ABOUT NARUC

- The National Association of Regulatory Utility Commissioners (NARUC) is a non-profit organization founded in 1889.
- Our Members are the state utility regulatory Commissioners in all 50 states & the territories. FERC & FCC Commissioners are also members. NARUC has Associate Members in over 20 other countries.
- NARUC member agencies regulate electricity, natural gas, telecommunications, and water utilities.





ABOUT NARUC'S CENTER FOR PARTNERSHIPS & INNOVATION

- Grant-funded team dedicated to providing technical assistance to members.
- CPI identifies emerging challenges and connects state commissions with expertise and strategies to inform their decision making.
- CPI builds relationships, develops resources, and delivers trainings.



Regularly updated CPI fact sheet with recent publications & upcoming events under Quick Links at:

https://www.naruc.org/cpi-1/

NARUC Center for Partnerships & Innovation

Current Activities

Recently Released Publications

- Public Utility Commission Stakeholder Engagen Decision-Making Framework (Jan. 2021) Private, State, and Federal Funding and Financing Options to
- Enable Resilient, Affordable, and Clean Microgrids (Jan. 2021) User Objectives and Design Options for Microgrids to Deliver
- Reliability and Resilience, Clean Energy, Energy Savings, and Other Priorities (Jan. 2021)
- Understanding Cybersecurity for the Smart Grid: Questions for Utilities (Dec. 2020)
- Artificial Intelligence for Natural Gas Utilities: A Primer (Oct. 2020
- <u>Cybersecurity Tabletop Exercise Guide</u> (Oct. 2020) Recent Events

- Comprehensive Electricity Planning Blueprint for State Action and related resources A Guide for Public Utility Commissions: Recruiting and Retaining a Cybersecurity Workforce
- Sharing

Grid-Interactive Efficient Buildings, Contact Danielle

Forthcoming Resources NARUC-NASEO Task Force on

- Metering Infrastructure
- Integrated Distribution Systems Planning: NARUC partnered with DOE national laboratories to deliver a virtual training in Oct. 2020 on forecasting, control and automation, metrics, resilience, PUC practices, and more. The next session will be held for Western state officials beginning Feb. 26, 2021. Contact Dominic
- NARUC-NASEO Task Force on Comprehensive Electricity Planning, Resources developed by the Task Force will be shared in a virtual workshop on Feb. 11, 2021. Read the Task Force fact sheet. Contact Danielle
- National Council on Electricity Policy (NCEP). <u>Presentations</u> from NCEP's December 2020 Annual Meeting are available as well as an updated Transmission and Distribution Resource Catalog, Contact Kerry
- · Carbon Capture, Utilization and Storage Workshop Webinar Series. Recordings are available from a Western Interstate Energy Board- and NARUC-hosted six-part webinar series in Sept. and Oct. 2020. Contact Kiera

Available Virtual Learning Opportunities

- Cybersecurity Training for State Regulatory Commissions: NARUC is hosting a virtual cybersecurity training on Feb 23-25 2021 Contact Ashton
- · National Council on Electricity Policy (NCEP). Register for a special session on Exploring Optimization through Benefit-Cost Analysis on Feb. 25, 2021, Learn More about NCEP, Contact Kerry
- Emergency Preparedness, Recovery and Resilience Task Force: The EPRR Task Force will meet Feb. 5, 2021 to discuss BRIC funding with FEMA. Contact Will
- Commission Staff Surge Calls, NARUC hosts guarterly calls on which commission staff discuss how different states approach emerging issues in electricity policy. The next call will be held in early Mar., 2021, Summaries from past calls are available. Contact Kiera
- Innovation Webinar Series. NARUC hosts monthly webinars for members and the public. Mar. 11: Data for the Public Interest; Empowering Energy Equity. Apr. 15: Initiative on Cybersecurity in Solar Projects, May. 13: Staffing the Evolving PUC Workforce. Register and find recordings of past events. Contact Dominic
 - Join us! NARUC hosts four working groups for members:
- Performance-Based Regulation. Contact Kerry Microgrids, Contact Kiera
- Electric Vehicles, Contact Jasmine

www.naruc.org/cpi

Cybersecurity Partnerships and Information Approaches to Economic Development in Decision-Making for Public Utility Commissions Regulators' Financial Toolbox on Advanced

