NARUC Winter Policy Summit

Staff Subcommittees on Energy Resources and the Environment, Rate Design, Electricity, Electric Reliability and Resilience, and Consumers and the Public

What is Community Solar 2: Cost Impacts to Participants and Non-Participants

11:15 – 12:15 PM ET

Community Solar: Cost Impacts to Participants and Non-Participants

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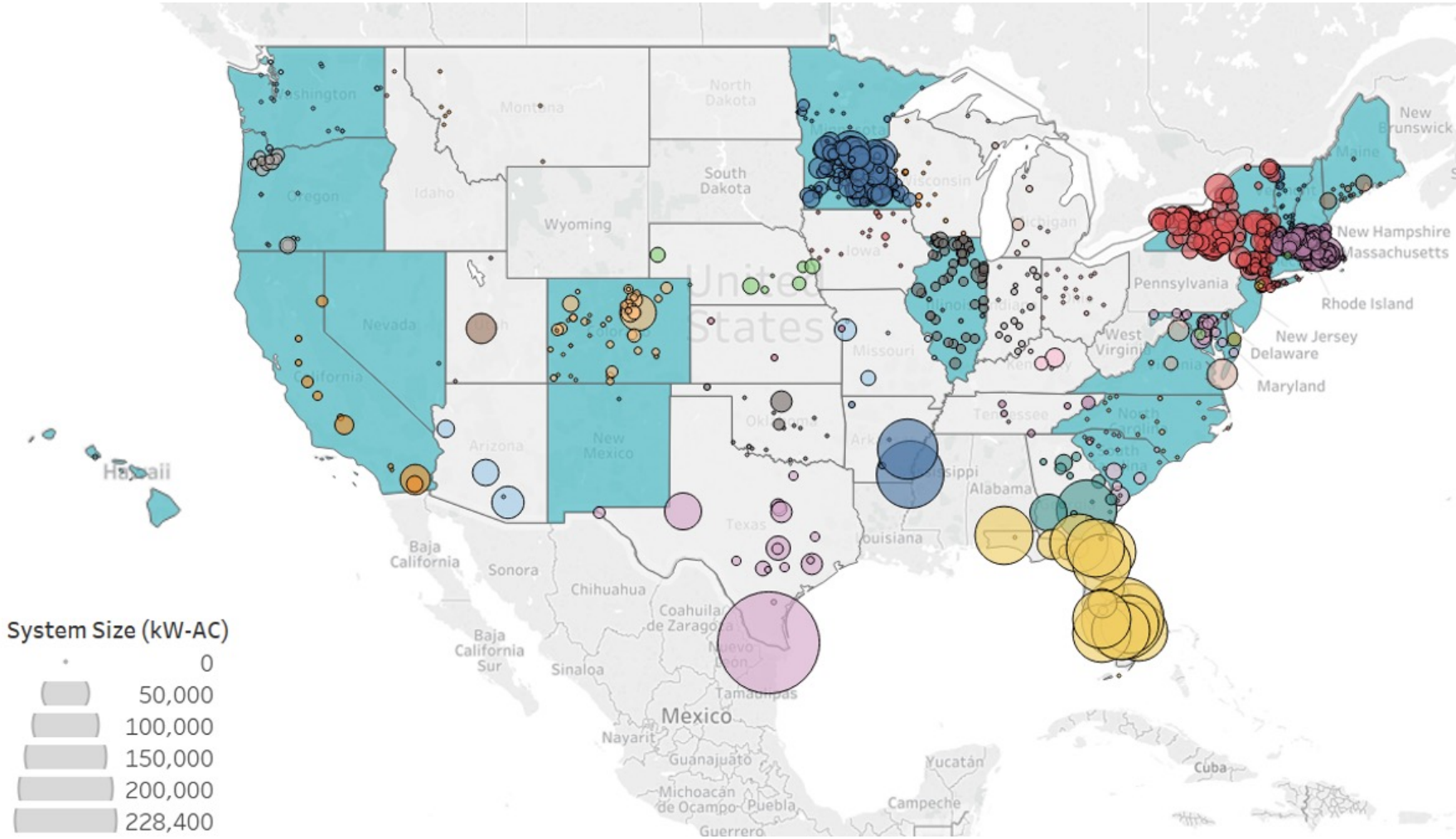
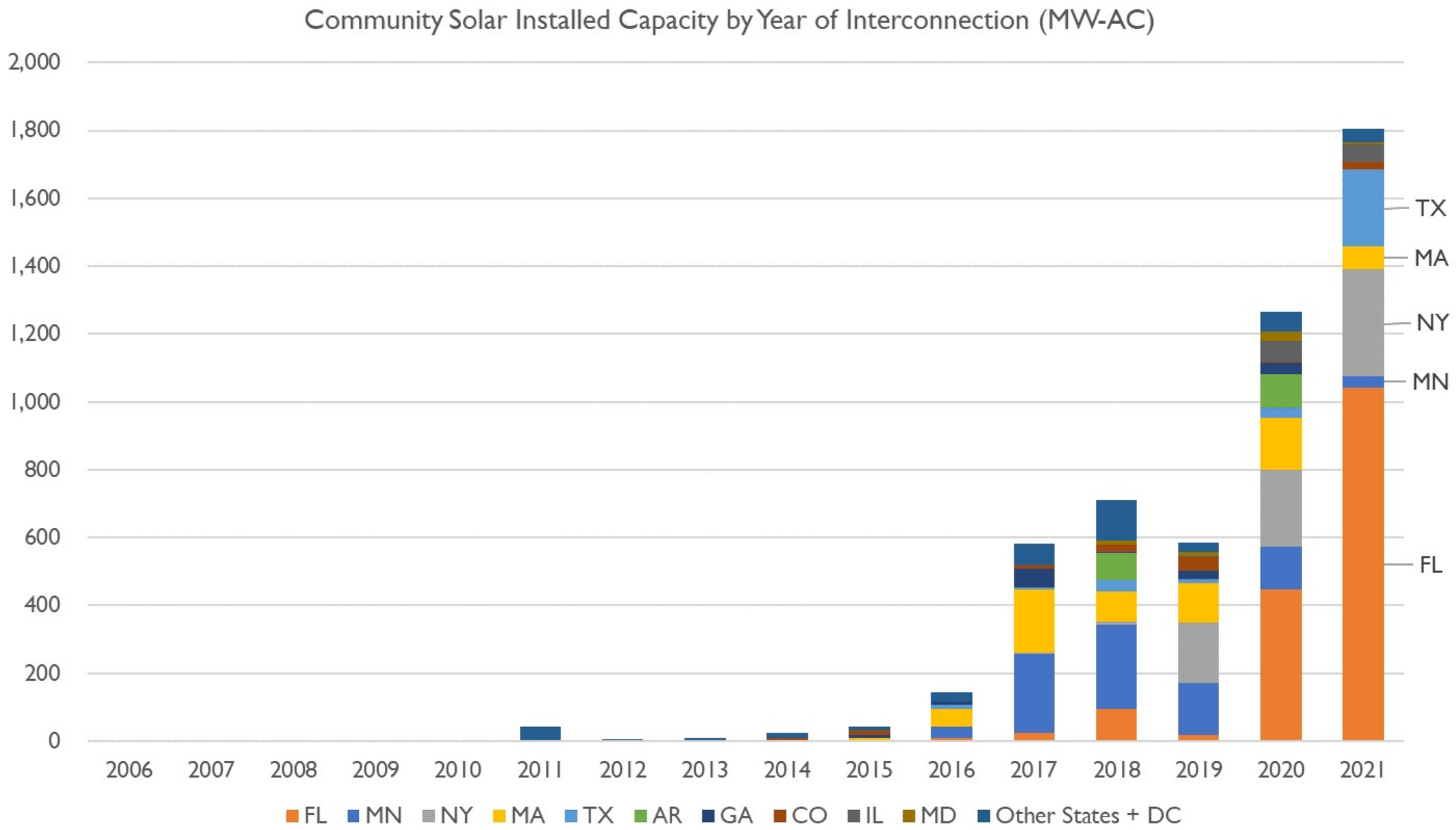
February 13, 2022

