Net metering for class I renewable energy systems
Technical conference

February 10, 2025

Welcome

This is the public stakeholder meeting and technical conference for

Docket No. QO24090723

In the Matter of

Net Metering for Class I Renewable Energy Systems

This meeting will include presentations by stakeholders regarding their recommended policies for the future of net metering in New Jersey.

Webinar Instruction Page

- All attendees will be automatically muted.
- Each presenter will have 20 minutes to present. Five minutes will follow for questions submitted via the Q&A function.
- Please note that the Chat function in Zoom is not available for this meeting.
- This meeting is being recorded. A copy of the recording and slides will be made available on the BPU website: https://www.nj.gov/bpu/newsroom/public/

Disclaimer

This presentation is provided for informational purposes only and should not be taken to represent the views of the New Jersey Board of Public Utilities, its Commissioners, or the State of New Jersey. Please be aware that any information presented is subject to change if there are changes to New Jersey statutes, rules, or policies.

All viewers are responsible for ensuring that they rely only on current legal authority regarding the matters covered in the presentation.

Written Stakeholder Comment Guidelines

- Board Staff will accept written comments to inform the next stages of this process.
- Public comments are due **March 3, 2025, at 5 p.m.**
- Please submit comments directly to Docket No. QO24090723, using the "Post Comments" button on the Board's Public Document Search tool.
- Comments are considered "public documents" for purposes of the State's Open Public Records Act and any confidential information should be submitted in accordance with the procedures set forth in N.J.A.C. 14:1-12.3.
- Written comments may also be submitted to:

Sherri L. Golden, Secretary of the Board

44 South Clinton Avenue, 1st Floor

Post Office Box 350

Trenton, NJ 08625-0350

Phone: 609-292-1599

Email: board.secretary@bpu.nj.gov

Agenda

NJCleanEnergy.com/COMMUNITYSOLAR

Time	Presenter	
1:00-1:05	NJBPU	Sawyer Morgan
1:05-1:30	NJSEC and SEIA Ad-hoc Committee	Fred DeSanti, Tom Beach
1:30-1:55	Vote Solar	Kartik Amarnath
1:55-2:20	Mid-Atlantic Solar and Storage Industries Association	Lyle Rawlings
2:20-2:45	Core Renewables	Andrew Wall
2:45-3:00	Break	
3:00-3:35	Rate Counsel	Maura Caroselli, David Dismukes
3:35-4:00	NJ Utilities Association	Joseph Gurrentz
4:00-4:25	Rockland Electric Company	Kristen Barone, Yan Flishenbaum, Jonathan Rodriguez
4:25-4:50	Atlantic City Electric	Kevin Thompson

New Jersey's cleanenergy program™

NEM Technical Conference Polling Questions

00:05:57 | 11 questions | 25 of 86 (29%) participated

1. Please select the option that best describes your organization (Single choice)
25/25 (100%) answered

SOLAR OR STORAGE INDUSTRY (12/25) 48%

ELECTRIC UTILITY (6/25) 24%

CUSTOMER OR CUSTOMER REPRESENTATIVES (1/25) 4%

ENVIRONMENTAL GROUP (3/25) 12%

GOVERNMENT (0/25) 0%

OTHER (3/25) 12%

2. DERs provide additional value compared to utility-scale resources and should be compensated for it. (Single choice)
23/25 (92%) answered

STRONG DISAGREE (0/23) 0%

DISAGREE (0/23) 0%

NEUTRAL (4/23) 17%

AGREE (7/23) 30%

STRONG AGREE (12/23) 52%

3. Customers with DERs are accessing the grid for both power import and export and should pay for that access. (Single choice)

23/25 (92%) answered

STRONG DISAGREE (3/23) 13%

DISAGREE (7/23) 30%

NEUTRAL (3/23) 13%

AGREE (6/23) 26%

STRONG AGREE (4/23) 17%

4. It is more important for compensation to be predictable than for it to be closely aligned with the system value stack. (Single choice)

23/25 (92%) answered

STRONG DISAGREE (1/23) 4%

DISAGREE (6/23) 26%

NEUTRAL (4/23) 17%

AGREE (11/23) 48%

STRONG AGREE (1/23) 4%

5. Customers should be able to avoid all retail charges when they self-consume their on-site generation. (Single choice)

23/25 (92%) answered

STRONG DISAGREE	(2/23) 9%
DISAGREE	(4/23) 17%
NEUTRAL	(3/23) 13%
AGREE	(8/23) 35%
STRONG AGREE	(6/23) 26%

6. Payment for DERs must include a component reflecting distribution grid service value. (Single choice)

23/25 (92%) answered

STRONG DISAGREE	(0/23) 0%
DISAGREE	(2/23) 9%
NEUTRAL	(4/23) 17%
AGREE	(12/23) 52%
STRONG AGREE	(5/23) 22%

7. Utilities should design programs to utilize DERs to provide distribution grid services. (Single choice)
23/25 (92%) answered

STRONG DISAGREE (0/23) 0%

DISAGREE (1/23) 4%

NEUTRAL (1/23) 4%

AGREE (11/23) 48%

STRONG AGREE (10/23) 43%

8. DER compensation should be influenced by the wholesale energy price. (Single choice)
23/25 (92%) answered

STRONG DISAGREE (0/23) 0%

DISAGREE (6/23) 26%

NEUTRAL (4/23) 17%

AGREE (9/23) 39%

STRONG AGREE (4/23) 17%

9. Any transition should include a glidepath between the current NEM structure and the new one. (Single choice)

23/25 (92%) answered

STRONG DISAGREE	(0/23) 0%
DISAGREE	(2/23) 9%
NEUTRAL	(5/23) 22%
AGREE	(6/23) 26%
STRONG AGREE	(10/23) 43%

10. There should be locational variation in compensation across an EDC's system. (Single choice)

23/25 (92%) answered

STRONG DISAGREE	(1/23) 4%
DISAGREE	(5/23) 22%
NEUTRAL	(6/23) 26%
AGREE	(9/23) 39%
STRONG AGREE	(2/23) 9%

11. Customers should have a choice between DER compensation mechanisms of varying complexity. (Single choice)

23/25 (92%) answered

STRONG DISAGREE (0/23) 0%

DISAGREE (4/23) 17%

NEUTRAL (6/23) 26%

AGREE (9/23) 39%

STRONG AGREE (4/23) 17%

Net Metering For Class I Renewable Energy Systems
Docket No. QO24090734

NJ Solar Energy Coalition and SEIA Stakeholder Presentation

February 10, 2024

Stated Purpose

INTRODUCTION

Purpose of NEM Successor Policy Development Workshops

- **Motivations for considering NEM successor policy in NJ**
  - Provide certainty on compensation going forward, since the 5.8% milestone was exceeded during Energy Year 2024
  - Encourage economic efficiency and fair allocation of costs and benefits
  - Align of DER compensation with achievement of climate goals
  - Integrate with grid modernization, energy storage, and demand-response technologies
  - Continue to support a strong solar industry in the state
  - Promote energy equity and access for disadvantaged communities

Statutory Requirement:

- " The board **may authorize** an electric power supplier or basic generation service provider to cease offering net metering to customers that are not already net metered whenever the total rated generating capacity owned and operated by net metering customer-generators Statewide equals 5.8 percent of the total annual kilowatt-hours sold in this State by each electric power supplier and each basic generation service provider during the prior one-year period;"
- The prevailing statute, then provides broad Board discretion in determining:
  - **What** needs to be considered in the fair allocation of costs and benefits.
  - But, perhaps more importantly, **if, when, and how** these principles can be integrated into New Jersey's Solar Clean Energy program while modeling in advance the likely market outcome considering many emerging exogenous factors including, but not limited to:
    - 10% incremental tariff just added to the current 50% tariff on Chinese solar panel imports.
    - Uncertainty surrounding the continuation of the investment tax credit.
    - Likelihood of higher rates of inflation and accompanying high interest rates
    - Current build trends in ADI residential and commercial markets

Suggested Prioritized Purpose:

1. Continue to support a strong solar industry in the state.
2. Integrate with grid modernization, energy storage, and demand response technologies.
   - Grid modernization and the development of our nascent energy storage program relies upon the continuing development of DER, and in the current policy/cost climate, a robust solar market is pivotal.
3. Encourage economic efficiency and fair allocation of costs and benefits; align with climate goals; equity for disadvantaged communities; and meeting the statutory requirement of 5.8% trigger
   - Let's examine the scope of these issues in the context of trends and cost implications

Installation Report as of 12/31/24

New Jersey Solar Installations Report as of 12/31/24 (Annual Cap

SREC Registration Program (SRP), Transition Incentive Program (TI) and Administratively Determined Incenti

	Residential (kW)		Non-Residential < = 100 (kW)		Non-Residential > 100 to < 1000 (kW)		Non-Residential > = 1000 (kW)		Non-Residential Total (kW)	
	Qty	**Capacity**	**Qty**	**Capacity**	**Qty**	**Capacity**	**Qty**	**Capacity**	**Qty**	**Capacity**
***ADI* Program**										
2019	2	15	0	0	0	0	0	0	0	0
2020	24	183	0	0	0	0	0	0	0	0
2021	772	7,168	5	220	3	441	0	0	8	661
2022	16,259	145,644	96	3,103	46	14,547	7	9,775	149	27,425
2023	22,339	197,618	264	8,795	131	45,124	19	33,541	414	87,460
2024	16,126	138,321	166	6,223	113	32,818	19	31,998	298	71,039
***ADI* Total**	**55,522**	**488,949**	**531**	**18,341**	**293**	**92,930**	**45**	**75,314**	**869**	**186,585**
SRP, TI & ADI Programs										
2000-2014	29,269	229,211	3,006	94,813	1,573	478,255	158	346,373	4,737	919,440
2015	12,887	101,923	110	3,689	86	27,254	7	21,630	203	52,573
2016	21,920	180,334	212	6,528	123	42,753	18	42,480	353	91,760
2017	18,565	159,002	282	9,750	174	65,124	22	57,718	478	132,592
2018	17,256	150,395	329	10,830	203	70,259	26	56,309	558	137,398
2019	15,901	144,502	334	11,243	219	82,363	40	137,164	593	230,769
2020	14,015	124,464	284	9,194	187	67,026	22	56,821	493	133,041
2021	14,727	134,148	265	11,503	221	69,988	23	58,031	509	139,522
2022	17,973	161,810	400	16,104	419	146,424	56	116,352	875	278,880
2023	22,339	197,618	279	9,477	198	71,805	29	49,816	506	131,098
2024	16,126	138,321	166	6,223	113	32,818	20	33,966	299	73,007
SRP, TI & ADI Program Totals	**200,978**	**1,721,727**	**5,667**	**189,353**	**3,516**	**1,154,067**	**421**	**976,659**	**9,604**	**2,320,079**

2024 Market Performance

- Residential Market Performance 2024
  - 2024 installations were 69% of approved capacity goal of 200MWs
  - 2024 installations were 30% off from 2023
  - Causes:
    - Closed and restricted circuits limited site availability, particularly in Atlantic City territory where more than 60 circuits completely closed to any solar development.
    - High interest rates, material shortages and customers pressing for legacy project savings levels that are no longer achievable.
    - Interconnection delays and cost were <u>not</u> a factor
  - 2025 market performance will depend largely upon EDCs opening restricted or closed circuits.
  - S-2816's passage with board staff friendly amendments could be of substantial help.

2024 Market Performance:

- Commercial market Performance 2024
  - 2024 installations were only 37% of approved capacity goal of 200MWs
  - 2024 installations were 44% off from 2023 levels (including TI completions)
  - Causes:
    - Closed and significantly restricted circuits limited site availability, particularly in Atlantic City territory where more than 60 circuits completely closed to any solar development.
    - High interest rates, material shortages and customers pressing for legacy project savings levels that are no longer achievable.
    - Prohibitively high interconnection costs and delays significantly impacted project development.
    - Popular car port commercial development is no longer economically feasible under the current ADI incentive market. These were very popular for commercial applications.
  - Again, S-2816's passage with board staff friendly amendments could be of substantial help as closed and severely restricted circuits would be open to all commercial and residential markets.

What is the Scope of this Issue?

- In 2024 a little over 210 MWs of ADI "behind the meter" projects came online.
  - That means that at 1200MWh/MW - ADI solar in aggregate only reduced total statewide EDC throughput of 72 MMWh by about 0.35%
  - Even if ADI development achieved the full 400 MWs goal annually EDC throughput would only be about 0.66%
- Load growth resulting from robust EV charging, building electrification, and the emerging AI data center market among other factors will far outweigh ADI solar development EDC throughput losses.
- The statute created 5.8% as a target for review and assessment, but it clearly does not represent an EDC cost "cliff" beyond which some irreparable harm will result.

First Principles of Design -1

- EDC lost load revenues from any solar facility should not be recoverable from either the customer or system owner.
  - EDC lost load revenues from customer relocation, customer conservation, or customer investment in energy efficiency technologies are not subject to any direct EDC recovery.
    - EDC revenue losses from from solar cannot be viewed in any other reasonable context and should not be singled out and discriminated against.
    - By eliminating all self use / storage from the overall transaction under consideration, the scope of the equity issues involved narrow appropriately to a far simpler and smaller set of cost/benefit concerns.
    - SEIA and NJSEC have evaluated "Buy All / Sell All" programs across the nation and have no interest in pursuing this option in the context of this stakeholder process.
    - We would not, however, object to any voluntary "Buy All / Sell All" program being developed but would have no interest in engaging in that stakeholder process, preferring to focus upon mainstream issues.
  - All lost EDC operating and margin revenues are recoverable as a routine matter from all ratepayers at time of base rate case true up through energy forecast modeling to estimate forward looking throughput including migration and other anticipated load reductions and / or growth.
  - In today's environment of EV deployment, building electrification, and AI data center development EDC load and throughput from year to year will still be growing.

First Principles of Design - 2

- Any metered purchase of power needed to supplement customer use on the site of a solar self generation / energy storage system should be charged at the prevailing utility tariff.

