



Montgomery County
GreenBank

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Montgomery County Green Bank

Presentation to Montgomery Alliance

May 2021

Agenda

1. Solar Options for Residents and Businesses
 2. Rooftop Solar
 3. Community Solar
 4. County Resources – Larissa Johnson
-





What is the Montgomery County Green Bank?

- **Nonprofit Mission-Driven Organization: Chartered By Montgomery County: Independent, 501(c)3 Corporation**
 - **Purpose: To accelerate investment In Energy Efficiency And Renewable Energy in Montgomery County**
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- **Approach: Partner with private financial institutions to de-risk clean energy investments and bring more private capital into the clean energy marketplace**
 - **Market: Only for homes and businesses located in Montgomery County**



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What residential activities does the Green Bank Support?

- Energy Efficiency: Improvements to the building that reduce energy consumption: e.g., heating and cooling systems, building envelope, controls, and insulation
-
- Renewable Energy: Systems that provide energy from renewable sources and reduce the energy used from the electric grid; e.g., solar PV, geothermal

Solar Options for Residents and Businesses

Rooftop Solar

- Installed on home
- Generates power for the home
- Offsets demand on grid
- Could be owned or rented (lease / PPA)

Community Solar

- Built by a solar developer in the County on a site somewhere in the County
- Offers subscriptions to residents to buy a set amount of power at a specific price (usually less than the price per kWh of the grid) and this is paid to the community solar developer
- Subscriber gets a credit on their utility bill for the amount of power used from the community solar array



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ROOFTOP SOLAR INSTALLATION 101

Reviewing electricity usage and sizing a solar PV System

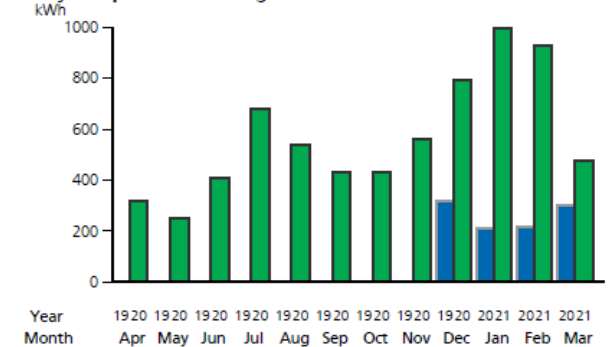
Bill Review

- The installer will look at a current bill
- How much energy does the home use in one month? In one year?



Your monthly Electricity use in kWh

Daily temperature averages: Mar 2020: 52° F Mar 2021: 50° F



System Sizing

- Offset - % of usage
- Roof orientation
- Code requirements

How installation works and how roof condition impacts eligibility

Considerations:

- Roof condition
- Roof space and setbacks
- Equipment placement and costs



Important equipment installed

Residential



Commercial



Where do I start?

1. Research installers

- Green Bank: mcgreenbank.org/partners/contractor-partners
- Email the Green Bank: cmccabe@mcgreenbank.org
- SEIA website: mdvseia.org

2. Reach out and schedule site surveys

3. Get multiple quotes

4. Review proposals

5. Chose an installer and sign a contract

Installation Flow

1. Installer submits permitting and interconnection requests
2. Permits approved and interconnection conditional approval
3. Installation is scheduled
4. Installation completed
5. County inspection (first through final)
6. Pepco interconnection
7. Final permission to operate (PTO)
8. Turn system on and start saving (money and the planet)!





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ROOFTOP SOLAR FINANCING 101

Ownership versus Contracting (e.g., renting) Homeowners and Businesses

Ownership - Upfront purchase

- Homeowner or Business Cover all costs:
 - Homeowner or Business Owner pays for the solar PV system up front with cash or financing*
 - If financing, pay predictable monthly payments for term of financing
- Homeowner or business owns, maintains, and insures the solar PV system
- Can take Investment Tax Credit (26% in 2021) and own SRECs that can sell on market

****Green Bank product provides flexible terms for ownership through its Clean Energy Advantage (Residential) or Commercial Loan for Energy and Renewables (commercial) products. Works with any installer.***

Contract - Third party ownership

- No upfront costs to Homeowner or Business
 - Homeowner or business signs a Power Purchase Agreement (PPA)* or Lease agreement for 20 years.
 - A solar installer or developer will own, finance, install, manage, and insure the solar system placed on your property.
 - ITC and SRECS are utilized by 3rd party to lower PPA/Lease price
 - Homeowner or business pay monthly payments at a price per kWh according to either the production of the system (PPA) or on a predetermined payment amount schedule (Lease)

****Green Bank PPA product offers favorable pricing for commercial properties. Works with any installer.***



How do the incentives work?