Community Solar Market Status (2021)

- 5.2 GW of community solar projects have been installed, as of Dec. 2021
- There are more than 2,000 projects across the United States
- 65 MW of community solar is serving low- and moderate-income subscribers
- 22 states and D.C. have enabling policies or mandates for community solar



Community Solar Market Status (2021)



Compensating Community Solar

Community solar is distributed generation with 100% “outflow” output

Most community solar contracts offer guaranteed savings to subscribers

There are different models of ownership of community solar

Most capacity (historically) has been owned by third parties and output purchased by utilities and credited to subscribers

Legislation provides guidance on rates, but regulators have had important oversight roles on community solar compensation rates

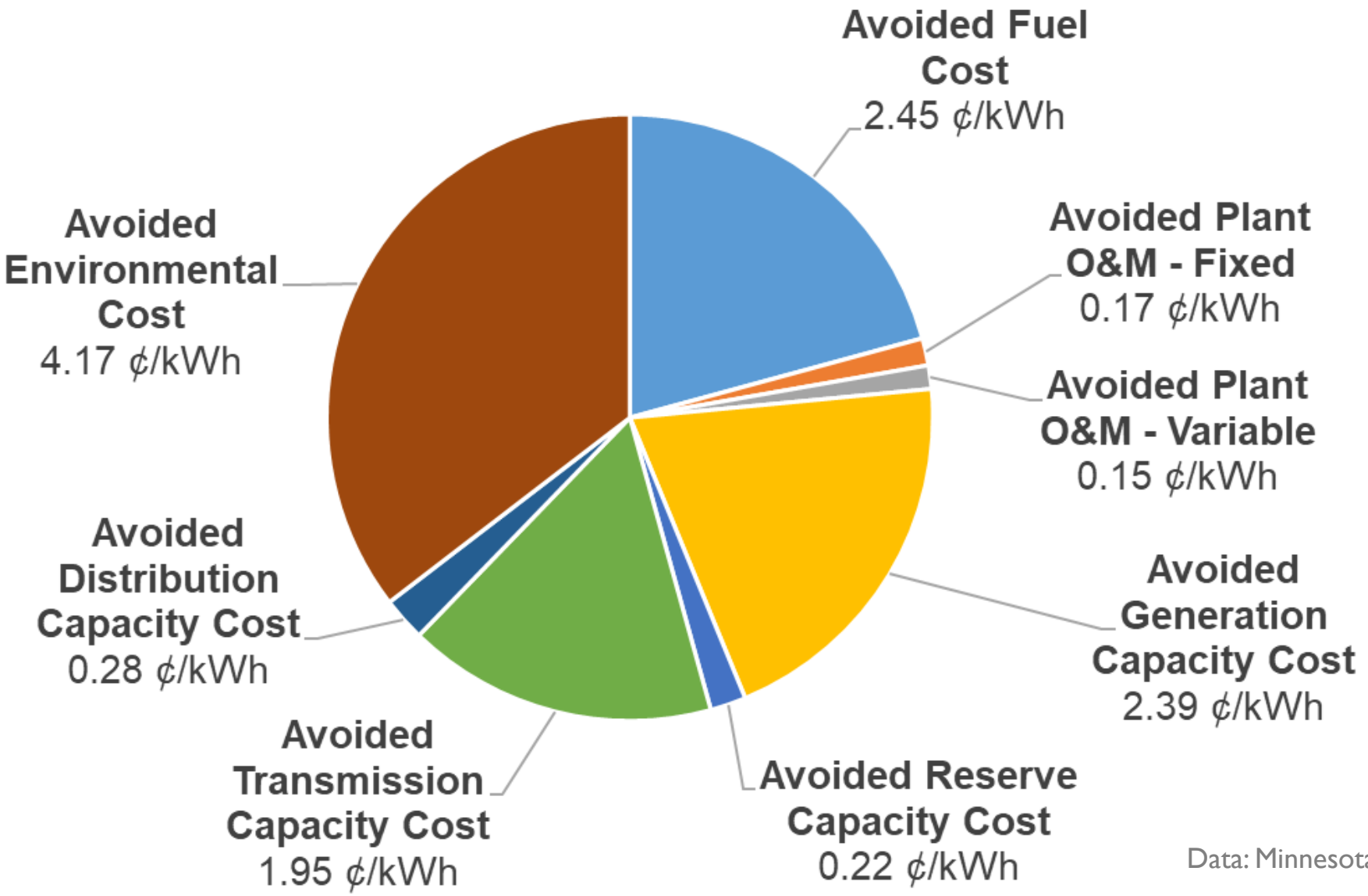
Minnesota Value of Solar

Minnesota's 2013 enabling legislation for community solar established the parameters for a VOS tariff

> *The distributed solar value methodology established by the department must, at a minimum, account for the* ***value of energy and its delivery, generation capacity, transmission capacity, transmission and distribution line losses, and environmental value****. The department may, based on known and measurable evidence of the cost or benefit of solar operation to the utility, incorporate other values into the methodology, including credit for locally manufactured or assembled energy systems, systems installed at high-value locations on the distribution grid, or other factors. (MN Stat. § 216B.164, subd. 10)*

Minnesota's VOS methodology was finalized in 2014 after extensive stakeholder engagement

