU) launched the Community Energy Plan Grant Program, offering support and funding for

municipalities to develop a Community Energy Plan. Burlington Township received the Community Energy Plan Grant and completed this plan as a participant of the grant program.

SECTION II

COMMUNITY OVERVIEW

II. Community Overview

The first settlers visited the area that is now Burlington Township in 1666, when three Dutchmen constructed a log cabin along the Delaware River, creating the first tavern and inn in the area, catering to travelers from north to south and providing a place for a meal and some much-needed rest. The Township was established in 1677 and incorporated through the Township Act of 1798 as one of the original 104 townships incorporated under that act.

Now, with approximately 160 miles of roadway – including the New Jersey Turnpike, Route 295, State Highway 130, and six county roadways – as well as a rail line and a shipping channel on the Delaware River, Burlington Township finds itself continuing to cater to the commuter over 350 years later. The daytime population of the Township is estimated at approximately 35,000 due to the large business community in the Township, including several retail centers, a shopping mall, a 20-screen movie theater, numerous dining establishments, business and industrial parks, and vast recreational opportunities.

Due to Burlington Township's status as a progressive, modern community, its excellent emergency services, and its exceptional recreational programs, the Township has become a desirable place to live, particularly considering its convenience to the Philadelphia, New York, and central New Jersey regions. Because of this, Burlington Township has seen extraordinary growth since 1990, with the population increasing from 12,454 in the 1990 census to 23,983 in the 2020 census – an increase of 91.96% in 30 years. According to the *American Community Survey 2024 5-Year Estimates*, the population has dropped slightly over the past five years to 23,627.

The Township's median household income sits at $104,067, comparable to the state's MHI of $103,556 and the County's $108,111. Further, the Township's poverty rate is relatively low, at 8.6%, lower than the county's 9.6% and the state's 10.0%. Regardless, according to the New Jersey Department of Community Affairs 2023 Municipal Revitalization Index, Burlington Township has an MRI Distress Score of 33.3, ranking #187 in the state: in the top third of municipalities in New Jersey most in need of revitalization.

Burlington Township is a minority-majority community, with only 44.5% of the population identifying as "White, one-race", as opposed to 54.0% of the State of New Jersey and 64.4% of Burlington County. With 10.0% of the population identifying as "two or more races," the Township exceeds the County's population of 9.6% and the State's at 12.4%. The Township's "Black or African American" population is 35.5%, exceeding the county's 16.3% and over double the state's 12.8%.

The Township's population is aging relative to broader benchmarks, with 20.1% of the Township's population under 18 years of age (below New Jersey's 21.8% and Burlington County's 21.5%) and 17.5% aged 65 and over (above New Jersey's 17.4% and Burlington County's 14.8%). Furthermore, a particularly high percentage of the Township's 9,007 households have one or more members under the age of 18 years. There are 56.5% of households in Burlington Township that fit this description, as opposed to 28.7% in Burlington County and 51.6% in the State as a whole.

The educational attainment in Burlington Township lags behind the state as a whole, with only 24.8% of the population of Burlington Township aged 25 or older having attained at least a Bachelor's degree, as opposed to New Jersey's 26.1% and Burlington County's 27.0%. There is a higher percentage of the population in Burlington Township with some college and no degree: approximately 25.0% of the Township fits this description, as opposed to 15.0% of the state and 17.7% of the county. In addition, graduate and professional degrees are below the state and county with 13.1% of the Township's population having progressed beyond their Bachelor's degrees, as compared to 17.6% of the state and 15.5% of the county.

The minority-majority population of Burlington Township is young and undereducated, with a disproportionately high percentage of those identifying as Black or African American. This young, diverse demographic profile influences Burlington Township's energy consumption patterns, with a high proportion of households with children driving elevated residential electricity and natural gas usage for heating, cooling, and appliances amid an aging housing stock. As the population continues to grow and age in place, future energy demands are projected to rise, particularly in multi-generational homes that balance child-rearing needs with senior care, underscoring the need for targeted efficiency upgrades and renewable transitions detailed in subsequent sections.

II.A. Transportation

Burlington Township's transportation network reflects its suburban character and strategic location within central Burlington County. The Township is served by an extensive system of local, County, and State roadways that facilitate regional connectivity, including U.S. Route 130, Interstate 295, and County Routes 541 and 662. Sidewalks and shared-use paths provide safe local access within residential areas and business corridors, while New Jersey Transit bus routes offer limited service to nearby communities and regional employment centers. Despite this, most residents continue to rely primarily on personal vehicles for commuting and daily travel.

Burlington Township also benefits from proximity to key regional transportation assets, including the River LINE light rail stations in neighboring Florence and Burlington City, which provide direct service to Camden and connections to Philadelphia via PATCO. Freight movement is a significant component of the local economy, with industrial and distribution facilities leveraging the Township's highway access and closeness to major logistics hubs such as the New Jersey Turnpike and the Port of Philadelphia.

Further, the Township is located near the South Jersey Regional Airport (KVAY), located adjacent to Route 206 in nearby Lumberton. This general aviation airport supports private, corporate, and instruction flights and presents opportunities for future integration with emerging aviation technologies such as drones, electric vertical takeoff and landing (EVTOL) vehicles, and other unmanned aircraft systems. Its location within a growing logistics corridor enhances its potential as a regional testing and operations site for advanced mobility initiatives.

As Burlington Township continues to evolve, its transportation infrastructure – balancing suburban mobility, freight accessibility, and forward-looking aviation opportunities – positions the community to grow sustainably while supporting both innovation and regional economic development.

II.A.1. Vehicle Miles Traveled by Vehicle Type

The vehicle miles traveled by vehicle type for Burlington Township for 2019 is detailed below. This data, provided by the Delaware Valley Regional Planning Commission, is derived by converting daily VMT to annual VMT. The chart illustrates annual vehicle miles traveled in Burlington Township by different vehicle types, showing that light trucks and passenger cars account for the overwhelming majority of travel activity. Light trucks (commercial and passenger) represent the largest share with 34,499,124 miles traveled, followed by passenger cars at 25,497,724 miles. Buses used for intercity, transit, and school purposes total 1,048,923 miles, while combination trucks used for short- and long-haul freight contribute 2,066,002 miles. Single-unit trucks, including refuse vehicles, short- and long-haul trucks, and motorhomes, add another 2,917,340 miles of travel, and motorcycles account for 605,287 miles, the smallest category shown. Overall, the data underscore Burlington Township's auto-oriented travel pattern, dominated by light-duty vehicles that support commuting, commerce, and everyday trips.

In total, the vehicle usage in Burlington Township generates a substantial level of transportation-related greenhouse gas emissions across all vehicle classes, with a total of 147,359.36 metric tons of carbon dioxide equivalent. Passenger cars and passenger trucks are the largest contributors, together accounting for over 104,000 metric tons, reflecting the dominance of personal vehicles in the community's travel patterns. Heavy-duty vehicles such as combination short-haul trucks, combination long-haul trucks, and single-unit long-haul trucks add significantly to the emissions burden, while buses, school buses, refuse trucks, motorcycles, motor homes, and transit buses collectively contribute smaller, but still notable, amounts. Overall, the data indicate that reducing emissions in Burlington Township will require strategies that address both everyday household travel and commercial freight and service operations.

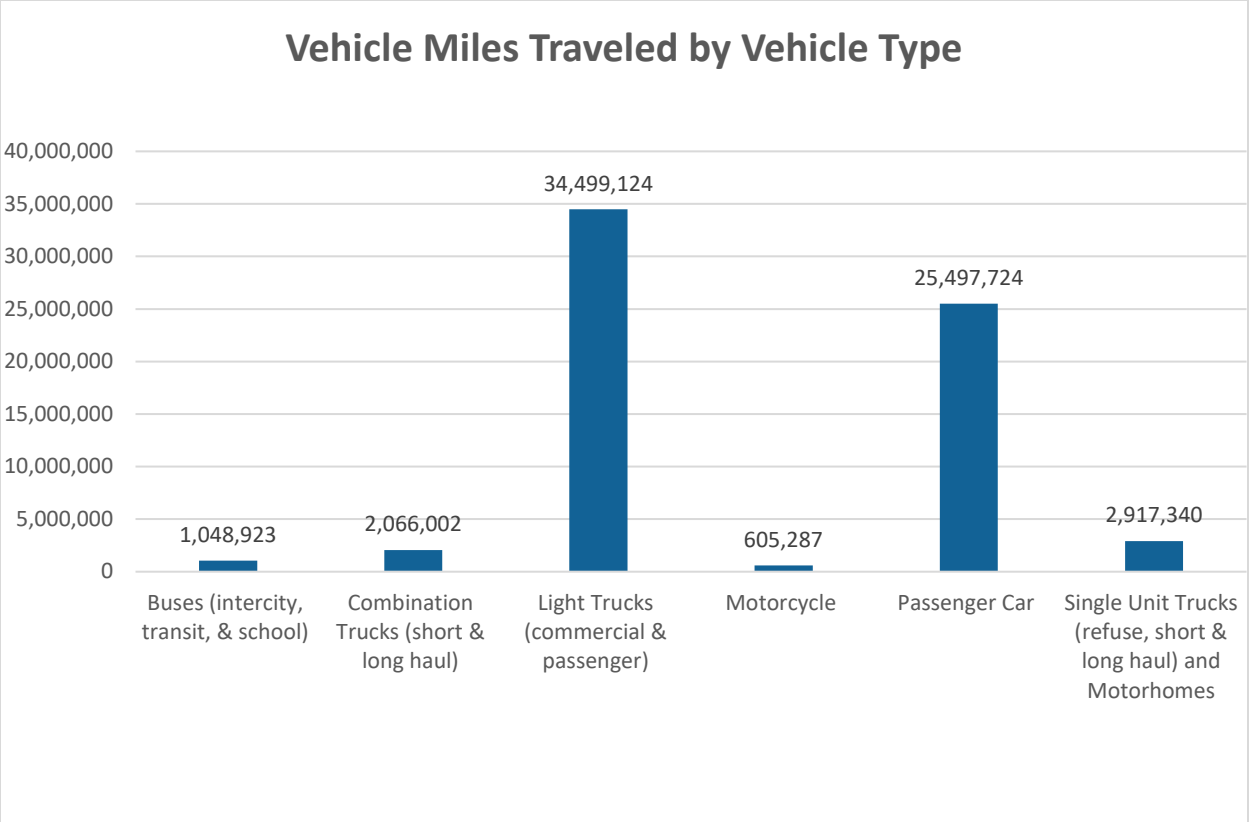

Chart #1 - Amount of Electricity Purchased by Sector (kWh)

Source: Sustainable Jersey, Aggregated Community-Scale Energy Data

II.A.2. Electric Vehicle Usage

Year	Total Personal Vehicles	# of EV	% of EV
2015	14,191	10	0.07%
2020	15,220	58	0.38%
% Change	7.26%	480.00%	442.86%

Chart #2 – Electric Vehicle Usage

Source: Sustainable Jersey, Electric Vehicle Ownership Data

A closer examination of Burlington Township's evolving vehicular landscape reveals a modest but meaningful shift toward cleaner transportation.

In 2015, the Township's residents owned 14,191 personal vehicles, of which just 10 were electric vehicles (EVs), representing only 0.07% of the total fleet. By 2020, both overall vehicle ownership and EV uptake had increased: personal vehicles rose to 15,220, while the number of EVs surged nearly sixfold to 58, lifting their share to 0.38% of all personal vehicles. Although these percentages remain small, they signal a community beginning to embrace greener mobility options, influenced by improving EV technology, growing consumer awareness, and gradual expansion of supportive infrastructure.

Burlington Township's journey toward sustainability is still in its early stages, yet the accelerating adoption of EVs demonstrates a growing interest in environmental stewardship and reduced transportation emissions. Each additional EV on the road not only helps to lower tailpipe emissions but also reflects a broader cultural shift: one in which incremental, data-backed progress lays the groundwork for a more resilient, energy-efficient, and sustainable future.

II.B. Electricity and Natural Gas Usage

Most electricity and natural gas use is currently associated with buildings. Utility companies generally organize electricity and natural gas use into four sectors – residential, commercial, industrial, and street lighting. The commercial sector includes nonprofits and government entities such as schools and municipal buildings, as well as businesses.

As illustrated in the charts below, the commercial sector accounts for the majority of electricity and the industrial sector accounts for the majority of natural gas use in Burlington Township. In other words, commercial and industrial buildings present the greatest opportunity for energy use reductions.

Notably, the Township has experienced a notable reduction in electricity usage over the past five years. This is potentially due to the adoption of increasingly energy efficient devices, as well as a significant increase in the number of residential and commercial solar installations. Primarily rooftop installations, the Township has routinely expressed their support for these initiatives through resolutions of the Township Board, an example of which is included in Section VI.

Amount of Electricity Purchased by Sector

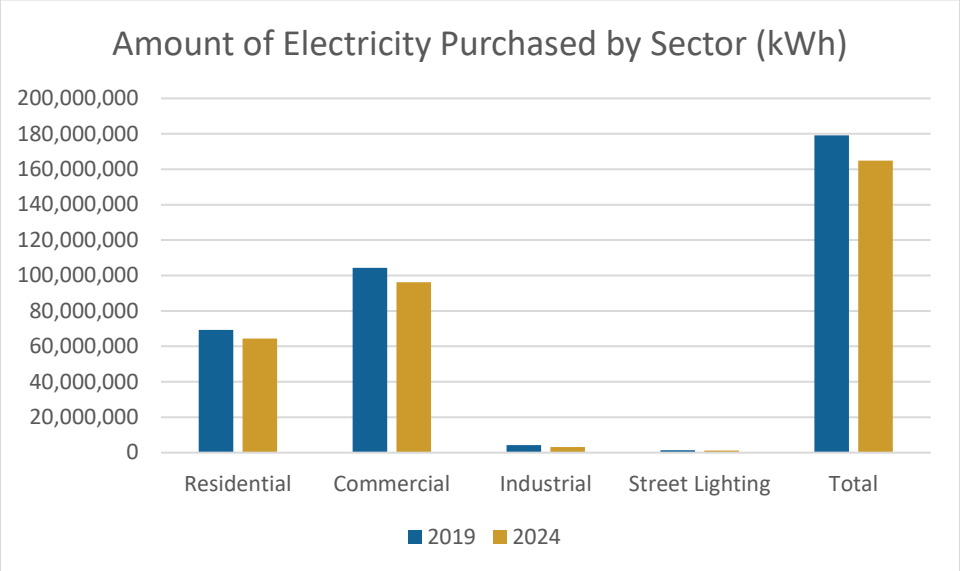

Chart #3 - Amount of Electricity Purchased by Sector (kWh)
Source: Sustainable Jersey, Aggregated Community-Scale Energy Data

Amount of Natural Gas Purchased by Sector (Therms)

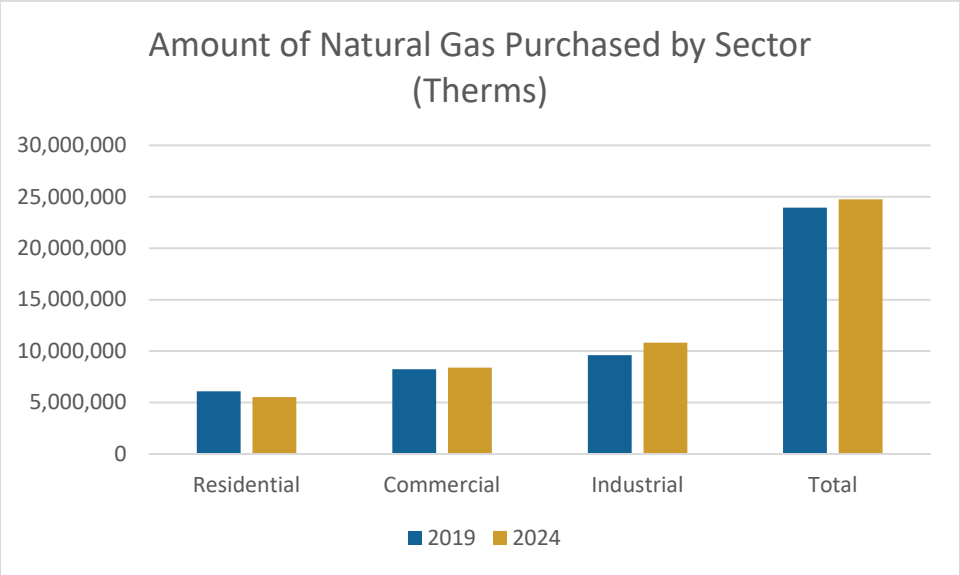

Chart #4 - Amount of Electricity Purchased by Sector (kWh)
Source: Sustainable Jersey, Aggregated Community-Scale Energy Data

II.C. Solar Energy Adoption

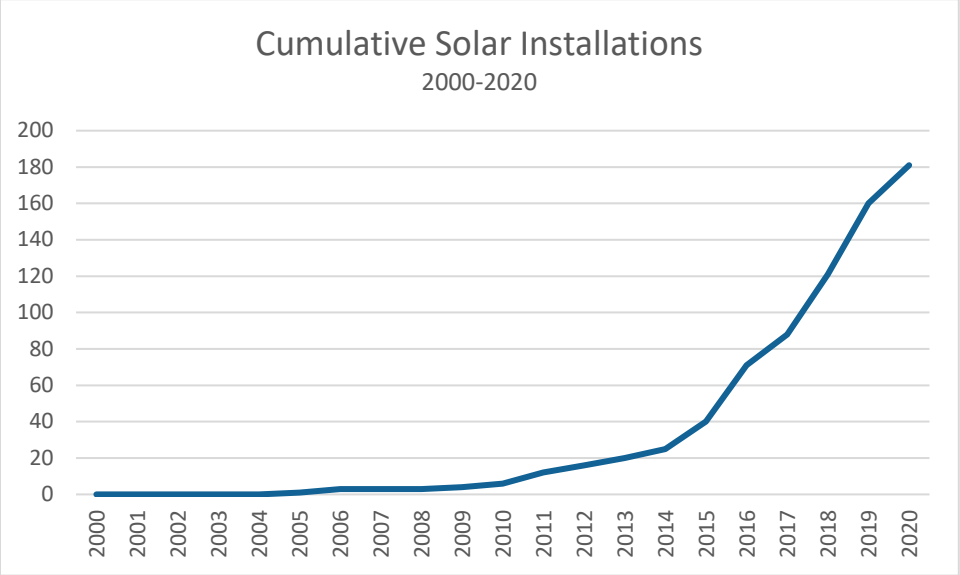

Chart #5 - Cumulative Solar Installations
Source: Sustainable Jersey, Solar Installation Data

As of 2020, Township-wide, there were a total of 181 solar installations, growing considerably from the first installation in 2005. The surge in solar energy adoption vividly illustrates Burlington Township's commitment to environmental stewardship. From the first installation in 2005 to 39 installations in 2019, this substantial growth – spanning commercial, private residential, public, and other sectors – signals the

community's readiness to embrace renewable energy. Complementing this, the total size of solar systems expanded from 181 kW to 1,921 kW over the same period, demonstrating not only additional installations but greater capacity.

This momentum toward solar power is driven primarily by the private residential sector, which accounts for the majority of installations and capacity. This residential-led adoption underscores a grassroots shift in mindset and behavior, as residents invest in green technologies to lower energy costs and environmental impacts.

Year	Commercial	Residential	Other	Total Installs	Total Size of Systems (kW)
2015	2	38	0	40	821.23
2020	2	179	0	181	1,996.71
Change	0.00%	8,800.00%	0.00%	8,900.00%	4,717.50%

Chart #6 – Total Solar Installations

Source: Sustainable Jersey, Solar Installation Data

Every solar panel installed and every kilowatt of clean energy generated represents a tangible step toward shrinking Burlington Township's carbon footprint and building a more resilient, sustainable future. Far beyond harnessing sunlight, this residential integration empowers the community to lead in environmental responsibility, actively driving progress toward an energy-independent tomorrow.

II.D Community GHG Emissions from Energy Use

In 2020, the total community-wide greenhouse gas emissions from electricity, natural gas/heating fuel, and transportation energy use in Burlington Township was 306,341.91 metric tons CO_2e. The largest share of community emissions came from on-road vehicles, followed by industrial natural gas usage.