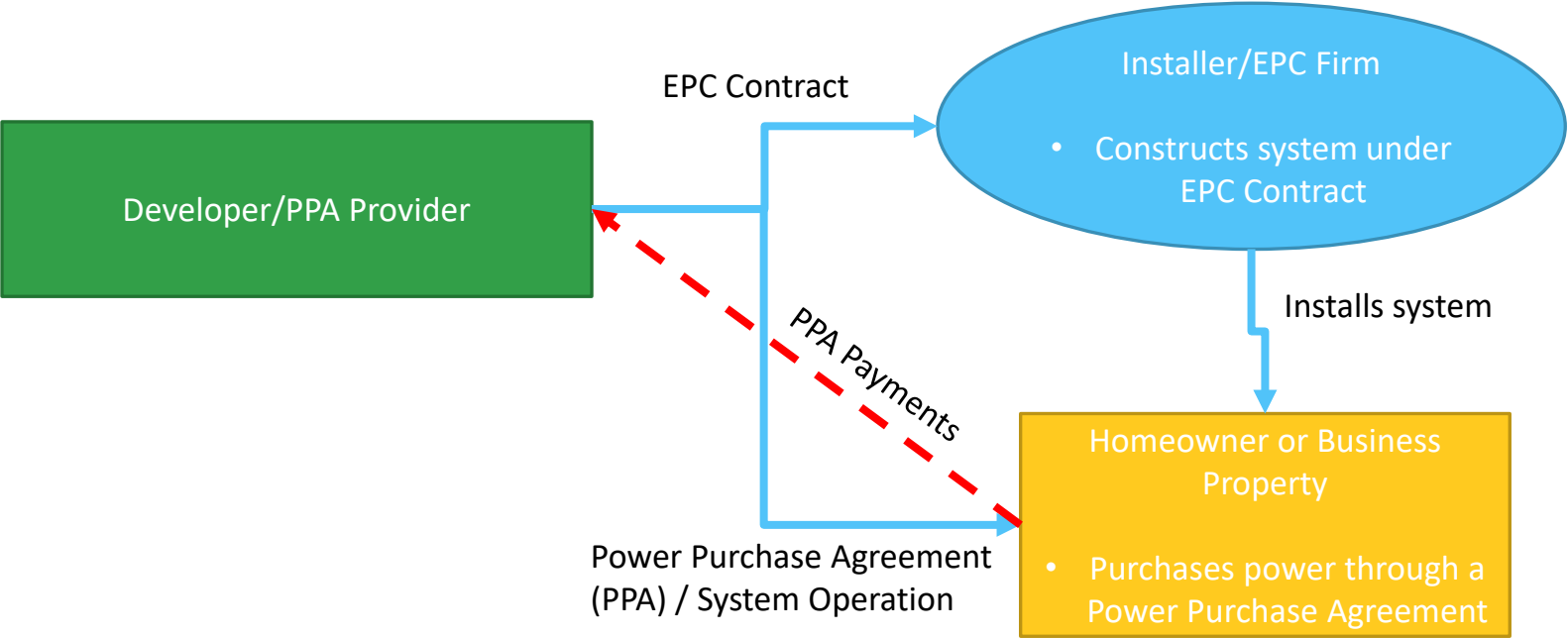
Federal Tax Credit

- Owner takes this credit when filing taxes, and it reduces the amount owed in income taxes (dollar for dollar)
- 26% of the total project costs in 2021
- Consult accountant for tax liability

Solar Renewable Energy Credits (SRECS)

- For each 1000 kilowatt hours generated, one credit is earned.
- One credit = \$77 as of today
- Market fluctuates and program is subject to termination
- Carbon offset market for solar system owner to help utilities meet their Renewable Performance Standards

How Does a PPA Structure Work?



Solar Models – which is best?

Upfront Purchase/Ownership

- Non-profit entity does not qualify for tax credit - 26%
- Return on Investment would be a determined number of years
- Typically, highest Net Present Value option. Also highest responsibility/liability option
- MCOB Loan available at 4.5-5% interest.