First Principles of Design - 3

- Excess power generated on site and subsequently delivered back to the grid by an on-site solar self generation / storage application shall be "Net Meter Credited" and considered in terms of system benefits inuring to ratepayers in tangible associated cost savings.
  - These system values include, <u>but not limited to</u>:
    - Capacity value to the grid at PJM ELCC (Dynamic Electric Load Carrying Capacity)
    - Time of Use energy commodity value at LMP (reflecting cost of RGGI and other environmental program costs)
    - Transmission and Distribution System Benefits:
      - Incrementally reduced EDC O&M
      - Incrementally reduced T&D capital expenses (at weighted average cost of capital)
      - Incrementally reduced depreciation expenses
      - Environmental benefits of reduced RGGI and other CO_2 reduction program expenses against the average PJM environmental emissions rates.
      - See appendix for additional metric details

Recommended Process Path Forward:

- The Residential and Commercial ADI markets are clearly very fragile and not now headed in the right direction.
- Any erosion of NEM finances will certainly not enhance the economics of either of these solar ADI markets going forward.
- The goals of this process should be both a fair allocation of costs and benefits **and** a sustainable path forward for New Jersey's flagship renewable energy program.
  - Both of these goals may not be achieved if this process does not create a separate and distinct effort to model and overlay these cost and market impacts carefully in view of the "externalities" that exist at the time.
- Hopefully, this process can set us on the "fair" and right path going forward, and we will work together in this process to accomplish that goal, however, we believe that the implementation plan will be of far greater importance to insuring the ADI program's future.

PURPA and the NEM Framework

- Net metering is "not a sale" until there is net excess (end of billing period); solidly within retail jurisdiction and rate design
- PURPA guarantees QFs right to interconnect, protection against discrimination (rates for purchase and rates for sale), and avoided cost compensation for as-available energy.
- The right to self-generate is inherent in existing law.
- Concepts like "buy-all, sell-all" **<u>already exist</u>** as an option under PURPA and should not be discussed as a transition option

Approach to Evaluating Legacy NEM and Valuing Future Export Compensation

- Well-accepted framework for cost-effectiveness evaluations of demand-side resources – EE, DR, and now DG
- Key attributes:
  - Examine multiple perspectives
  - Use a long-run analysis
  - Consider a comprehensive list of benefits and costs
- Benefit-cost tests – examine all perspectives
  - TRC / Societal – the system as a whole
  - Participant – the customer who adopts a demand-side measure
  - PAC / RIM – impacts on utility bills and other ratepayers

Demand-side Benefit / Cost Tests (+ = benefit, - = cost)

Category	Total Resource Cost (TRC)	Ratepayer Impact Measure (RIM)	Program Administrator - Utility (PAC)	Participant (PCT)
Capital and O&M Costs of the DG Resource	–			–
Utility Lost Revenues (same as Customer Bill Savings)		–		+
Costs for Incentives (if available)	–	–	–	+
Integration and Program Administration Costs	–	–	–	
Avoided Costs -- Energy -- Generation Capacity -- T&D, including losses -- Risk / Hedging / Market -- Environmental Compliance -- RPS -- Societal (for versions of TRC or RIM Tests)	+	+	+	
Federal Tax Benefits (excluded from Societal Test)	+			+

Consider a comprehensive list of benefits and costs

		Montana* (Navigant 2018)	Maryland (Daymark 2018)	Connecticut (CT DEEP and PURA 2020)	New Hampshire (Dunsky 2022)
Generation	Avoided Energy	Quantified	Quantified	Quantified	Quantified
	Avoided Capacity	Quantified	Quantified	Quantified	Quantified
	Avoided Renewable Portfolio Standard	Quantified	Quantified	Quantified	Quantified
	Fuel Hedging	Discussed	Discussed	Omitted	Quantified
	Market Price Response	Discussed	Quantified	Quantified	Quantified
	Ancillary Services	Discussed	Discussed	Discussed	Quantified
Transmission & Distribution	Avoided Transmission Capacity	Quantified	Quantified	Quantified	Quantified
	Avoided Line Loss	Quantified	Quantified	Quantified	Quantified
	Avoided Distribution Capacity	Quantified	Discussed	Quantified	Quantified
	Resilience & Reliability	Discussed	Discussed	Discussed	Discussed
	Distribution Operations & Maintenance	Discussed	Discussed	Discussed	Quantified
	Voltage and Power Quality	Omitted	Discussed	Discussed	Discussed
Costs	Integration	Discussed	Discussed	Discussed	Discussed
	Lost Utility Revenue	Quantified	Omitted	Omitted	Omitted
	Program Admin	Quantified	Omitted	Omitted	Quantified
Social	Avoided Cost of Carbon	Quantified	Quantified	Quantified	Quantified
	Other Avoided Environmental Costs	Quantified	Quantified	Quantified	Quantified
	Local Economic Benefit	Discussed	Quantified	Quantified	Omitted
	Other	Discussed	Discussed	Discussed	Discussed

* Of the four studies, the one in Montana was the only one commissioned by a utility (NorthWestern Energy) whereas the other three were commissioned by the state.

From:
LBNL, Energy Markets & Policy,
A review of value of solar studies in theory and in practice
(January 2025), at p. 9

Correctly Characterize the DG Customer

- DG customers are “prosumers” – consumers and producers
  - Still take significant service from the utility (imports of delivered energy)
  - Provide a service to the utility (exported generation)
  - A small net bill does not mean they do not pay for their use of the grid.
- DG customers use the grid only when they import power.
  - The utility uses the grid to deliver DG exports to the neighbors.
- DG customers remain significant utility customers
  - … for imported power,
  - and are a key market for other types of DERs that increase loads.
- DG customers should not be responsible for utility services they do not take.
  - Changes to NEM should focus on export compensation.

The RIM Test in Perspective

- Stringent – a “No Losers” test means “Hardly Any Winners”
  - RIM test is rarely used for other demand-side resources.
- A RIM score < 1 is not inequitable if there is equal access.
  - Community solar and incentives for LMI customers
- The RIM test does not measure all the benefits for ratepayers
  - Societal benefits
- Distributed generation leads to adoption of other DERs
  - Storage increases the value of DG.
  - EVs & heat pumps increase loads.

Appendix

- Proposed Grid Benefit Calculation Framework
  - While it will not be easy to glean this data from historical base case proceedings, it is important to generate the best estimates possible to quantify these ratepayer values and appropriately factor them into the process to then arrive at a fair and honest value reflecting all ratepayer benefits.

Appendix

- Proposed Grid Benefit Calculation Framework
- In Traditional Utility Base Case Ratemaking:
  - Total Revenue (TR)= Total Cost (TC)
  - Total Revenue = Total Operating Expenses (TOE)+ Total Earnings (TE)
  - TOE= Taxes + Depreciation + Operating Expenses
  - TE = Rate Base (RB) X Rate of Return (ROR)
- On an Incremental Basis the addition of 1 MW of Solar Capacity will:
  - Incrementally reduce rate base additions as additional capital investment in distribution infrastructure will be marginally reduced.
  - Incrementally reduce associated depreciation expenses.
  - Incrementally reduce operating expenses associated with maintenance and other operating expenses.
- Tax consideration will be exempt in as much as the transaction will not be considered at retail.
- Rate of Return calculations set by stipulation in the base case proceeding shall also not be impacted.
- Reduced transmission / distribution losses should also be factored into the avoided cost savings.

Questions?

NJ Board Of Public Utilities Technical Conference
Feb. 10, 2025

VOTE SOLAR

NJ DER Compensation

Kartik Amarnath, Mid-Atlantic Regulatory Director, Vote Solar
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Vote Solar fights for a 100% clean energy transition that puts the interests, health and well-being of people at its center.

Vote Solar works state by state to repower our communities with sunshine and build a thriving clean economy with affordable solar energy for all. We use a winning combination of deep policy expertise, coalition building, and public engagement to help build a strong, just, and inclusive 100% clean-powered future.

Outline

DER compensation MUST be fair and predictable and so, in these times, we must **maintain NEM *at least* for residential DERs**

VOTE SOLAR

I. New Jersey's policy mandates

II. NEM provides cost-saving and system-related benefits

III. NEM provides ease of understanding

IV. NEM *expands* participation from disadvantaged market segments

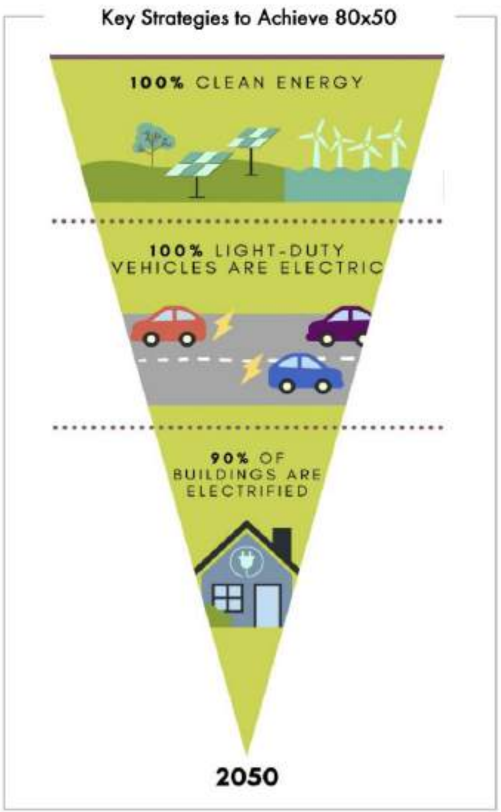
V. IF the BPU pursues transition from NEM for non-residential, compensation must be fair and based on system and societal benefits

I. Policy Mandates

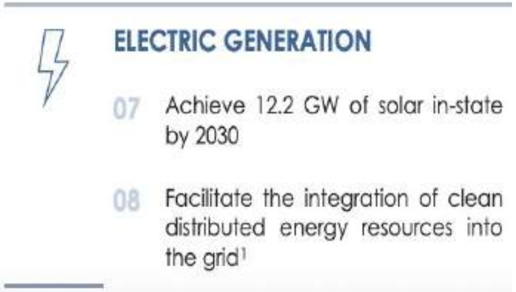
State Policy Mandates

I. Global Warming Response Act
   A. Reducing emissions by 20% below 2006 levels by 2020 and 80% by 2050

II. Executive Order No. 315 (2022)
   A. 100% clean energy by 2035



(Source: NJ GWRA Report)



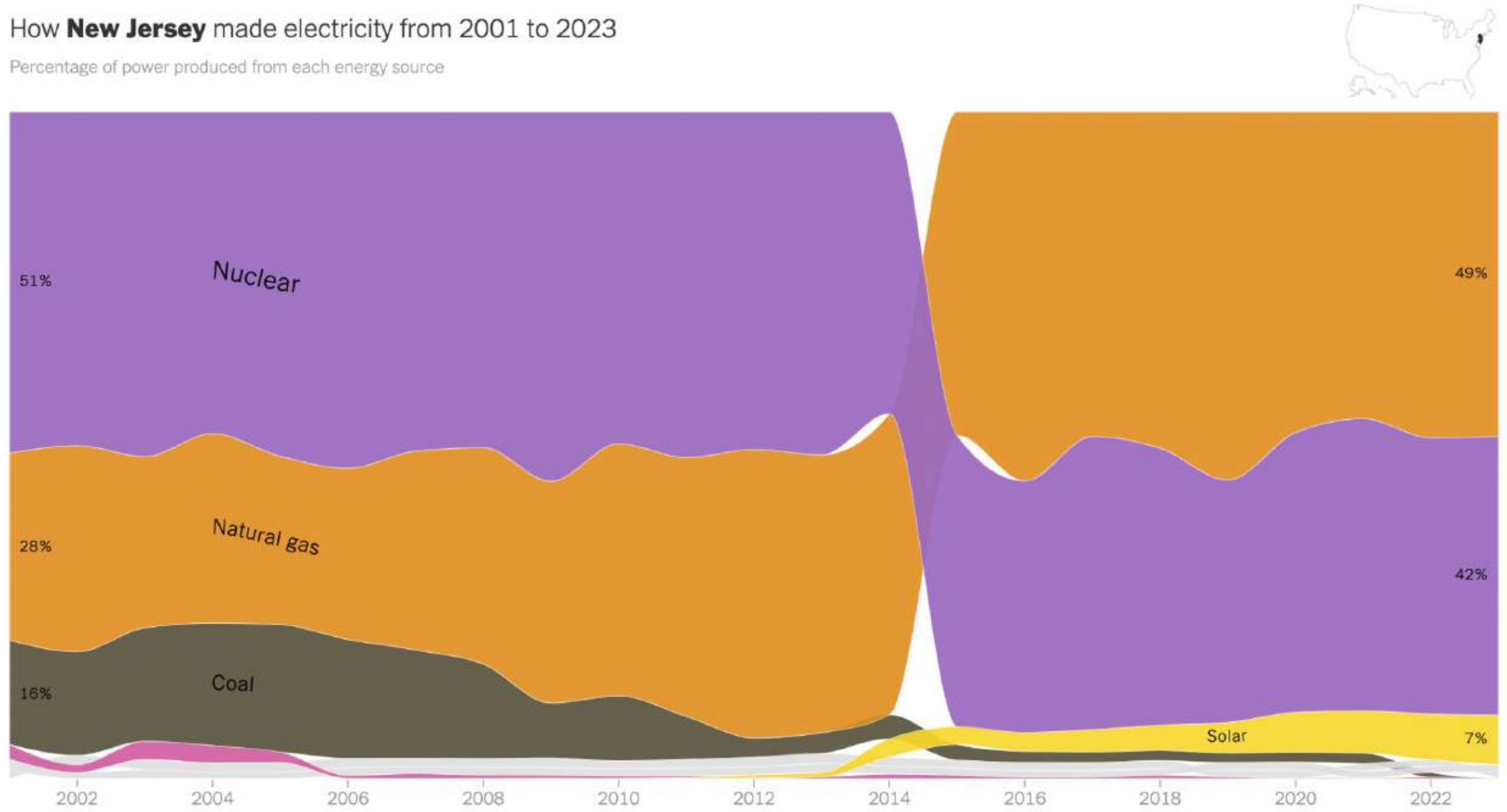
ELECTRIC GENERATION

07 Achieve 12.2 GW of solar in-state by 2030

08 Facilitate the integration of clean distributed energy resources into the grid[1]

(Source: NJ Priority Climate Action Plan)