2022 VOS is 11.79 cents/kWh (levelized)



Data: Minnesota Docket 13-867

Minnesota Value of Solar

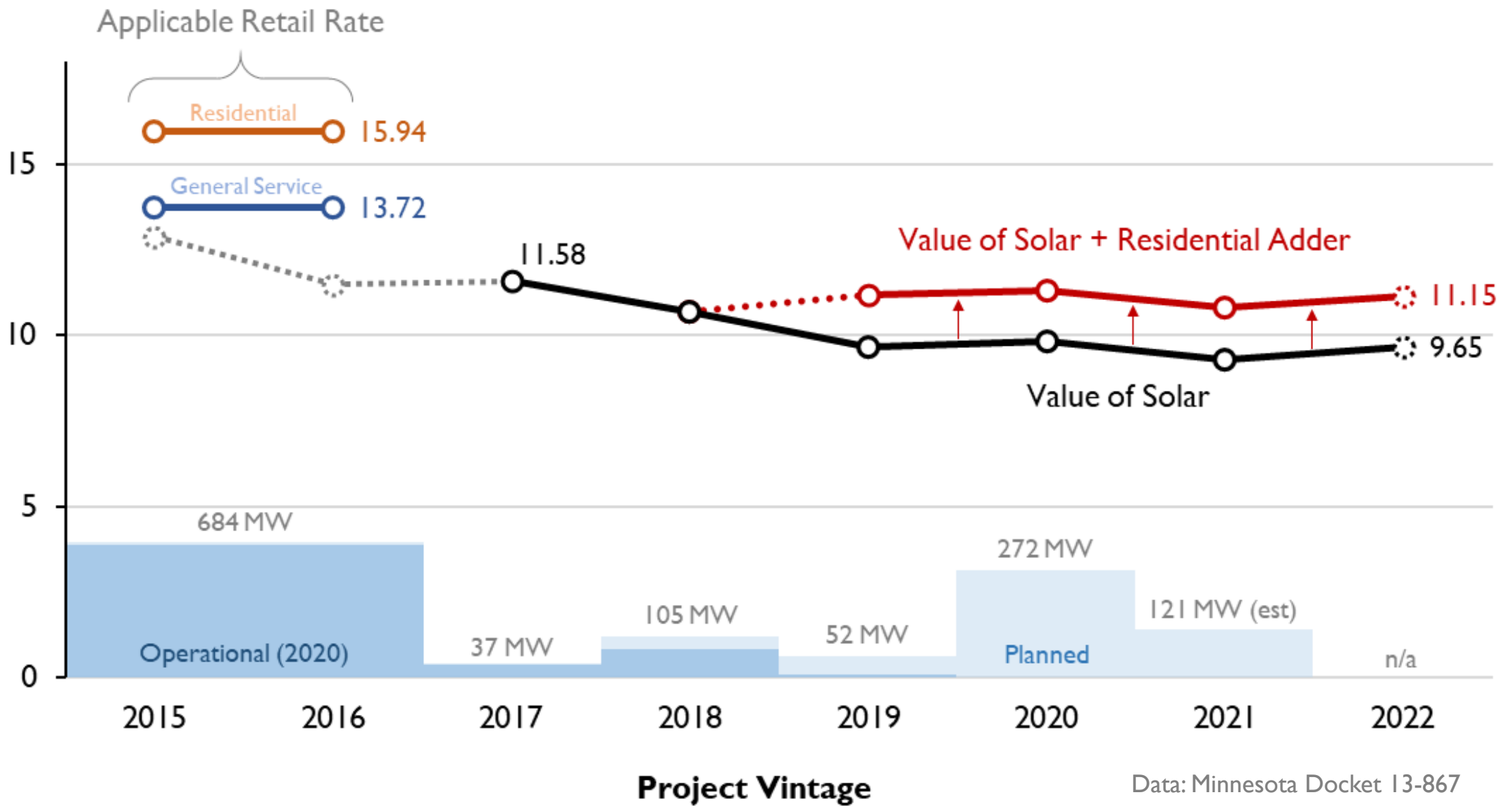
The VOS methodology is maintained by the MN Department of Commerce (DOC), implemented by Xcel Energy, approved by DOC, and implemented by the Public Utilities Commission after public comment

After a period of reimbursement under the "applicable retail rate," the VOS became the reimbursement tariff for all community solar gardens applied for starting in 2017

- Concerns raised in 2018 that the VOS would be incompatible with the CSG legislation's requirement that the program *"reasonably allow for the creation, financing, and accessibility"* of community solar *(MN Stat. §216B.1641)*

The Minnesota PUC adopted a 1.5¢/kWh adder for residential subscribers for 2019 (extended through 2022)