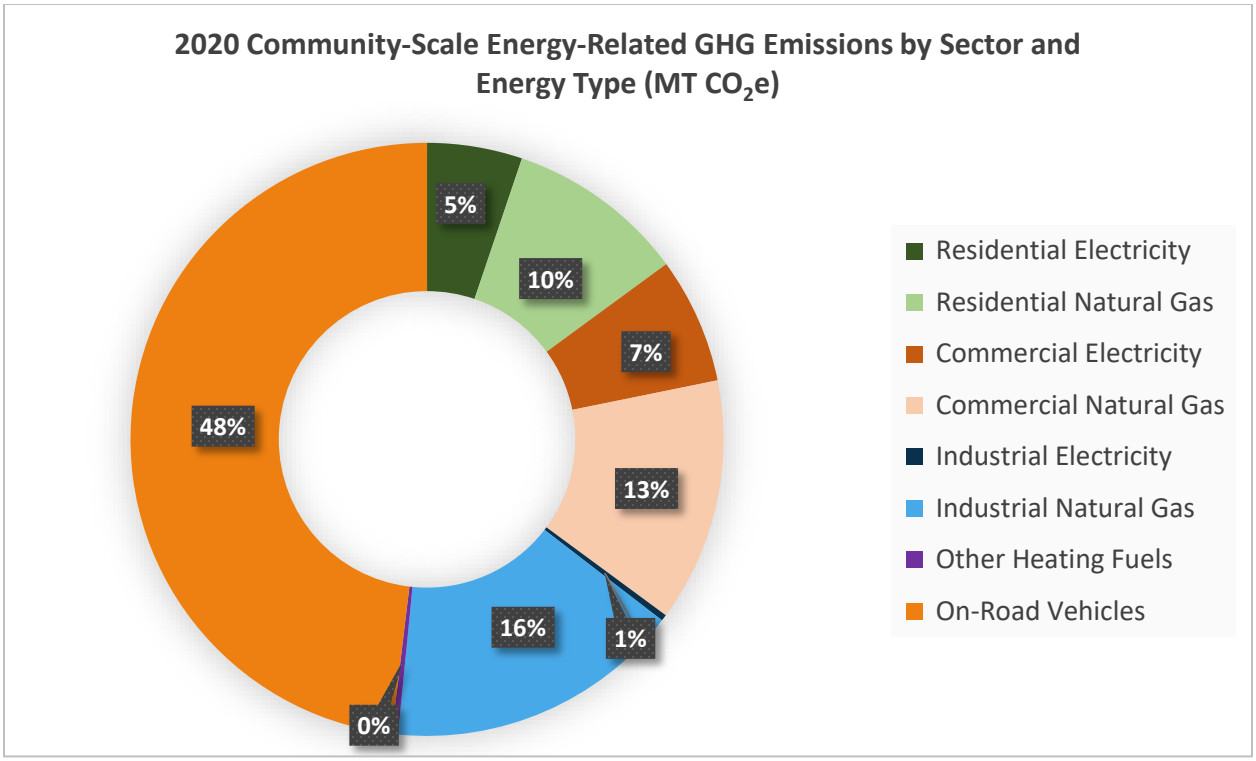

Chart #7 – Overall GHG Emissions of Burlington Township by Subsector
Source: Sustainable Jersey. Community-Scale Greenhouse Gas (GHG) Emissions Data

II.D. Municipal Operations GHG Emissions

Evaluation of GHG Emissions for Municipal Operations is ongoing. As such, this section will be updated upon completion. It is anticipated that data will include the number of metric tons of CO_2e produced by the Township's municipal buildings and its municipal fleet of vehicles.

Strategy 2: Accelerate Deployment of Renewable Energy and Distributed Energy Resources

Initiative 2.5: Install On-Site Municipal Renewable Generation

DESCRIPTION: Burlington Township is considering installing renewable energy infrastructure at the Municipal Building to accelerate the adoption of renewable and distributed energy assets. These systems will be dedicated to producing sustainable energy for the operation of various municipal structures and facilities. This initiative will focus specifically on ground-mounted carport solar arrays and, if viable, adjacent site conditions at the Municipal Building to determine structural suitability, energy load compatibility, and interconnection capacity.

The Township will assess both a traditional on-site solar installation designed to offset municipal electricity consumption. Priority will be placed on reducing municipal operating costs, stabilizing long-term electricity expenditures, and contributing to measurable greenhouse gas reductions consistent with the State's Energy Master Plan goal of 100 percent clean energy by 2050.

Installation of a solar system at the Municipal Building would reduce reliance on grid-supplied electricity and lower associated emissions from municipal operations. In addition to environmental benefits, the project would demonstrate visible municipal leadership in renewable energy adoption and serve as an educational example for residents and local businesses considering similar investments.

LEAD	START DATE	PRIORITY	ANTICIPATED LENGTH
Township Engineer	*June 2026*	*High*	*Ongoing Multi-Phased Project*

FUNDING SOURCES	*The Township will collaborate with Triad Associates, a reputable consulting firm, to investigate, secure, and manage grants for the successful completion of this project.*
DEPARTMENTS INVOLVED	• *Engineering Department* • *Department of Public Works & Utilities* • *Purchasing Department.*

OBSTACLES/BARRIERS: Potential constraints operational considerations and utility interconnection capacity. Financial considerations include capital costs, procurement requirements, and alignment with the Township's broader capital planning priorities.

POTENTIAL SOLUTIONS: The Township will conduct a professional assessment of the site's structural and electrical feasibility to confirm site viability. Additionally, the Township will work with Triad Associates to optimize the use of municipal funds by exploring alternative financing options. This includes applying for grants and obtaining low-interest loans from federal, state, and county authorities to support the project.

COMMUNITY NOTES:

MEASURES OF SUCCESS: The goal of this initiative is to establish onsite renewable energy generation that will significantly support municipal operations. Success will be measured through completion of the feasibility assessment, execution of a financing or power purchase agreement (if pursued), installation of system capacity (kW), annual renewable energy production (kWh), documented reductions in municipal electricity expenditures, and associated greenhouse gas emission reductions.

NEXT STEPS: The Township Engineer will coordinate a preliminary energy usage and a site assessment of the Municipal Building. Upon confirmation of technical feasibility, the Purchasing Agent and Finance Department will determine the appropriate procurement mechanism and initiate the solicitation process in compliance with state and local regulations.

The Township of Burlington performed significant community outreach throughout the drafting of this plan. In addition to the outreach in forming the Steering Committee, the public was informed regarding the development of the plan and was invited to a public meeting, held in the Community Room of Municipal Hall on April 14, 2026. The building and the room are fully accessible.

The meeting was called to order at 5:35 pm by Township Engineer Scott Hatfield, with members of Council present, as well as members of the Steering Committee and the public at large. The meeting was well-attended, and the conversation was productive.

Scott Armato, Senior Associate from Triad Associates and author of the plan, began the meeting by presenting the contents of the document. Mr. Armato explained that the plan documents the Township's plan to support the State's transition to cleaner energy sources over the next several years, through municipal operations, public policy, and community-facing programs. He explained the various Strategies and Incentives provided in the plan guidance and some of the rationale behind rejecting some of those Strategies.

After walking the participants through the technical elements of the plan, Mr. Armato explained that the Township selected Initiative 2.5: Install On-Site Municipal Renewable Generation. The Township of Burlington plans to install ground-mounted carport solar arrays at the Municipal Building in the near future. Mr. Armato explained the process of such a project, including finding sources of funding, potential obstacles, solutions, and next steps.

At this point, the floor was open for discussion. The meeting was very informal, the discussion sometimes passionate and quick. Below are the main questions with their primary responses; however, it should be noted that in nearly every case the conversation continued well past the initial responses given by Mr. Hatfield and Mr. Armato.

Question: Considering the impact of transportation discussed in the plan, why isn't there an initiative in the plan dedicated to transportation?

Response, from Mr. Hatfield: The Township adopted an ordinance requiring multi-family unit developers to include EV chargers at their units.

Question: Why do the statistics end in 2020?

Response, from Mr. Armato: The statistics are provided by the New Jersey Board of Public Utilities, and these are the most recent statistics available.

Question: Why doesn't the Township require the new warehouses to have solar?

Response, from Mr. Hatfield: Many of the Community Solar projects that the Township has supported through the years have been installed on the warehouses; however, not every rooftop is conducive to solar

installations, including the Municipal Building. Further, oftentimes the building owners and mortgage holders are concerned about the fire risk of solar panels.

Statement: There are a few factual inaccuracies in the plan.

Response, from Mr. Armato: They will be corrected in the next draft.

Question: What about requiring the schools or fire stations to install solar?

Response, from Mr. Hatfield: The school district and fire district are entities separate from the Township itself, and there's only so much the Township can do to encourage them to adopt solar.

Question: What is the energy usage of the Municipal Building?

Response, from Mr. Armato: That continues to be assessed and will likely be included in any grant application.

Question: How does the grant funding work?

Response, from Mr. Armato: Different grants have different eligibility requirements, different eligible applicants. Sometimes the Township is eligible, sometimes the School District or the Fire District are eligible on their own. There's usually a match required – usually anywhere between 20% and 75%. If the project costs $1M and the grant awards $20,000, typically the funder will nonetheless expect the full project to be completed, but the Township can supplant the remaining funds with other grant funding.

Question: Can we replace the municipal fleet with EVs?

Response, from Mr. Hatfield: Essentially, there are two major aspects of the Township's fleet: the Police Department and Public Works. Neither of them are interested in EVs.

The meeting was closed at 6:30 pm.

SECTION IV

DOCUMENTATION OF PUBLIC OUTREACH

Sign-In Sheet 4/14/2026

Community Energy Plan Grant Mtg.

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Scott Arcnata, Tri-State (Consultant)

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Township of Burlington's Post

Township of Burlington
April 2 at 4:19 PM ·

We hope you'll join us on April 14th for a community meeting to learn more about Burlington Township's Community Energy Plan. This is a great opportunity to hear about the plan's goals, ask questions, and share your ideas as the Township works toward a cleaner, more sustainable future.

Your input is an important part of this process, and we encourage residents, business owners, and community members to attend. Together, we can help shape practical energy strategies that we anticipate will result in lower costs, improved air quality, and a more resilient Burlington Township for years to come.

The meeting will be held from 5:30 – 6:30 pm in the Community Room on the lower level of the Municipal Building.

Please access the draft of the plan here:

14 5

Township of Burlington limited who can comment on this post.

News & Events

4/14/2026 - Community Engagement Meeting – Community Energy Plan

Burlington Township residents are invited to attend a Community Engagement Meeting regarding the Township's Community Energy Plan.

This meeting will provide an overview of the plan and offer an opportunity for residents to learn more about the Township's efforts to reduce energy use, lower greenhouse gas emissions, and support sustainable energy initiatives within the community.

Meeting Details:
Date: April 14, 2026
Time: 5:30 PM – 6:30 PM
Location: Community Room (Lower Level)
Burlington Township Municipal Building
851 Old York Road, Burlington Township, NJ

Residents are encouraged to attend and provide feedback as the Township works toward implementing strategies that promote energy efficiency, renewable energy, and long-term sustainability.

You can review the draft Community Energy Plan here:

Community Energy Plan - Township of Burlington

Archives

SECTION V

APPENDICES

Solar Guidebook for New Jersey Municipalities

Powered by SunShot
U.S. Department of Energy

SOLAR OUTREACH PARTNERSHIP

Table of Contents

This material is supported by the following team of organizations: ***ICLEI-USA; International City/County Management Association (ICMA); Solar Electric Power Association (SEPA); Interstate Renewable Energy Council, Inc. (IREC); North Carolina Solar Center (NCSC); Meister Consultants Group, Inc. (MCG); The Solar Foundation (TSF); American Planning Association (APA); and National Association of Regional Councils (NARC)****.*

This material is based upon work supported by the ***U.S. Department of Energy under Award Number DE-EE0003525****.*

Authors: Chad Laurent, Meister Consultants Group, Inc.; Alexander Winn, The Solar Foundation; Jayson Uppal, Meister Consultants Group, Inc.; Sarah Birdsall, Sarah Birdsall Planning Consulting; Kimberly Kooles, North Carolina Solar Center/DSIRE

SARAH BIRDSALL, PLANNING CONSULTING

Introduction. About the SunShot Initiative

The U.S. Department of Energy (DOE) SunShot Initiative seeks to make solar energy cost-competitive with other forms of electricity by the end of the decade. The SunShot Initiative drives research, manufacturing, and market solutions to make the abundant solar energy resources in the United States more affordable and accessible for Americans.

The Solar Outreach Partnership (SolarOPs) is designed to help accelerate solar energy adoption on the local level by providing timely and actionable information to local governments.

Funded by the U.S. Department of Energy (DOE) SunShot Initiative, SolarOPs achieves its goals through a mix of educational workshops, peer-to-peer sharing opportunities, research-based reports, and online resources.

To perform the work of SolarOPs, DOE selected teams led by the International City/County Management Association (ICMA) and ICLEI - Local Governments for Sustainability USA. These organizations and their teams help local governments take a comprehensive approach to solar energy deployment by:

- Conducting outreach and sharing best practices for increasing solar energy use with thousands of local governments across the nation
- Working in partnership with industry experts and national membership associations to enable local governments across the United States to expand their local solar markets
- Providing information in relevant areas, such as solar policies and regulations, financial incentives, workforce training, and utility and community engagement.

Solar Powering Your Community: A Guide for Local Governments serves as the foundation for these outreach efforts and for sections of this Guide.

Chapter 1. About this Guide and the Accompanying Model Ordinance

Background

New Jersey is a national leader in renewable energy and solar in particular, with over 1GW of solar energy capacity installed (only behind California and Arizona) providing cleaner and renewable electricity to residents, businesses, and governments across the state.[1] This is due in part to both federal and state financial incentives and New Jersey state regulatory changes that promote solar development in New Jersey.

Despite this large influx of solar development projects into the state, there is no clear guidance or accepted standard available to municipalities for properly siting these projects. In many cases municipalities have been struggling to deal with requests to accommodate large commercial installations that have the potential to have significant land use, aesthetic, economic, and environmental impacts. In other cases there is fear that municipal ordinances may place unnecessary burdens on new small scale solar projects (for example on individual homes).

State legislation allows for municipal adoption of siting criteria for solar photovoltaic (PV)systems at the local level on issues such as location, size and aesthetics. However, most municipalities do not have ordinances or site design standards in place to assess solar projects and approve, modify, or reject them. Without an ordinance, municipalities must turn to the use-variance process which must be performed on a case-by-case basis with little guidance. Some municipalities have begun adopting ordinances to regulate the solar installations. However, without clear guidance on how to construct solar siting ordinances, many of these efforts can conflict with state laws, may be overly restrictive, fail to address key impacts, and produce other unintended consequences.

This piecemeal approach has a three-fold effect. An inconsistent, unpredictable and inefficient process saps municipal and private sector resources and can retard the growth of the solar industry. Secondly, with no clear guidelines or standards for solar development in communities, any given application may have undesired consequences such as poor aesthetics or improper use of valuable or sensitive land. Thirdly, there can be an inherent conflict between farm and open space preservation efforts and master plans and large land-based solar development when solar is proposed in those types of locations.

Given the continuing demand for solar projects in New Jersey, it is evident that the solar industry and local quality of life are best served, in the absence of statewide rules, if municipal governments proactively develop siting standards. This guidebook and accompanying framework ordinance aim to assist local governments in better understanding and preparing for different kinds of solar installations that balance the need to support renewable energy and preserve local quality of life and are most effective utilized together.

This guidebook provides a comprehensive background for New Jersey municipalities on solar PV systems, state legislation that affects the siting of these systems, and the appropriate tools and methods municipalities can use to incorporate solar PV systems into their community's vision. After

[1]New Jersey's Clean Energy Program: http://www.njcleanenergy.com/renewable-energy/project-activity-reports/installation-summary-technology/installation-summary-technology, and Greentech Solar. Garden State a Solar Eden-New Jersey Hits 1 GW. March 22, 2013. http://www.greentechmedia.com/articles/read/garden-state-a-solar-eden-new-jersey-hits-1-gw

reading the Guidebook, you will be better prepared to consider the benefits and considerations that a solar siting ordinance will bring to your community.

From there, municipalities should utilize the complementary ordinance framework that addresses the full spectrum of solar development options in a community – from residential systems designed to meet the needs of a single household, to utility-scale projects that serve electricity consumers more broadly. Municipalities should utilize the framework and the information in this guidebook as well as their knowledge of their communities to create an ordinance that will work best for their particular situation.

It is recommended that municipalities consider adopting this Ordinance as a stand-alone piece of legislation or as a separate section within their Land Use Ordinance rather than try to fit it into existing Ordinance language. If a municipality already has a Land Use Ordinance adopted that solely addresses the solar PV systems, they may consider reviewing this guidebook and framework ordinance and revising their existing ordinance.

It is important to remember that ordinances must be supported by the municipal master plan. In matters dealing with environmental and aesthetic factors, the master plan depends to a large degree, on the municipal Environmental Resources Inventory (ERI) as well as other planning policies and documents including, but not limited to, open space and agricultural preservation plans. New Jersey's Municipal Land Use law also authorizes three optional elements that should be examined with solar installations in mind. These are the Conservation Element, the Historic Preservation Element and the Sustainability Element. Municipalities should be advised that their ERI and other master plan elements need to be consulted, interpreted and updated to support the accompanying modifications to the master plan and development of a solar siting ordinance.

Chapter 2. Solar Energy Technology Background

2.1 How Does a Photovoltaic System Work?

Solar energy systems (referred to as photovoltaic (PV) systems) convert sunlight directly into electricity. These systems allow electricity consumers (homes, businesses, public buildings, etc.) to generate some or all of their electrical energy demand. The system is generally installed either on a roof or on the ground somewhere near the owner's property.

The majority of solar PV systems are grid-tied, meaning they are directly interconnected to the power grid and do not have battery or other forms of storage. Grid-tied PV systems will generate electrical power to supply part or all of a building's energy usage during the day, but will not produce power during a power outage or at night when the sun isn't shining.

When the solar PV system generates more electricity that is needed by the owner, the excess electricity can be fed back into the electricity grid, in effect spinning the building's electricity meter backwards. The ability to export electricity into the grid and receive compensation from the utility in this way is called net-metering. Utilities generally have a special rate tariff for net-metered PV systems and will install a dedicated utility meter that records the net power coming in from the utility and the surplus power flowing out from the solar PV system. The customer's electricity bill reflects the net amount they used subtracting out the amount generated or exported to the grid.

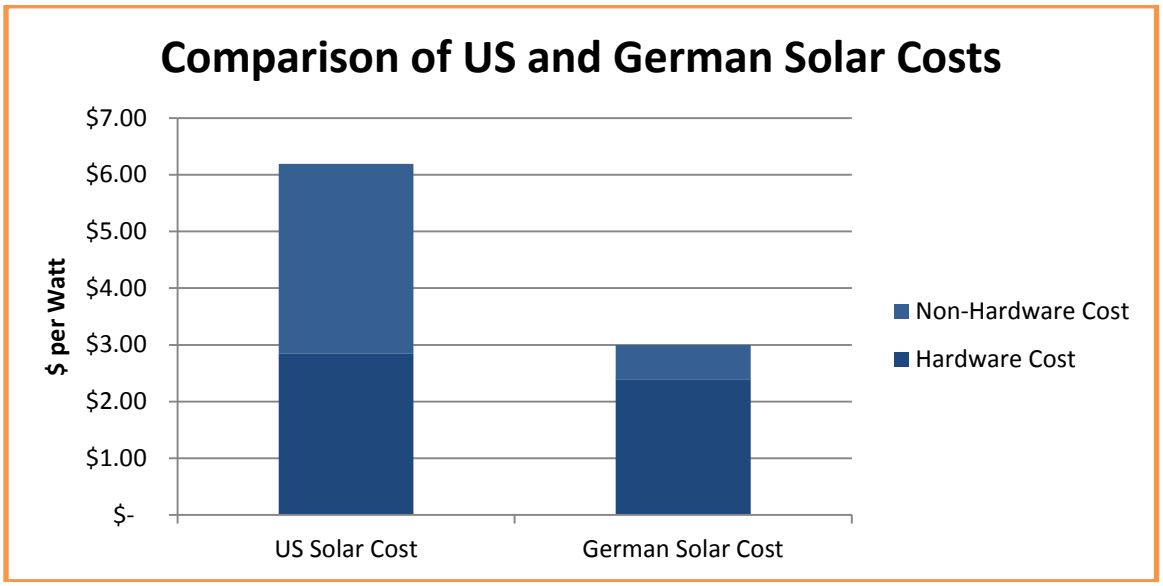
Large utility scale PV systems are not generally net metered and instead sell power directly to the utility or into wholesale electricity markets.

A solar PV system will not operate during a power outage unless the system includes a battery or other forms of backup and most systems do not include backup because batteries tend to increase the installed cost of the system.

The basic components of a PV system include:

- the solar panel, which contains the blue or black colored cells of silicon or other semi-conductor material that converts sunlight to flowing electrons. These panels are affixed to the roof or ground.
- the inverter, which converts the electrons from direct current (DC) to alternating current (AC). The inverter also serves as a safety and monitoring device, preventing power from flowing out from the panels and into the electric grid during a power outage or shutting down the flow of electricity if there is a problem with the system.
- the balance of system components (BOS) that includes racking, wiring, junction boxes and meters.