VOTE SOLAR



(Source: NYT, “[How Does Your State Make Electricity?](#)”)

II. NEM provides cost-saving and system-related benefits

Local Solar Saved New Englanders $1.1 Billion+

Figure 2. Illustrative price and load impacts of BTM solar

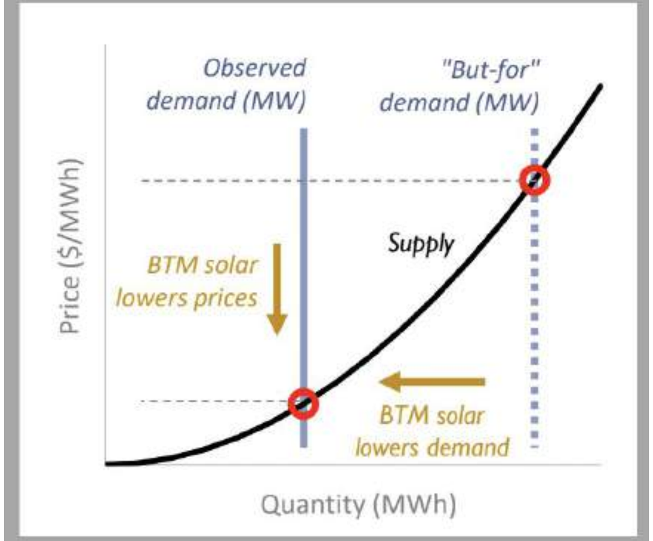
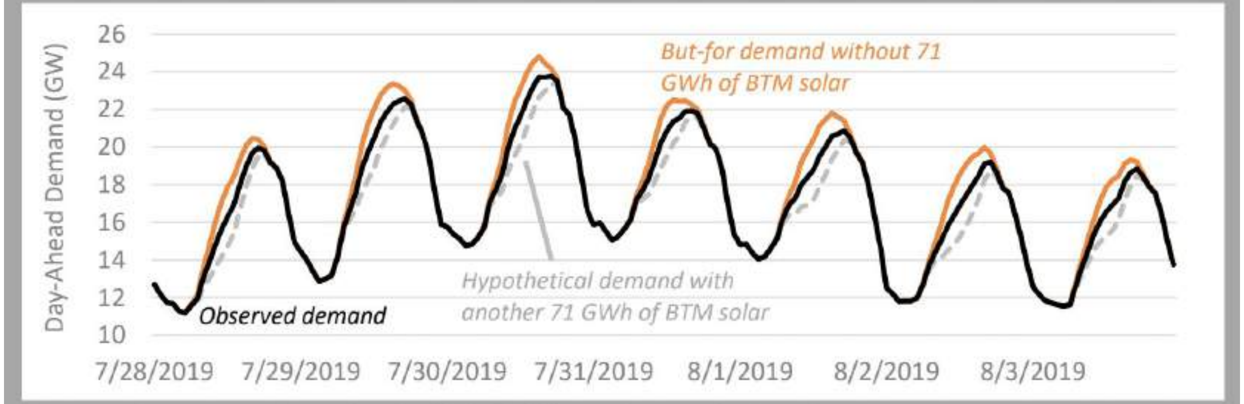


Figure 6. Demand for illustrative week, with and without BTM solar

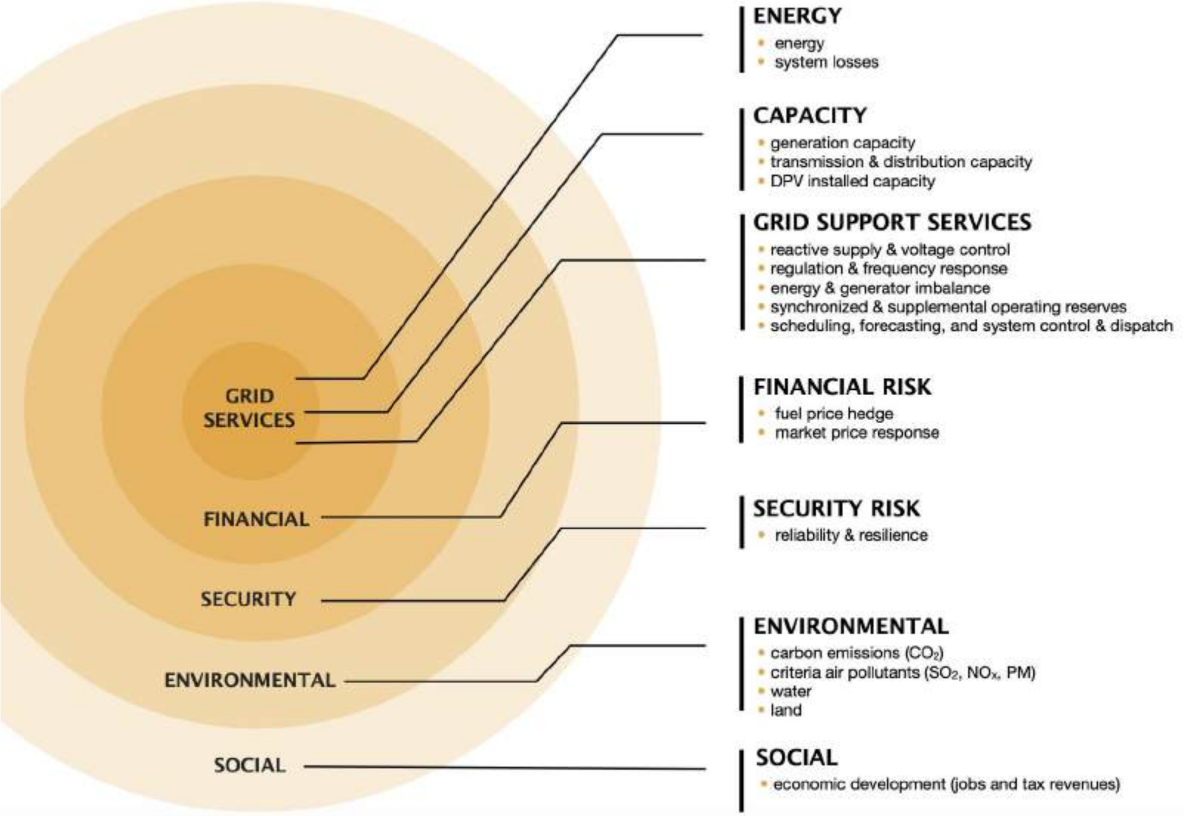


Note: Y-axis begins at 10 GW in order to highlight the difference between the three depicted scenarios.

(Source: Synapse Energy Economics, "Solar Savings in New England")

BENEFIT & COST CATEGORIES

For the purposes of this report, **value is defined as net value, i.e. benefits minus costs.** Depending upon the size of the benefit and the size of the cost, value can be positive or negative. A variety of categories of benefits or costs of DPV have been considered or acknowledged in evaluating the value of DPV. Broadly, these categories are:



(Source: RMI, *A REVIEW OF SOLAR PV BENEFIT & COST STUDIES*)

A Review of Solar PV Benefit & Cost Studies, 2nd edition

III. NEM provides ease of understanding

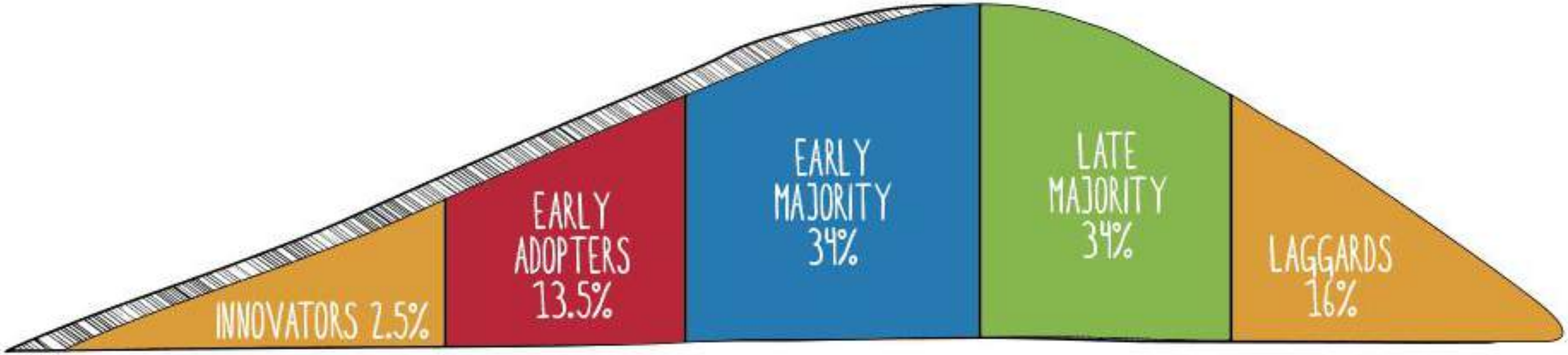
Ease of Understanding

“VoS tariffs are relatively complex and challenging to implement relative to NEM.”

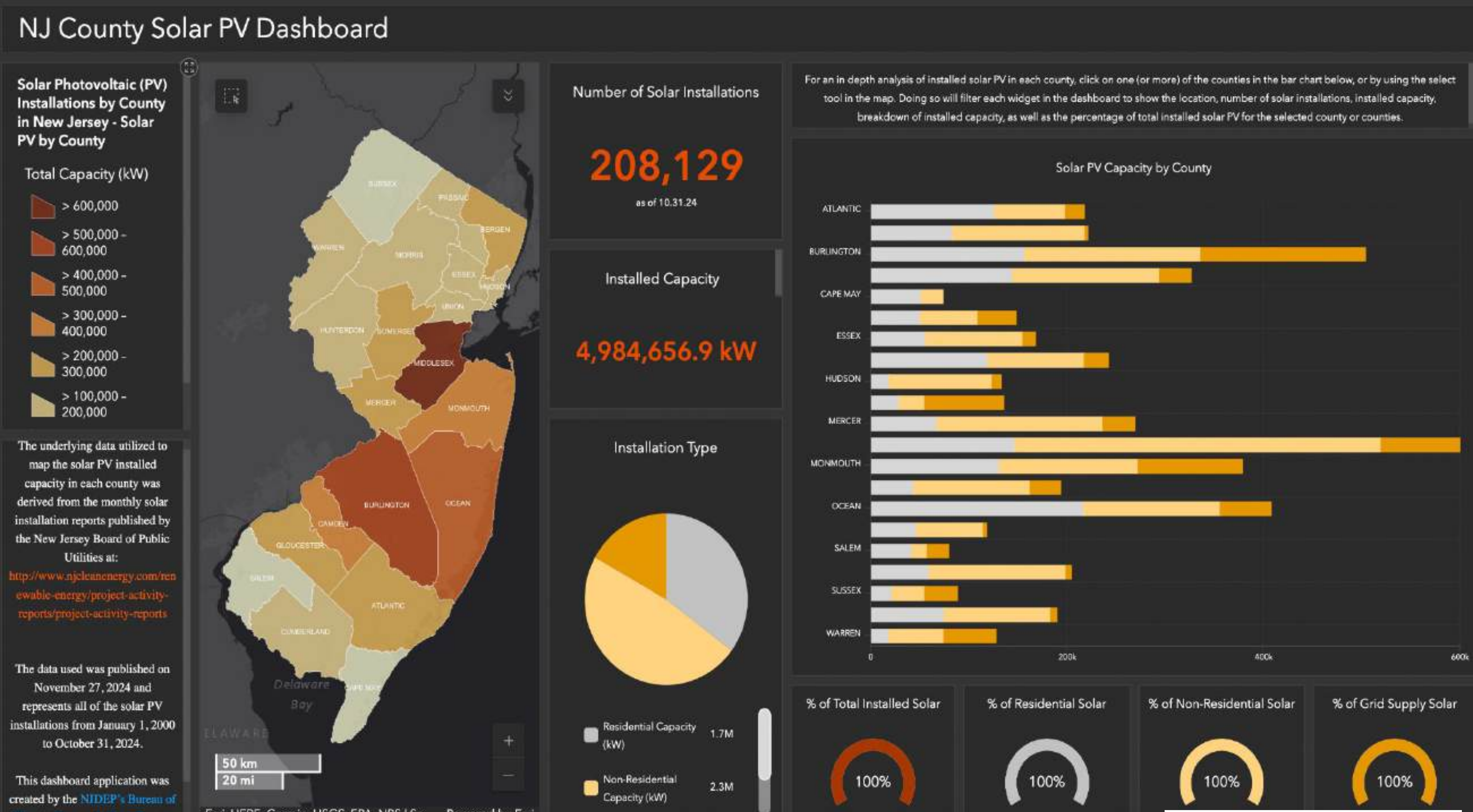
(Lawrence Berkeley National Laboratory, “A review of value of solar studies in theory and in practice”;
See also: National Academies Sci Med Eng, “The Role of Net Metering in the Evolving Electricity System”)

IV. NEM *expands* participation from disadvantaged market segments

DIFFUSION OF INNOVATION MODEL



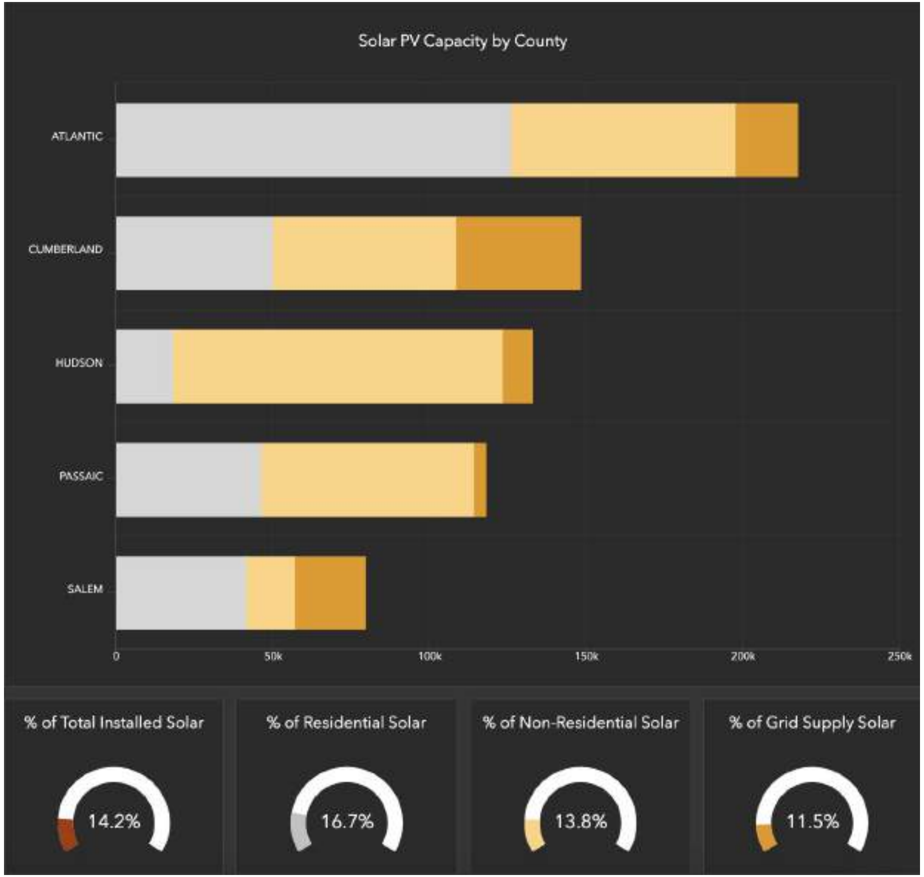
(Image Source: Smart Insights, "[What is the Diffusion of Innovation Model?]")