MODERATOR

CHAIR RORY CHRISTIAN, NEW YORK STATE PUBLIC SERVICE COMMISSION



MATT MACUNAS, BLUE HORIZON CONSULTING JORDAN TAYLOR, MONTGOMERY COUNTY GREENBANK





NARUC National Association of Regulatory Utility Commissioners

Center for Partnerships and Innovation

Green Banks: Financing a Reliable Future

Matt Macunas, Founder December 15, 2022

Blue Horizon Consulting









Another major component of SB1 is the restructuring of the Connecticut Clean Energy Fund. As currently proposed, a new quasi-public Clean Energy Finance and Investment Authority will be created to administer the Fund. The Authority would come under the existing quasi-public agency, Connecticut Innovations.

There also is a new funding model, which some refer to as a "green bank," that allows for leveraging the ratepayer fees the Fund already gets, private capital and other funds. The legislation also dramatically expands the Fund's purview beyond the solar rebate and other limited clean energy projects to include things like electric and natural gas infrastructure projects.



A mission to confront climate change and provide all of society a healthier and more prosperous future by increasing and accelerating the flow of private capital into markets that energize the green economy.



Connecticut Green Bank is the nation's first green bank.

Established in 2011 as a quasi-public agency, the Green Bank uses limited public dollars to attract private capital investment and offers green solutions that help people, businesses and all of Connecticut thrive.

it's not a retail depository institution



It's more like development finance

(in some cases)



Image sources:

https://www.finance-monthly.com/2018/09/the-easy-6-step-guide-to-development-finance/

https://commons.wikimedia.org/wiki/File:Administrative and financial building for KPMG.jpg

Key Characteristics

- Combating climate change
- Innovation
- Disruptive significance

Next: a few examples...

Example State Program Administration: Commercial Property Assessed Clean Energy (C-PACE)



Example Resident / Community Campaign

Liberty Bonds

Liberty Notes



Example Residential Lending: Smart-E Loan





What's in it for Regulators?

Service Reference: 000000000			
Generation Srvc Chrg**	575.00kWh X \$0.10143	\$58.32	0
Subtotal Supplier Services		\$58.32	J f(x.y.z)dz
Delivery (DISTRIBUTION RATE: 001) Service Reference: 000000000			15 -2 x Inx Sa
Transmission Chrg	575.00kWh X \$0.02717	\$15.62	$h + a \frac{1}{(1 + x + y + z)^2}$
Distr Cust Srvc Chrg		\$9.21	
Electric Sys Improvements***	575.00kWh X \$0.00218	\$1.25	
Distr Chrg per kWh	575.00kWh X \$0.05417	\$31.15	
Revenue Adj Mechanism	575.00kWh X \$0.00181	\$1.04	(^{+z}) ²
CTA Chrg per kWh	575.00kWh X \$-0.00058	-\$0.33	$\sim \sqrt{2} \sin 2x$ b-C-COS a
FMCC Delivery Chrg	575.00kWh X \$0.01015	\$5.84	
Comb Public Benefit Chrg*	575.00kWh X \$0.01259	\$7.24	∑/5x²+14xy+2y²₌-18
Subtotal Delivery Services		\$71.02	Acosx · arct g 2sil
Total Cost of Electricity		\$129.34	

Examples of Utility Partnership



Energy Efficiency Loans

(small business, non-profit, and municipal and state properties)

- Thousands of on-bill financings totaling tens of millions of dollars
- Energy Efficiency Fund buys down interest rate and absorbs loan losses
- Green Bank sources private capital (Amalgamated Bank) for utility's lending and warehouses loans



State Program Co-Administration: Energy Storage Solutions



REC trading for RPS Green Bank Cost Recovery for Administering State Solar PV Incentive

- Residential solar PV designated as Class I resource
- Green Bank receives RECs on systems receiving its (legacy) incentive
- Utilities enter 15-year master purchase agreements to buy tranches of Class I RECs at declining prices
- Utilities may retire for RPS compliance or re-sell to spot market



SHREC Structure Options



Solar PV Campaign on Distribution Circuit Feeder





EDUCATE We are helping to make the benefits of green energy clear to drive interest.



ACTIVATE We are inspiring people to take action and make green energy a part of their lives.



ACCELERATE

We are accelerating the growth of green energy.