BOS components make up a significant portion of the overall costs of a PV system.[2]



2.2 Photovoltaic Technologies

Solar PV technologies are broadly categorized into three types of semiconductor technologies, monocrystalline, multicrystalline and thin-film. Each of these technologies has different performance factors, efficiencies, costs and warranties.

Monocrystalline silicon (mono-Si) solar modules are the highest efficiency PV technology commonly available on the market. Monocrystalline modules are comprised of multiple rows of cells characterized by a single, uniform silicon crystal wafer per solar cell.

Multicrystalline silicon (mc-Si) solar modules are typically lower efficiency than monocrystalline silicon modules. Silicon wafers for mc-Si cells are grown in a less uniform fashion, and the non-uniform nature of the silicon crystals results in less efficient solar cells. However, multicrystalline solar cells are also less expensive.

Thin-film solar technologies include a range of different semiconductor types, including Copper Indium Gallium Selenide (CIGS), Copper Indium Selenide (CIS), Cadmium Telluride (CdTe) and amorphous silicon (a-Si). Each of these technologies has their own unique design and performance characteristics; however, in general, thin-film solar modules and cells are lower efficiency than either crystalline silicon technologies. The lower efficiency of thin-film technologies, however, is balanced against lower production and materials costs for thin-film panels. In spite of these lower efficiencies, thin film solar products have been popular with utility-scale and large commercial solar sectors where installation space may be less constrained.

[2] Ardani, Barbose, Margolis, Wiser, Feldman, and Ong. 2012. Benchmarking Non-Hardware Balance of System (Soft) Costs for U.S. Photovoltaic Systems Using a Data-Driven Analysis from PV Installer Survey Results. National Renewable Energy Laboratory. November.

2.3 Installation Methods

There are a number of methods for affixing PV arrays to buildings or to the ground or in other open spaces. Common PV array mounting methods for residential and commercial systems include:

- Integral roof mounting
- Standoff roof mounting
- Rooftop or ground rack mounting
- Rooftop or ground ballasted mounting
- Ground-based pole mounting

Large-scale flat roof commercial projects are often designed with fully integrated mounting systems, and many systems require no roof penetrations. For these systems, mounting hardware is either secured with "ballast systems" (using rock, pre-cast concrete, or cinder blocks), interlocking or some combination of the two in order to withstand wind speeds as required by local building codes. Non-penetrating ballasted systems require adequate roof structural integrity in order to withstand the additional weight of the ballast. Non-penetrating mounting hardware can be installed on standing seam metal roofs with roof clips. Mounting hardware can also be mechanically attached to the roof and underlying structural roof joists or rafters.

Various PV installation methods clockwise from upper left: ground rack mounting, rooftop standing seam mounting, ground-based pole mounting, rooftop rails system, rooftop ballasted.
Images Courtesy of Home Power Magazine

2.4 The Benefits of Solar

There are numerous public, private and utility benefits of installing solar including:

- Local economic growth - The Solar Energy Industries Association has been tracking the growth of the industry for several years now and found that the solar industry has grown 300% from 2006 to 2010. The solar industry has become the fastest growing energy sector and one of the fastest growing industries in any sector across the U.S.[7]
- Local clean energy jobs - Over 119,000 Americans work in the solar industry as of the end of 2012 and solar employment grew 13.28% between 2011 and 2012.[8]
- Energy independence – Solar provides on-site energy generation avoiding the import of fossil fuels from out-of-state and out-of-country.
- Stabilize price volatility – With no fuel source, solar energy provides a stable energy price throughout the life of the project.
- Added value to utility via distributed generation – Solar energy provides value to the grid including avoided need for additional fossil fuel energy sources, avoided transmission and distribution investments, avoided capacity purchases, avoided fossil fuel price impacts, and energy supplied during summer peak energy use. Solar has been found to add between 10 and 25 cents of value to the utility beyond the market value of the electricity.[9]
- Smart economic investment – Solar can be a smart economic investment saving money on energy bills for homes, businesses and governments. In addition, recent studies have shown that homes with solar power may sell faster and for more money than comparative homes without solar power.[10]

2.5 Common Misconceptions

There are a number of myths and misconceptions relating to solar PV. As a necessary step in developing a solar ordinance or other local planning around solar, local officials must be familiar with some of the more common concerns and responses to these concerns.

Myth: Solar takes up too much land

Fact: There is a large amount of available roof space, capped landfills, and other brownfield space to install significant amounts of solar. Cities and towns across New Jersey have developed solar projects on capped landfills and other unused brownfield sites. In addition, there are opportunities to install solar on abandoned malls and large areas of impervious surfaces that are currently devoted to parking. Municipalities should take care to plan for larger solar arrays and discuss potential competing land uses, like agriculture.

Myth: Solar causes too much glare

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[7] See: SEIA/GTM Research - 2010 Year in Review Report http://www.seia.org/galleries/pdf/SMI-YIR-2010-ES.pdf SEIA/GTM Research- 2009 year in Review Supplemental Charts.

[8] The Solar Foundation, Cornell University ILR School, bw Research Partnership. National Solar Jobs Census 2012: A Review of the U.S. Solar Workforce. November 2012. URL?

[9] See: Perez, Richard, Zweibel, Ken, Hoff, Thomas. Solar Power Generation in the US: Too expensive, or a bargain? Energy Policy 39 (2011), pp. 7290-7297. Available at: http://www.asrc.cestm.albany.edu/perez/2011/solval.pdf

[10] See: Fahar, B.C., Coburn, T..C. A New Market Paradigm for Zero Energy Homes. December 2006. National Renewable Energy Laboratory. http://www.nrel.gov/docs/fy07osti/38304-01.pdf

Fact: As with swimming pools, decks, and garages, the aesthetics of solar panels may raise concerns for some residents, or neighbors. One potential concern is glare. However, solar panels are designed to absorb radiation, not reflect it. Solar PV panels are constructed of dark-colored (usually blue or black) materials and are covered with anti-reflective coatings. Modern solar PV panels reflect as little as 2 percent of incoming sunlight, about the reflectivity as water and less than soil or wood shingles.[11] Projects can be analyzed and adjusted to mitigate potential glare issues and a number of solar installations have been successfully located at or near several U.S. airports (Boston, New York, San Francisco, and Denver). The Federal Aviation Administration delivered a preliminary report showing that glare is not a concern; however, the FAA has not finalized its determination on solar PV panels and glare.[12] When the issue has come up, it is no different than potential glare from office building windows and the effects are only witnessed during a few minutes to hours of the day and can often be mitigated with blinds or awnings. For example, while there has been concern at the Manchester Regional Airport in Manchester New Hampshire over glare, the concern was only during a couple of hours during the day and was not affecting any aircraft either while in flight or during takeoffs or landings.[13]

Myth: It isn't sunny enough in New Jersey for solar to make sense

Fact: While solar irradiation levels vary across the U.S. a New Jersey homeowner can produce a significant portion of their electric load from their roof space (assuming un-shaded, proper tilt, orientation and installation). Germany is the world's leading installer of solar even though it has a similar solar resource to Alaska. Germany has enough solar installed to essentially eliminate the afternoon 'peak' throughout the entire country. A PV system in New Jersey could be expected to produce 90% of the energy that would be created by the same sized system in Florida.[14]

Photovoltaic Solar Resource : Unites States and Germany[15]

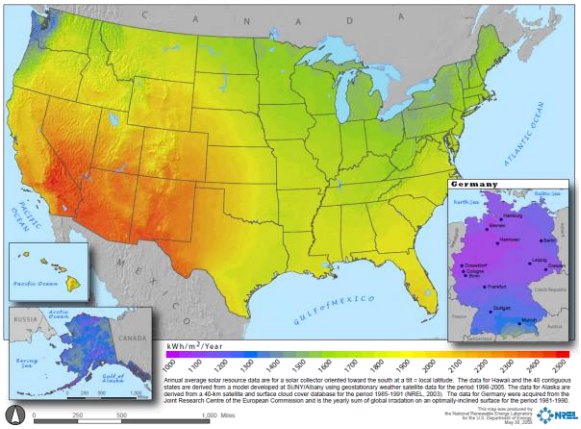
[11] See: APA Solar Briefing Papers, Solar Community Engagement Strategies for Planners Available at http://www.planning.org/research/solar/briefingpapers/pdf/engagementstrategies.pdf and ACRP Synthesis 28, Investigating Safety Impacts of Energy Technologies on Airports and Aviation, A Synthesis of Airport Practice, Transportation Research Board, of the National Academies available at: http://www.dot.ca.gov/hq/planning/aeronaut/documents/InvestigatingSafetyImpactsOfEnergyTechnologiesOnAirportsAndAviation.pdf

[12] Federal Aviation Administration, Office of Airports. 2010. Technical Guidance for Evaluating Selected Solar Technologies on Airports. Washington, D.C.: FAA. Available at www.faa.gov/airports/environmental/policy_guidance/media/airport_solar_guide_print.pdf

[13] Hayward, Mark, "Airport Controllers Complain of Solar Panels' Glare." New Hampshire Union Leader, Aug. 30, 2012.

[14] Analysis using NREL PVWatts calculator available at: http://www.nrel.gov/rredc/pvwatts/

[15] Source: National Renewable Energy Laboratory



Myth: Solar is not compatible with fighting fires[16]

Fact: While solar installations that do not adhere to basic fire safety standards may interfere with fire-fighting procedure, smart regulations can ensure that solar installations are strategically placed such that they do not inhibit firefighters or firefighting operations.[17] A number of reputable organizations have evaluated fire safety issues related to solar PV installations and have developed relevant guidelines including the International Building Code and International Fire Code as well as the National Fire Code published by the National Fire Protection Association (NFPA). These codes address setbacks and pathways for flat and pitched roofs, marking and labeling requirements, the location of wiring and other electrical equipment, and ventilation options. By marking hazardous equipment, ensuring sufficient rooftop access, moving electrical wiring and equipment to safe locations, and creating space for smoke ventilation, firefighters can safely and effectively fight fires with a solar PV installation on site. Educating firefighters on the risks solar technology can pose during a fire and the precautions that can be taken if key. A number of training resources exist to assist Fire Departments in training firefighters, including a NFPA approved lesson plan developed by the State of California.[18]

Myth: Solar energy is only an option because of lavish subsidies

Fact: Every energy technology takes advantage of subsidies. Fossil fuel and nuclear power receive numerous federal subsidies – including loan guarantees, accelerated depreciation, tax credits, caps on producer liability, bankruptcy protection, and avoidance of paying for externalities.[19] The

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[16] See: More Solar Energy Myths, SunShot Solar Outreach Partnership, Meister Consultants Group, Inc. Available at: http://solaroutreach.org/wp-content/uploads/2013/10/Solar-Myth-II-_-Final.pdf

[17] See: Paiss, Matthew, "PV Safety and Firefighting." Home Power Magazine. June/July 2009. Available at http://www.homepower.com/articles/solar-electricity/equipment-products/pv-safety-and-firefighting

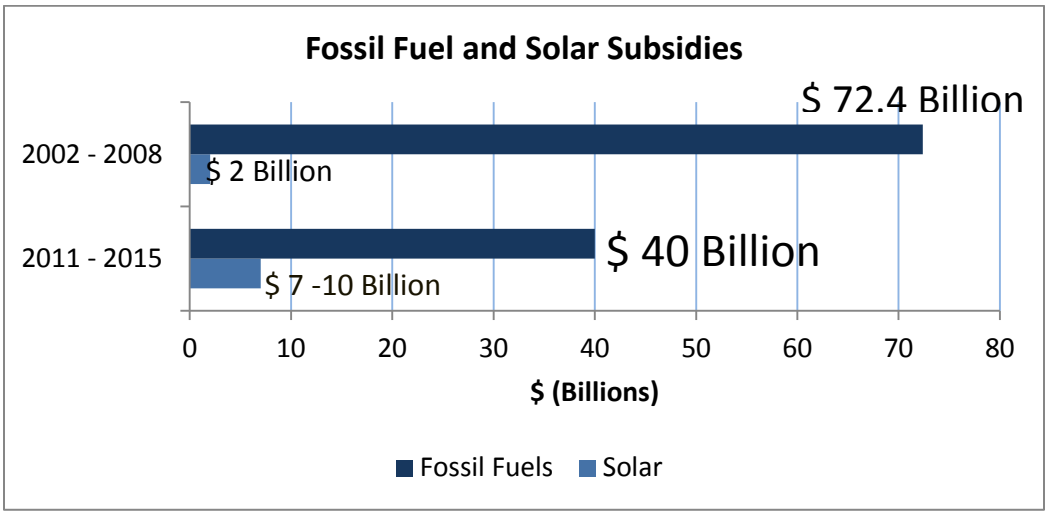
[18] California Department of Forestry and Fire Protection Office of the State Fire Marshall. "Solar Photovoltaic Installation Guideline". August 22, 2008Available at: http://osfm.fire.ca.gov/training/pdf/photovoltaics/solarphotovoltaicguideline.pdf and Brooks Engineering. "Understanding the Cal Fire Solar Photovoltaic Installation Guideline". August 2010. http://www.fsec.ucf.edu/en/education/southeast_training_network/Background%20on%20CA%20PV%20Installation%20Guide.pdf

[19] Keith, Geoff, Jackson, Sarah, Napoleon, Alice, Comings, Tyler, and Rame, Jean Ann. 2012. The Hidden Costs of Electricity: Comparing the Hidden Costs of Power Generation Fuels. Synapse Energy Economics, Inc., Prepared for the Civil Society Institute. September. 2012. Available at: http://www.civilsocietyinstitute.org/media/pdfs/091912%20Hidden%20Costs%20of%20Electricity%20report%20FINAL2.pdf

subsidies available for renewable technologies have only been around recently and have gone through various stop and start cycles.[20] For example, the federal wind production tax credit was extended for only one-year as of 2013 and federal solar tax credits are set to expire in 2016. In contrast, the majority of fossil fuel and nuclear subsidies have been uninterrupted for up to a century and many of these subsidies are permanently written into the Federal Tax Code.[21] It is important to reiterate that all technologies are subsidized and therefore these subsidies and their implications should be considered when comparing the costs of various technologies.

[20] Pfund, Nancy, and Ben Healey. 2011. What Would Jefferson Do? The Historical Role of Federal Subsidies in Shaping America's Energy Future. San Francisco: DBL Investors. September. Available at www.dblinvestors.com/documents/What-WouldJefferson-Do-Final-Version.pdf.
[21] Id.

Fossil Fuel and Solar Subsidies[22]



Myth: Solar is too expensive

Fact: While solar power isn't free, global solar industry growth has reduced costs steadily and rapidly in recent years. Current analyses that compare the cost of various energy technologies show that PV is already cost competitive with new nuclear plants and gas peaking plants, and, given declining costs, will be cost competitive with other technologies in the near term.[23] The cost of solar has fallen dramatically in recent years with installed costs falling by 11-14% in 2011 and an additional 6-14% in 2012.[24] The cost of solar power has fallen by 99% since 1977.[25]

Myth: Solar doesn't create jobs and we can't compete with China

Fact: Over 119,000 Americans work in the solar industry as of the end of 2012 and solar employment grew 13.28% between 2011 and 2012.[26] By way of comparison, 79,500 Americans work in iron & steel manufacturing and 84,000 work in coal mining.[27] Solar creates seven times more jobs per MW than coal.[28] Most solar jobs are in the sales and installation of solar energy systems—jobs that cannot be out-sourced.

Myth: Solar technology is new and will quickly become outdated

Fact: Basic solar photovoltaic technologies have been around for more than 40 years. While efficiencies have increased and costs have decreased, solar PV systems built in the 1970s still produce the same product (kWhs of electricity) as any modern solar PV system. The solar industry

[22] Sources: Environmental Law Institute, SEIA, U.S. Treasury

[23] Lazard Levelized Cost of Energy Analysis Version 5.0

[24] Galen Barbose, Naïm Darghouth, Samantha Weaver, and Ryan Wiser. Tracking the Sun VI: An Historical Summary of the Installed Price of Photovoltaics in the United States from 1998 to 2012. July 2013. Available at: http://emp.lbl.gov/sites/all/files/LBNL-5919e-REPORT.pdf.

[25] Bloomberg New Energy Finance. Sustainable Energy in America 2013 Factbook. January 2013. Available at: https://www.**bnef**.com/InsightDownload/7320/pdf/

[26] The Solar Foundation, Cornell University ILR School, bw Research Partnership. National Solar Jobs Census 2012: A Review of the U.S. Solar Workforce. November 2012.

[27] Id.

[28] Id.

like other electricity generating industries does not evolve in the same way that the electronics or computer industries have. If solar makes financial sense today, then there is no reason to wait to take advantage of solar power's benefits.

Myth: Most solar panels contain toxic metals that can pollute the environment

Most solar panels are constructed of silicon (glass), aluminum and copper (for wiring), and do not usually contain heavy metals or other potentially toxic substances. At least 90 percent of a PV module can be recycled and a number of manufacturers offer voluntary panel take-back programs.[29] Like all manufactured products, the production of solar panels does cost energy — however, studies show that the panels' energy production more than pays off the energy cost of their manufacture, with energy-cost paybacks of less than two years.[30] Thin-film solar modules may contain heavy metals such as cadmium. However, numerous studies show that there is little to no evidence of toxic leaching from these types of solar modules, and a robust recycling program exists to reclaim such modules at the end of their useful lives.

Myth: Solar is only for environmentalists or advocates

Fact: Solar is for everyone. Everyone from firefighters, the US military and NASCAR racetracks have adopted and are using solar power. In addition, large companies like Google, Wal-Mart, Toys R Us, Staples and others have installed large amounts of solar to power their operations. In Kearny, New Jersey Public Service Electric and Gas (PSE&G) is leasing 13 acres of land atop a capped landfill from the New Jersey Meadowlands Commission to operate a 3 megawatt solar PV installation. Similar installations have been developed on brownfields in Edison, Hackensack, Linden, and Trenton, New Jersey.

2.6 Technological Capabilities and Limitations

Solar power is only produced during daylight hours thus limiting the total amount of time the system is generating electricity and is available to supply power. Fortunately, this is when electricity is in greatest demand. Nevertheless, solar-powered facilities must still be connected to the electricity grid or have on-site electricity storage to supply power during those hours when the sun is down. That said, there are numerous studies looking at the potential of solar to power the grid. These studies indicate that solar could realistically supply up to 30% of our national energy needs.[31] Experience in other countries also shows that even relatively small amounts of solar power can make a huge difference. For example, Germany receives about 4% of its total energy from solar, however, during sunny summer afternoons that correspond to peak demand upwards of 50% of Germany's electricity is supplied by these solar systems.[32] The result has been a reduction in peak demand and peak pricing for electricity.

[29] Sniderman, Debbie. 2012. "Life After Death." Solar Builder, May 14. Available at www.solarbuildermag.com/featured/life-after-death/#.UAmgPGFfGVo

[30] Sanchez, Justine. 2008. "PV Energy Payback." HomePower Magazine, October/November. Available at http://204.12.63.66/view/?file=HP127_pg32_Sanchez.

[31] Perez, Richard, Zweibel, Ken, Hoff, Thomas. Solar Power Generation in the US: Too expensive, or a bargain? Energy Policy 39 (2011), pp. 7290-7297.

[32] Kirschbaum, Erik, "Germany sets new solar power record, institute says." Rueters. May 26, 2012.

2.7 Additional Reading Material and Resources

Myths and Facts of Solar Power
This PowerPoint presentation delves into some of the most common misconceptions about solar power and systematically debunks each one, providing evidence as to why each is false.

Photovoltaic (PV) Tutorial
This PowerPoint presentation discusses the composition of PV systems as well as methods for installing them on residential properties. It also includes a primer on inverter models and some issues that may revolve around them.

Analysis of Web-Based Solar Photovoltaic Mapping Tools
This report identifies the commercially available solar mapping tools and gives a thorough summary of the source data type and resolution, the visualization software program used, user inputs, calculation methodology and algorithms, map outputs, and development costs for each map.

A Homebuilder's Guide to Going Solar
This guide assists homebuilders who are contemplating solar-ready or solar homes. It helps them decide whether to install solar energy systems on homes or to make homes solar ready, and helps quantify the benefits for home buyers.

Solar-Ready Buildings Planning Guide
This guide identifies the important aspects of building design and construction to enable installation of solar systems after the building is constructed. It discusses important system requirements for PV, SWH, and SVP systems. Attention to these guidelines when developing building codes or any building- or community-related regulations, as well as during building design, could significantly improve the performance and minimize the cost of solar systems.