Tariff for Community Solar Gardens in 2022 (cents/kWh) by Project Vintage

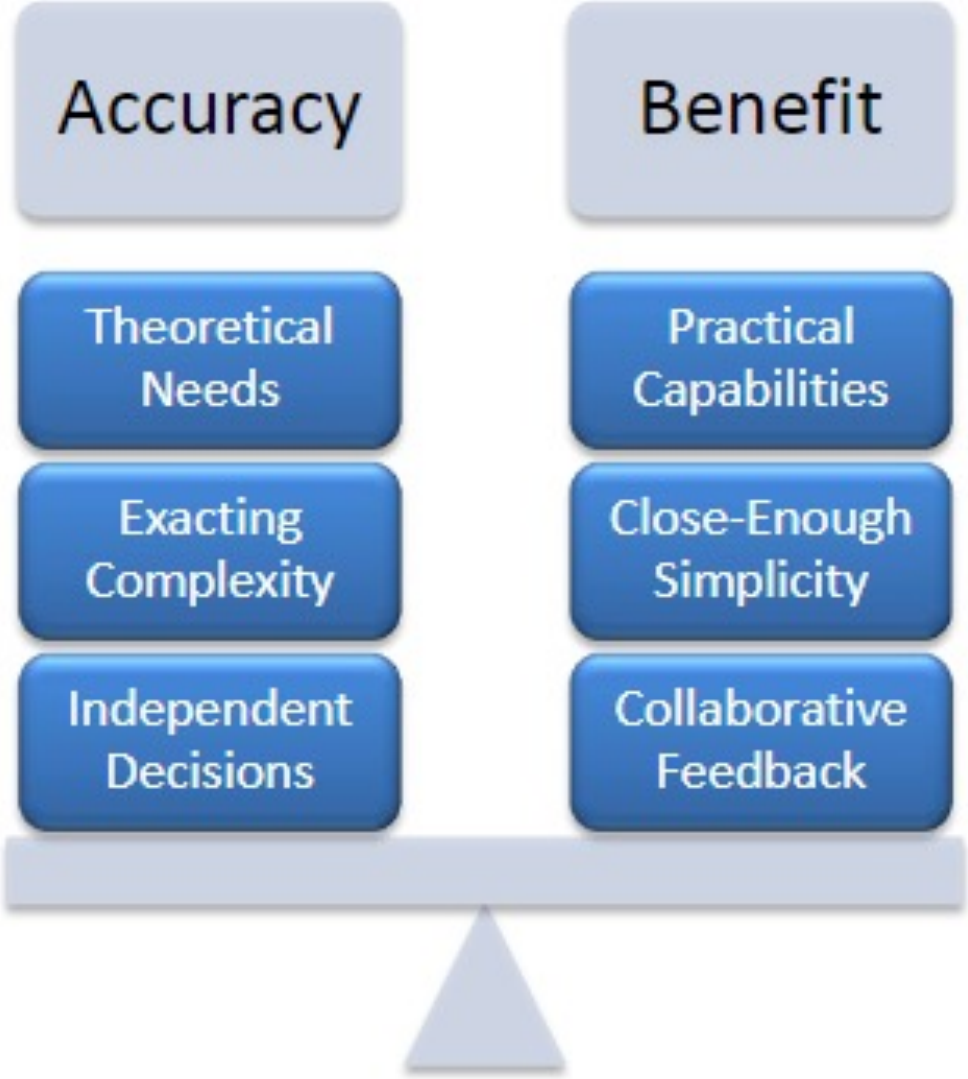


Data: Minnesota Docket 13-867

The VOS Balancing Act: Tradeoffs in Ratemaking Principles

VOS design must balance:

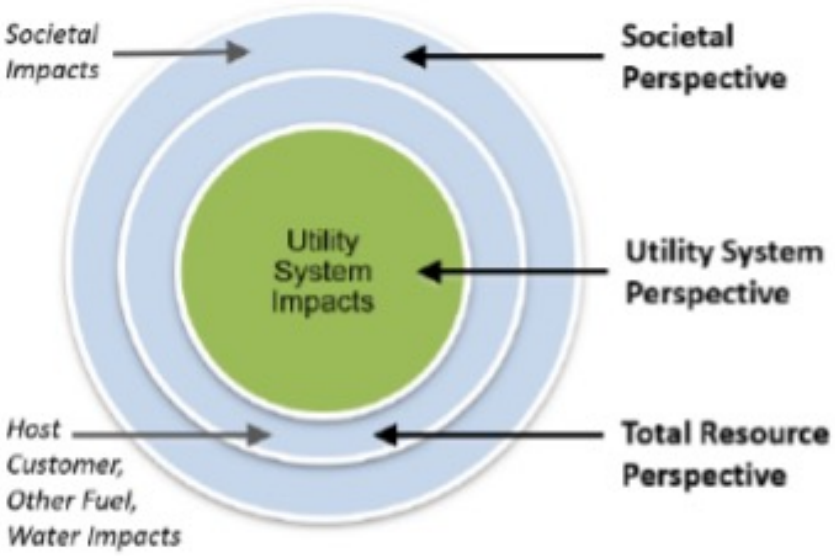
- **Accuracy** that ensures fairness based on cost-causal principles
- **Practical capability** as a market-shaping tariff for appropriate third-party investment
- **Transparency** and close-enough **simplicity**
- **Consider pace of change**



(Adopted from Taylor, et al. 2015)

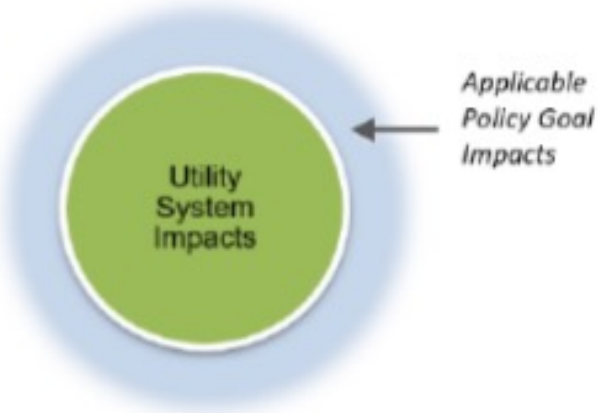
The Scope for DER Compensation Analysis

Traditional Perspectives



- Three perspectives define the scope of impacts to include in the most common traditional cost-effectiveness tests.