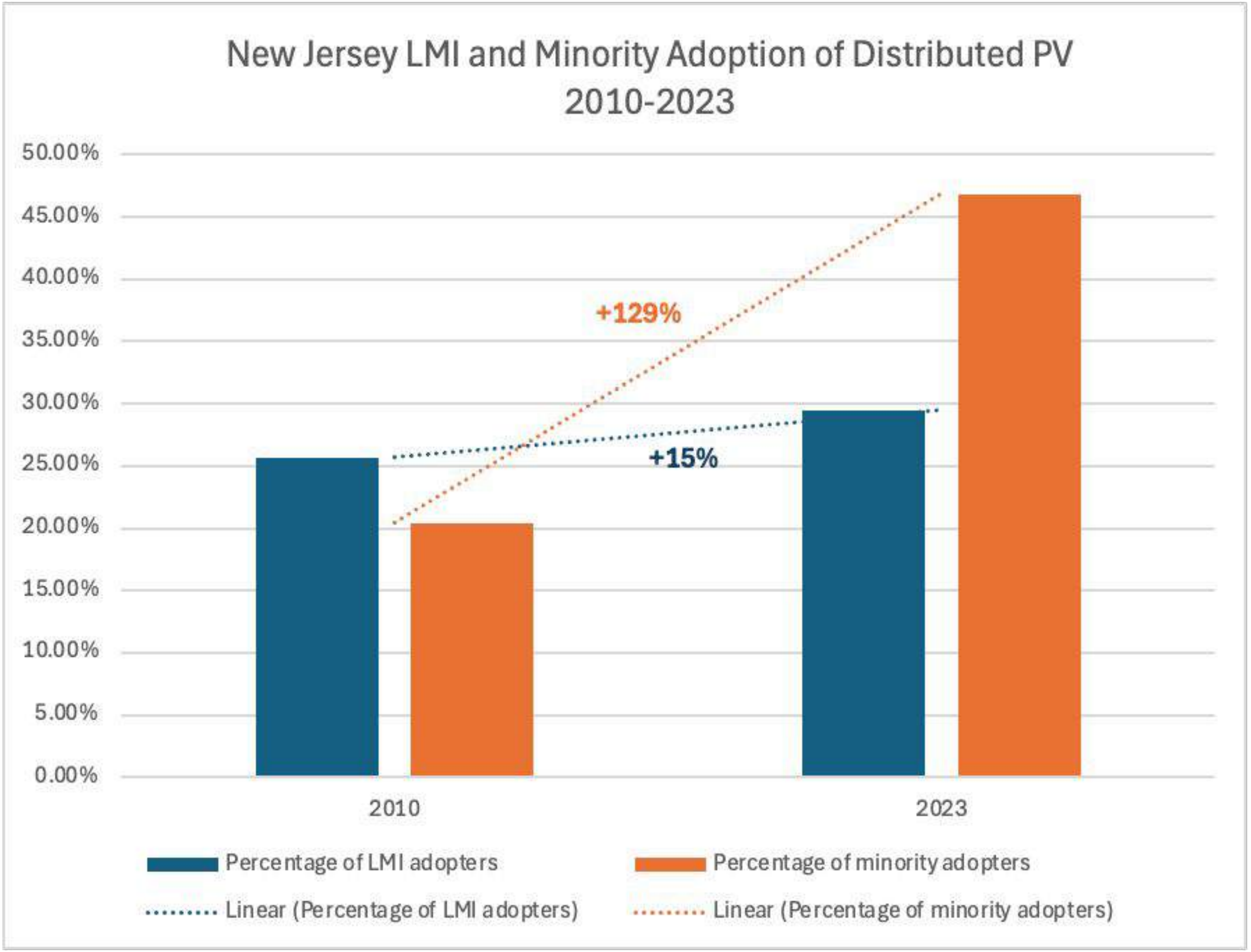
(Source: NJDEP, NJ County Solar PV Dashboard)

Highest Income Counties

Lowest Income Counties



(Source: NJDEP, NJ County Solar PV Dashboard)



(Source: Lawrence Berkeley Natl. Laboratory Solar Demographics Tool)

V. **IF** the BPU pursues a transition from NEM for non-residential DERs, then **compensation must be fair and recognizes system, environmental, and societal benefits**

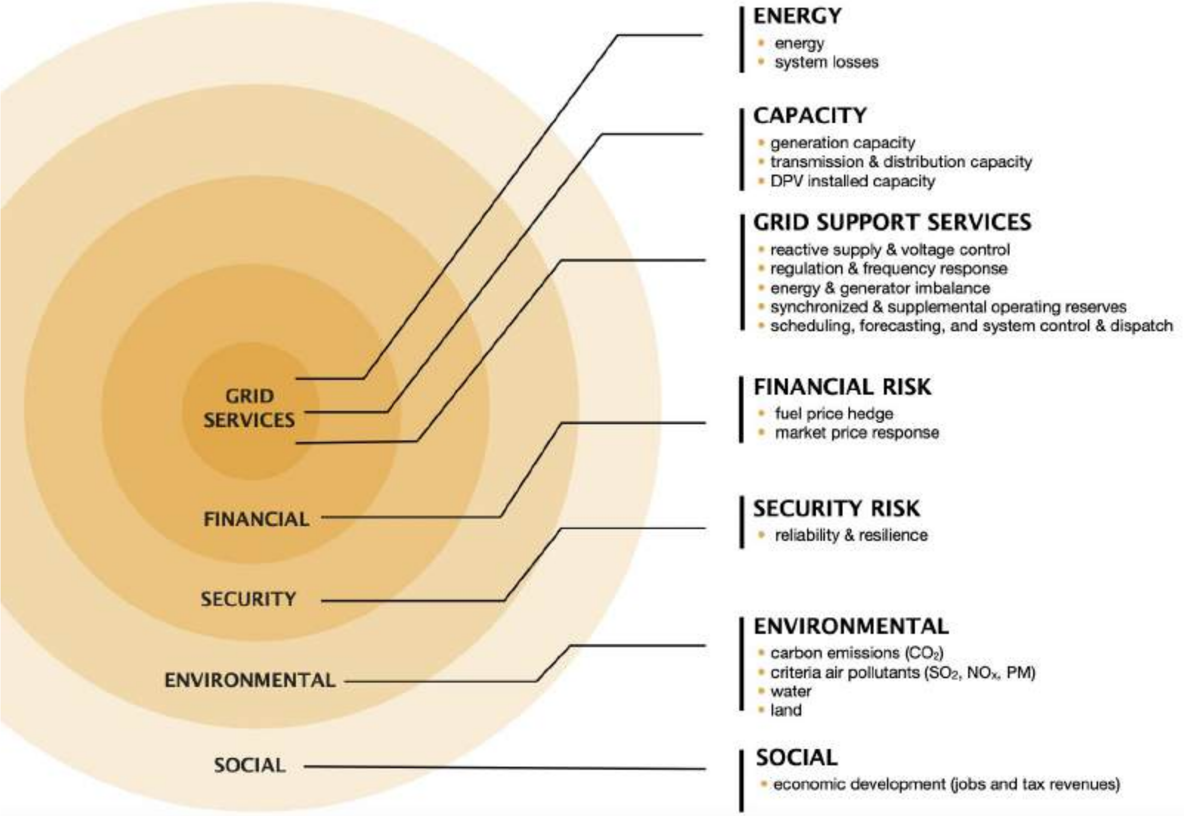
IF NJ BPU transitions from net metering for non-residential customers…

a. **Transition should be gradual**

b. **Customers should still be able to make reliable, informed investment decisions through understandable and consistent compensation**

BENEFIT & COST CATEGORIES

For the purposes of this report, **value is defined as net value, i.e. benefits minus costs.** Depending upon the size of the benefit and the size of the cost, value can be positive or negative. A variety of categories of benefits or costs of DPV have been considered or acknowledged in evaluating the value of DPV. Broadly, these categories are:



(Source: RMI, A REVIEW OF SOLAR PV BENEFIT & COST STUDIES)

National Standard Practice Manual

For Benefit-Cost Analysis of Distributed Energy Resources

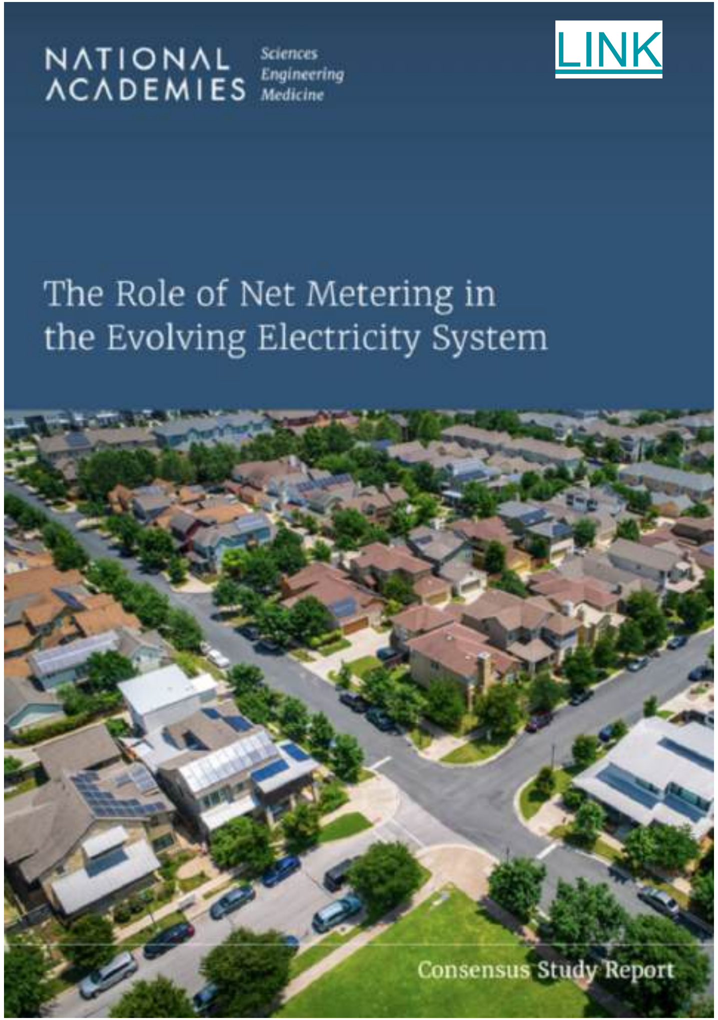
nesp

LINK

NSPM Benefit-Cost Analysis (BCA) Principles

1. Recognize that DERs can provide energy/power system needs and should be compared with other energy resources and treated consistently for BCA.
2. Align primary test with jurisdiction's applicable policy goals.
3. Ensure symmetry across costs and benefits.
4. Account for all relevant, material impacts (based on applicable policies), even if hard to quantify.
5. Conduct a forward-looking, long-term analysis that captures incremental impacts of DER investments.
6. Avoid double-counting through clearly defined impacts.
7. Ensure transparency in presenting the benefit-cost analysis and results.
8. Conduct BCA separate from Rate Impact Analyses because they answer different questions.

LINK



Thank you!

Kartik Amarnath, Mid Atlantic Regulatory Director, Vote Solar
kamarnath@votesolar.org

NET METERING FOR CLASS I RENEWABLE ENERGY SYSTEMS VIRTUAL TECHNICAL CONFERENCE

MID-ATLANTIC SOLAR & STORAGE INDUSTRIES ASSOCIATION PRESENTATION

January 30, 2025

LYLE RAWLINGS
PRESIDENT, MSSIA

AGENDA

1. Net Metering: fundamentals and value studies

2. Utilities: expanded roles in a renewable future

3. We should keep net metering, but create new alternatives that can work in parallel with it.

4. Prime example of an alternative that can work in parallel with net metering: Massachusetts SMART Program

MID-ATLANTIC SOLAR & STORAGE INDUSTRIES ASSOCIATION

1. Net Metering: fundamentals and value studies

- For 30+ years, regulatory authorities, state governments, and courts have upheld NEM and expressed a logic for it: that it's purpose is to enable self generation in lieu of batteries, that it is conceptually less a transaction than something akin to a power swap on a node in an ISO grid, etc.