Third Party Ownership

- Allow nonprofits to access federal tax credit.
- Provide access to smaller systems
- Benefit nonprofits with expertise of strong developer/PPA provider
- Allow a commercial entity solar facility access with NO upfront cost
- Allow a commercial entity immediate savings

Property Example

Size of array:	9 kW
Potential Annual Generation:	12,000 kWh
Project Costs (est):	\$29,250
Net metering benefit annually (year 1)	\$ 1,400
Investment Tax Credit (in 2021)	\$ 7,605
State Clean Energy Rebate	\$ 1,000
SRECs (in Year 1)	\$600 to \$850



Solar Loan Financing Example

	Short Term (18 months)	Long Term (12 year)		Benefits over 25-year system term
Project Costs (9 kW example)	\$29,250	\$29,250		
State MEA Rebate		(\$1,000)		
Investment Tax Credits	(\$7,605)	(\$7,605)		
Loan Amount	\$7,605	\$20,645		
Loan Payoff Amount (18 mo)*	\$7,909			\$304
Annual Amount of Loan Payments (\$190.15/mo)*	\$0	\$2,392.32		\$27,382
Annual kWh savings (Net metering)		(\$1,400)		(\$35,000)*
Annual SRECs (est 10 years at \$60/MW)		(\$600)		(\$ 6,000)
Out-of-pocket Net	\$304 one time	\$392.32 annual		(\$13,314)*

1* Uses 5% note rate.

2* Does not factor in possible inverter replacement of insurance.



Residential Solar PPA Example

	Annualized PPA Summary (20 year)	Benefits Over 25-year system term
Cash Out-of-Pocket	\$0	
Project Size	9 kW	
kWh Generated Electricity (annual)*	12,000	
PPA Price per kWh (year 1)	12 cents	
PPA payments for year (\$120 / month)	\$1,440	\$36,000
Annual kWh savings**	(\$1,800)	(\$45,000)
Out-of-pocket	(\$360) annual	(\$9,000)

* Does not factor in degradation of panels.

** Assumes that escalator and utility price increase equally over term of PPA.

Lease would provide similar benefits. Payment would be same month-to-month and not fluctuate for energy savings.





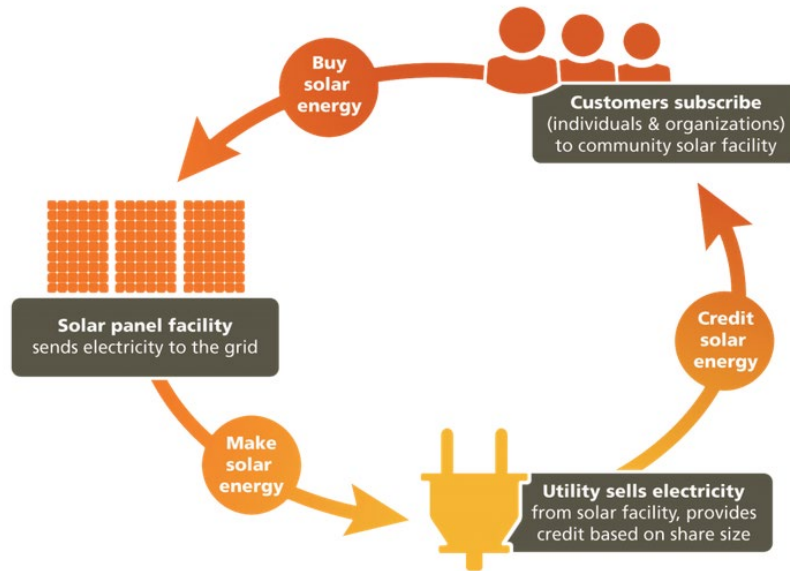
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COMMUNITY SOLAR BASICS

Community Solar Structure

Developer owns, finances, manages, and operates solar array



Owner subscribes for solar generation from array

<https://www.solarunitedneighbors.org/learn-the-issues/community-solar/>

Community Solar Subscription

- Solar array built in utility territory by private third-party
- Solar array owner sells subscriptions to customers in the market at a price below cost of grid pricing for same kWh usage.
 - Neighborhood SUN is an example of a subscription seller for community solar arrays.
- Customers (e.g., condo owner) sign subscription contract for certain amount of kWh of solar generation.
- Customer pays monthly subscription price AND gets metering credits on your utility bill for your community solar kilowatt usage that offsets subscription payment.