Regulatory Perspective



- Perspective of public utility commissions, legislators, muni/coop boards, public power authorities, and other relevant decision-makers.
- Accounts for utility system plus impacts relevant to a jurisdiction's applicable policy goals (which may or may not include host customer impacts).
- Can align with one of the traditional test perspectives, but not necessarily.

Source: National Efficiency Screening Project. (2020). National Standard Practice Manual for Benefit-Cost Analysis of Distributed Energy Resources: Summary, (August 2020), P. V, https://www.nationalenergyscreeningproject.org/wp-content/uploads/2020/08/NSPM-Summary_08-24-2020.pdf

Reflections on the MN VOS experience

The PUC, Xcel, and stakeholders have spent a disproportionate amount of time on establishing the VOS relative to the total MW that have been deployed

The complexity of the VOS may be necessary for creating **a deployment environment for distributed resources** that recognizes the full public value these resources can provide

The VOS is a "**boundary object**" (a point of negotiation to create a "neutral incentive") for utilities, third parties, and the public to engage in setting the rules for the energy system based on data and analysis

Complexity may be necessary to protect the public interest, particularly as distributed energy scales up to meet **system needs**

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Utility-Sponsored Low Income Community Solar Models in FL

Katie Chiles Ottenweller
Southeast Director

VOTE SOLAR

FPL
SolarTogether

FPL
SolarTogether
SunAssist Program

Duke Energy Florida

Income-qualified customers

Income-qualified participants* will pay a fixed monthly-kW subscription fee for the life of the program and can expect to receive immediate savings, as the fixed credit rate will start and stay higher than the subscription fee. We will work with local governments, employers and community organizations to help drive awareness of the program.

*Customers with proof of participation in a government assistance program or previous participation in Duke Energy's Neighborhood Energy Saver program.

FPL Low income customer value proposition

Example of a customer with a $100 monthly energy bill and a maximum subscription of 5 kW.

Subscription charge

$5.57/kw fixed subscription rate
x 5 kW subscription share
= $27.85 Monthly Subscription Charge

Subscription credit

$6.27 fixed credit rate
x 5kW subscription share
= $31.35 Monthly Subscription Credit

Monthly savings

$31.35 monthly subscription credit
- $27.85 monthly subscription charge
= $3.50 Monthly Savings

FPL Non-participant value proposition

Table 1 – CPVRR Savings to General Body of Customers Prior to Allocating to Participants

Fuel Cost Forecast	Environmental Forecast	Net System Savings (Millions)
High Fuel Cost	Low CO2	($323)
High Fuel Cost	Mid CO2	($414)
High Fuel Cost	High CO2	($563)
Mid Fuel Cost	Low CO2	($159)
Mid Fuel Cost	Mid CO2	($249)
Mid Fuel Cost	High CO2	($401)
Low Fuel Cost	Low CO2	$8
Low Fuel Cost	Mid CO2	($82)
Low Fuel Cost	High CO2	($232)

- Negative ( ) Indicates Savings to FPL Customers

Table 2 – CPVRR Savings to General Body of Customers After Allocating to Participants

Fuel Cost Forecast	Environmental Forecast	Net System Savings (Millions)
High Fuel Cost	Low CO2	($186)
High Fuel Cost	Mid CO2	($277)
High Fuel Cost	High CO2	($427)
Mid Fuel Cost	Low CO2	($22)
Mid Fuel Cost	Mid CO2	($112)
Mid Fuel Cost	High CO2	($265)
Low Fuel Cost	Low CO2	$145
Low Fuel Cost	Mid CO2	$54
Low Fuel Cost	High CO2	($96)

- Negative ( ) Indicates Savings to FPL Customers.