- Many studies, including in New Jersey, have shown that solar power has very high value, including:
  - + JBS Energy Study, "Mid-Atlantic States Cost Curve Analysis", 2000
  - + Clean Power Research, "Value of Solar to New Jersey and Pennsylvania Utilities" 2012
  - + Lawrence Berkeley Nat. Lab., "Impacts of High Variable Renewable Energy Futures on Wholesale Electricity Prices, and on Electric-Sector Decision Making", 2018
  - + U.S. Dept. of Energy, "Solar Futures Study", 2021

MSSIA
MID-ATLANTIC SOLAR & STORAGE INDUSTRIES ASSOCIATION

2. Utilities: expanded roles in a renewable future

- **MSSIA has long recognize that: 1) utilities will, if anything, have expanded roles in a renewable-driven energy future; and 2) therefore, we must have healthy utilities in order to make that future happen**

- **New and expanded roles for utilities include:**
  - \+ More complex control of generation sources, which are orders of magnitude more numerous, different, and largely intermittent.
  - \+ More transactional complexity
  - \+ More long-distance transmission
  - \+ Storage
  - \+ Load shaping and demand-side management
  - \+ More communication & control responsibility, and more complexity

- **MSSIA believes that there are 5 main policy pathways** that should be investigated & adopted to ensure utility health, optimization of the transition, and grid stability.

MSSIA
MID-ATLANTIC SOLAR & STORAGE INDUSTRIES ASSOCIATION

3. We should keep net metering, but create new alternatives that can work in parallel with it.

- Net metering should be a choice open to everyone, but create an alternative choice that can be more attractive for most.

- Net metering works well for residential system owners, and makes sense. But even there, alternatives could work well.

- Commercial and Public market segments can benefit greatly from net metering alternatives…

  and there’s proof of that…

4. Prime example of an alternative that can work in parallel with net metering: Massachusetts SMART Program (1 of 2)

- The Massachusetts SMART was announced in 2017 and went live in late 2018. It has been very successful.

- New Jersey ADI has an administratively fixed ***incentive***, so:

Incentive + Energy compensation = Total Revenue, so it is Total Revenue, that can vary from project to project.

whereas..

- Massachusetts SMART has an administratively ***fixed total revenue***, so:

Incentive = Total Revenue – Energy Compensation, so it is the Incentive that can vary.

- Solar developers/owners can choose whether to connect in front of the meter or behind the meter. Either way, they get the same total revenue.

4. Prime example of an alternative that can work in parallel with net metering: Massachusetts SMART Program (2 of 2)

- **Results:**
  - + Utilities pushed for SMART to have this equity between FTM* and BTM*, and got it; so they supported the program. Utilities do not lose throughput when FTM is chosen.
  - + Solar developers were happy – greatly increased market opportunities, greater investment security if FTM chosen, etc.
  - + For the state, larger average project size (efficient), no lost revenue recovery, program goals easier to achieve.
  - + A large majority of commercial projects chose FTM:

Massachusetts SMART Program Analysis

FTM % Commercial	88.4%
FTM% Commercial w.o. Community Solar	80.0%
FTM% Residential	1.1%
FTM% Overall	74.5%

* FTM = Front-of-the meter; BTM = Behind-the-meter

MID-ATLANTIC SOLAR & STORAGE INDUSTRIES ASSOCIATION

THANK YOU

Lyle Rawlings
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Net Metering in New Jersey

Core Renewables at the Net Metering Conference
February 10, 2025

Outline

I. Key Principles

II. New Jersey Market Context

III. Proposal

IV. Customer Bill Example

Outline

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Net metering design principle #1

Keep it simple

This is not traditional utility rate making

- Customers don't <u>have</u> to buy what we offer
- Customers have busy lives; our offering needs to be easily understood and compelling

Net metering is a product

- Think in modern product design terms
- Sleek, simple (Apple, Google)

➡ **To keep ratepayer costs low, we need a product that <u>sells</u>**

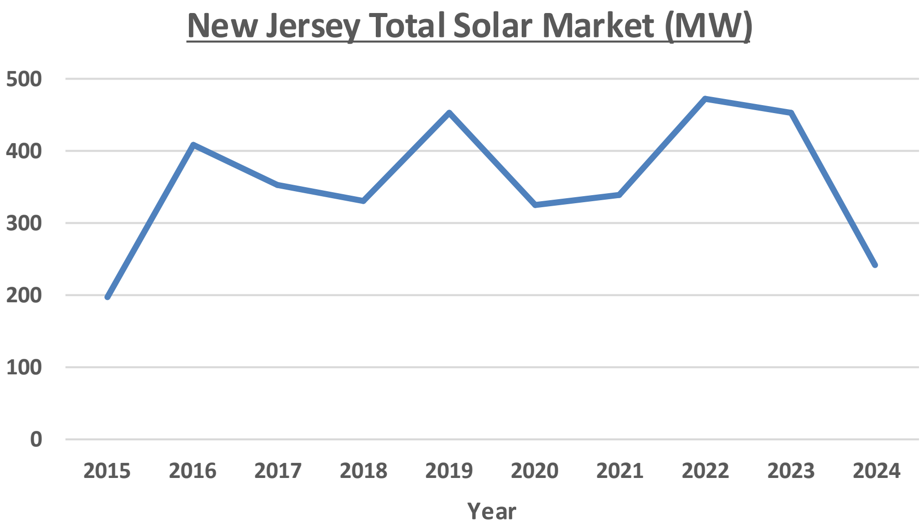
Net metering design principle #2

Squeeze the balloon in one place…

- Any reduction in net metering compensation, if we aim to maintain installation volumes, will be compensated for by an increase in SREC values
- Our public policy priority is to minimize <u>total</u> ratepayer cost
- See design principle #1

Outline

2024 was not a good year for New Jersey's solar market

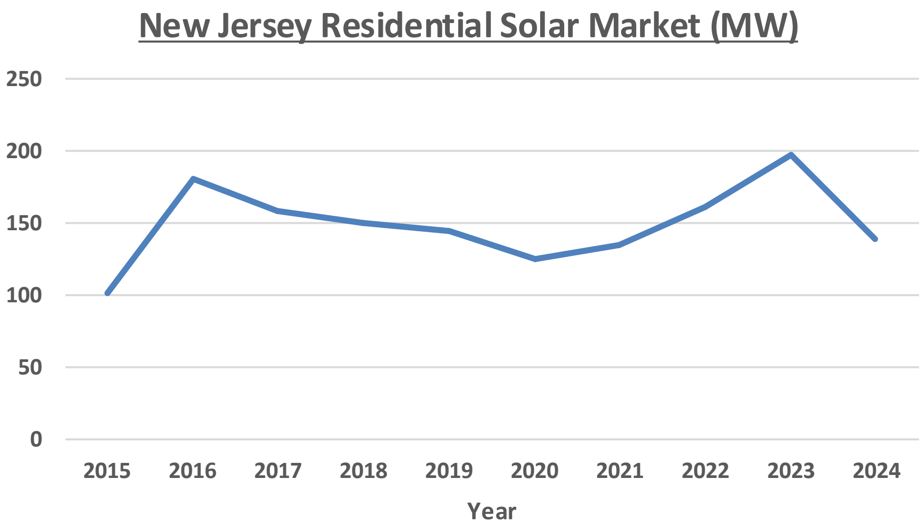


Source: NJOCE Monthly Reporting, Installation Report December 2024

- **~1 GW of solar programs in place, but…**
- **In 2024 New Jersey experienced the lowest installation volumes since 2015**
- **The overall US market was roughly flat from 2023 to 2024**
- **New Jersey specific factors that may explain the poor performance**
  - Grid constraints
  - Pause on grid scale programs
  - Late 2024 installations not yet reflected in data

We should exercise extreme caution in disrupting this market

New Jersey's residential market performance has been relatively stable

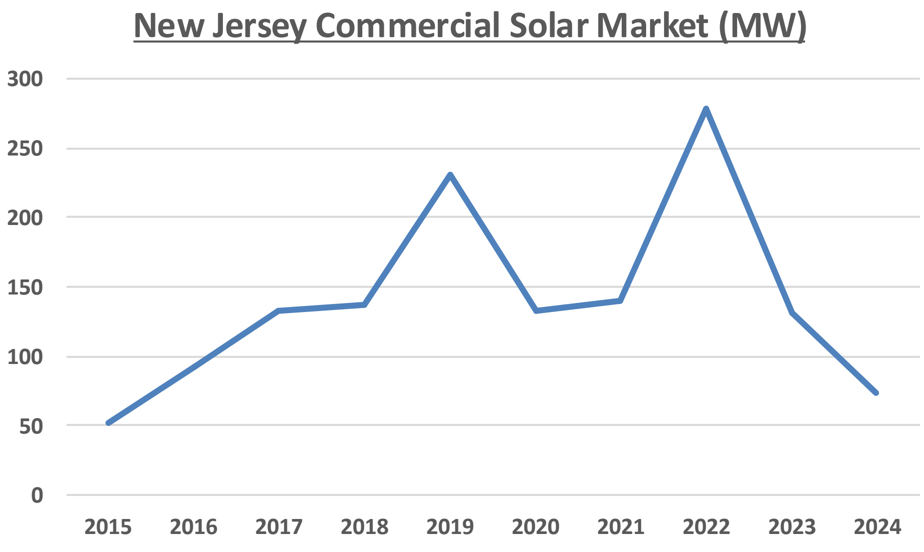


Source: NJOCE Monthly Reporting, Installation Report December 2024

- **Decline in volumes from 2023 to 2024 largely mimics national trends**
  - Interest rates elevated
  - Notable large bankruptcies

A priority should be to guard this stability

New Jersey's commercial market performance has been challenged



Source: NJOCE Monthly Reporting, Installation Report December 2024

- **Sharp decline in installation volumes from 2022 to 2024 does <u>not</u> mimic national market behavior**
  - Commercial solar is growing nationwide
- **Grid constraints are likely an important reason for the volume struggles**
  - Lack of industry interconnection application reporting makes this difficult to "know"
- **Part of the decline stems from an inflated 2022 due to high TREC values**
  - However, an anemic current pipeline suggests that the underperformance is not from project "pull forward"
  - Part of the decline is from hosts switching to the community solar program
  - TREC experience suggests a large opportunity remains…

We have an opportunity to increase commercial market volumes

Outline

I. Key Principles

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IV. Customer Bill Example

Proposal

A few goals emerge from the previous analysis

- Exercise caution in disrupting a market that is currently underperforming
- Preserve the stability and success of the residential market
- Take the opportunity to improve the commercial segment

Proposal: Provide customers a choice of interconnecting BTM or FTM

- BTM preserves net metering where it is simple and effective
- FTM allows a simple compensation mechanism when utility bill structures are complex
- Total FTM compensation would:
    - Be fixed for a term (e.g. 20 years)
    - Consist of an energy portion and an SREC portion, with fluctuations in individual portions possible while maintaining a constant total
    - Be equivalent initially with BTM total compensation

MA SMART program is best example of this policy structure

- Variations exist around the northeast; most significantly in New York though VDER violates design principle #1
- >99% of residential solar customers choose BTM
- ~75% of commercial customers choose FTM

The FTM option addresses several problems with net metering for some commercial customers

The landlord / tenant problem

- Landlord makes solar investment decision, tenants capture a large share of the benefit
- All FTM compensation can go to landlord

Demand charges

- Solar benefits to demand charges are difficult to understand and difficult to quantify
- Result is that we overpay some customers and don’t convince some to host solar that would host solar if demand charge benefit were clear
- FTM compensation provides clarity on full compensation amount

Low on-site load relative to roof size

- New Jersey open land is a valuable resource – not utilizing all roof space available is wasteful

Credit

- FTM compensation for solar energy occurs whether building is occupied or not

Outline

I. Key Principles

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A customer example illustrates two of the challenges with commercial bills

The landlord / tenant problem

- Customer was a landlord for a small office building with 3 tenants
- Tenants initially had a direct billing relationship with utility
- First step in solar project was to establish a direct billing relationship with utility
- Necessitated sub-billing to tenants, i.e. increased administration and some collection risk

Demand charges

- Bill structure pre-solar: volumetric charges $14.8k, ”demand” charges $14.1k
- Demand charges of three types: delivery demand $4.9k, transmission capacity $7.6k, generation capacity $1.6k
- We estimated solar would reduce demand charges by 60-80%
- The challenge landlord faced was how to capture that benefit, i.e. how to demonstrate to tenants what the bill would have been without solar
- This is not impossible to achieve, but landlord decided it was i) too difficult to explain to tenants and ii) too complex to administer for 20+ years
- Public policy implication: a large portion of bill reduction was both <u>real</u> and <u>completely ignored</u> in the investment decision – a pure waste of ratepayer resource
- FTM compensation would avoid this waste

Thank You!




ACADIAN
CONSULTING GROUP

February 10, 2025

Net Energy Metering Policy Reform Proposal

In the Matter of Net Metering for Class I Renewable Energy Systems
Docket No. QO24090723

Discussion and recommendations of the New Jersey Division of Rate Counsel before the public workshop on NEM development

David E. Dismukes, Ph.D.
Acadian Consulting Group, LLC

Original motivations for NEM

Early NEM policy motivations

PURPA (1978) changed how state regulators **evaluated non-utility generation resources of any type**. The **change in policies**, while primarily focused on bulk-power level generation **did have implications for distribution level generation as well.**

Many states came to **recognize the similarities** in the **challenges facing both bulk-power level and distribution level non-utility generation** and began implementing “**net energy metering” policies (or “NEM”).**

Note that the original goal for NEM was NOT to facilitate an “active incentive” to “promote” distribution level generation.

Like PURPA, **the goals were to remove market barriers** that included **(a) access/interconnection, (b) guaranteed backup service support and (c) a defined “put” for electricity generated from self-generation.**

NEM eligibility

The **regulatory conditions for NEM eligibility** vary across the U.S., although there are usually **three basic requirements**.

Technology → Current NEM policies typically **limit generation technologies to renewables**.

