# CATCHING SOME RAYS: SOLAR ON BROWNFIELDS WEBINAR The Webinar will begin Shortly



SEPTEMBER 15, 2021 10:00 – 11:30 AM





Sean Vroom, Director

NJ Brownfields

Assistance Center @NJIT



**Brad Higginbottom**Project Developer
Solar Landscape



**Betsy McBride**Former Mayor
Pennsauken, NJ

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## Housekeeping

- All will be muted during presentation.
- Submit questions via Q&A to "All"
- All slides and the recorded webinar will be made available on the NJ Brownfields Assistance Center's website





## Mission

- to educate and engage communities around brownfield issues
- to provide free technical assistance and resources to county and municipal governments, and nonprofits challenged by former industrial and commercial properties
- to develop tools, strategies, and resources; create partnerships; and provide subject matter experts to brownfields-challenged communities



## The NJIT Team



planners, engineers,
environmental scientists, and social scientists
who have helped hundreds of communities
throughout the country



## How can we help you?

#### **Resource Center**



njit.edu/njbrownfields



@njbrownfields



www.linkedin.com/company/njbrownfields



## How can we help you?

#### **Brownfields Help Desk**



973-596-6415



njbrownfields@njit.edu

- **Answers to quick questions**
- **\*** Conversations about brownfield challenges
- **Actions plans/next steps**

### WHAT IS A BROWNFIELD?

#### **State Definition**

"any former or current commercial or industrial site that is currently vacant or underutilized and on which there has been, or there is suspected to have been, a discharge of a contaminant."



### WHAT IS A BROWNFIELD?

### Federal Definition

"A brownfield is a property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant."



### WHY SOLAR ON BROWNFIELDS?



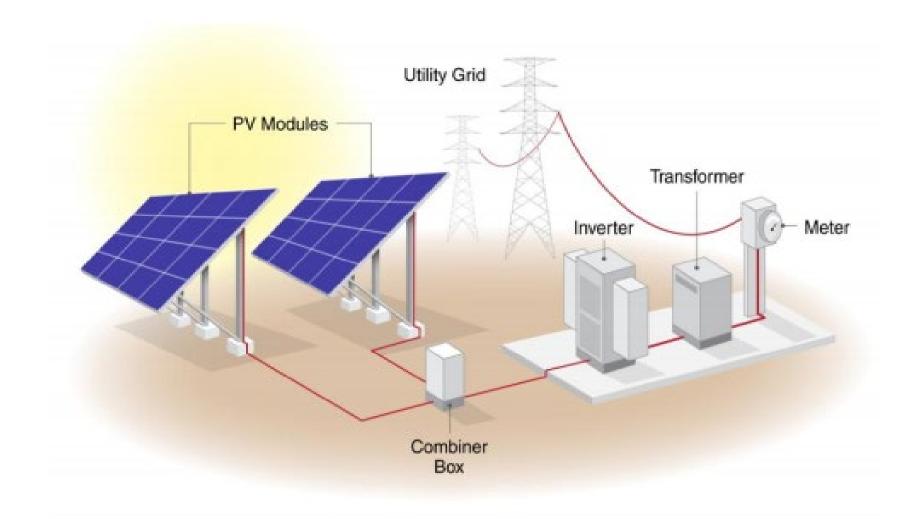
- improves the local tax base
- has to potential to create energy savings
- creates jobs
- turns blight into economic opportunity
- aligns with global warming trends
- can put otherwise difficult properties into productive use