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Community Solar for Low-Income Customers: A View from the West

Matt McDonnell, Managing Director
Strategen Consulting

NARUC Winter Policy Summit | February 13, 2022

STRATEGEN

Overview

1. Community Solar Rate Design Approaches
2. Fostering LMI Participation in Community Solar
3. View from the West: Case Studies

Community Solar Rate Design Considerations

+ Virtual Net Metering

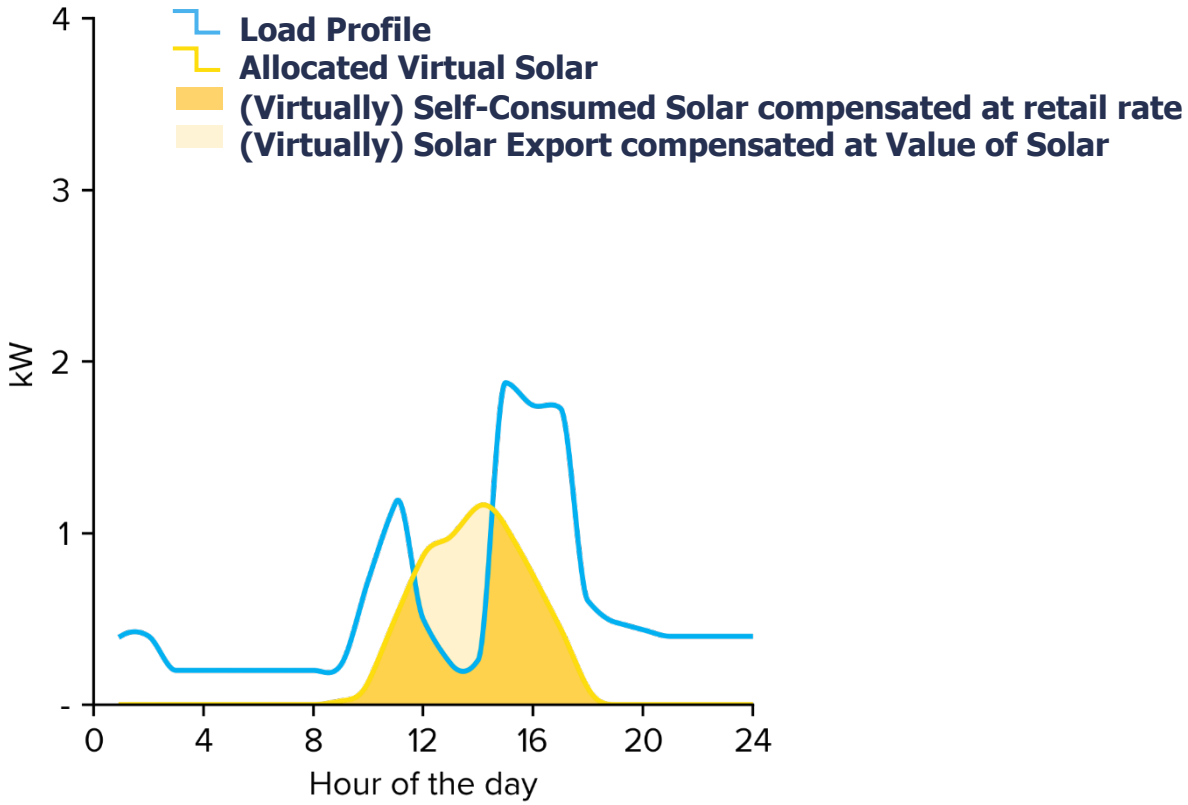
- Simple to explain to customers
- Often yields highest customer savings potential
- But could raise concerns about cost shifting for non-participating LMI customers

+ Virtual *Net Billing*

- Mimics the rooftop solar PV benefit
- Can incent consumption during times of high-PV output and mitigates cost shift concerns
- But adds complexity and may lower customer value proposition for participating LMI customers

Virtual Net Billing: Illustrative Example

+ **Solar Credit reduces Electricity Consumption on a Customer's Bill**
  - **When the account consumes more than the allocated virtual solar, then solar reduces consumption charges and is thus implicitly compensated at retail rate.**
  - **When the account consumes less than the allocated virtual solar, the excess solar export is compensated at a specified export rate, less than retail rate (e.g, Value of Solar)**



Future State? Dispatchable Community Solar + Storage

- Community solar facility paired with energy storage
- Utility able to dispatch facility to meet a variety of dynamic grid needs
- Facility receives flat monthly revenues for services akin to a capacity payment
- Revenues shared with community solar subscribers on a proportional basis
- Could be strategically sited for resilience benefits

Fostering LMI Participation in Community Solar

+ Pricing + Subscriber Savings

- Upfront expense can be cost-prohibitive
  - *Pay-As-You-Go* approach can allow LMI participation with no initial "buy-in"
- Ultimate bill savings may be minimal, demotivating LMI participation; fraud or deceptive sales tactics can victimize vulnerable customer groups
  - *Guaranteed Savings* approach can help assure minimum bill savings for LMI participants