Chapter 3. The Solar Market in NJ

3.1 State of the Market

New Jersey is the third-largest solar market in the U.S. behind California and Arizona with over 1 GW of installed solar PV capacity, including a particularly robust nonresidential market (governments, businesses, and non-profits).[33] New Jersey's current solar incentive program is structured as a solar carve-out requirement that makes up part of the state's renewable portfolio standard (RPS). The RPS is a state law that requires New Jersey's utilities (both third party electricity suppliers and basic service suppliers) to purchase a set amount of solar energy. The utilities "purchase" solar power by purchasing Solar Renewable Energy Credits (SRECs) in quantities sufficient to meet their solar RPS obligations measured as a percentage of the utilities total electricity supply. The price of SRECs is driven by the market and the penalty payment (called an alternative compliance payment) that the utilities pay if they do not acquire enough SRECs to meet their obligation. SREC market prices have been high enough in value to rapidly promote the development of large amounts of solar PV in a relatively short period of time. However, in 2011 these relatively high SREC prices pushed an overrun of development as compared to the amount of solar the utilities were required to purchase, in essence creating an over-supply of SRECs. The over-supply threatened to cause the prices of SRECs to fall so fast as to stop solar development in the State. In 2012, the state legislature passed a bill to maintain growth in the solar market by increasing the solar carve-out requirements and thus correcting the over-supply of SRECs in turn bringing market prices for SRECs back to levels that support additional solar development.

3.2 Emerging Issues in Solar

The last year has proven to be somewhat turbulent for the solar industry. An oversupply of solar panels from foreign manufacturers significantly undercut many domestic manufacturers, forcing reductions in workforces and shuttering of plants. Installations, however, have benefitted from these very low prices. Places like New Jersey have seen installations skyrocket as a result (among other factors already discussed). Although some beneficial Federal tax incentives expired at the end of 2011, other financing models have emerged to help push the market forward. Third-party financing, where customers pay little to no up-front cost to go solar is proving to be a major force in the residential and small-commercial solar market. In addition, financing community-based solar, where neighbors pool their funds to by one, large solar installation, and using "crowd funding" is becoming increasingly easier. For example, Solar Mosaic launched a crowd funding solar investment option to residents of California and New York in early 2013. Solarize programs are also proving to significantly cut customer acquisition costs, lowering prices further and providing community education and engagement around solar PV.

3.3 Federal and State Incentives

The main federal incentive is the Residential Personal Tax Credit of 30% of the system cost, the Business Energy Investment Tax Credit (ITC) of 30% of the system cost, and the Modified Accelerated Cost-Recovery System (MACRS) + Bonus Depreciation (for systems installed between 2008 and 2013). There is no maximum credit amount. Under the current policy program, PV systems must be placed in service on or before December 31, 2016 in order to receive the credit.

[33] Greentech Solar. "Garden State a Solar Eden-New Jersey Hits 1 GW". March 22, 2013. http://www.greentechmedia.com/articles/read/garden-state-a-solar-eden-new-jersey-hits-1-gw

The state incentives include the aforementioned SREC program. The state also has a property tax exemption that applies to all customer sited PV installation.

New Jersey has a sales tax exemption, applicable to all taxpayers, for all solar energy equipment. The language of the exemption also includes equipment used for passive solar design.

3.4 Solar Industry Needs and Process

Local permitting and inspection processes can account for upwards of one-third the cost of a solar PV system. Industry analysis attributes these costs (which are 40% higher than in Germany) to variation in local approval, permitting and zoning practices. The solar industry has indicated that a standardized and streamlined process along with fair and transparent permitting fees is desired. For example, the Solar America Board for Codes and Standards found that roughly 80% of residential rooftop solar systems are practically identical in design and could benefit from an expedited permitting process.

While New Jersey has a uniform building code, municipalities play a key role in the solar market as local jurisdictions have control over construction processes via discretionary building and zoning codes. In this respect, solar is different from other large-scale power plant construction processes where local control is preempted by state or even federal approval processes. Therefore, the solar industry is subject to numerous individual permitting and market dynamics even within a single state like New Jersey. In turn this can lead to large variation in local solar adoption levels. Some communities may promote solar in unexpected ways while other may unintentionally prohibit solar development. A more consistent, transparent and uniform approach benefits the solar industry. Local governments should be aware of the impact of their local permitting processes and adapt their approaches to meet local solar development and planning goals.

3.5 Additional Reading Material and Resources

New Jersey's Clean Energy Program: Solar Market FAQs
This site provides a list of questions and answers regarding NJ's solar market.

New Jersey Incentives/Policies for Renewables and Efficiency
This is a list of incentives for renewable energy in NJ. It includes NJ's solar tax exemption, information on SRECs and solar loans, as well as other incentives to pursue solar installation in the state.

New Jersey Solar Industry Fact Sheet
This slideshow details the current state of the solar industry in NJ and projects its impacts into the future.

Solar Photovoltaic Financing: Residential Sector Deployment
This report presents the information that homeowners and policy makers need to facilitate PV financing at the residential level. It covers the full range of cash payments, bill savings, tax incentives, and potentially available solar attribute payments.

Chapter 4. Solar Installation Issues

4.1 Municipal Perspective

From the municipal perspective, solar offers many benefits, especially if the municipality has a clear idea of what its goals and expectations with regard to solar development are. Solar energy is proving to be a successful strategy for reducing the energy costs of the municipalities, local businesses and residents. Solar energy development can also intersect with other local government interests related to sustainability, economic development, siting and land use planning. When the local government has clearly laid out its goals in terms of balancing economic development and land use, the process of siting solar facilities can go more smoothly. Land Use Boards can base their decisions on planning documents that help in weighing the benefits of solar energy development against other public interests like preserving particular community character, be it rural, agricultural or historic. For example, the Planning Board of Branchburg Township, NJ decided by one vote to allow the development of a 29-acre solar project on the property of a large industrial employer. The site was mostly undeveloped woodland, but, despite that loss, members of the Board were swayed by the fact that development of a solar installation would avoid the potential of a large warehouse being constructed, preserve 5 acres of the tract as woodland, and that the energy savings from the solar installation would help to keep the large employer located in the town. In this instance, without an Ordinance on solar development to guide it, the Board balanced the economic needs of the Township with two of the Township's land use goals of preserving the rural character while providing for a diversity of non-residential uses to provide a balance of land uses within the township. Municipalities need to translate their land use goals into clear ordinance standards and development procedures in order to help expedite solar installation for both local residents and developers.

4.2 Solar Developer Perspective

While many solar developers have enjoyed the rapidly expanding solar market in New Jersey, more and more of these companies have recognized that a sustainable market requires that they engage local stakeholders. Solar projects can accommodate many siting concerns, but these concerns must be understood at the early stages of project development in order to keep the project economical for the developer. Installation requirements, such as set-backs, height restrictions, minimum lot sizes, and impervious surface restrictions can be implemented in ways that are reasonable for most solar projects. As more local jurisdictions begin to include solar considerations in their planning and siting documents, it is imperative that local ordinances allow the process of installing solar to be as efficient as possible both for developers and the municipality while still respecting other community values.

4.3 Public perspective

More than 7-in-10 Americans want the U.S. to put more emphasis on producing domestic solar energy sources.[34] Given the level of solar development in New Jersey, supported by state policy goals, programs and incentives, it is evident that many within the state also strongly support solar. Nevertheless, the public is torn on certain types of solar development, particularly on rural land.

[34] Gallup Poll, March 7-10, 2013. http://www.gallup.com/poll/161519/americans-emphasis-solar-wind-natural-gas.aspx?utm_source=alert&utm_medium=email&utm_campaign=syndication&utm_content=morelink&utm_term=Energy

While siting requirements such as set-backs and height restrictions may avoid the most disagreeable rooftop solar installations, such requirements do not as easily settle disagreements over land use issues. It can be difficult for planning boards to manage concerns regarding wildlife habitats, preserved open space, and contiguous forests. Despite these difficulties, clear standards, and early public engagement can satisfy many of the public's concerns regarding the impact of the various effects of solar development.

4.4 Historic Districts

Historic sites and structures typically have very specific federal, state and local building codes and standards associated with any new construction or site improvements. Owners of historic properties may feel discouraged from pursuing adding solar energy to their property if they feel the process is too complex. Indeed, this may be the case if municipalities haven't taken steps to create an application process and provide a set of clear standards for adding solar energy to historic sites. The first step in making historic property owners feel more confident in pursuing the installation of solar energy is to delineate which properties are in designated historic districts versus conservation districts. The different categories require different levels of municipal review from the relevant landmark and planning commissions. Solar projects in conservation districts can often be permitted on an expedited basis given they comply with established community design standards. Projects in designated historic districts or on designated historic landmarks will most often require additional local, state or federal review.

Local jurisdictions can aide property owners through the review process by establishing web sites to help property owners navigate any additional statutes, view design guidelines, and track their applications. Municipalities can also establish mechanisms for administrative review of certain solar energy systems on historic properties, thereby saving property owners both the time and money associated with a formal planning commission review. Administrative review, clear design guidelines, and a serviceable web site would make the process of installing solar energy on historic properties more transparent.

Solar installation on an historic building in Michigan.[35]

[35] Photo courtesy of Kim Kooles

4.5 Proposed and Adopted State Regulations

- Inherently beneficial use S1303/A3062 (2009) Classifies solar technology as "inherently beneficial use."

- Use By Right A2550/S1299 (2009) Permits renewable energy facilities in industrial zones as a use by right on, "parcels of land comprising 20 or more contiguous acres that are owned by the same person or entity." The definition of "contiguous as recently interpreted by BPU in Bedminster raises concerns. The site for the 55ac. array is in Bedminster, Twp. in the R-10 zoning district the destination (behind the meter system) is in Bridgewater Twp, separated by the I-287 right of way. The distance between the two properties is 1500'. Bpu has ruled that this is a "contiguous" project. Thus, a "contiguous" project in one municipality intrudes on the zoning of an adjoining municipality.

- Impervious Surface Exemption S921/A2289 (2010) Exempts solar panels from calculations of impervious surface cover.

- Right to Farm S1538/A2859 (2009) Extends protections of the Right to Farm Act to the generation of solar energy on commercial farms within certain standards.

- All electric utility companies regulated by the NJBPU (PSE&G, JCP&L, Atlantic City Electric, and Rockland Electric) and electric suppliers or providers must offer net metering to retail customers that generate electricity through a solar PV system. To be eligible for net metering, the generating capacity of a system cannot exceed the customer's annual electric needs.

- N.J. 46:3-24 (1978) Solar easements to ensure proper sunlight extends over real property. Precludes construction or placement of structure that would block sunlight to solar panels on adjacent property. Negotiations required. Granting of easement not mandated.[36]

- Municipal Land Use Law 40:55D-66.11/A.B. 2550 (2010) Solar and wind facilities permitted in Municipal Industrial Zones with condition that the property be comprised of 20 or more acres and under common ownership.[37]

- N.J. 45:22A-48.2 (2007) "Solar Rights Law" Prevents homeowner associations from prohibiting solar collectors.[38]

- NJBPU Order (2010) Net metering rules applies to all residential, commercial, industrial customers. Limited to meeting on-site electricity demand.[39]

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[36] See Joseph S. Augustyn, PP, AICP. Medford Environmental Commission Solar Town Workshop. Solar Systems as a Land Use: The Municipal Perspective. March 14, 2011.
[37] See Joseph S. Augustyn, PP, AICP. Medford Environmental Commission Solar Town Workshop. Solar Systems as a Land Use: The Municipal Perspective. March 14, 2011.
[38] Id.
[39] Id.

- Senate Bill S 2160 MLUL amended to allow as permitted uses of Solar and Wind Energy projects on sites of former landfills, quarries and other extractive industries. Environmentally sensitive areas remain subject to regulation. Particularly welcome in the Pinelands where there are over 80 old landfills in towns. Funds are to be made available to cap these landfills (Gibbons/Lottinville/7/26/10).[40]

- Municipal Land Use Laws/S 1202 Solar/Photovoltaic/Wind Inherently Beneficial by definition in the MLUL. The use is universally considered of value to the community because it fundamentally serves the public good and promotes the general welfare. Positive criteria and negative criteria are less stringent when a solar project application requires a Use Variance. The positive criteria is presumptively satisfied and the negative criteria is resolve by balancing the project against any detriments, and imposing seasonal conditions to reduce any negative impacts.[41]

- Senate Bill S-921 Exempts solar panels from being classified as impervious. Affects stormwater management calculations and some municipal zoning ordinances.[42]

- Assembly Bill A 1084 Requires solar panels to be included in the design and construction of all new public schools across New Jersey.[43]

- Senate Bill S-1538 Allows for solar, biomass and wind energy generation on preserved farms, with area limits. Maximum 110% of base energy demand of 1% of entire farm area.[44]

- Local Lands and Building Act: N.J.A 40A-12-1. Rules for lands of solar projects regarding terms of lease or sale, and facility closure for municipal and county owned projects.[45]

4.6 Environmental Impact Considerations

All types of energy generating technologies have some type of environmental impact. However, as an emission free and fuel free renewable energy source, solar PV is generally regarded as one of the more benign technologies in existence today. The environmental impacts are generally confined to siting, aesthetics and land use considerations.
Environmental impacts from solar energy development vary significantly based on the type of installation. Residential rooftop installations have little to no impacts (rain water sheeting may occur if installations aren't sufficiently set back from roof edges to allow gutters to channel water). Commercial rooftop and other uses on developed land, such as parking shade structures, do not have any environmental impacts. In fact, solar installations over dark structures like black rooftops may help alleviate the heat-island effect. Photovoltaic solar installations are solid-state systems with no emissions, even large, ground-mounted can be built in a way so as to produce minimal environmental impacts. The impacts that do occur, and should be considered by local planning organizations, are the result of the construction process (e.g., removal of vegetation, site grading, heavy vehicle traffic, etc.), or are due to the presence of the structure itself. Mounting structure

[40] Id.
[41] Id.
[42] Id.
[43] Id.
[44] Id.
[45] Id.

footings can degrade the top soil. Grading and other installation components can obstruct natural drainage flows. Large ground-mounted installations could reduce or degrade wildlife habitat if proposed in these areas of land. In addition, the solar structure could affect valuable scenic vistas. These impacts and corresponding mitigation strategies should be weighed against the environmental benefits of clean energy and other benefits derived from solar energy when considering solar development planning efforts.

4.7 Additional Reading Material and Resources

Balancing Solar Energy Use with Potential Competing Interests
This briefing paper discusses the various concerns local jurisdictions should consider as they begin to include solar energy in the local planning process.

A Comprehensive Review of Solar Access Law in the United States: Suggested Standards for a Model Statute and Ordinance
This comprehensive review of solar access law across the United States suggests standards for a model statute and ordinance.

A Step by Step Tool Kit for Local Governments to Go Solar
The tool kit contains an array of strategies and options that local governments can implement to help encourage solar developments. It discusses incentive and rebate options, focusing on streamlined permitting and permit fee reductions or waivers for solar energy installations, and also includes a model ordinance for a permit fee waiver for residential solar installations.

Chapter 5. Solar and the Planning Process

As communities look to solar energy to help meet energy and sustainability goals, planning should play an important role. Community leaders can initiate and facilitate conversations with community members and stakeholders about solar energy prior to applications for solar development in order to be comfortable with their community's needs and desires as they analyze proposals. Feedback from these conversations should be incorporated into the Municipal Master Plan's mandatory statement of principles.

The master plan is a logical point to introduce solar energy goals and objectives in the context of the wider local policy framework since all Zoning Ordinances should be consistent with the intent of the Master Plan's Land Use Element. The Master Plan's clear intention to support solar development can encourage and facilitate both private and public solar energy systems for the benefit of the municipality and its citizens.

When establishing a policy on solar development in the municipality, community leaders should take the time to explore and educate their residents on, how solar energy works and the types of solar which can be installed on different uses. Without a clear idea of the types, benefits and impacts of various solar installations, the community cannot establish a policy which fits their local character. There are various methods for installing solar from integrating it into rooftops to having stand-alone systems on the ground. In addition solar can be placed in nearly any un-shaded location, from rooftops, to parking lots. Furthermore, solar can take advantage of the myriad unused spaces such as brownfields, capped landfills, and parking lots.

Communities should do a self-analysis when considering how to formulate their policy on solar energy. While solar energy is clearly a beneficial use, the municipality should consider its particular character when studying how to gain the greatest benefit from solar installations. Small, dense communities may need to ask different questions about where and how to best place solar than sprawling suburban or rural municipalities. Cities with large numbers of flat roofed commercial buildings should investigate their great potential for solar installation. Agricultural communities need to be aware of State law with regard to solar installations on farmland and they need to weigh any potential loss of open land with the benefits of solar. There are a host of questions to consider as a solar policy is formulated. These questions should be asked and answered at the community level, where the local situation is best understood.

The ERI should inform master plan changes with adequate objective information. For example, spatial and narrative information on wildlife habitats, water resources including streams, water bodies and wetlands, steep slopes, (or other municipally defined "critical areas"), forests, soils (especially agricultural potential) and cultural resources including both below ground resources (archeology)and above ground resources (e.g. historic structures).

5.1 Developing an Ordinance

Once a municipality has a clear policy on solar energy in the Master Plan, it can consider how to best enable citizens and developers to efficiently install solar systems. While the Master Plan establishes policy, the Zoning Ordinance must specify what type, where and how systems will be built. Consistency with the Master Plan is usually determined by the planning board and environmental commission may review proposed ordinances. Whether the Ordinance language

comes out of the governing body, is developed by the Planning Board or by a citizens' committee, it should reflect the intent of the Master Plan and be consistent with State law.

Ordinance drafters should consider the importance of clarity and simplicity in the Ordinance. The process to obtain permits or to apply for Site Plan approval should be laid out clearly so citizens will be comfortable with the requirements. Regulations, such as height and setbacks and types of installation, should be reasonable and reality based. Setting arbitrary standards, based on fear of the unknown, will discourage applications for installations and may result in unnecessary and expensive litigation against the municipality.

The following chapter presents some examples of solar ordinances around the nation and in New Jersey. The Solar Ordinance Framework developed as part of this project presents draft language and issues for considerations which a municipality can utilize in framing an ordinance for its particular circumstances.

5.2 Additional Reading Material and Resources

Association of New Jersey Environmental Commissions (ANJEC) White Paper, Solar Siting and Sustainable Land Use
ANJEC also has several power point presentations and resources available at their website under "Workshop Materials" including the following:

"Utility Scale Solar: Preparing your Municipality" by David Peifer, Association of N.J. Environmental Commissions
http://www.anjec.org/pdfs/WorkshopPresentation5312UtilityScaleSolarDPeifer.pdf

"On-Farm Solar Energy Generation" by Susan E. Payne, Executive Director, State Agriculture Development Committee
http://www.anjec.org/pdfs/WorkshopPresentation5312OnFarmSolarEnergyGenSPayne.pdf

"Solar Energy Facilities: Challenges for New Jersey Municipalities by Clarke Caton Hintz
http://www.anjec.org/pdfs/WorkshopPresentation5312SolarEnergyFacilitiesCCHintz.pdfAmerican Planning Association, Planners Energy and Climate Database
This database contains examples of communities that have integrated energy and climate change issues into planning, and states that have addressed climate change issues in plans or policies.

Developing an Effective State Clean Energy Program: Renewable Energy Incentives
This paper summarizes innovative approaches and practices that have worked effectively for providing small renewable project incentives at the state level.

Integrating Solar Energy into Local Development Regulations
This briefing paper provides planners, public officials, and engaged citizens with an overview of three aspects of integrating solar energy into local development regulations — removing barriers, creating incentives, and enacting standards — and offers examples from communities across the country that are taking steps to supporting local solar market growth.

Integrating Solar Energy into Local Plans
This paper provides planners, public officials, and engaged citizens with an overview of common practices that can be used to integrate references to solar energy into local plans.

PAS Essential Info Packets

"[These] Essential Info Packet[s] provide an extensive collection of sample ordinances on solar access, solar siting, and solar energy systems large and small, along with background articles and examples of how communities are adding solar provisions to their comprehensive plans."

Solar Mapping

This paper "provides an overview of common questions community members may raise about solar energy use and discusses various engagement techniques available to help planners raise public awareness and solicit feedback about local policies and regulations that affect solar energy use."

Chapter 6. Examples

6.1 New Jersey Examples

In spring 2012, Montgomery Township in New Jersey adopted a solar ordinance meant to streamline the approval process for new solar projects and preserve the qualities of the township that residents value. Roof mounted solar installations have very clear and simple requirements, namely height restrictions. Larger, ground-mounted systems are encouraged on large commercial, landfill and brownfield sites, and are discouraged, not prohibited as in other jurisdictions, from development on preserved farmland and open space. By clearly encoding the land use values of the township in this ordinance, Montgomery balances the restrictions placed on certain solar developers with some additional planning certainty.[46]
In 2011, Hamilton, NJ introduced an ordinance that limits solar projects to rooftops, industrial zones, and some commercial zones, but not on the ground in residential areas. The rules were aimed at restricting projects from encroaching on farmland and residential neighborhoods.