Thank you



Matt.Macunas@gmail.co

m



Your partner for clean energy

Introduction

Jordan Taylor

December 12, 2022

About MC Green Bank

- <u>Structure</u>: Chartered by Montgomery County. Independent, 501(c)3 non-profit corporation. 11-member board
- Equity: \$18 million in capital from settlement funds from the Pepco-Exelon merger
- <u>Purpose</u>: Accelerate investment in energy efficiency and renewable energy in the county by partnering with the private sector
- <u>Focus</u>: Build a more diverse, equitable, and inclusively prosperous, resilient, sustainable, and healthy community
- <u>Alignment</u>: Support Montgomery County's goal to reduce its greenhouse gas emissions to 0% by 2035
- <u>Target</u>: Leverage investment to attract private capital at target 4:1



Who we are

- Non-profit Mission-Driven Organization
 - <u>Chartered by Montgomery</u>

County.

- <u>Independent</u>, 501(c)3 non-profit corporation.
- Capital from settlement funds from the Pepco-Exelon merger.

- <u>Purpose</u>: Accelerate investment in energy efficiency and renewable energy in the County by partnering with the private sector.
- <u>Focus</u>: Build a more diverse, equitable, and inclusively prosperous, resilient, sustainable, and healthy community.
- <u>Alignment</u>: Support Montgomery County's goal to reduce its greenhouse gas emissions.



What we do

- **Goal**: Increase amount of private funding available to property owners and businesses to undertake energy-saving clean energy improvements
 - Heating and Ventilation Systems
 - Renewable Energy
 - Building Envelope
- **How**: Use our limited resources to de-risk investments for financial institutions to bring in their capital = leverage
- **Result**: <u>Help property owners</u> reduce operating costs and fund improvements with savings
- Public Benefit: <u>Help the County</u> to meet its goal to <u>reduce greenhouse gas emissions</u> to 0% by 2035.



Sectors that we work in

Our **residential financing programs** provide Montgomery County <u>homeowners</u> with easy ways to finance projects to <u>improve the energy</u> <u>efficiency of your home</u> or install renewable energy systems – all to reduce your energy usage and save money on electricity bills. Our financing solutions for **commercial property owners and businesses** help you find the right tool so you can make those <u>energy savings upgrades</u> that help improve your return on your investments, while also helping the planet.







Our Impact





What are the options for commercial solar installations?

Solar System Design:

Build a system to produce what you will need in a year (Net Metered)

Financing Options:

1. Third Party "Rental"

O Net Metered Power Purchase Agreement (PPA)

Third Party "Rental" Solar Example

- Solar contract signed between Property and Developer.
- Payments projected in proposal.
- Maintenance and Operations costs covered by Developer

2. Ownership

- O Cash Purchase
- **O** < \$150,000 Small Business Loan 5-7 year loan with a 20 year amortization
- O > \$150,000 CLEER Loan 7-10 year loan with a 20 year amortization
- **O** > \$500,000 CPACE Loan up to 20 year loan with 20 year amortization





Third Party "Rental" Solar Example

- Solar contract signed between Property and Developer.
- Payments projected in proposal.
- Maintenance and Operations costs covered by Developer



Third Party Financing "Rental" options

Why are solar developers proposing to put up solar panels on local organizations **at no up-front cost** to the organizations? How do they make money on these projects?

Federal tax credit 26%* *if you start now!

Sales of SRECs to utilities*

*while MD law requires



How does the process work?

1. Contact the Montgomery County Green Bank

- 2. Provide 12 months of energy bills for the property
- 3. Contact 2-3 contractors referred to you

4. Invite installers to your facility to survey the site (roofs, electrical rooms, attic/rafter space)

- 5. Receive and review solar proposals and quotes
- 6. Contact and obtain approvals from any governing bodies
- 7. Sign a contract with installer, developer, and lender(s)

We are here!



Installation Flow

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



NARUC Innovation Webinar Series

One Thursday most months

All NARUC members and stakeholders are invited

Grid Architecture: Why it Matters January 19, 2023 | 3:00 – 4:00 PM EST

Advances in Resource Adequacy March 16, 2023 | 3:00 – 4:00 PM EST

More webinar information will be added soon!

https://www.naruc.org/cpi-1/innovation-webinars/

NARUC thanks the U.S. Department of Energy for its support of this series.