Sample Utility Bill with Community Solar Credits

Your Name Here

Account number: 1234 1234 123
Your service address: 123 MAIN ST
 SILVER SPRING MD 20902
Bill Issue date: Jun 27, 2018

Summary of your charges

Balance from your last bill	\$98.80
Your payment(s) - thank you	\$98.80-
<hr/>	
Balance forward as of Jun 27, 2018	\$0.00
New Electric charges	\$170.05
New Neighborhood Sun Credits	-\$133.83
<hr/>	
Total amount due by Jul 18, 2018	\$33.22

After Jul 18, 2018, a Late Payment Charge of will be added, increasing the amount due to

Your smart electric meter is read wirelessly. Visit My Account at pepco.com to view your daily and hourly energy usage.

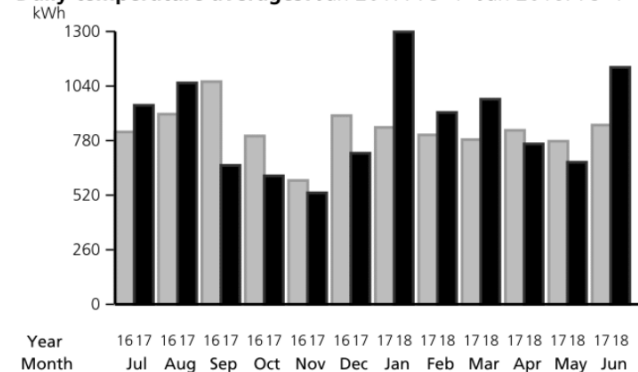
If you are moving or discontinuing service, please contact Pepco at least three days in advance.

How to contact us

Customer Service (Mon-Fri, 7am - 8 pm) **202-833-7500**
 Hearing Impaired (TTY) **202-872-2369**
 ¿Problemas con la factura? **202-872-4641**
 Electric emergencies & outages (24 hours) **1-877-737-2662**
 Visit pepco.com for service, billing and correspondence information

Your monthly Electricity use in kWh

Daily temperature averages: Jun 2017: 73° F Jun 2018: 75° F



<https://neighborhoodsun.solar/resources/>

Community Solar Subscription payment example

Electric Utility

ACCOUNT BALANCE	
Previous Balance	\$200.00
Payment Received on 8/20/18	- \$200.00
Current Charges	+\$100.00
Other Charges/Credits	-\$100.00
Amount Due	\$0.00

Solar Farm

Monthly Bill	
Credit Produced by your Share:	\$100.00
Amount Paid for Credit:	\$90.00
Savings:	\$10.00