## Solar 101 – Power Grid Basics



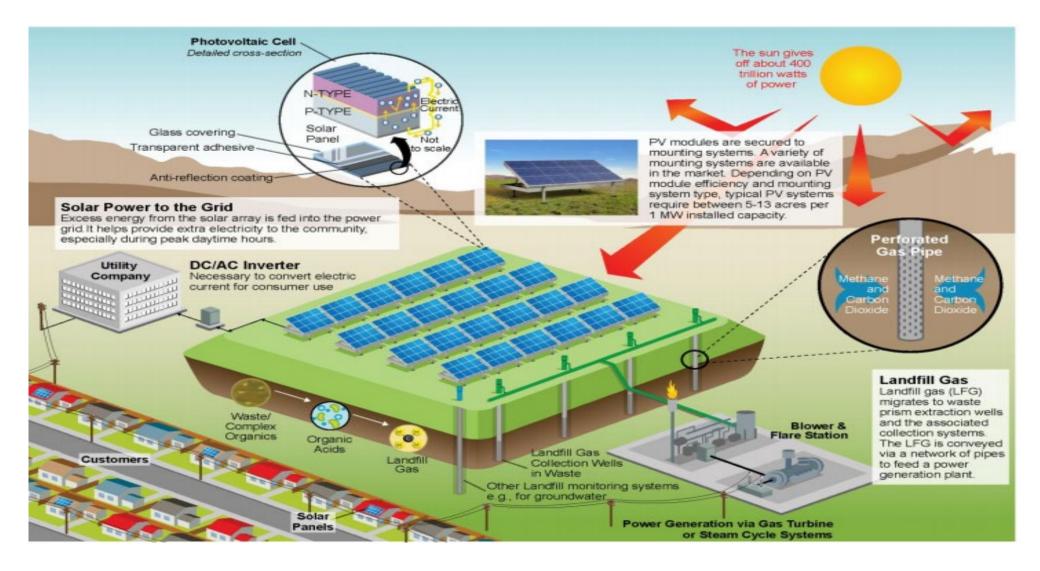


## How Solar Works

- Sun hits solar panels
- Positive / Negative sides in solar panel create DC current
- Inverter converts DC to AC power
- Transformer steps up Voltage to deliver to Grid
- Solar meter measures kWh output from solar array
- AC Power is delivered to electrical grid for immediate use

## Landfill / Power Grid depiction







### New Jersey Community Solar

Timeline

Commercial real estate owners in New Jersey are already receiving lease payments and touting their commitment to sustainability through the NJ Department of Clean Energy's Community Solar Pilot Program.



## The Community Solar Opportunity So Far

225

#### Megawatts

The total amount of solar capacity allocated n the first two years of the NJ Community Solar Energy Pilot Program .

+35,000

#### NJ Residents

The number of NJ residences powered by clean solar energy without the need for panels on residential rooftops +198,000

#### **Metric Tons**

The amount of carbon dioxide that will be prevented from entering the NJ atmosphere each year by projects from NJ Community Solar's first two years



Transitioning our state to clean energy will not only reduce the harmful emissions polluting our air, but it will also spur much needed economic growth and create career opportunities for a diverse workforce to participate in the clean energy innovation economy.

NEW JERSEY GOVERNOR, PHIL MURPHY



#### Community Solar - How it Works



Brand new state initiative to bring environmental justice to communities



Guaranteed discount 20-25% every year on electricity cost



Access for All apartments, condos, high rises, with no solar panels needed



Enroll on-line. No long-term contracts. No hidden fees www.gosolarlandscape.com



51% of the electricity generated must be sold to low to moderate income households



Municipalities and CRE partner with solar developers to use landfills, brownfields and rooftops to transform the way we consume energy in NJ.







#### BENEFITS OF COMMUNITY SOLAR





#### **ENERGY GENERATION**

Each project generates kWh of clean electricity to the grid to be sold to NJ residents.





#### **ENERGY SAVINGS**

Subscribers receive a 20-25% reduction on their energy bills. 51% of our project subscribers are low to moderate income households.





#### **CLIMATE CHANGE**

Community Solar projects are already preventing millions of tons of carbon dioxide from entering the atmosphere every year.





#### **JOB TRAINING**

We are providing solar installation job training to NJ residents as part of our commitment to the Board of Public Utilities.



#### The Community Solar

#### Opportunity for Municipalities





#### **DEVELOPER**

The developer finances, builds, owns and operates the project at their own expense. There is no cost to the Township for the project.



#### **COMMUNITY SOLAR HOST**

Receives a quarterly lease payment from the developer for hosting the community solar project and achieves ESG goals. No investment, or requirement to purchase energy.

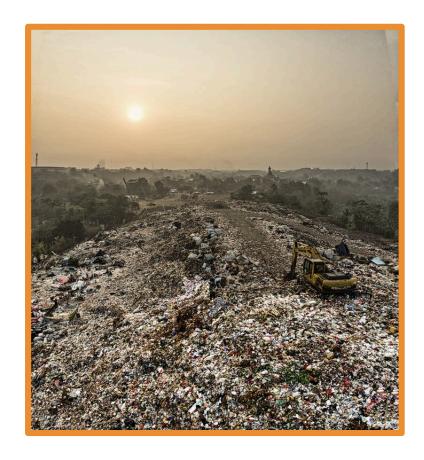


#### **LOCAL COMMUNITY**

Residents subscribe to receive the clean, discounted energy. Subscribers are guaranteed to save 20-25%% on electricity costs. 51% of the subscribers must be low to moderate income households.