Other examples include Bedminster (currently pending) and Burlington Township in Burlington County.

6.2 Additional Reading Material and Resources

Developing an Effective State Clean Energy Program: Renewable Energy Incentives
This paper summarizes innovative approaches and practices that have worked effectively for providing small renewable project incentives at the state level.

Freeing the Grid: Best and Worst Practices in State Net-Metering Policies and Interconnection Procedures, 2010 Edition
This report outlines the best and worst practices in state net-metering and interconnection policies.

Photovoltaic Power Systems and the 2005 National Electrical Code: Suggested Practices
This manual examines the requirements of the 2005 National Electrical Code as they apply to PV power systems. It includes the design requirements for the balance-of-system components in a PV system, including conductor selection and sizing, over current protection device rating and location, and disconnect rating and location. Stand-alone, hybrid, and utility-interactive PV systems are covered.

[46] See: Township of Montgomery Ordinance No. 12-1418 available at:
http://www.montgomery.nj.us/depts/landuse/Ord%2012-1418%20-%20LDO%20-%20FINAL%20WIND%20SOLAR%20%20PHOTOVOLTAIC%20ENERGY%20SYSTEMS.pdf

Additional References

Solar Powering Your Community: A Guide for Local Governments

Solar Boston Permitting Guide: A resource for building owners and solar installers

New York City's Solar Energy Future: 2011 Update

Community Solar: Sustainable Jersey How-to Guide

Community Solar:
Sustainable Jersey How-To Guide

Sustainable Jersey
Sustainability Institute at The College of New Jersey
Forcina Hall, 3rd Floor
2000 Pennington Rd.
Ewing, NJ 08628-0718

Cover images:

TOP: Perth Amboy Community Solar Project. 2021.
Image courtesy of New Jersey Board of Public Utilities.

BOTTOM: NREL. 2018. Solar with pollinator plants. Photo by Dennis Schroeder. 53021.

This report was made possible through a grant from New Jersey's Clean Energy Program™. New Jersey's Clean Energy Program is brought to you by the New Jersey Board of Public Utilities.

ABOUT THE NEW JERSEY BOARD OF PUBLIC UTILITIES (NJBPU)

The NJBPU is a state agency and regulatory authority mandated to ensure safe, adequate and proper utility services at reasonable rates for New Jersey customers. Critical services regulated by the NJBPU include natural gas, electricity, water, wastewater, telecommunications and cable television. The Board has general oversight and responsibility for monitoring utility services, responding to consumer complaints, and investigating utility accidents.

ABOUT THE NEW JERSEY CLEAN ENERGY PROGRAM (NJCEP)

NJCEP, established on January 22, 2003, in accordance with the Electric Discount and Energy Competition Act (EDECA), provides financial and other incentives to the State's residential customers, businesses and schools that install high-efficiency or renewable energy technologies, thereby reducing energy usage, lowering customers' energy bills and reducing environmental impacts. The program is authorized and overseen by the New Jersey Board of Public Utilities (NJBPU).

ABOUT SUSTAINABLE JERSEY

Sustainable Jersey is a certification program for municipalities in New Jersey. Launched in 2009, Sustainable Jersey is a nonprofit, nonpartisan organization that supports community efforts to reduce waste, cut greenhouse gas emissions, and improve environmental equity. It provides tools, training and financial incentives to support and reward communities as they pursue sustainability programs. Sustainable Jersey is one hundred percent voluntary and each town can choose whether it wants to get certified and the actions it wants to do in order to achieve enough points to get certified.

Table of Contents

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Executive Summary

Community solar provides a path for those who cannot install solar panels on their own building or residence—due to shading, orientation, cost, or other issues—to realize the cost savings and reduced carbon footprint of solar power. In addition, community solar projects can offer numerous benefits to municipalities, such as workforce development programs or positive development of difficult sites like landfills.

This guidebook is designed to assist municipal leaders in supporting community solar projects. Background information and resources are provided to illuminate the different roles municipalities can take in promoting community solar projects, including a step-by-step framework to help municipalities encourage projects most beneficial to the local community.

In particular, the guidebook discusses key considerations in developing a community solar project such as:

- Maximizing the benefit of the community solar project to the municipality and residents, particularly low- and moderate-income residents.
- Choosing municipal project roles.
- Selecting a site or sites in the community for projects.
- Navigating project development considerations such as creating a project team, financing model, and subscriber product offering for the project.
- Using a competitive process to select a developer or partner for the project.
- Applying for New Jersey's Clean Energy Program Community Solar Energy Pilot Program.

This guidebook also includes **case studies** from several municipalities selected from Pilot Year 1 of New Jersey's Clean Energy Program Community Solar Energy Pilot Program. These case studies show how community solar can benefit diverse municipalities, from large cities like Newark to smaller towns like Manchester.

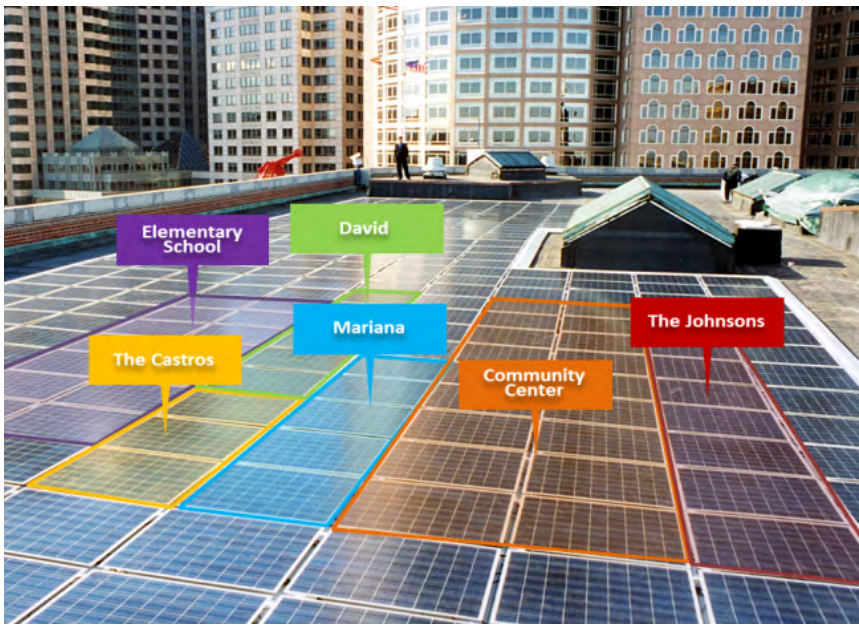
Community Solar Overview

Perth Amboy Community Solar Project. 2020.
Image courtesy of Solar Landscape.

What is Community Solar?

In traditional solar projects, property owners install solar panels on their property and receive credit on their utility bill for the electricity generated by the solar panels; this process is known as "net metering". In a community solar project, any utility customer can sign up as a participant to a solar installation sited elsewhere (on a landfill, municipal building, church, recreation center, commercial building, warehouse, etc.) and receive credit on their utility bill for the electricity created by the solar panels. Several customers can sign up for, or 'subscribe,' to the same solar installation for a percentage of the electricity produced by the community solar project.

The goal of NJCEP's Community Solar Energy Pilot Program is to create a community solar program that can bring the benefits of solar to all income sectors of New Jersey. Each facet of the program has been structured to incentivize inclusion of low- and moderate-income (LMI) residents. As a result, community solar is an opportunity to increase the amount of renewable energy being generated in New Jersey's communities and widen the range of residents able to participate in the clean energy transition. Access to community solar means that LMI residents see a cost reduction on their electricity expenses, thus reducing their overall energy burden (the percentage of household income that is used to pay energy bills). Other benefits include opportunities for workforce training as well as local job creation.



Cook County, IL. Community Solar Subscriptions.
www.cookcountyil.gov/communitysolar/CaseStudies

Does the municipality have to install solar panels on municipal property to support community solar?

No, the municipality can support community solar projects located anywhere in their electric utility service area. The municipality can take on a supportive role in an existing project or work with site owners or developers to create a new project. See Municipal Roles in Community Solar Projects section for further detail.

Benefits of Community Solar

Community solar is a path for electric utility customers who cannot install solar panels on their own property to realize cost savings and reduce their carbon footprint.

For residents, businesses, or other organizations that cannot put solar on their own roof for any reason—whether they are renters, have too many shade trees, cannot afford the cost, or other constraints—subscription to a community solar installation located off-site on a commercial rooftop, landfill, or parking lot canopy, for example, can allow them to participate in both the environmental and cost-saving benefits of solar energy. Community solar benefits the whole community in numerous ways by:

- Expanding access to solar in the community, including for low- and moderate-income residents
- Reducing energy costs for residents, businesses, and/or for government operations
- Increasing municipal income by leasing available rooftop, parking lot, or landfill space for solar installations
- Producing clean energy locally
- Creating local jobs and/or providing local workforce development
- Creating positive development on difficult sites, such as brownfields and landfills
- Enhancing community pride

Municipal support of community solar projects goes a long way towards making these projects successful. This guidebook details the different roles that municipalities can take in community solar projects and a step-by-step framework to help municipalities select proposed projects most beneficial to the local community.

Community Solar from the Customer's Point of View

Any metered customer in an electric utility service territory, including homeowners, renters, businesses, municipalities, institutions, non-profits, schools, and other entities can participate in community solar. Community solar projects can be structured so that participants are either subscribers or owners.

Subscription Model of Community Solar

In the subscription model, the customer signs a subscription agreement and receives credit on the utility bill for a portion of the electricity generated by the solar system. Subscribers to the community solar project will continue to receive a bill from the utility for their energy use, which will include the bill credit (i.e., the discount) associated with the subscription. A subscription will not necessarily cover the customer's full electricity usage. A separate bill will be sent to the subscriber for the cost of the subscription. A customer's bill savings are equal to the bill credit, minus the cost of the subscription.

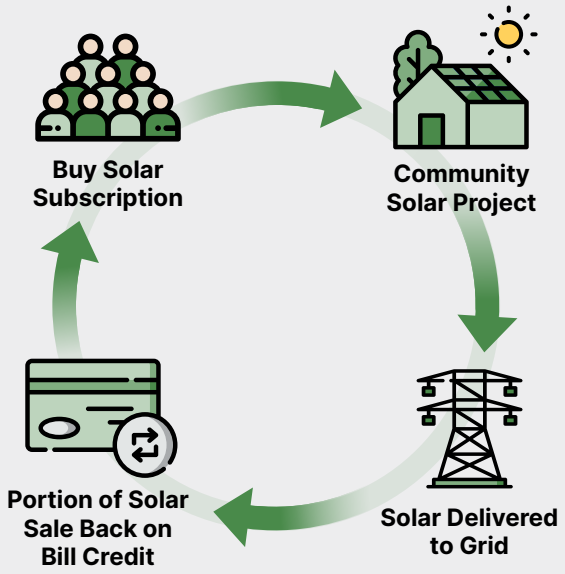
Subscription agreement terms may address the length of the subscription agreement, any guaranteed annual savings, missed payment penalties, and whether subscribers may retain a subscription if they move, for example, as long as their new address is in the same utility service area. Some projects may reserve a percentage of subscriptions for specific categories of subscribers, such as low- and moderate-income (LMI) residents or tenants of an affordable housing project.

Bill Credits in Community Solar

In community solar projects, solar panels are installed in a large array that serves multiple customers. This allows community solar to provide the benefits of solar to more customers and increases the number of sites that can be developed into successful solar projects, such as roof area on large buildings used for storage or other low energy applications.

Each subscriber receives a credit on their electric bill similar to 'net metering' available to customers that install solar panels on their roof. The community solar bill credit is calculated based on the subscriber's rate class. Credit for electricity production from the community solar panels can be 'banked' during high production months and the credit applied to later billing cycles on a customer's utility bill.

The bill credit does not represent 100% of the cost of electricity, meaning that community solar subscribers will continue to pay a portion of their electric bills that exceeds the amount of electricity produced by the solar subscription.



Financial Model of Community Solar

Information in model by NJCEP.

Separately, a community solar subscriber will receive a bill for their community solar subscription. Subscribers should check their contracts to make sure that the cost of the subscription is lower than the bill credit, thereby providing bill savings. Appendix E. Calculating the Savings from a Community Solar Subscription has more information about community solar bill credits.

Considerations for Master Meter and Affordable Housing Providers

In cases of master-metered buildings, the account holder of the master meter can subscribe to a community solar project and pass the benefits on to tenants. Affordable housing providers may qualify as an LMI subscriber for a community solar project, provided the benefits of the project are passed along to their residents/tenants. A directory of affordable housing providers is available from the NJ Department of Community Affairs.

Ownership Model of Community Solar

A community solar project may be structured so that instead of subscribing to the project for a fixed term, participants become owners of a portion of the generation capacity. Individuals, businesses, or other organizations may purchase a share of the solar project or a local nonprofit may own and administer a project on behalf of members. The participant contract will determine ownership terms, including apportioning of any incentives given to the project as well as any tax liabilities.

Supporting LMI Projects with Anchor Subscribers

Anchor subscribers are large energy users that support a community solar project by subscribing to a significant percentage (up to 40%) of the solar generation of the project. Anchor subscriptions usually have a longer contract term than other subscribers, often for the life of the project. The creditworthiness and longer contract term of the anchor subscriber provides financial stability to the project by reducing the subscriber turnover risk to the developer. A 2018 NREL study, **Modeling the Cost of LMI Community Solar Participation**, determined that projects without anchor subscribers had panel lease prices that were 55% higher than those with anchor subscribers.

Entities with more than one meter can have separate anchor subscriptions associated with each meter. Each meter will be associated with a unique subscription agreement and each meter can subscribe for up to 40% of the total project generation.

The anchor subscriber contract can be structured to absorb unsubscribed portions of the LMI reserved capacity until LMI subscribers are acquired. For example, an anchor subscriber may subscribe to percentage of the project for the life of the project but may subscribe for a higher percentage at the beginning of the project. In such arrangements, the contract may define the floor of participation as well as the ceiling.

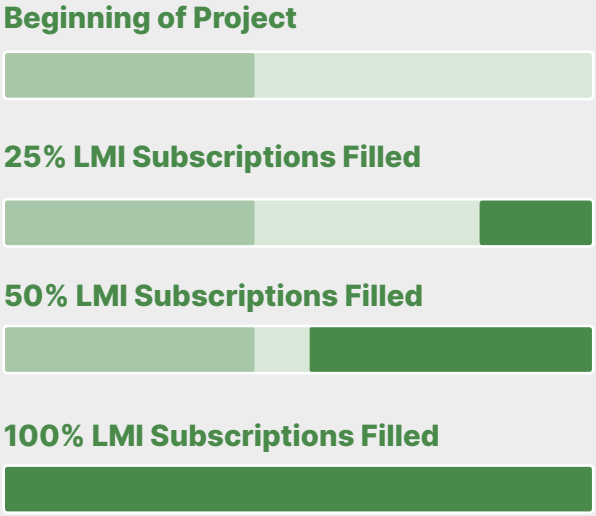
While the 'floor' of the subscription can be as low as 15% or less, the ceiling for the percent of the project subscribed by the anchor subscriber (non-LMI) can be no more than 40%. In the example in Box 2, the anchor subscription provides an early subscriber base for the project at 40% but falls over time to 0%, ending as LMI subscriptions fill out the project.

Some anchor subscribers, like affordable housing providers, can be counted as LMI subscribers. Municipalities can be anchor subscribers or can be project ambassadors and help bring local large energy users into projects as anchor subscribers.

Box 2. Anchor Subscriber Model

Structuring the anchor subscriber contract to provide income base until LMI subscription target is met

In example LMI subscription, target = 100%



Municipal Roles in Community Solar

Ribbon Cutting for Delanco Landfill Community Solar Project. 2021. Photo by Paul Seibert.
Image courtesy of Soltage.

Pictured from left to right:
Ed Cohen, Sustainable South Jersey
Kate Fitzpatrick, Delanco Township Committee
Jesse Grossman, CEO, Soltage
Troy Singleton, New Jersey State Senator
Joseph Fiordaliso, President, New Jersey Board of Public Utilities
Mark Miller, Operations Manager, Huen Electric
Herb Conaway, Assemblyman, NJ General Assembly
Jane Cohen, Executive Director, Governor's Office of Climate Action and the Green Economy

Selecting a Project for Municipal Support

While municipal support is not required for community solar projects to be approved, it is valuable to a solar developer. In addition to getting assistance from the municipality, projects that applied in Program Year 1 were scored higher in the NJCEP application process if they included letters from the municipality or other demonstrations of municipal support. A similar preference was identified in the Program Year 2 evaluation criteria (see Appendix A).

The municipality can condition its support of a community solar project on whether the project meets criteria determined by the community. Community criteria may include:

- **Benefit to the community**

  Are there opportunities for local workforce development, positive development of difficult sites like brownfields or landfills, or other ways that the community solar project will benefit the community?

- **Capacity dedicated to participation by low- and moderate-income (LMI) residents**

  Will a percentage of the project subscriptions be reserved for LMI residents? Is there a mechanism for funding incentives for LMI residents?

- **Protections for consumers**

  What is the proposed course of action if panels produce less than expected, the project ends early, or another unplanned event occurs? Can consumers end their subscription without significant cancellation fees in the event they move or wish to end their subscription?

- **Revenue generation**

  If the municipality is leasing its property to site the community solar project (use of municipal landfill, rooftop, parking lot), what revenue will the site leasing generate?

- **Responsibilities of the municipality**

  What work will be carried out by municipal staff?

- **Municipal costs**

  If the municipality provides incentives, such as reduced permitting fees, what will be the impact on the municipality?

- **Municipal benefits**

  Will the municipality join the community solar project as an anchor subscriber? What will be the estimated cost savings on the municipality's electric bills?

Once a municipality has decided on the preferred criteria for the project, the next step is often for the municipality to solicit proposals from solar developers.

Typical Municipal Roles in Community Solar Projects

There are several roles municipalities can take on in community solar projects; each role represents varying degrees of municipal involvement in the projects. Municipalities can create early financial stability for a project by becoming an anchor subscriber or help reduce subscriber acquisition costs by educating the community and serving as an outreach ambassador with local stakeholders. Municipal roles in community solar projects are described in more detail below.

Project Supporter

Municipalities may be contacted by project developers asking for municipal support for a community solar project. Projects with demonstrated municipal support (e.g. letter of support, municipal resolution, etc.) scored higher in the Program Year 1 project evaluation process. Municipal support is also expected to be considered in the Program Year 2 project evaluation. The municipality can work with the developer to determine whether to support the project, whether the municipality wishes to condition its support on specific design elements of the community solar project (e.g., LMI inclusion, community benefits, etc.), and whether the municipality wishes to serve additional roles for the project as listed in Box 3 below.

Outreach Partner

In the role of outreach partner, the municipality can use municipal resources (mailing list, website, etc.) to educate the community about community solar in general and to provide subscription details of municipally supported projects. Municipal outreach can help reduce the developer's customer acquisition costs, thus reducing the overall cost of the project.

Project Ambassador

As a trusted messenger, the municipality is an important ally to any community solar project. By acting as an ambassador for the project, municipal leaders can help recruit project partners, which may provide additional support for LMI inclusion in the project. Municipalities can help to recruit anchor subscribers, affordable housing property owners, and sponsors, such as non-profit and faith-based organizations that may underwrite some or all of the subscription fees for LMI residents.

Municipal Roles in Community Solar

Project Supporter

- Municipality works with developer to ensure that project is consistent with municipal goals and supportive of community interests
- Municipality provides letter of support for the project as part of the BPU application

Outreach Partner

- Municipality uses municipal resources (mailing list, website, etc.) to educate the community about community solar

Project Ambassador

- Municipality acts as ambassador for project, facilitating connections between developers, site owners, anchor subscribers, affordable housing property owners

Zoning

- Municipality reduces zoning barriers for large scale solar installations by:
  - Describing requirements for large scale ground mount solar
  - Describing requirements for commercial rooftop solar

Permitting

- Municipality helps developers understand local permitting requirements
- Municipality adopts permitting fee structure to incentivize community solar

Multi-Municipality Project Coordinator

- Municipality partners with neighboring municipalities to:
  - Reduce resource commitment needed by each municipality
  - Encourage advantageous pricing/ terms for subscribers as larger projects are more attractive to developers

Anchor Subscriber

- Municipality serves as substantial subscriber, up to 40% total site generation
- Municipality receives billing credit on municipal electric bill

Site Host

- Municipality hosts community solar project on municipal property
- Municipality generates revenue from the site lease for the solar installation

Developer/ Project Owner

- Municipality takes on higher level of involvement/difficulty
- Municipality directly arranges construction and other contracts (developer)
- Municipality legally and financially controls the project (project owner)

Zoning and Permitting

Municipal permitting requirements and zoning ordinances are important components in supporting community solar. Municipal zoning ordinances may need to be updated to specifically allow for large scale solar projects, including ground mount arrays and commercial rooftop installations. Additionally, the municipality may ease project development time and costs by designating the site of a community solar project as a redevelopment zone.