Customer class → Most NEM tariffs are **restricted to residential and commercial classes** – these customer/generators are typically served through their **primary class tariff with NEM provisions defined under a rider**.

Size (capacity) → **Many states have capacity limitations** for NEM eligibility to **avoid adverse system impacts** and **reduce speculative projects**.

Common early NEM regulatory practices

Many states **took "shortcuts"** or **adopted very generous policies** in the early days of NEM development in order to (a) create actively **positive incentives** or (b) **reduce administrative costs**.

Measurement and Reimbursement → Early practices used **net metering measurements** (not separate two channel approaches) and **valued those at retail rates** for administrative ease.

Eligibility → Early practices **capped capacities** (on **a per installation and system wide basis**) even though system costs were so expensive it was considered unlikely that larger units would be developed.

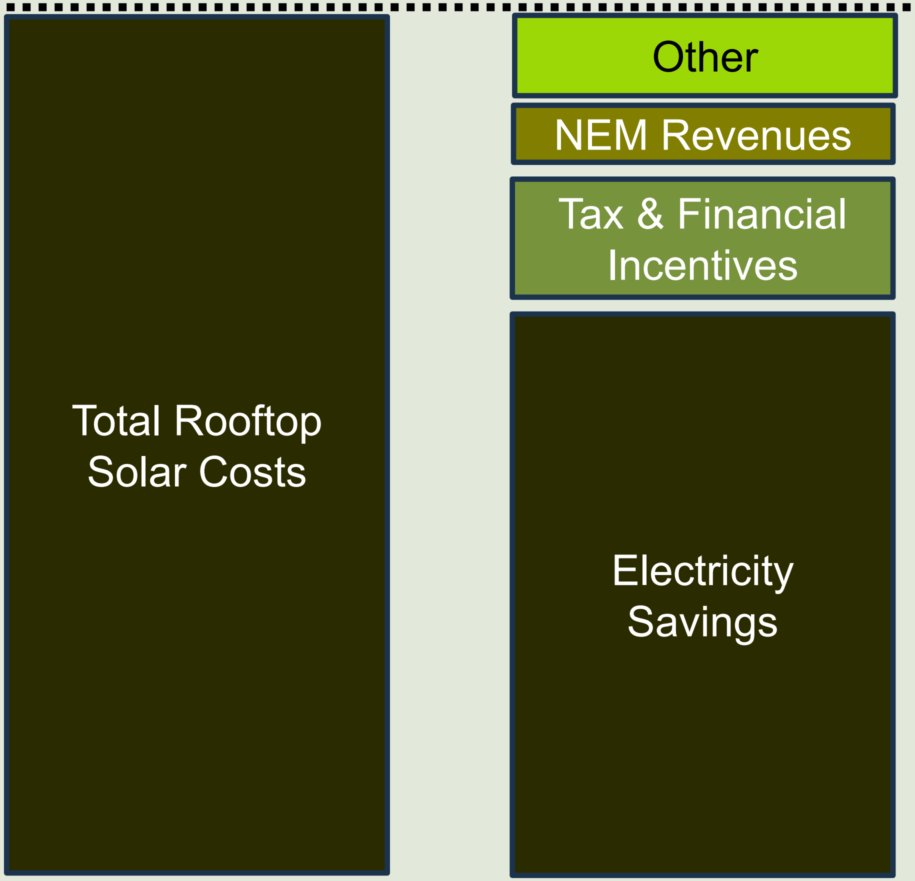
Rate Design Considerations → **Low expected participation reduced the incentives to develop separate tariffs** or separate measurements for cost-of-service purposes.

Why is NEM important for solar development

Costs

Revenue Offsets

A variety of **revenues are used to offset** the installed costs of most solar NEM systems.



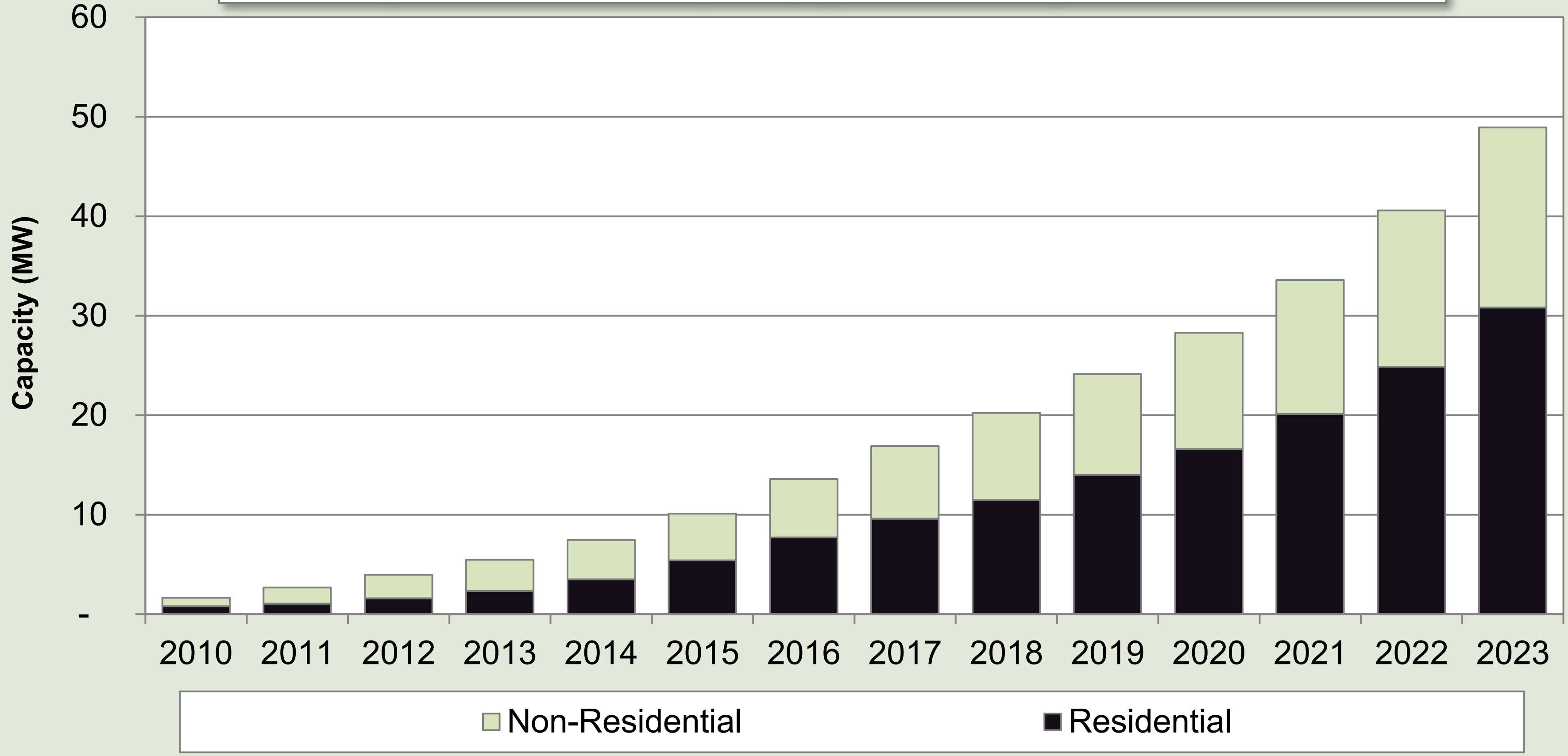
NEM revenues account for a **very small piece** of the revenue offset for solar NEM systems. Thus, reforming these payments will have small individual impacts **but could yield significant aggregate ratepayer benefits**.

Electricity savings are the primary revenue source by which NEM solar is financed. These savings typically account for **50 percent or more of a system's supporting revenue.**

U.S. NEM capacity growth

NEM capacity growth has increased rapidly over the last decade alone.

Average **annual NEM capacity growth of 25 percent** 2013-2023.

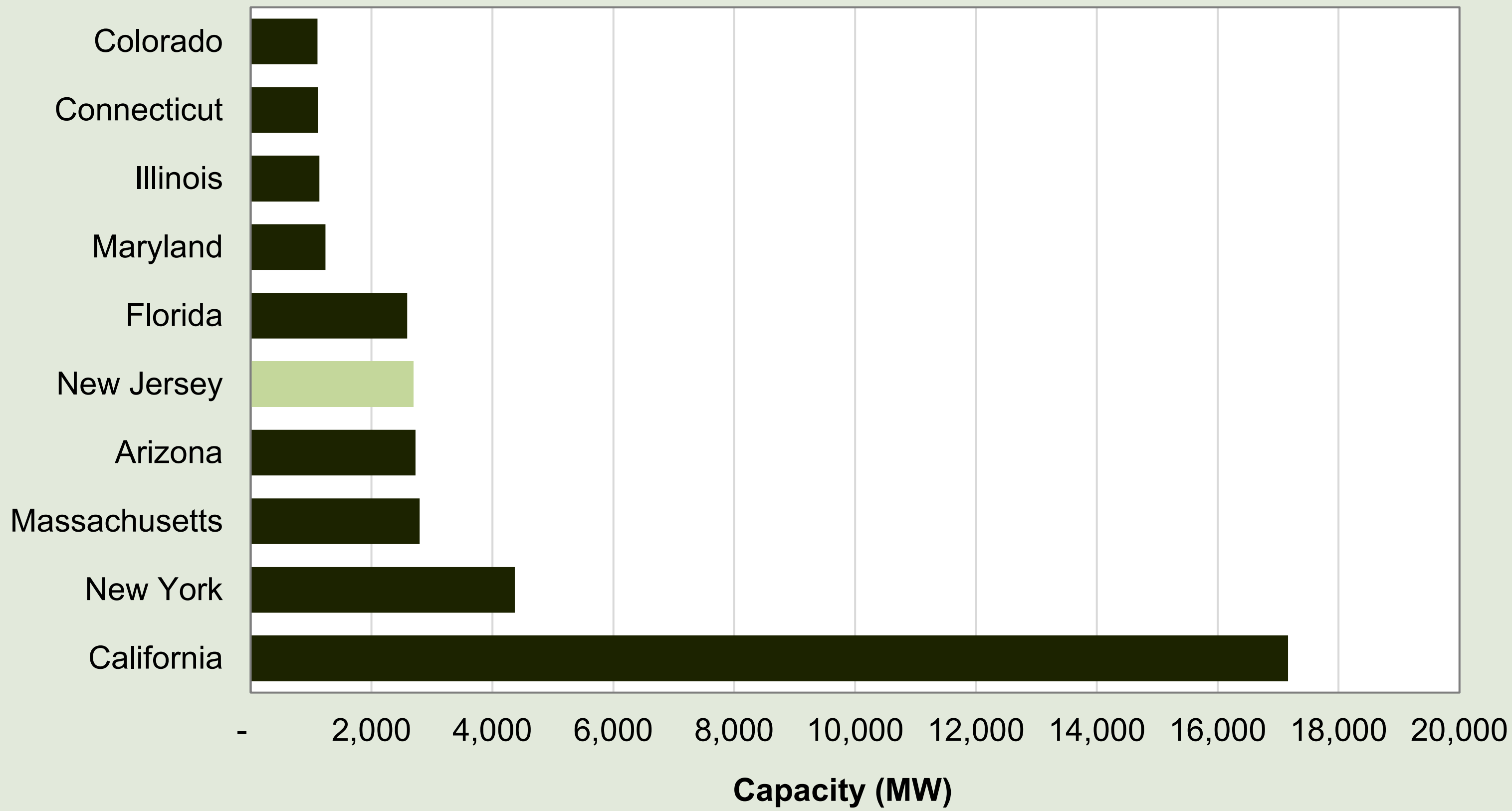


Source: Form-861, Energy Information Administration ("EIA"), U.S. Department of Energy.

Note: NEM includes all types of technology unless stated otherwise.

Top 10 NEM States (capacity basis)

California leads significantly, with a total capacity exceeding 17,000 MW, followed by New York and Massachusetts. **New Jersey is among the top states, surpassing Florida and Maryland, reflecting strong capacity adoption**.

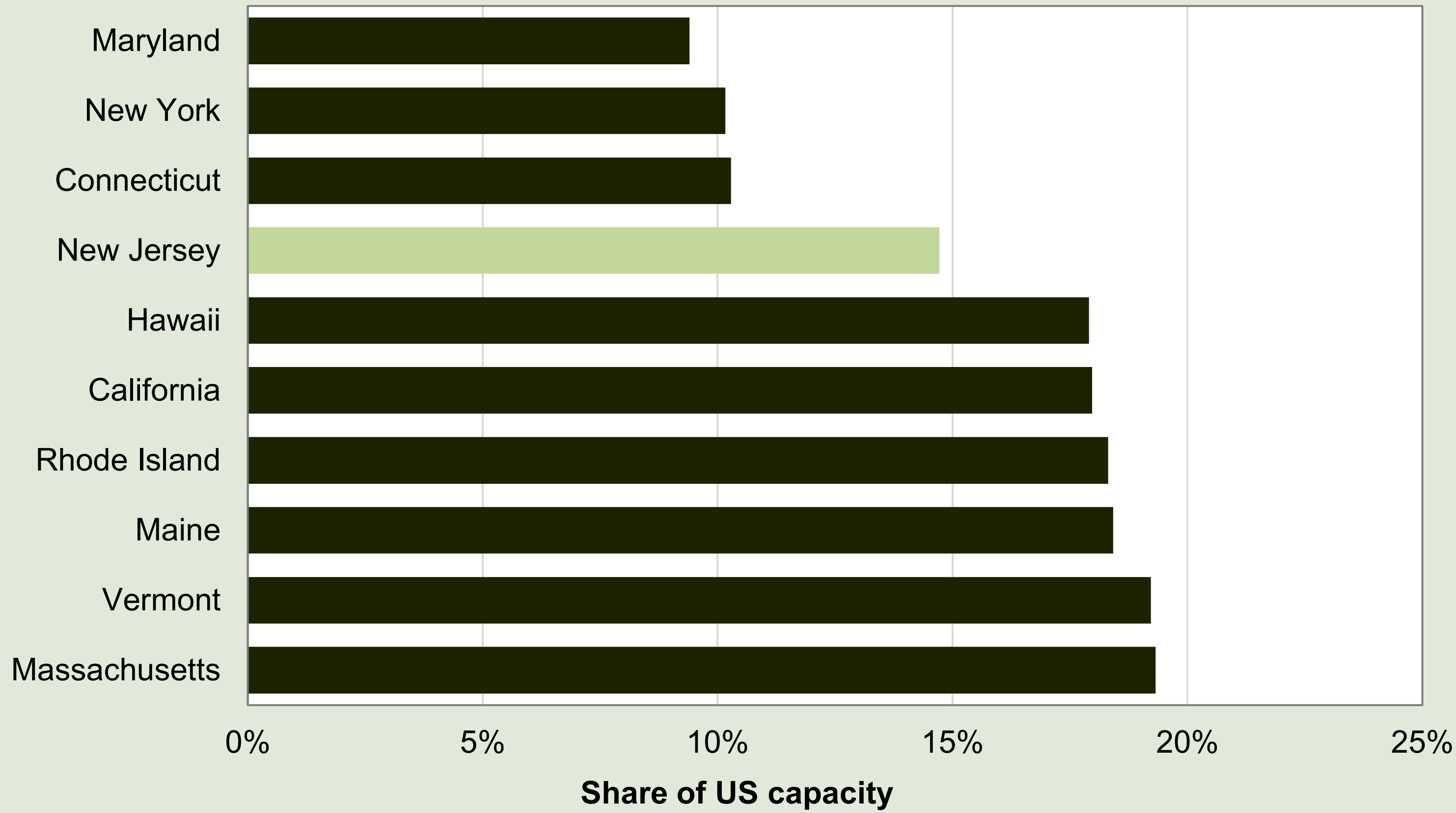


Source: Form-861, Energy Information Administration ("EIA"), U.S. Department of Energy.