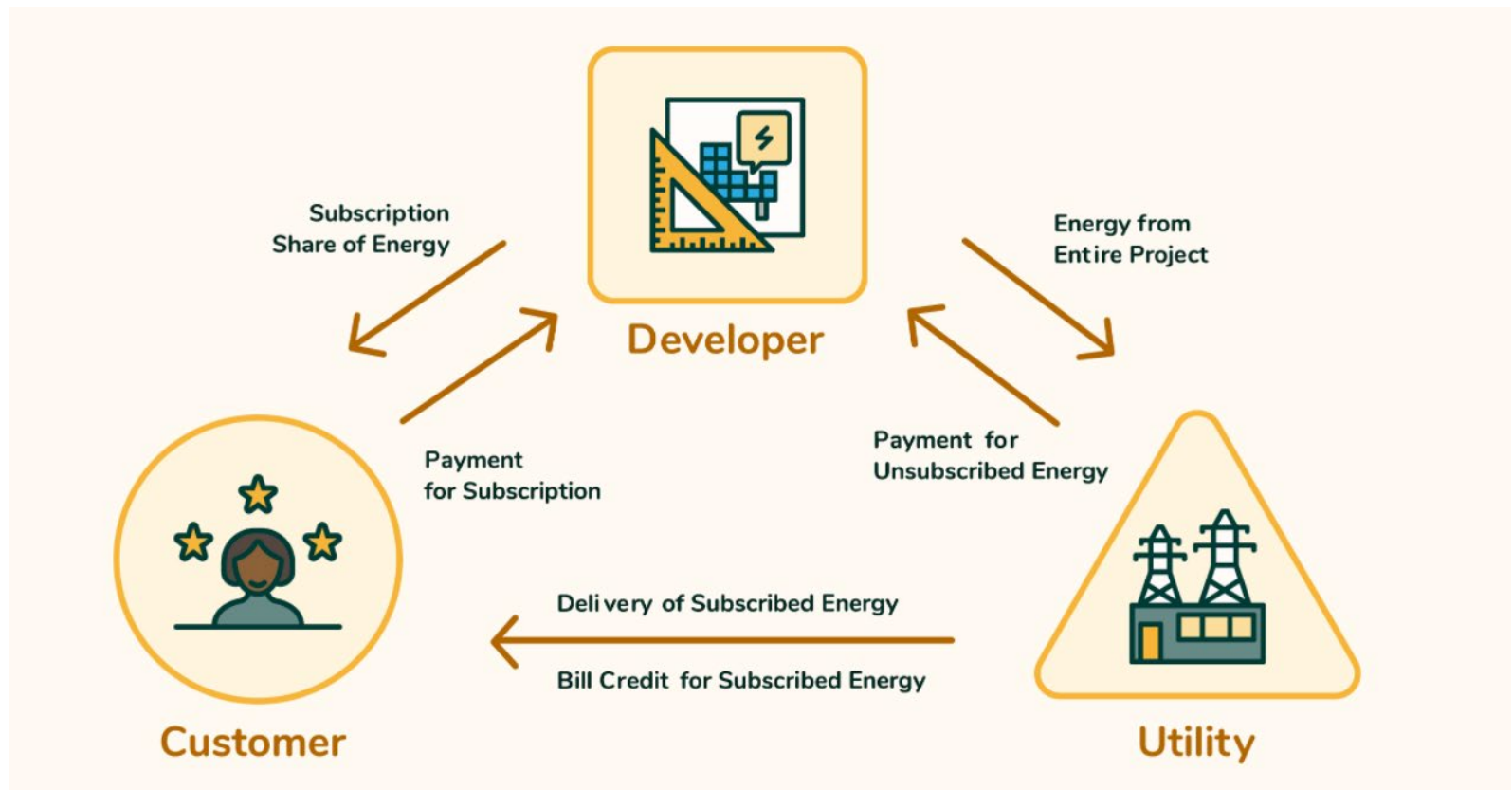


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COMMUNITY SOLAR DEVELOPMENT

Subscriber structure for a community solar development



Solar Land Lease

Understanding a Solar Site Lease

1.



LEASE
AGREEMENT

A lease agreement is formed between property owner and solar financier.

2.

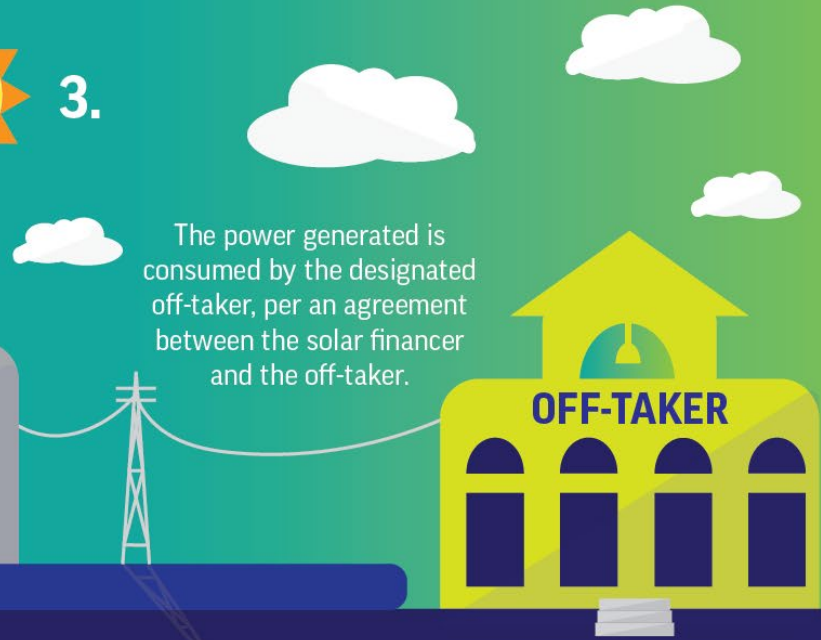
Solar panels are installed on the host property.



HOST PROPERTY

3.

The power generated is consumed by the designated off-taker, per an agreement between the solar financier and the off-taker.



OFF-TAKER

Solar Land Lease Resources

- [Guide to Land Leases for Solar](#) – This SEIA guide helps landowners understand the opportunities and implications of leasing their property for solar installations.
- [Landowner Considerations for Solar Land Leases](#) – This PDF from New York State Energy Research and Development Authority (NYSERDA) examines what to consider when leasing your property for community solar projects.





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COUNTY RESOURCES
LARISSA JOHNSON



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Q & A



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