Municipalities can streamline permitting for community solar projects by offering a permitting consultation and by providing developers with a permitting checklist. Municipalities can further support community solar by offering expedited permitting and inspection processes or adopting reduced permitting fees for community solar.

Anchor Subscriber

Municipalities can support a community solar project by serving as an anchor subscriber. Municipalities with more than one meter can be anchor subscribers for more than one community solar project as long as each subscription is attached to a separate electrical meter, such as electrical meters for town hall, police station, public works, etc. Community solar anchor subscribers receive a bill credit on their electric utility bills for each meter.

NOTE: Municipal anchor subscriptions are subject to the normal procurement process; consult the municipality's procurement officer to determine the process required for the project under consideration.

Developer and Project Owner

Some municipalities may wish to take on the role of the developer or project owner. It is important to understand the difference between the developer and the project owner.

- The **developer** is responsible for procuring the contracts for the construction of the community solar installation.
- The **project owner** is the entity that legally and financially controls the community solar project. The project owner retains full ownership of the renewable energy certificates (RECs) generated by the project unless otherwise determined by the contract. Also, the project owner controls how subscriptions are structured and allocated.

Taking on either of these roles adds significantly to the difficulty of the project and may not be feasible or advisable for most municipalities. Both options will create additional administrative workload. Despite these difficulties, municipalities may wish to undertake one or both of these roles because:

- proposals received from RFP process did not meet municipal requirements, such as inclusion of local workforce development; and/or
- profits stay with municipality where they can either be retained by municipal government as operating budget or reinvested into the project in the form of increased incentives for LMI residents.

NREL. 2010. Solar Installation. Photo by Dennis Schroeder. 18482.

Site Host

If the municipality has land or buildings that are good sites for solar, these sites can generate revenue for the municipality. Municipalities can become site hosts in several ways, most often by leasing municipally-owned sites (rooftop, parking canopy, landfill, etc.) to the developer or by entering a power purchase agreement (PPA) with the developer for a solar installation on the site. In the PPA, the developer owns the solar installation, and the municipality purchases the electricity produced by the solar panels at a reduced rate.

Municipalities may choose to forgo site-leasing payments or bill credits for site hosting in return for beneficial terms for LMI subscribers, such as reduced subscription pricing or elimination of sign-up fees.

One of the benefits of community solar is the possibility of positive development on difficult sites like brownfields and landfills. For municipalities that need to cap a landfill, it may be possible to build the cost of the site capping into the community solar project proposal. The case studies include examples of projects sited on municipal landfills in Linden and Manchester.

Resources for site hosting, including sample lease agreements developed specifically for use in solar site leasing are provided in Appendix C. Procurement Guide; resources for brownfield development are provided in Appendix D. Resource Guide.

Multi-Municipality Project Coordinator

The benefits of community solar can be maximized by partnering with multiple municipalities. Municipalities in the same utility service area can create joint projects and share responsibilities and resources. A project with more community resources may attract more advantageous offers from developers, resulting in better pricing for participants, and reduced administrative overhead.

An example of such a partnership could include Municipality A being a site host and Municipality B acting as an anchor subscriber or outreach partner for Municipality A's site, with residents from both communities benefiting from the collaborative project. An example of community solar benefiting more than one town is a North Bergen project that also benefits Secaucus residents. See the case studies section for further details.

Bringing the Benefits of Solar to All Residents

Municipalities have an important role to play in making sure community solar projects include LMI residents. Taking an active role in supporting these projects not only makes the community more attractive to developers, but also enables the municipality to set project parameters so that there are clear project benefits to LMI residents.

The NJCEP Community Solar Energy Pilot Program incentivizes inclusion of LMI residents by setting aside a minimum of 40% of total program capacity for projects serving low- and moderate-income residents. Additionally, in Pilot Year 1 and 2, NJCEP offered additional points in the application scoring process to projects with at least 51% of the generation capacity reserved for LMI subscribers. Projects with municipal support also scored higher in the NJCEP application process.

Municipalities can condition municipal support for community solar projects based on project elements advantageous for LMI residents, such as subscription terms that:

- Reserve a percentage of the total site generation for LMI subscribers. LMI subscribers may take longer to recruit for community solar subscriptions. Reserving a defined percentage of subscriptions for LMI residents helps ensure that subscriptions are available for LMI residents as the LMI targeted outreach takes effect.
- Offer enhanced subscription pricing for LMI residents. The project can offer LMI subscriptions at a discounted price; this discount may be negotiated as part of the contract with the developer or underwritten by the municipality or another sponsor.
- Provide supportive LMI contract terms. LMI subscribers may feel more comfortable subscribing if contract lengths are shorter. Inclusion of a penalty-free contract release for unplanned events, such as an unexpected relocation, will also make LMI residents feel more at ease subscribing. LMI subscriptions should have payments set at the same price throughout the contract, with no payment escalator.

NREL. 2012. Solar Installation.
Photo by Dennis Schroeder. 21512.

Local Workforce Development

Another way to benefit LMI communities with community solar is including local workforce development and local workforce recruitment as part of a project. In order to facilitate the training program, a municipality may offer outreach support, a temporary site for training, or other resources to make the addition of a workforce development component to the project more feasible. Developers and other project partners may consider forming partnerships with existing programs to offer job training locally.

Structuring Projects for Low- and Moderate-Income Residents

Community solar offers a unique opportunity to bring the benefits of solar to low- and moderate-income residents. Strategies such as these can help encourage LMI participation in community solar projects. The case studies include examples of subscription and project structures for LMI projects from Pilot Year 1.

Subscription Structure

- **Reserved capacity for LMI subscribers** establishes a percentage of the total project generation that will only be available to LMI subscribers. The Pilot Program defines an LMI project as one that reserves at least 51% of the project's capacity for LMI subscribers.
- **Enhanced subscription terms** for for LMI residents may involve providing discounted fees for LMI subscribers and/or underwriting the fees for LMI participants partially or in full by non-profit entities, donors, the municipality, or via an incentive program.
- **Supportive LMI contract terms** for LMI subscribers include shorter contracts or other flexible terms.
- **Flexible anchor subscriber structure** provides flexibility for the anchor to absorb vacancies in the LMI reserved capacity.
- **Affordable housing providers** may participate as subscribers on behalf of their tenants as long as the benefits are passed through to the residents.
- **Sponsorship options** create opportunities for individuals and entities to sponsor or underwrite some or all of the fees for LMI residents.

Project Structure

- **Inclusion of an anchor subscriber** provides an early, constant income base for the developer. (See Anchor Subscriber Section).
- **Supportive permitting** offers waivers or reduced permitting fees for LMI projects.
- **Site host contract terms** may include site host (like the municipality) choosing to forgo lease payments or bill credits for site hosting in return for beneficial terms for LMI project subscribers.
- **Multi-municipality partnerships** may result in beneficial terms for LMI residents. For example, a solar array located in one municipality can offer subscriptions to affordable housing authorities in multiple municipalities.

Developing a Community Solar Project

Three key components to developing a community solar project are **siting the project**, **developing a project team**, and **creating the financial model/product offering** of the project.

NREL. 2016. Parking Canopy Solar Installation. Photo by Dennis Schroeder. 37951.

Siting: How to Determine the Best Place to Locate the Project

The site selected for a community solar project can impact the cost to build the project, and consequently, the offering made to subscribers. While cost and generation abilities of any site depend on site conditions, on average five acres of panels can host photovoltaic panels representing about one megawatt of solar, which would typically serve 100-200 households. The maximum project size for community solar projects in the NJ Community Solar Energy Pilot Program was capped at five megawatts. The Pilot Program had no minimum kW size requirements; however, projects were required to have at least ten subscribers.

Determining the site of a project is sometimes done by the municipality, or a developer may propose sites or suggest the municipality join a project sited in another part of the same utility service territory.

NYC Five Borough Administrative Building www.nycgovparks.org

Box 5. Bonus Scoring in NJCEP Evaluation Process

Siting Bonuses

Projects that include landscaping, land enhancement, pollination support, storm water management, and/or soil conservation will receive bonus points in the NJCEP Year 2 selection process. See Appendix A. Program Year 2 Evaluation Criteria for details on how points are awarded for siting.

Site Selection

Community solar can be located on many types of sites, including private or public land (brownfields, closed landfills), public buildings, commercial rooftops (warehouses, manufacturing facilities), affordable multifamily housing, buildings owned by nonprofit organizations and churches, and other sites. The solar installation must be located in the same electric utility service territory as the subscribers, i.e., if subscribers are PSE&G customers, the community solar project must be in PSE&G territory.

Online Tools to Evaluate Sites for Community Solar Projects

New Jersey Department of Environmental Protection (NJDEP) NJ Community Solar PV Siting Tool:

www.nj.gov/dep/aqes/solar-siting.html

The NJDEP Community Solar PV Siting Tool can show the estimated interconnection capacity of a site. The interactive tool can also show if sites qualify for points based on criteria in the Pilot application, such as brownfield designation.

NJDEP NJ Community Solar PV Siting Tool User Guide:

www.nj.gov/dep/aqes/docs/sstguide.pdf

PVWatts Calculator:

pvwatts.nrel.gov/pvwatts.php

PVWatts Calculator is an interactive tool created by the U.S. Department of Energy. The tool estimates the solar generation capacity based on the location and other characteristics of the site.

Interconnection Capacity Maps

Atlantic City Electric

Jersey Central Power and Light

Orange and Rockland Electric

Public Service Electric and Gas

For additional information about interconnection and contact information for each utility's interconnection department, see: NJCEP Interconnection Page.

Interconnection and Capacity

Each utility must have enough hosting capacity at the site to accept incoming electrical current, and each utility must have infrastructure in place in the area of the solar project to connect the solar system to the grid. Utility infrastructure upgrades to accommodate specific sites are possible but add to the overall development cost of the project.

New Jersey Department of Environmental Protection Site Permitting Process

Before submitting a project for approval, applicants have to complete the NJDEP Permit Readiness Checklist. Project organizers have the option to have the plans reviewed by the NJDEP Office of Permitting and Project Navigation to identify the permits needed and other possible issues. Floating community solar projects (projects sited to float on use bodies of water) must meet with the NJDEP Office of Permitting and Project Navigation before an application is submitted.

NREL. 2018. Floating Solar. Photo by Dennis Schroeder. 53994.

Common Types of Solar Arrays

When selecting a site for a community solar project, an important consideration is the type of solar array that can be installed at the site. Common panel arrays are described below.

Roof Mount Panels are installed on a building's roof. The condition of the roof is important; poor roof conditions may add to the cost of project. The roof should not require replacement within the projected lifetime of the solar installation (~25 years).

Ground Mount Solar Panels are mounted on a framework directly on the ground, including brownfields, closed landfill sites, and other sites that would be difficult to develop. Community solar projects may not be sited on preserved farmland.

Canopy Mount Panels are suspended over parking lots or other uses of the ground space. Canopy mounted panels have the highest cost per kWh, due to engineering and equipment required for the canopy.

Floating Panels are solar arrays floating on a body of water, such as Sayreville's 4.4 MW installation at the water treatment plant.

Box 7. The Role of Redevelopment Zones in Community Solar

Redevelopment Zones in Community Solar

If the site being considered for a community solar project is in a redevelopment zone the project will be able to take advantage of redevelopment zone financing tools and incentives as well as the provisions established for redevelopment zones in New Jersey contract law.

One of the powers of a redevelopment agency as put forth in N.J.S.A. 40A:12A-8 is the ability to lease or convey property or improvements without public bidding. While this may expedite a community solar project, the municipality may still decide to issue a request for proposals (RFP) for solar development of the site to ensure that the most advantageous development offer is selected for the project. Linden, NJ, one of the **case studies** featured in this guidebook, made the choice to issue an RFP for a developer for their project located on a municipal landfill redevelopment site.

If the site under consideration for a community solar project meets the criteria for a redevelopment zone as established under N.J.S.A 40A:12A-5, the municipality may consider designating the area a redevelopment zone.

Developing a Project Team

The Pilot Program application requires that the following project partners be known at the time of the application: Project Owner, Developer, and Property/Site Owner. Additional optional partners may include the subscriber organization, consultants, outreach partners, financing partners, and affordable housing providers. In Pilot Years 1 and 2, municipal applicants were exempt from identifying the developer at the time of application if they intend to select the developer via a public bidding process such as an RFP.

- **Project Owner**: entity that financially and legally controls the project; often serves as the developer, particularly in the early stages of project development.
- **Developer**: oversees construction, acts as liaison to utility.
- **Property/Site Owner**: owner of site where panels will be placed; can be a public entity site such as a municipality or school, a private entity commercial/industrial site, or a nonprofit entity site such as a church, shelter, affordable housing complex. The site owner can be, but does not necessarily need to be, the same as the project owner.
- **Subscriber Organization**: conducts subscriber acquisition and subscriber management. All subscriber organizations are required to register with the BPU.

Box 8. Using a Consultant to Develop a Community Solar Project

Using a Consultant to Develop a Community Solar Project

Hiring a consultant is a decision some municipalities make to facilitate planning for a community solar project, particularly if the municipality is seeking to lead or be actively engaged in the development of the project. Common roles for consultants include completing the NJCEP application paperwork and managing competitive bidding (RFP) to select a developer.

It is not mandatory to work with an energy consultant. However, if the municipality decides to hire an energy consultant, an RFP is highly recommended. If an RFP is issued, notifying energy consultants on the NJ BPU list of energy agents will maximize the number of proposals received. Another option for engaging an energy consultant is to work with a purchasing co-op that has already conducted a competitive bidding process for energy consultation services.

How will the consultant be paid? There are several ways consultant fees can be structured in a community solar project. The municipality can pay an agreed-upon fee directly, include the fee in a larger consulting contract, or compensate the energy consultant when the final contract is signed with a developer. If the energy consultant works "on spec" until the project is approved, the consultant is compensated through the terms of the developer contract. If the project doesn't move forward, the consultant is not paid.

Is a consultant required? No, having a consultant is not a requirement. A municipality is not required to take a major leadership role in the design and implementation of a project, but rather can provide support to a developer's project.

Incentives, Tax Credits, and Funding to Support Community Solar

Federal Programs

Investment Tax Credit (ITC)

The federal investment tax credit (ITC) allows a project owner to deduct a percentage of the cost of a solar project from their federal taxes. More information can be found in the U.S. Department of Energy Solar Technologies Office publication, ***Guide to the Federal Investment Tax Credit for Commercial Solar PV.***

State Programs

Brownfields

For projects that involve brownfields, the New Jersey Economic Development Authority (NJ EDA) has funding to support initial site preparation work through the Brownfields and Contaminated Site Remediation Program. More information can be found in New Jersey Economic Development Authority's report, Brownfields and Contaminated Site Remediation Program available at: **https://www.njeda.com/large_business/brownfields**.

New Jersey's Clean Energy Program's Administratively Determined Incentive (ADI) Program

Community solar projects are eligible for incentives through New Jersey's Clean Energy Program's Administratively Determined Incentive (ADI) Program. In almost all community solar projects, these incentives go to the project owner, unless otherwise agreed upon by contract. Details about the ADI program incentives can be found at **NJCleanEnergy.com/renewable-energy/programs/susi-program/adi-program**.

Soliciting Proposals for Community Solar

Once a municipality has decided what criteria the community desires for the project, the siting option or options being considered, which role or roles the municipality wishes to serve—such as site host, anchor subscriber, development of a project on a landfill site owned by the municipality, or establishing a redevelopment zone in the municipality—the next step is for the municipality to solicit proposals from solar developers.

Municipal leaders should form an advisory committee to draft the solicitation for community solar proposals. This committee may include:

- Business Administrator/Qualified Purchasing Agent/Municipal Attorney
  - provide guidance about procurement requirements
- DPW/Engineering department
  - identify sites for hosting project on municipal property
- Green Team
  - assist outreach efforts
- Affordable Housing Coordinator
  - provide information about the size and type of LMI housing
- Municipal Planner/Planning Board
  - identify zoning barriers to large scale solar installations
  - review and update permitting ordinances

Steps to Selecting a Community Solar Project for Municipal Support

Solicitation to solar developers for community solar proposals. → Pre-proposal meeting with developers to discuss municipal role in projects. → Evaluation of developers' proposals. → Select project(s) for municipal support.

Does the Municipality Need to Issue a Request for Proposals (RFP)?

Not necessarily. In particular, if the municipality is only providing support for a project that is being developed by a third-party, an RFP is likely not needed. If the municipality has a financial stake in the project, such as being a project subscriber, providing a concession, or receiving payment for leasing a site above a purchasing threshold, the municipality is required to go through a competitive selection process (**N.J.A.C. 5:34-1**). Consult the municipal procurement officer to determine the procurement requirements for the project in consideration.

If it is determined that a competitive process is not required, the municipality may still consider issuing an RFP or more informal solicitation to ensure that the project receiving municipal support is the best project available to the municipality. If the municipality elects not to have a formal selection process, it is strongly recommended that the municipality use evaluation resources such as those provided in **Appendix A. Program Year 2 Evaluation Criteria from NJCEP** and **Appendix B. Community Solar Product Offering Questionnaire** to compare the offerings of developers.

In the Pilot Program, for projects in which a municipality, county, or state is the project owner/applicant to NJCEP, the RFP/ RFQ or another bidding process may be completed after the NJCEP approval process.

NOTE: Some forms of municipal support described in the **Municipal Roles in Community Solar Projects** may meet the definition of a concession. Any resource provided by the municipality for which a developer would otherwise have to spend money or other resources can be considered a **concession**. An example would be if the municipality uses municipal resources, like the municipal website, to help sign up subscribers. Please consult with the municipal procurement officer and legal counsel on this matter.

Crafting an RFP for a Community Solar Project

The purpose of an RFP is to ensure that the municipality supports the project(s) that best helps the municipality meet its goals for a community solar project, such as including low- and moderate-income residents or workforce training.

RFPs should include a list of evaluation criteria that addresses both municipal goals for the project and the proposed contract terms for all classes of subscribers (LMI, anchor, etc.). The evaluation criteria included as part of New Jersey's Community Solar Energy Pilot Year 2 Application address many of the criteria municipalities should evaluate as part of an RFP. These resources are available in **Appendix A. Program Year 2 Evaluation Criteria from NJCEP** and **Appendix B. Community Solar Product Offering Questionnaire**.

If the municipal procurement officer determines that the municipality is required to award the contract based on pricing, the municipality should include the non-price criteria of an acceptable community solar project in the bid specifications. See **possible criteria**.

Key Considerations for RFPs for Municipal Community Solar Site Hosts

If the municipality is considering leasing its property to serve as a site host, the RFP will need to contain all the components of a traditional solar site RFP as well as address the criteria established by the municipality for community solar projects. These considerations include:

- Division of maintenance responsibilities between site owner and developer
- Roof integrity and warranties
- Terms of contract including structure of income to municipality
- Permitting and inspection compliance
- Tax implications of contract
- Liabilities
- Insurance requirements of all parties
- Interconnection responsibility
- Team qualifications and experience
- Technical specifications
- Project schedule
- Community benefits

Below are some procurement models for municipalities seeking to be site hosts or anchor subscribers for community solar projects. These models can be combined and modified based on the municipality's preferences and the specific circumstances of the project.

Community Solar Site Hosting Agreement Types

There are many possible site hosting agreements. The two most common agreements are:

- **Site Leasing**
  The municipality enters a lease with a developer for the site (municipal land, municipal rooftop, municipal parking lot canopy, etc.) and receives a direct lease payment for the site, according to the terms of the contract. **Appendix C. Procurement Guide** includes sample lease agreements developed specifically for use in solar site leasing.
- **Subscription Agreement**
  The municipality enters into an agreement with the developer, which allows the developer use of the site, and in return, the municipality receives a credit on their electric bill for the electricity produced by the solar system by means of a community solar subscription.

Note that if there is on-site electricity usage, it may be more advantageous for the municipality to develop the project as a net metered project that serves the electricity needs of the building, rather than a community solar project. If siting a net metered system and a community solar system in the same site, each system would be separately metered and operate independently.