Note: NEM includes all types of technology unless stated otherwise.

Top 10 NEM States (share of capacity basis)

California has the highest capacity share in the U.S. **New Jersey ranks fifth ahead of Florida and Maryland.**



Source: Form-861, Energy Information Administration ("EIA"), U.S. Department of Energy.
Note: NEM includes all types of technology unless stated otherwise.

Current NEM policy challenges

Rapid and continued growth of NEM systems are forcing the reconsideration/re-evaluation of a number of NEM policies not too dissimilar to those experienced during the early PURPA implementation.

Buyback rate terms and conditions → Large levels of NEM participation is inordinately increasing (non-NEM participating) ratepayer costs well above those originally anticipated.

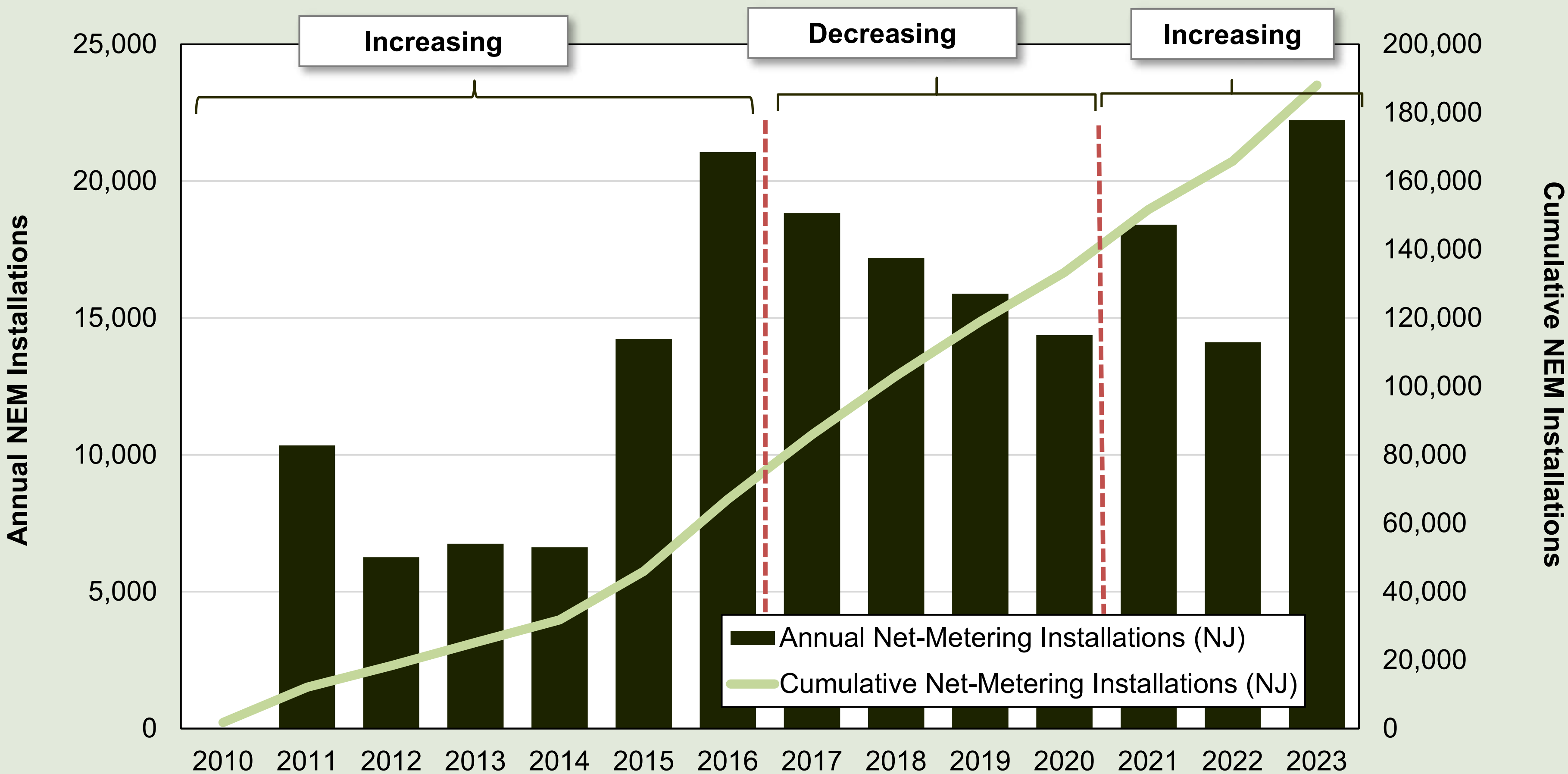
Eligibility requirements → Significant cost efficiency improvements for solar systems of all capacity are making it easier to install larger distributed systems. Greater total participation is leading to large NEM-solar penetration levels.

Rate impacts and distributional outcomes → Distribution level cost of service is becoming more distorted with NEM participating customers paying considerably less than full cost of service. Usage and CCOSS characteristics raise questions about NEM being served on a separate tariff.

New Jersey NEM development trends

New Jersey NEM trends: installation numbers.

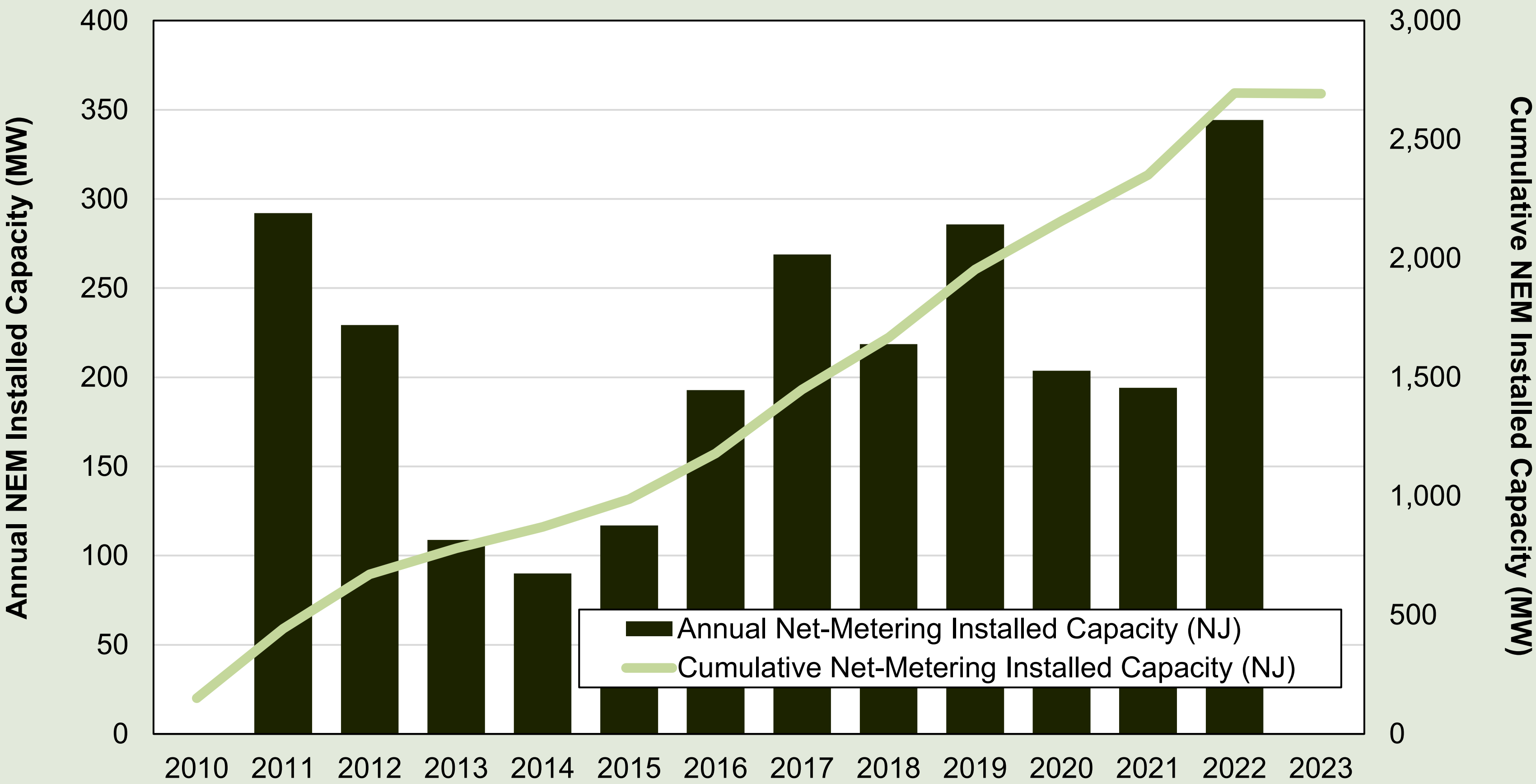
New Jersey has seen **three distinct NEM installation periods**.



Source: EIA Form 861. EDC Semiannual Reports.

New Jersey NEM trends: capacity

Annual NEM capacity growth has **grown by over 18 percent** since 2010.



Source: Form-861, Energy Information Administration ("EIA"), U.S. Department of Energy.
Note: NEM includes all types of technology unless stated otherwise.

Regional NEM trends: total installed NEM capacity.

New Jersey ranks **second in total NEM capacity among Mid-Atlantic states**, following New York, and remains significantly above the regional average.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
New Jersey	**150**	**442**	**672**	**780**	**870**	**987**	**1,180**	**1,449**	**1,667**	**1,953**	**2,157**	**2,351**	**2,695**	**2,692**
New York	42	74	104	195	336	560	820	1,082	1,390	1,711	2,171	2,738	3,724	4,369
Pennsylvania	35	146	170	197	216	226	275	336	410	479	565	632	747	923
Delaware	9	14	19	22	27	37	59	76	83	90	91	103	117	134
Maryland	14	38	67	106	153	292	511	655	751	832	877	950	1,049	1,237
Virginia	4	7	10	12	18	27	36	48	69	112	171	244	277	631
Regional Average	**42**	**120**	**174**	**219**	**270**	**355**	**480**	**608**	**729**	**863**	**1,005**	**1,170**	**1,435**	**1,664**

Source: Form-861, Energy Information Administration ("EIA"), U.S. Department of Energy.

Note: NEM includes all types of technology unless stated otherwise.

Regional NEM trends: residential NEM penetration.

New Jersey has the **highest residential NEM penetration in the Mid-Atlantic**, reaching 5.15 percent in 2023, reflecting strong policy support and adoption, outpacing regional peers.