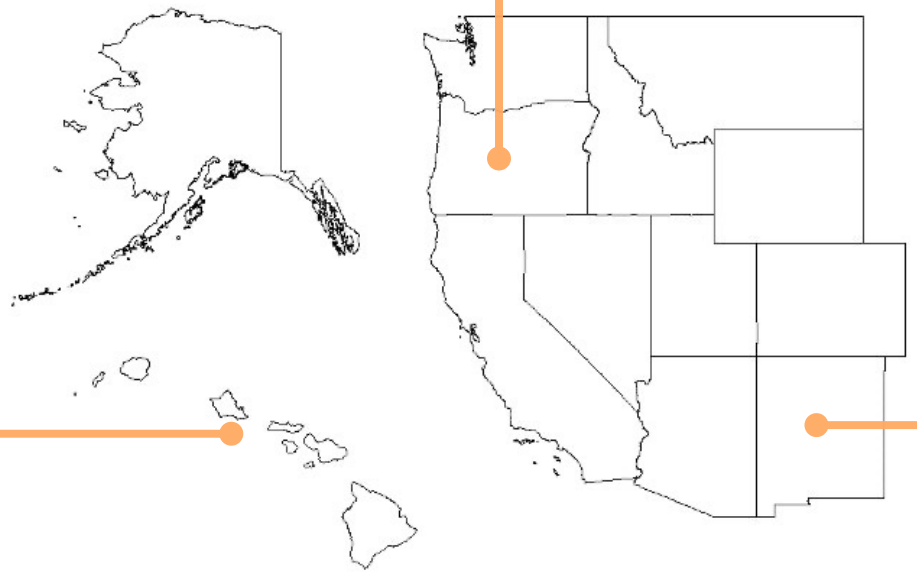
+ Reducing LMI Barriers to Participation

- Qualifying customers as "low-income" or "LMI" can be challenging
  - Hard to reach demographic – inherent impediments to identifying which customers are eligible
- Emergent best practices
  - Pre-qualification through participation in other income-assistance programs
  - Self-Attestation

Community Solar Case Studies in the West

Oregon

- Established by SB 1547 (2016)
- Rules adopted by Commission in 2019
- Program capacity divided into 2 tranches:
  - Initial Offering: 82 MW available early 2020
  - Second Offering: 79 MW available early 2022
- Updated rules were adopted for Second Offering



Hawaii

- Established by Act 100 (2015)
- Program approved in 2018
- Program capacity:
- Phase 1: 8 MW (2018)
- Phase 2: 235 MW (2022)

New Mexico

- Established by SB 84 (2021)
- Rules under development
- Program capacity: 200 MW

Comparative Evaluation - 1

	Oregon	Hawaii	New Mexico
Bill Credit	• Equal to the retail rate for residential customer and 90% of the retail rate for non-residential customers, with an annual 2% escalator • Total costs and fees for LI participants must be at least 40% lower than the bill credit	• Based on historic average avoided cost of energy; differentiated by island	• Derived from the total aggregate retail rate on a per-customer-class basis, minus distribution costs • May include the net present value of RECs
Carve-Out	• 10% of project capacity for LI customers • 25% of program capacity for community-based projects	• 50% LMI Subscribers for utility-owned community solar facilities	• 30% of project capacity for LI customers and LI service organizations

Project Selection	• First-come, first-serve	• First-come, first-serve for small projects (up to 250 kW)
		• RFP Solicitation for larger projects with Price and Non-Price Selection Criteria
			• Non-price RFP based on:
			  ○ Project viability
			  ○ Developer experience and subscriber benefits
			  ○ Project siting
			  ○ Local community benefits

Comparative Evaluation - 2

	Oregon	Hawaii	New Mexico
Prequalification of LI customers	• No prequalification • Income verification conducted by the LI Facilitator • An affordable housing facility can enroll on behalf of specified LI tenants if it directly pays for electricity costs	• Prequalification based on participation in Medicaid, SNAP, LIHEAP, other LI programs, or residence in an affordable housing facility	• Prequalification based on participation in Medicaid, SNAP, LIHEAP, other LI programs, or residence in an affordable housing facility • An affordable housing facility can enroll with consent of all tenants
Education & Outreach	• The LI Facilitator can recruit LI participants for a project at no cost if requested by the PM • PMs that recruit their own LI participants must submit a LI Recruitment Plan	• Community Outreach Plan requirement for Subscriber Organizations • Cultural resource impacts evaluated	• Experience working with LI communities and LI customer engagement included in RFP criteria
Cost Shift & Cross-Subsidization	• Required to minimize cost shift to non-participating ratepayers, but no specific parameters	• Exploring subsidization of interconnection costs for LMI community solar projects	• Cross-subsidization may not be more than 3% of non-subscribers' aggregate retail rate on an annual basis

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This session has ended. The next session begins at
1:30 p.m. ET after the lunch break

Relevant NARUC Resources:
- Relevant External Resources (on the app)
- Staff Surge Call on Community Based Clean Energy Summary