Procurement Models for Municipal Site Hosts and Anchor Subscribers

Role	Financial Model	Project Details
Municipal Site Host	Municipal Site Lease	Municipality issues RFP/competitive bidding to lease site.* Municipality is paid directly by the solar developer. Payment to municipality is not tied to solar generation of site.
Municipal Anchor Subscriber	Municipal Community Solar Subscription Agreement	Municipality issues RFP/competitive bidding for a community solar subscription contract.* The municipality receives community solar bill credits applied to one or more municipal electrical accounts.
Municipal Site Host	Net-Metered Solar and Community Solar Site Lease Projects at the Same Site	If the solar project is planned for a site that uses electricity (has on-site load), the site owner would benefit from installing a traditional net metered solar array large enough to generate the amount of electricity used on-site. If there is space for additional solar panels on the site after the generation needs of the site owner are met, the remaining space can be used for a community solar project. The net-metered system would need to be separately metered and operated from the community solar system.*

** If the municipal procurement officer determines that the municipality is required to award the contract based on pricing, the municipality should include the non-price criteria of an acceptable community solar project in the bid specifications. See **possible criteria**.*

Conclusion

Community solar is a valuable tool bringing the benefits of solar to all New Jersey residents. Community solar projects create an economic pathway for adding solar to more rooftops, landfills, and other sites than was previously possible.

Projects that receive municipal support can be structured to align with municipal priorities, especially project elements that benefit LMI residents. While the municipality may receive calls from developers looking for a letter of support or other assistance for a proposed community solar project, municipalities are encouraged to use this guide to determine criteria by which the municipality can evaluate prospective community solar projects and consider potential roles for a municipality beyond providing its support.

Engaging in the process of soliciting proposals for community solar projects can help ensure that the municipality receives proposals for projects that offer the best terms available for both the municipality and its residents.

Perth Amboy Community Solar Project. 2020.
Image courtesy of Solar Landscape.

Steps to Creating a Municipally Supported Community Solar Project

Getting Proposals from Solar Developers		
Develop municipal stakeholder team/ Define community goals	▸ Decision makers/municipal leadership ▸ DPW/Engineering department: to develop list of potential suitable sites NJ Community Solar PV Siting Tool (see siting section). ▸ Green Team: develop list of possible outreach efforts ▸ Affordable Housing Coordinator: provide information about the size and type of LMI housing ▸ Municipal Planner/Planning Board: to evaluate zoning and permitting ordinances to incentivize community solar	pp. 8, 21
Evaluate multi-municipality project	Are there neighboring municipalities with assets that would combine with your municipal assets to make a stronger project?	p. 12
Hire consultant	▸ Having a consultant is not required ▸ Competitive bidding for consultant recommended but not required	p. 19
Identify municipal roles	▸ Compile list of incentives municipality is willing to offer towards project, such as underwriting LMI subscriptions ▸ Consider roles municipality would be willing to take on in project, such as anchor subscriber and/or site host	pp. 9-12
Solicitation for project developer	▸ Issue RFP if required or desired by municipality ▸ Issue less formal solicitation for project proposals in cases where RFP not required or desired	pp. 21-24
Selecting a Developer and Putting Together an Application to the NJCEP Community Solar Program*		
Project selection	Municipal team evaluates proposals and selects project(s) worthy of municipal support	p. 8
NJDEP permit readiness	Optional review by NJDEP Office of Permitting and Project Navigation to identify permits needed. Review mandatory for floating projects.	pp. 17
Application	Developer and municipality develop and submit application to NJCEP	p. 27
Pass resolution	Municipality passes resolution of support (this step is not mandatory and can be earlier in the process)	
NJCEP Approves Project		
Execute contracts	▸ Execution of lease/PPA agreement for site host ▸ Execution of subscriber agreement for municipal anchor subscriber ▸ Execution of contract for municipal roles per NJ Public Contract Law	

**Note: In the Pilot Program, if the municipality, county, or state is the project owner/applicant to NJCEP, the RFP/ RFQ or another bidding process to select the project developer may be completed after the NJCEP approval process. Please consult the Application Form for more information.*

Applying for Community Solar Energy Pilot Year 2

Information is presented on New Jersey's Clean Energy Program Community Solar Energy Pilot Program Year 2 for reference. The application for Pilot Year 2 (which closed in February 2021) can be found **here**.

Project Specifications:

- Maximum size of individual community solar project: 5MW, no minimum size
- Minimum 10 subscribers (possible exemption for multifamily buildings with a community solar project located on the property)
- Maximum 250 subscribers per 1MW capacity
- 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)
- Anchor subscriptions cannot exceed 40% of the project's annual net energy production
- Subscriptions cannot exceed 100% of the subscriber's 12-month historic annual usage
- Subscriptions are portable and transferable
- Approved project is expected to begin construction within six months of approval by Board, and be operational within 12 months
- Existing solar projects cannot apply to re-qualify as a community solar project
- A low- and moderate-income project is defined as a project in which a minimum 51% of project capacity is subscribed by LMI customers

Community Solar Pilot Application Scoring and Preferred Conditions

In order to be considered for the pilot in Year 2 of the program, an application must score at least 50 points. On the last page of the pilot program application, there is an application scoring matrix. The most beneficial attribute a project can have is to be an LMI project, meaning at least 51% of the project capacity is subscribed to by LMI subscribers. Affordable housing providers may qualify as LMI subscribers.

Other preferred conditions include: brownfield/historical fill siting; guaranteed savings of 10% or more to subscribers; flexible subscriber contract terms; partnership with a municipality, local community organization, or affordable housing provider; creation of local jobs or job training opportunities; community co-benefits (e.g., paired with storage, micro grid project, energy audit, energy efficiency measures); location of site in proximity to subscribers. The scoring rubric for the NJCEP Community Solar Energy Pilot Program Year 2 application is provided in **Appendix A. Program Year 2 Evaluation Criteria from NJCEP.**

FAQs

Does the municipality have to install solar panels on municipal property to have a municipally-supported community solar project?

No, the municipality can support community solar projects located anywhere in their electrical distribution territory (electrical utility service area). The municipality can take on a supportive role in an existing project or work with site owners or developers to create a new project. A list of current community solar projects can be found in the 12/20/2019 BPU Board Order.

A solar developer contacted the municipality and is requesting municipal support for a community solar project they are putting together, what is the best course of action?

Municipal support is valuable to a solar developer. In addition to getting assistance from the municipality, the project is also scored higher in the NJCEP application process. To make sure the municipality is supporting the best project available, it is recommended that the municipality follow the process laid out in the Selecting a Project for Municipal Support section.

Can a municipality have more than one municipally-supported community solar project?

Yes, a municipality may support more than one project. If the municipal support includes an anchor subscription by the municipality, each municipal anchor subscription will need to be associated with a different municipal electrical meter.

What percentage of savings on subscriber electric bills should a municipality expect to see in a community solar proposal?

Bill savings are likely to be between 10-20%. Projects may be structured to give low- and moderate- income residents a higher bill savings rate than other classes of subscribers. Unless guaranteed by contract, the bill savings can be calculated by subtracting the cost of the community solar subscription from the total estimated bill credits.

How does community solar compare to R-GEA?

Community solar and Renewable Government Energy Aggregation (R-GEA) are both important mechanisms for increasing renewable content in the electrical supply of consumers. Some differences and similarities are outlined below:

- Community solar projects make subscriptions available for a portion of municipal residents while R-GEA serves all residents who don't opt-out.
- Community solar directly leads to the creation of new solar arrays in the municipality's electrical service area while R-GEA currently relies on Renewable Energy Credits (RECs) of existing renewable energy projects, which may be located in other states.
- Community solar secures long-term, renewable energy content for subscribers; R-GEA contracts are short term and are impacted by price changes in the energy market.
- Community solar is often developed by a private entity, with or without municipal support and participation; R-GEA is necessarily implemented via a municipal or county RFP.
- Having a community solar project does not mean that a municipality cannot do an R-GEA, and vice versa. Customers participating in an R-GEA can also subscribe to a community solar project, and a municipality with a community solar project can participate in an R-GEA program.

For more information about R-GEA see the **Renewable Government Energy Aggregation: Sustainable Jersey How-To Guide (2019)** and the **Sustainable Jersey R-GEA action**.

How does net metering in traditional solar compare to community solar bill credits?

Community solar bill credits and net metering, while both advantageous, are not identical. In net metering, each kWh generated by the solar array is deducted from the number of kWhs billed to the customer at a 1:1 ratio.

The community solar bill credit provides a partial credit per kWh, as it excludes certain non-bypassable charges, including monthly fixed customer charges, such as the societal benefit charge. For customers with time of use (TOU) rates (mostly non-residential accounts) the community solar credit cannot be applied to demand charges. The community solar bill credit does not represent 100% of the cost of electricity, meaning that community solar subscribers will continue to pay a portion of their electric bills.

Community solar subscribers will receive two bills for their electricity use: an electric utility bill and a separate bill for the community solar subscription. Subscribers should check their contracts to make sure that the cost of the subscription is lower than the bill credit, thereby providing bill savings. See **Appendix E. Calculating the Savings in a Community Solar Project**.

Can municipalities participate in the NJCEP Community Solar Program?

Municipal utilities may develop their own community solar projects; they are not eligible to participate in the NJCEP Community Solar Energy Pilot Program. Municipal utilities also do not need BPU approval to start their own Community Solar Program.

How will the Clean Energy Act Solar Transition impact community solar subscribers?

New Jersey is beginning a transition process in the solar market that will change incentives available for solar projects. In the case of community solar, these renewable energy credits (called Transition RECs, or TRECs) are most often allotted to the project owner or developer. Subscribers and other project partners will likely not be involved in the process of navigating the transition market.

For details about TREC incentives available: bpu.state.nj.us/bpu/pdf/boardorders/2020/20200309/3-9-20-8H.pdf

Does municipal support mean that a community solar project is automatically able to proceed?

No, all community solar projects must receive conditional approval from the New Jersey Board of Public Utilities in order to proceed. Municipal support for proposed projects was considered in the evaluation of Pilot Year 1 and 2 projects, among other criteria.

Is it possible for the monthly subscription fee to be included in the utility bill along with the bill credit?

NJCEP is considering this prospect, but currently, including the subscription fee on the utility bill, also referred to as consolidated billing, is not provided for in the NJCEP Community Solar Energy Pilot Program rules.

Can a Government Energy Aggregation (GEA) opt-out model be applied to community solar to allow groups of residents to be subscribed to a project unless they opt-out?

Maybe. The current community solar rules do not allow for an "opt-out" method of subscriber enrollment, and require that subscribers provide their affirmative consent to be signed up for community solar. However, the BPU has proposed a rule amendment which would allow "opt-out" subscriber enrollment under limited circumstances; this rule proposal is under consideration, and may be effective for Year 2 projects if approved by the BPU. The status of this proposed rule can be found at NJCleanEnergy.com/renewable-energy/programs/community-solar.

Visit New Jersey's Clean Energy Program Community Solar FAQ at: https://njcleanenergy.com/renewable-energy/programs/community-solar/FAQs

Case Studies

These case studies reflect projects as planned at the time of the Community Solar Energy Pilot Year 1 approvals in December 2019.

Final project structure may vary from these case studies.

NREL. 2010. Workers Installing Rooftop Solar. Photo by Dennis Schroeder. 18482.

Atlantic County Utility Authority (ACUA)/ Pleasantville

2 MW LMI project sited on the Atlantic County Utilities Authority landfill in Egg Harbor Township

- **Project Procurement**

  ACUA issued an RFP for a Power Purchase Agreement to solar developers; the RFP was issued after project was selected by NJ BPU

  ACUA selected the most beneficial offer from among several bids

- **Municipal Roles in Community Solar Project**

  Ambassador to project partners: Councilperson's office introduced the project to affordable housing managers

- **Benefit to Municipality/ACUA from Community Solar Project**

  Discounted energy costs for LMI residents

  Positive development of difficult to use land: solar panels on landfill space

East Orange

0.5054 MW LMI project sited on a parking deck, Brick Church Redevelopment Project

- **Municipal Roles in Community Solar Project**

  Ambassador to project partners: municipal government is aiding in outreach to affordable housing authorities

  Outreach partner: town will promote project to eligible residents via website, etc. reducing customer acquisition costs of developer

- **Benefit to Municipality/Community from Community Solar Project**

  Discounted energy costs for LMI residents (10-15% discount)

Linden

5 MW LMI project sited on the Linden Municipal Landfill

- **Project Procurement**

  The township issued an RFP for solar developers to lease site prior to project application being submitted to BPU

  Municipal leaders selected the option that best met the needs of the community from among several bids

- **Municipal Roles in Community Solar Project**

  Site host: project will be site on municipally owned landfill

  Ambassador to project partners: Mayor's office introduced developer to affordable housing managers

- **Benefit to Municipality/Community from Community Solar Project**

  Discounted energy costs for LMI residents (10% discount)

  Positive development of difficult to use land: solar panels on landfill space

  Income for municipality from lease of municipal land

Manchester

4.62 MW LMI project located on Manchester Township Landfill

- **Municipal Roles in Community Solar Project**

  Site host: project will be sited on municipally owned landfill, designated as an area in need of redevelopment

  Outreach partner: town will promote project to eligible residents via website, etc. reducing customer acquisition costs of developer

- **Benefit to Municipality/Community from Community Solar Project**

  Discounted energy costs for municipality: LMI residents (10% discount)

  Capping of municipal landfill is being funded and managed by the developer as part of the project

  Positive development of difficult to use land: solar panels on landfill space

  Income to municipality: lease of site to developer

Secaucus (two projects)

1.34 MW LMI project sited on a rooftop in Secaucus

- **Benefit to Municipality/Community from Community Solar Project**

  Discounted energy costs for LMI residents (15% discount)

  Discounted energy costs for other subscribers (10% discount)

2.22 MW LMI project sited on a rooftop in North Bergen, supported by Secaucus

- **Municipal Roles in Community Solar Project**

  Ambassador to project partners: Mayor's office introduced developer to affordable housing managers

- **Benefit to Municipality/Community from Community Solar Project**

  Discounted energy costs for seniors/LMI residents (15% discount)

Perth Amboy

2.68 MW LMI project sited on a rooftop in Perth Amboy
4.33 MW LMI project sited on a rooftop in Perth Amboy

- **Benefit to Municipality/Community from Community Solar Project**

  Discounted energy costs for LMI residents (10-15% discount)

  Workforce training program in collaboration with local non-profits; training program graduates have been employed on project construction

Perth Amboy Community Solar Project. 2020.
Image courtesy of New Jersey's Clean Energy Program.

Appendix A. Program Year 2 Evaluation Criteria, NJCEP Community Solar Energy Pilot

The rubric below was developed by New Jersey's Clean Energy Program for use in evaluating community solar proposals for the pilot phase of New Jersey's Clean Energy Program Community Solar Energy Program Pilot Year 2. Projects must score a minimum of 50 points total in order to be considered for participation in the Community Solar Energy Pilot Program. Rubric subject to change, see New Jersey's Clean Energy Program for most up to date application which includes rubric.

Evaluation Criteria	Max. Points
Low- and Moderate-Income and Environmental Justice Inclusion ***Higher preference:*** LMI project	**25**
Siting ***Higher preference:*** landfills, brownfields, areas of historic fill, rooftops, parking lots, parking decks, canopies over impervious surfaces (e.g. walkway), former sand and gravel pits, floating solar on water bodies at sand and gravel pits that have little to no established floral and faunal resources (*) ***Medium preference:*** floating solar on water bodies such as water treatment plants and sand and gravel pits, that have little to no established floral and faunal resources (*) ***No Points:*** preserved lands, wetlands, forested areas, farmland ***Bonus points*** for site enhancements, e.g. landscaping, land enhancement, pollination support (3 bonus points max) ***Bonus points*** if project is located in a redevelopment area or an economic opportunity zone (2 bonus points max) ***No Points:*** preserved lands, wetlands, forested areas, farmland **Note: Applicants with a floating solar project must meet with DEP prior to submitting an Application, and take special notice of DEP's siting guidelines*	**25 plus bonus points**

Community and Environmental Justice Engagement ***Higher preference:*** formal agreement, ongoing collaboration or effective partnership with municipality and/or local community organizations and/or affordable housing provider ***Medium preference:*** consultation with municipality and/or local community organization(s) and/or affordable housing provider ***No Points:*** no collaboration or collaboration has not been proven	**15**
Product Offering ***Higher preference:*** guaranteed savings >20%, flexible terms* ***Medium preference:*** guaranteed savings >10% ***Low preference:*** guaranteed savings >5% ***No Points:*** no guaranteed savings, no flexible terms* *Flexible terms may include: no cancellation fee, short-term contract	**15**
Other Benefits ***Higher preference:*** Provides jobs and/or job training and/or demonstrates co-benefits (e.g. paired with storage, EV charging station, energy audits, energy efficiency)	**10**
Geographic Limit within EDC Service Territory ***Higher preference:*** municipality/adjacent municipality ***Medium preference:*** county/adjacent county No Points: any geographic location within the EDC service territory	**5**
Project Maturity ***Higher preference:*** project has received all non-ministerial permits; project has completed an interconnection study	**5**

Appendix B. Community Solar Product Offering Questionnaire

This worksheet was adapted from the Community Solar Subscriptions and Subscribers and product offering worksheet included in the application for New Jersey's Clean Energy Program Community Solar Energy Program Pilot Year 2.

Project Attributes

1. What is the estimated or anticipated number of subscribers?

2. What is the estimated or anticipated breakdown of subscribersby category: residential, commercial, industrial, other?

3. Is the proposed community solar an LMI project? What percentage of the capacity will be reserved for LMI residents or affordable housing providers?

4. Does the project have a clear plan for effective and respectful customer engagement process? Does the project serve LMI communities or include partnerships with organizations that have experience serving LMI communities?

5. Does the proposal allocate at least 51% of project capacity to residential customers?

6. Does the proposed community solar project include plan to have an affordable housing provider qualify as an LMI subscriber? If "Yes," estimated or anticipated percentage of the project capacity for the affordable housing provider's subscription? If "Yes," what specific, substantial, identifiable, and quantifiable long-term benefits from the community solar subscription are being passed through to their residents/tenants?

7. Does the proposal include use of an anchor subscriber? What is the estimated or anticipated percentage or range of the project capacity for the anchor subscriber?

8. Is there any expectation that the account holder of a master meter will subscribe to the community solar project on behalf of its tenants? If "Yes," what benefits from the community solar subscription are being passed through to the tenants?

9. Are there geographic restrictions for distance between project site and subscribers?

Product Offering Options by Subscriber Type

This set of questions ***should be filled out for each category of subscriber*** included in the proposal, such as residential subscriber, master-meter subscriber, anchor subscriber, LMI subscriber.

1. **Subscription type:** Is the subscription based on: kilowatt hours per year? percentage of community solar facility's nameplate capacity? percentage of subscriber's historical usage? percentage of subscriber's actual usage?
2. **Subscription price:** Is the subscription a fixed price per month or is the price variable? What is the basis for price variation?
3. **Fee escalator:** Does the subscription price have an escalator? at which intervals? of what percent?
4. **Contract term:** What is the length of contract? Is there a month-to-month contract option?
5. **Fees:** Is there a sign-up fee? early termination/cancellation fee? other fee(s)? at what frequency?
6. **Guaranteed savings:** Does the subscription guarantee or offer fixed savings or specific, quantifiable economic benefits to the subscriber? If "Yes," are the savings guaranteed? fixed as a percentage of monthly utility bill? fixed guaranteed savings as compared to average historic bill? fixed as percentage of bill credits?
7. **Special conditions:** Are there any other special conditions or considerations?

Appendix C. Procurement Guide

Even in cases where competitive bidding is not required by law, the municipality may decide it is best served by issuing a request for proposals (RFP) or a more informal call for proposals. See the **Soliciting Proposals for Community Solar** section for more information.

The municipality is required to go through a competitive bidding process via a Request for Proposals if the value of the municipal support meets the definition of a concession, or if the municipality has a financial stake in the project that is above the established bid threshold. Projects that involve leasing municipal rooftops or land must be competitively bid under the rules set forth in the New Jersey Municipal Land Use Law N.J.S.A. 40:55D.

Soliciting and Evaluating Proposals from Solar Developers

New Jersey Division of Community Affairs. Public Contract Law N.J.A.C 5:34-1 www.nj.gov/dca/divisions/dlgs/resources/rules_docs/5_34/njac_5341.pdf

Solar Energy Industry Association. 2016. *Residential Consumer Guide to Community Solar.* www.sustainablejersey.com/fileadmin/media/Actions_and_Certification/Actions/Energy/SEIA_Residential_Consumer_Guide_to_Community_Solar_2016.pdf

The Solar Foundation. 2012. *Steps to a Successful Solar Request for Proposal (RFP).* www.sustainablejersey.com/fileadmin/media/Actions_and_Certification/Actions/Energy/Solar_Foundation_Steps_to_a_Successful_Solar_Request_for_Proposal_2012.pdf

U.S. Department of Energy. NREL. *Community Solar Database.* https://data.nrel.gov/submissions/95
Lists all community solar projects by state including developer names.

Site Leasing/Power Purchase Agreements

Clean Energy Resource Teams. Great Plains Institute. 2015. Lease templates.