## Why Put Solar on Land fills?



- Best use for otherwise unusable property
- Financial benefits of income producing project
- Can help in covering remediation costs
- Quiet and low profile, no school or services tax burden
- Demonstrates local commitment to clean energy / environment
- Local job creation



### What to Consider

- Federal Regulations:
  - **≻**Location
  - ➤ Design
  - **≻**Operating Practices
  - ➤ Ground Water Monitoring
- Landfill Characteristics
- Closure Status
- Cap Characteristics
- Age and Thickness Settlement



2006 NJ DEP landfill list shows 854 public/private landfills in NJ. Many of these are too small for solar development or have already been redeveloped into buildings, parks, solar fields, highways or other uses.

## What to Consider (2)



- Slope and Stability
- Control of Leachate and Landfill Gas
- Stormwater Management
- Long Term Maintenance Requirements
- Interconnection





#### Why put Solar on Brownfields?

The Environmental Protection Agency (EPA) defines a brownfield site "as any land in the United States that is abandoned, idled or underused because redevelopment and/or expansion is complicated by environmental contamination that is either real or perceived." There are 450,000 brownfields nationwide, 415 had renewable energy projects as of 2020.

- Environmental Benefits
- Economic Benefits
- Best use for otherwise undevelopable property
- Clean energy benefits





#### What to consider for Solar on Brownfields?

- ✓ Degree of Remediation Required
- ✓ Alternative Uses of property
- ✓ Early discussions with NJ DEP / Civil Engineers
- ✓ Explore funding for Remediation
- ✓ Sufficient Land / Size?
- ✓ Time Consideration





## Key Roles for Municipalities

#### Must Do

- Zoning/Permitting
- Selecting Developers
- Project Negotiation
- Legal

#### Can Do

- Engagement and Convening
- Site Preparation
- Workforce Development



#### Case Study – Pennsauken Landfill

Pennsauken Landfill – 9600 River Road Pennsauken
Has 3 solar arrays and a methane gas recovery system
First array built in 2009

Camden County Initiative – supported by Pennsauken Energy Power Partners – private equity fund manager Latest array initiated in 2017 – 2.7 MW DC, additional 20K panels

Pre-cast concrete footing used as foundation on side slopes
PCFA shares revenue with private investor – SRECs and PPA
Power goes to private business: Aluminum Shapes





#### Mayor McBride quote on Pennsauken landfill:

"We are thrilled in Pennsauken that this new project will afford us the opportunity to have energy provided here for residents. It's on the grid and it's local energy," adds Pennsauken Mayor Betsy McBride. "We're a business-friendly community, but we also are strongly supportive of any environmental improvements that can help us. It's taken a long time for people to realize that renewable energy is the way to go and the way of our future. It's wonderful to have great partners that see that and work at it every day."





## Community Solar – Landfills/Brownfields Scores!

- Landfills / Brownfields are well suited for success in Community Solar
  - Siting points give preference to landfills/brownfields/historic fill projects
    - Bonus siting points for redevelopment areas/economic opportunity zone
  - Community and Environment Justice Engagement
    - Bonus points for partnership with municipality or affordable housing
  - Job Training preference
  - Geographical Limit points
    - Highest points for municipality/adjacent municipality
  - Low to Moderate Income Subscribers 51%



## Funding for Brownfields Projects

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: <a href="https://www.njeda.com/large\_business/brownfields">https://www.njeda.com/large\_business/brownfields</a>



## Community Solar Benefits

- 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

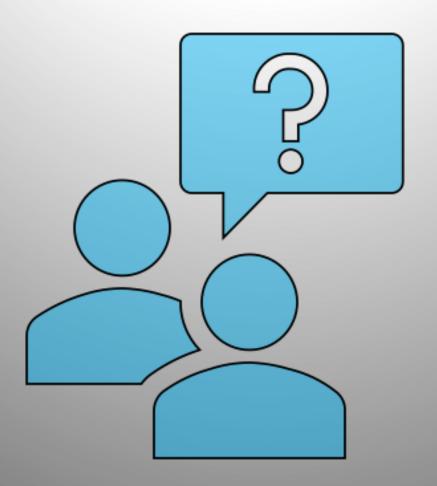


## Summary: NJ Community Solar

- Perfect program for Landfill/Brownfield Solar Development
- Municipalities can be anchor subscribers up to 40% of project
- 3-year pilot program currently in 3<sup>rd</sup> year
- Best financial choice for vacant land
- Max project size: 5MW, no minimum
- Customers in Govt Energy Aggregation (R-GEA) can participate in Community Solar

## QUESTIONS?







## **CONTACT US**

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