- Rooftop Lease: **Download model rooftop lease agreement**
- Land Lease: **Download model land lease agreement**

Practical Law Real Estate. 2015. *Rooftop Landlords: Look Before You Lease.* https://content.next.westlaw.com/Document/Iffb88146ddf311e498db8b09b4f043e0/View/FullText.html?contextData=(sc.Default)&transitionType=Default

Solar Energy Industry Association. 2016. *Guide to Land Leases for Solar.* www.sustainablejersey.com/fileadmin/media/Actions_and_Certification/Actions/Energy/SEIA_2016_Guide_to_Land_Leases_for_Solar.pdf

U.S. Department of Energy. NREL. 2009. *Power Purchase Agreement Checklist for State and Local Governments.* www.sustainablejersey.com/fileadmin/media/Actions_and_Certification/Actions/Energy/NREL_PPA_Guide_2009.pdf

Appendix D. Resource Guide

Sustainable Jersey Resources

Sustainable Jersey Actions

Brownfields Reuse Planning Action

Resources to aid brownfield redevelopment including information about funding and incentives available for this purpose.

Community-Led Solar Initiatives Action

Make Your Town Solar Friendly Action

Municipally Supported Community Solar

Sustainable Jersey Webinars

Community Solar in New Jersey (2018)
Click here for webinar recording; click here for webinar slides

Community Solar by Municipalities (2019)
Click here for webinar recording; click here for webinar slides

Navigating the Community Solar Application (2019)
Click here for webinar recording; click here for webinar slides

Planning Solar to Serve the Whole Community (2019)
Click here for webinar recording; click here for webinar slides

Case Studies from New Jersey's Community Solar Energy Pilot Year 1 (2020)
Click here for webinar recording; click here for webinar slides

Too Good to be True? Reducing Energy Costs with Community Solar (2020)
Click here for webinar recording; click here for webinar slides

General Resources for Community Solar

Illinois Solar Energy Association. 2017. *Community Solar Project Proposal Development.* www.illinoissolar.org/Community-Solar-Project-Proposal-Development-Presentation

New Jersey's Clean Energy Program. 2019. *Community Solar Energy Pilot Program Rules.* N.J.A.C. 14:8-9 https://njcleanenergy.com/files/file/R_2019%20d_021%20(51%20N_J_R_%20232(a)).pdf

New Jersey's Clean Energy Program. *Community Solar FAQ.* https://njcleanenergy.com/renewable-energy/programs/community-solar/FAQs

U.S. Department of Energy. NREL. 2010. *Guide to Community Solar, Utility, Private, and Non-Profit Project Development.* www.sustainablejersey.com/fileadmin/media/Actions_and_Certification/Actions/Energy/NREL_2010_Guide_to_Community_Solar.pdf

Brownfield and Landfill Sites

New Jersey Economic Development Authority. *Brownfields and Contaminated Site Remediation Program.* www.njeda.com/large_business/brownfields

U.S. Environmental Protection Agency. 2016. *Community Solar: An Opportunity to Enhance Sustainable Development on Landfills and Other Contaminated Sites.* www.sustainablejersey.com/fileadmin/media/Actions_and_Certification/Actions/Energy/EPA_Community_Solar_2016.pdf

U.S. Environmental Protection Agency. *Siting Renewable Energy on Potentially Contaminated Lands, Landfills, and Mine Sites.* USEPA RE-Powering America's Land Website www.epa.gov/re-powering

This site has resources and tools, including re-powering mapper tool and solar decision tree tool, aimed at aiding site owners and developers in evaluating sites for renewable energy projects.

Community Solar Outreach

Sustainable Princeton. Community Solar Factsheet. https://www.sustainablejersey.com/fileadmin/media/Actions_and_Certification/Actions/Municipally_Supported_Community_Solar/Sustainable_Princeton_Community_Solar_Fact_Sheet.pdf

Sustainable Princeton. Community Solar Subscriber Tip Sheet. https://www.sustainablejersey.com/fileadmin/media/Actions_and_Certification/Actions/Municipally_Supported_Community_Solar/Sustainable_Princeton_Community_Solar_Subscriber_Tip_Sheet.pdf

Siting Community Solar Projects

New Jersey Department of Environmental Protection (NJDEP). *NJ Community Solar PV Siting Tool.* www.nj.gov/dep/aqes/solar-siting.html

The NJDEP Siting Tool shows if sites may qualify for extra points during the application, available capacity for the site, estimated site size, etc.

NJDEP. *NJ Community Solar PV Siting Tool Guidebook.* www.nj.gov/dep/aqes/docs/sstguide.pdf

U. S. Department of Energy. NREL. *PVWatts Calculator* (online tool for calculating generation capacity). https://pvwatts.nrel.gov/pvwatts.php

Solar Workforce Development

Solar Training Network. www.americansolarworkforce.org

The Solar Foundation. 2018. *Strategies for Workforce Development: A Toolkit for the Solar Industry.* www.sustainablejersey.com/fileadmin/media/Actions_and_Certification/Actions/Energy/TSF_2018_Strategies-for-Solar-Workforce-Development-TOOLKIT.pdf

The Solar Foundation. *Workforce Development Resource Page.* www.thesolarfoundation.org/workforce-development/solar-training-network/

Low- and Moderate-Income Projects

New Jersey Department of Community Affairs. *Directory of Affordable Housing Providers.* www.state.nj.us/dca/divisions/codes/publications/developments.html

U.S. Department of Energy. NREL. 2018. *Design and Implementation of Community Solar Programs for Low- and Moderate-Income Customers.* www.sustainablejersey.com/fileadmin/media/Actions_and_Certification/Actions/Energy/NREL_2018_Design_and_Implementation_of_CS_for_LMI_Customers.pdf

U.S. Department of Energy. NREL. 2018. *Modeling the Cost of LMI Community Solar Participation: Preliminary Results.* www.sustainablejersey.com/fileadmin/media/Actions_and_Certification/Actions/Energy/2018_NREL_Modeling-the-Cost-of-LMI-Community-Solar-Participation.pdf

U.S. Department of Energy. NREL. 2019. *Up to the Challenge: Communities Deploy Solar in Underserved Markets.* www.sustainablejersey.com/fileadmin/media/Actions_and_Certification/Actions/Energy/NREL_Up_to_the_Challenge_Communities_Deploy_Solar_in_Underserved_Markets_2019.pdf

Appendix E. Calculating Savings from a Community Solar Subscription

Customers that subscribe to a community solar project will receive two bills for their electric utility use: a community solar subscription bill and a bill from the electric utility company. The cost for the community solar subscription depends on the subscription contract offered for each community solar project. The electric utility bill will show a community solar bill credit for the energy produced by solar panels for which the customer has subscribed.

To calculate the amount of savings, the customer needs to compare the cost of these two bills.

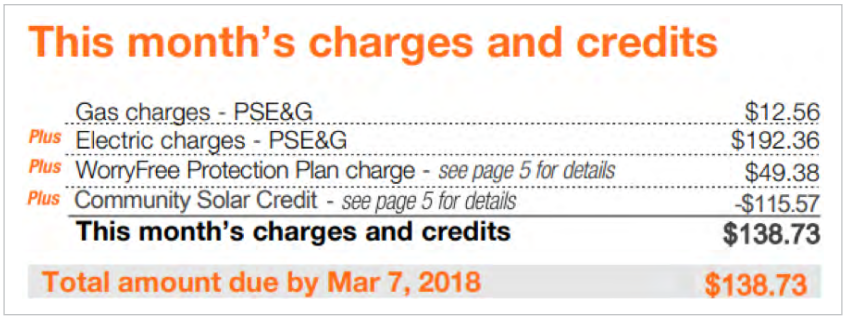
Community solar bill credit (included in electric utility bill)
- Community solar subscription bill (billed separately)

= Total savings for billing period

Community Solar Bill Credit, Included in Electric Utility Bill

Subscribers to community solar projects receive a credit directly on their electric utility bill for the electricity generated by the solar panels associated with their community solar subscription.

The electric utility bill will show the cost of the electricity used by the customer and the credit from the community solar subscription. The example below is excerpted from a sample PSE&G residential bill showing the billing credit.



This month's charges and credits

	Gas charges - PSE&G	$12.56
Plus	Electric charges - PSE&G	$192.36
Plus	WorryFree Protection Plan charge - *see page 5 for details*	$49.38
Plus	Community Solar Credit - *see page 5 for details*	-$115.57
	This month's charges and credits	**$138.73**
	Total amount due by Mar 7, 2018	**$138.73**

The value of the community solar bill credit is based on the retail rate of each customer that has subscribed to a community solar project. Each kilowatt hour of electricity generated by the solar panels is credited to the customer's utility bill based on the value of the credit set for each utility and rate class. This means that the utility credits the customer for the energy produced by the solar panels associated with their community solar subscription at a set rate per kWh. This rate includes both supply and delivery charges but does not include demand charges or non-bypassable charges, as described below.

Community Solar Subscription Bill

Community solar participants receive a separate bill for their community solar subscription fee. The cost for the community solar subscription depends on the subscription contract offered for each community solar project. The subscription contract will include details on the percent savings the customer can expect from their participation in the community solar project.

When the customer is signing up for a subscription, the size of the subscription will be determined by reviewing the customer's past electric utility bills to calculate the 12-month average usage per billing period. The subscription can vary in size but will not be larger than the 12-month average usage. For example, if over a 12-month period a customer uses an average 100kWh/billing period, their community solar subscription would be set at a maximum of 100kWh of solar generation or less.

The percentage of the total electric utility bill offset by the bill credit will depend on the size of a participant's community solar subscription. The closer the community solar subscription is to the participant's actual electricity usage, the larger the portion of the electric utility bill covered by the community solar bill credit will be. As noted above, community solar billing credits cannot be applied to non-bypassable charges on the customer's electric utility bill.

The subscription contract will include details on the percent savings the customer can expect from their participation in the community solar project. The subscription contract may or may not offer a guaranteed percentage of savings. Participants should review the subscriber contract carefully to see if a percentage of savings is guaranteed and how the savings are calculated.

Calculating the Savings

To calculate the total electric utility bill savings received for participating in a community solar project, the subscriber needs to subtract their community solar subscription fee (billed separately from the electric utility bill) from the community solar credits received on their electric utility bill.

If the customer's total electric utility bill averages $200/billing period for a 12-month period, to have a ten percent savings, their total savings per billing period must be at least $20. To show a 10 percent savings, the community solar bill credits (line item on the electric utility bill) minus the subscription fee (billed separately) must average at least $20.

*NOTE: Some fees on electric utility bills are considered 'non-bypassable charges' (**N.J.A.C. 14:8-9**) and community solar billing credits cannot be applied to those fees. Each utility has provided community solar bill credit details for each rate class (e.g. residential, commercial) and sample bills at* NJCleanEnergy.com/renewable-energy/programs/community-solar/bill-credits.

Glossary

Affordable Housing Authority
A government agency that administers programs of the U.S. Department of Housing and Urban Development, which promotes strong communities and quality affordable housing for all.

Avoided Cost Rate
The lowest cost an investor-owned utility is allowed by law to pay for solar generation. This price is the cost the utility avoided spending because the electricity was generated by the solar owner. In net metering, there is an annual "True Up" statement where solar generation that exceeds the usage of meter associated with the solar array is credited to the site owner at the avoided cost rate. The avoided cost rate is lower than the retail rate used to credit generation, not in excess of usage.

Brownfield
A site that has been contaminated by previous commercial or industrial use.

Capacity
Ability of the grid infrastructure to safely and reliably accommodate an influx of electricity from distributed energy projects like solar. The term capacity is also used to refer to the total size of a project or program (e.g. the Community Solar Pilot Year 1 total capacity was 75 MW).

Capacity Map
A map that shows the amount of grid interconnection capacity available for locations. In the context of New Jersey's Community Solar Energy Program, capacity maps were developed by the EDCs and can be found here: Atlantic City Electric, Jersey Central Power and Light, Public Service Electric and Gas, Orange and Rockland Electric.

Concession
An agreement allowing a company, such as a solar developer, to provide a service requiring the approval or endorsement of the municipality, or to act on behalf of the municipality. Concessions may or may not involve payment or exchange, or provision of services by or to the municipality. (N.J.A.C. 5:34-9.4)

Consolidated Billing
In the context of community solar, consolidated billing allows both the community solar billing credit and the subscription fee to be billed on the electrical utility bill. Consolidated billing is under consideration by BPU but is not currently provided for community solar projects in New Jersey.

Electric Distribution Companies (EDCs)
Companies that manage the transmission and distribution of electricity, also known as electric utilities. In New Jersey, EDCs include rural electric cooperatives, municipal electric companies, and investor-owned utilities (IOU). See list of IOUs below.

EDC Service Territory

The geographical area in which an electric distribution company (EDC) has exclusive rights to distribute electricity. Electricity consumers in that territory may only purchase electricity transported through that EDC's infrastructure network.

Fee Escalator

A contract term that allows the base price of the subscription to increase over the course of the contract.

Interconnection and Capacity

Interconnection is the physical point of exchange of electricity between the electric distribution company and customer. A given interconnection point has a certain capacity, tied to the amount of electricity that can pass through it in a given time frame.

Investor-Owned Utility (IOU)

Investor-owned electric utilities in New Jersey are regulated by the Board of Public Utilities. The IOUs in New Jersey are: Atlantic City Electric, Jersey Central Power and Light, Public Service Electric and Gas, and Orange and Rockland Electric.

Low- and Moderate-Income (LMI)

As defined by the Community Solar Energy Pilot Program, a low-income household has an adjusted gross income at or below 200% of the Federal Poverty Level. A moderate-income household has a total gross annual household income over 200% of the Federal Poverty Level, but no more than 80% of median income, as determined by the U.S. HUD annual income limits.

Master Meter

A single meter that measures the electric, water, or natural gas usage of multiple housing units, such as in multifamily housing facilities.

Net Metering

A program that allows participants to sell excess electricity generated by their own solar system to the utility. In New Jersey, participants receive the advantageous net-metered rate, usually very close or equal to what a resident pays for a kWh, on their utility bill for each kWh of electricity their system produces over the course of a year. At the end of an annualized period, the customer-generator will receive credit on their utility bill at the less advantageous avoided cost rate of electricity for any excess generation that remains.

Power Purchase Agreement (PPA)

A financial agreement in which a developer arranges for the design, permitting, financing, and installation of a solar energy system on a customer's property at little to no cost. The developer sells the power generated to the host customer at a low fixed rate and retains any tax credits and other incentives generated from the system (Illinois SEA, 2017).

Request for Proposal (RFP)

A solicitation for proposals for a product or service. RFPs include detailed specifications of the desired product or service and proposals are selected on price and the fulfillment of other criteria listed in the specifications.

Solar Engineering, Procurement, Consulting Company (Solar EPC)

A company that provides all services necessary to create a solar installation: engineering (design); procurement (purchase/manufacture of parts); and construction (installation).

SECTION VI

RESOLUTIONS

TOWNSHIP of BURLINGTON

RESOLUTION

2025-R-255

RESOLUTION APPOINTING MEMBERS TO THE COMMUNITY ENERGY PLAN COMMITTEE FOR BURLINGTON TOWNSHIP

WHEREAS, Burlington Township has received a grant from the NJ Board of Public Utilities to prepare a Community Energy Plan, which will help to facilitate future clean energy programs and initiatives; and

WHEREAS, the terms of the grant award requires that the Township appoint a "Planning Team", whose primary function will be to review the plan prepared by the Township's Consultant, Triad Associates, and make recommendations to the Governing Body with respect to the implementation of initiatives and actions that addresses both the needs of the community and aligns with the priorities of the municipal leadership; and

WHEREAS, it is the role of the Governing Body to appoint members of the various municipal committees.

NOW, THEREFORE, BE IT RESOLVED by the Township Council of the Township of Burlington, County of Burlington and State of New Jersey, that Council, in recognition and with gratitude, hereby appoints the following individuals as members of the Township's Community Energy Plan Committee:

- Council Member Patricia M. Siboczy
- Council Member / PSE&G Employee Michael A. Ramos
- Township Qualified Purchasing Agent Stacey Schwoebel
- Township Engineer Scott Hatfield
- Green Team Chair Rachelle Gizinski
- Jonathan Luyber (Township Resident)

DATE: December 9, 2025

TOWNSHIP OF BURLINGTON

PATRICIA M. SIBOCZY
President of Council

ATTEST:

MARY E. FIELD, RMC
Municipal Clerk

TOWNSHIP OF BURLINGTON

RESOLUTION

2023-R-189

RESOLUTION SUPPORTING DIMENSION RENEWABLE ENERGY'S PROPOSED COMMUNITY SOLAR PROJECTS AT 1950 RIVER ROAD AND 320 DULTY'S LANE

WHEREAS, the State of New Jersey enacted N.J.S.A. 48:3-87.11 authorizing the Community Solar Energy Pilot Program, and implementing regulations were adopted with the directive that the Board of Public Utilities adopt by January 1, 2022, rules to convert the Pilot Program to a Community Solar Energy Program; and

WHEREAS, the January 1, 2022, deadline was not met and the application process for new community solar locations was not open; and

WHEREAS, on August 16, 2023, the Board of Public Utilities issued in Docket No. Q022030153 its "Order Launching Community Solar Energy Program" on a first-come, first-served basis, which Order became effective on August 23, 2023; and

WHEREAS, the Community Energy Solar Program will be receiving applications on November 15, 2023, and each application is to include a Community Engagement and Subscriber Acquisition Plan with a letter of support from the municipal council and/or mayor of the municipality where the project will be located; and

WHEREAS, in addition to furthering New Jersey's clean energy goals, community solar projects are required to reserve fifty-one per cent (51%) of their capacity to persons of low and moderate income; and

WHEREAS, Dimension Renewable Energy has requested support for two community solar projects to be located at 1950 River Road and 320 Dulty's Lane, and in support of Dimension's request for municipal support it has provided a description of its proposal for each location, which description is attached hereto; and

WHEREAS, to further benefit residents Dimension Renewable Energy has agreed for a six month period to focus its efforts solely on enrolling Burlington Township residents.

NOW, THEREFORE, BE IT RESOLVED, by the Township Council, with the recommendation of the Mayor, that the Township supports the Dimension Renewable Energy projects proposed to be located at 1950 River Road and 320 Dulty's Lane subject to compliance with the requirements of Code § 330-38.3, and with the commitment by Dimension Renewable Energy that for a six-month period following approval it will work collaboratively with the Township to focus its efforts on enrolling Township residents with the goal of achieving full subscription by Township residents for the solar energy produced at each project.

DATE: September 26, 2023

TOWNSHIP OF BURLINGTON

Robert W. Jung
President of Council

ATTEST:

Mary E. Field, RMC
Municipal Clerk

TOWNSHIP OF BURLINGTON

RESOLUTION

2026-R-166

RESOLUTION ADOPTING THE COMMUNITY ENERGY PLAN (CEP) PREPARED IN CONNECTION WITH THE NEW JERSEY BPU CEP GRANT PROGRAM

WHEREAS, New Jersey Board of Public Utilities ("NJBPU") authorizes and oversees the NJCEP program and has created a grant program for municipalities to develop a Community Energy Plan ("CEP") to meet the goals of the New Jersey's Energy Master Plan ("EMP"); and,

WHEREAS, New Jersey's EMP: Pathway to 2050 established that community level action is necessary to achieve the state's goal of 100% clean energy by 2050; and,

WHEREAS, Community Energy Planning is the process by which communities collaboratively select and strategically implement emissions-reducing initiatives that fulfill the EMP goals; and,

WHEREAS, the Township of Burlington is invested in developing a CEP to help the State achieve its goal of 100% clean energy by 2050; and,

WHEREAS, by way of Resolution 2024-R-037, the Township applied for and received a grant from the NJBPU to prepare a CEP, and;

WHEREAS, during the creation of this Plan, the Governing Body appointed a CEP Committee to review the Plan and solicited input through a community engagement meeting that was held at the Municipal Building on April 14, 2026; and,

WHEREAS, the resulting CEP will help the Township plan for and invest in renewable energy and enhance community resiliency for all residents by encouraging the development of sustainable strategies that increase clean energy production, reduce energy use, cut carbon pollution, and strengthen our community against the impacts of climate change; and

WHEREAS, upon approval by the BPU, the CEP will be on file in the Office of Township Clerk.

NOW, THEREFORE, BE IT RESOLVED by the Township Council of the Township of Burlington, County of Burlington and State of New Jersey, that:

Section 1. The Township hereby adopts the Burlington Township CEP to guide energy efficiency and resiliency initiatives.

DATE: July 14, 2026

TOWNSHIP OF BURLINGTON

GEORGE M. KOZUB
President of Council

ATTEST:

MARY E. FIELD, RMC
Municipal Clerk