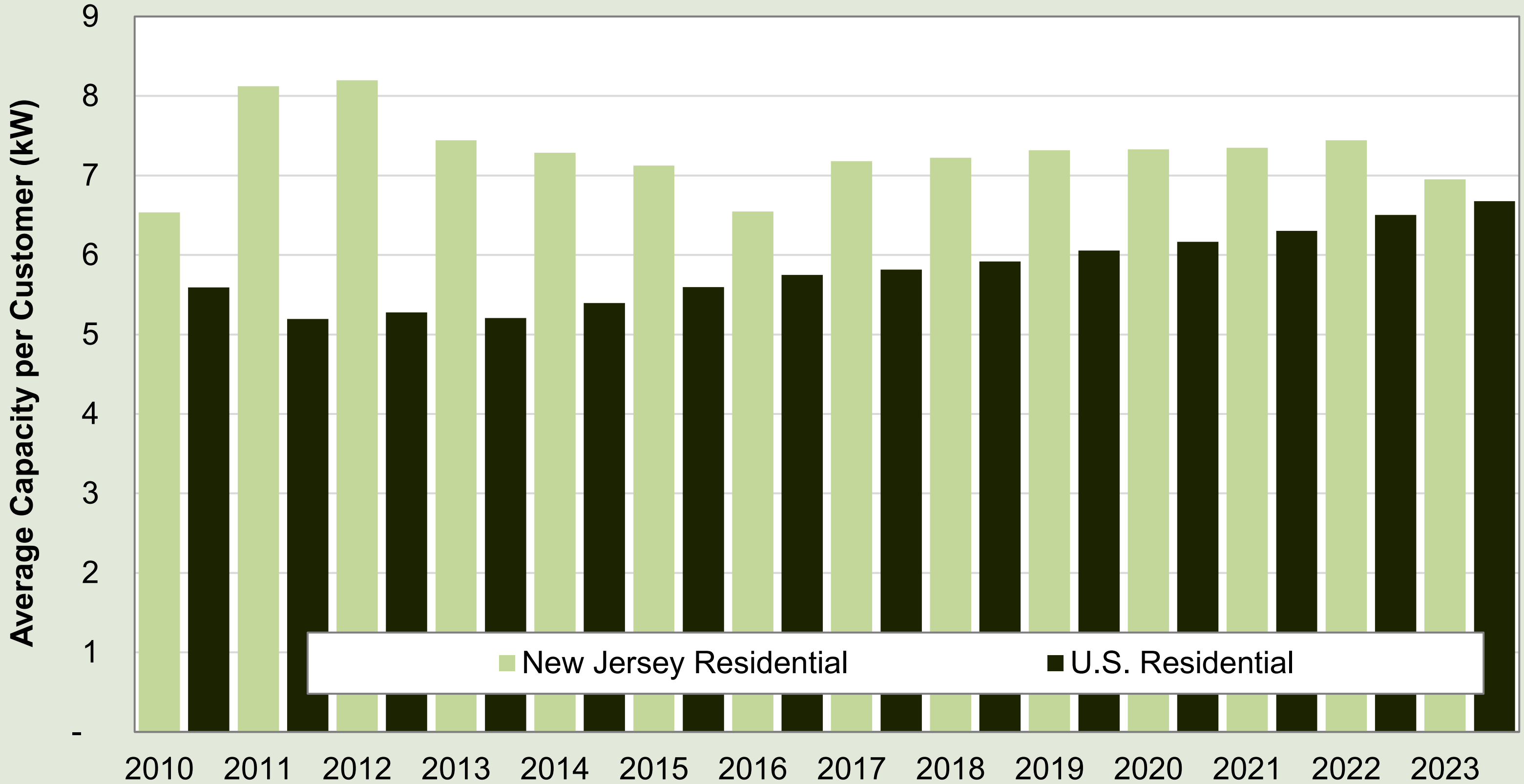
	Share of NEM Residential Customers													
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
New Jersey	**0.21%**	**0.33%**	**0.52%**	**0.74%**	**0.96%**	**1.30%**	**2.07%**	**2.69%**	**3.13%**	**3.55%**	**3.99%**	**4.28%**	**4.64%**	**5.15%**
New York	0.08%	0.12%	0.16%	0.23%	0.46%	0.84%	1.28%	1.54%	1.76%	1.99%	2.20%	2.43%	2.69%	3.04%
Delaware	0.11%	0.20%	0.27%	0.36%	0.51%	0.75%	1.29%	1.60%	1.78%	2.06%	1.98%	2.19%	2.54%	2.93%
Pennsylvania	0.05%	0.13%	0.17%	0.21%	0.23%	0.24%	0.34%	0.51%	0.60%	0.82%	0.86%	0.99%	1.21%	1.60%
Virginia	0.02%	0.03%	0.03%	0.04%	0.06%	0.09%	0.11%	0.14%	0.21%	0.92%	0.48%	0.70%	0.77%	1.62%
Maryland	0.10%	0.12%	0.21%	0.36%	0.62%	1.23%	2.36%	3.07%	3.44%	4.00%	3.91%	4.16%	4.33%	4.61%

Source: Form-861, Energy Information Administration (“EIA”), U.S. Department of Energy.

Note: NEM includes all types of technology unless stated otherwise.

Average NEM installation size (U.S. v. NJ; average capacity, kW).

New Jersey's average residential NEM installation size has consistently exceeded the U.S. average.

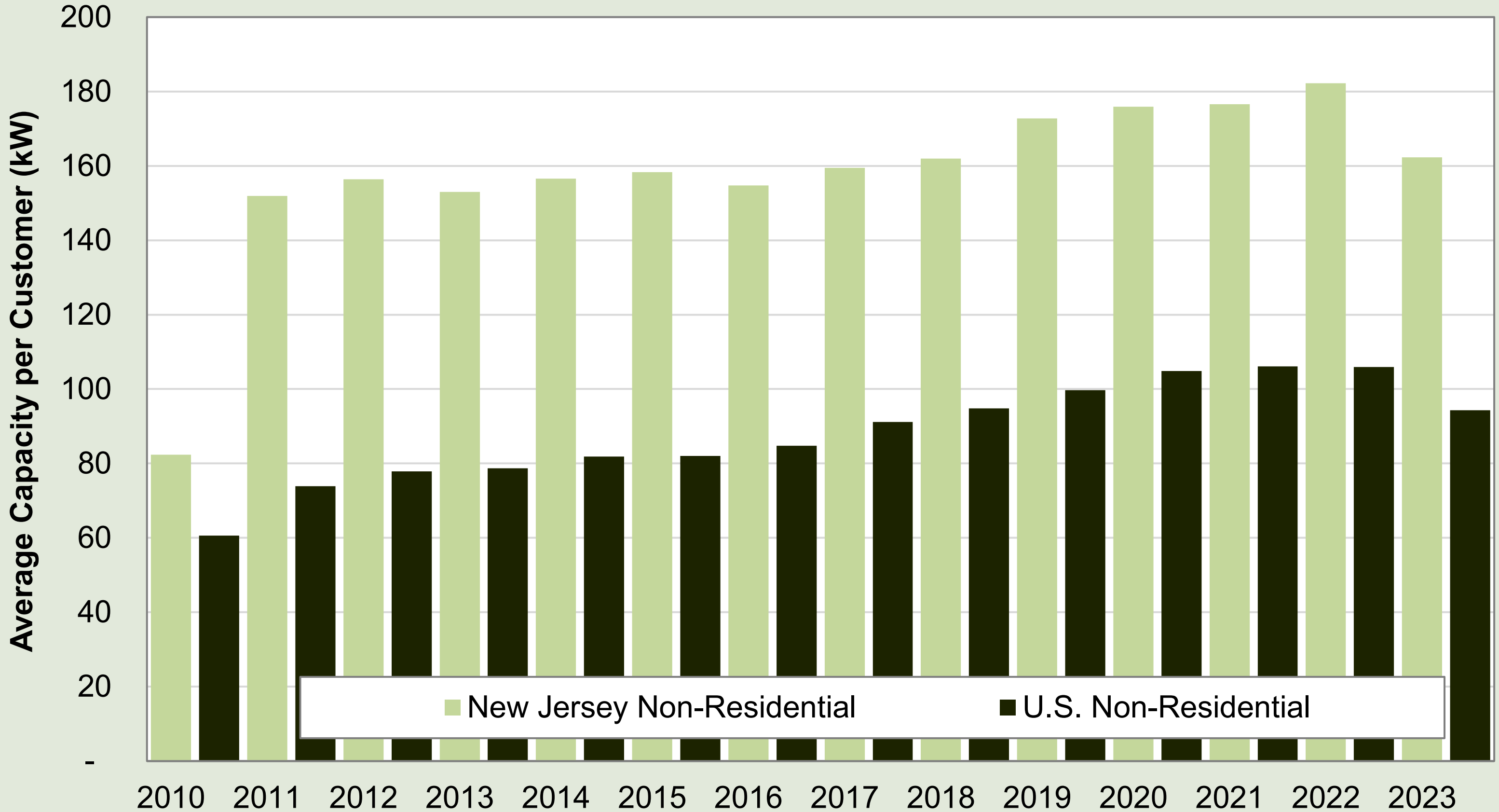


Source: Form-861, Energy Information Administration ("EIA"), U.S. Department of Energy.

Note: NEM includes all types of technology unless stated otherwise. Includes both residential and commercial installations

Average NEM installation size (U.S. v. NJ; average capacity, kW).

New Jersey's average non-residential NEM installation size has consistently exceeded the U.S. average.



Source: Form-861, Energy Information Administration ("EIA"), U.S. Department of Energy.

Note: NEM includes all types of technology unless stated otherwise. Includes both residential and commercial installations

State Regulatory Policies

Trends in current state NEM regulatory reforms

Many states are in **the process of reforming their NEM policies** given the large relative penetration rates. In many states, those **reaching their statutory maximum penetration rates** have adopted some forms of reform that includes:

- Adoption of **two-channel billing**
- Changes in individual NEM system **installation caps**
- Updated **total system NEM installation caps** (as share of total generation)
- **Valuation** of excess NEM generation at **market-based rates** rather than full retail (or administratively determined rates)
- Some for or **rate design and/or cost-of-service modeling** analysis to account for non-participating customer impacts.

Rate Counsel supports these reforms and recommends they be adopted in New Jersey.

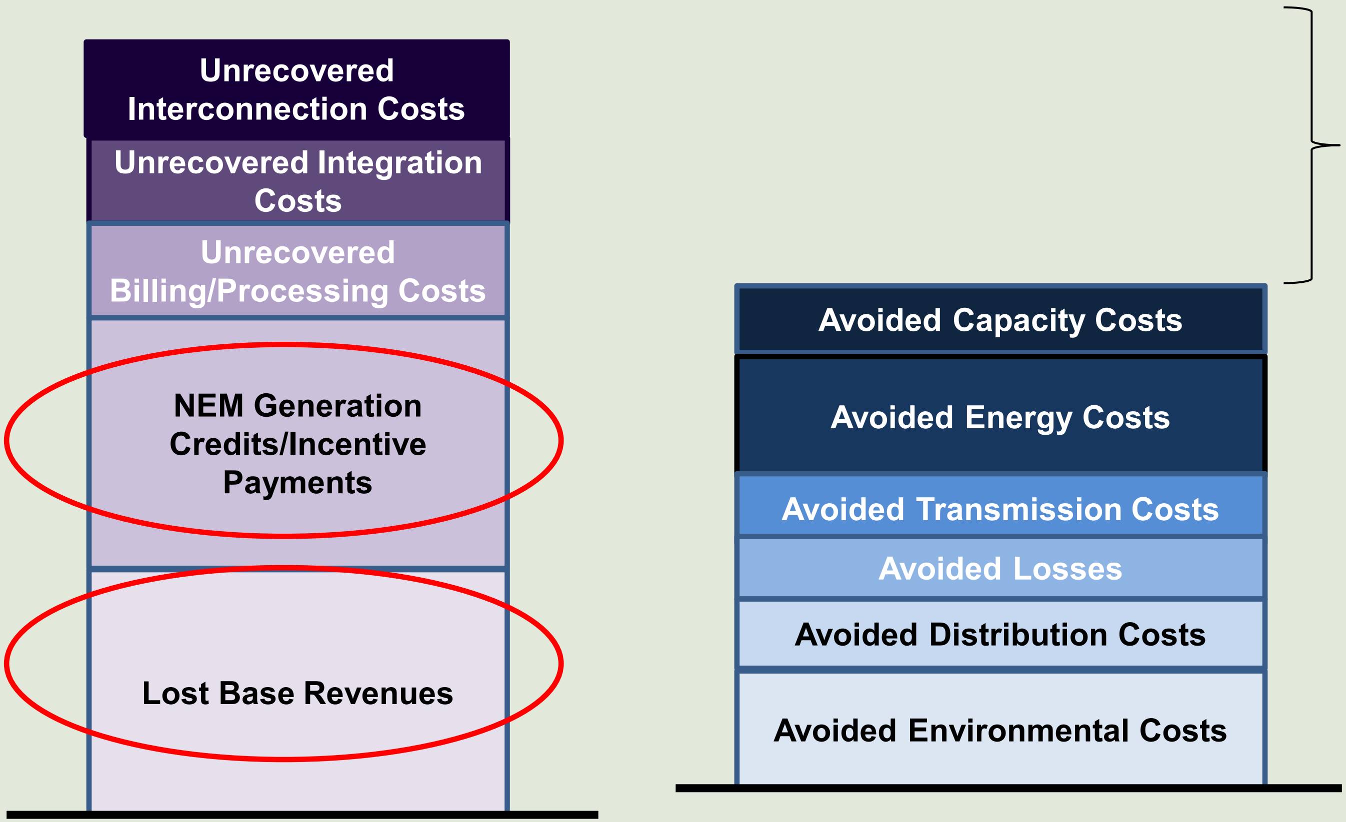
Rate Counsel: general recommendations

Upon reflection of the historic trends in New Jersey NEM development, and the recent NEM reform initiatives in other states, Rate Counsel generally recommends:

- **Now is an appropriate time to modernize** and reform New Jersey **NEM policies** to be consistent with those in other leading states.
- Reforms will **likely have very small impacts on individual NEM systems, but large impacts for non-participating customers** by reducing the overall costs of NEM policies.
- **Distributed technologies are now more affordable** than ever **reducing the need for excessive NEM financial incentives**.
- **NEM reforms** can be adopted that maintain installation incentives of while **reducing non-participating ratepayers' costs** and financial support.
- **Past New Jersey NEM policies** and Board practices **have not collected the appropriate data on NEM systems**, particularly in quantifying the **additional costs they impose on ratepayers** for meeting New Jersey's clean energy goals. **This needs to be remedied**.

NEM valuation challenges

The **value at which NEM generation credits are reimbursed is contentious**. A very close second on this list of contentious issues is the **treatment of lost utility revenues.**



NEM Program Costs | **NEM Program Benefits**

NEM credits at full retail rates, coupled with significant utility revenue losses, **represent "costs" to non-NEM participants (i.e., other ratepayers).**

This example shows negative net benefits given the relatively significant generation credits and lost revenues.

Illustrative New Jersey ratepayer costs of NEM.

New Jersey ratepayers **face two costs for NEM support**: (1) the **lost revenue requirement contributions** that NEM customers impose on the system and (2) the **excessive cost of generation valuations**. This could amount to over **$280 million per year, statewide.**

	Net Energy Metering Sector						
	Residential		Commercial		Industrial		Total
Estimated Cost of Subsidized Energy Credits							
2023 NEM Energy Sold to Grid (kWh)	**777,892,124**		**591,650,314**		**47,953,668**		**1,417,496,105**
	Rate	**Subsidy**	**Rate**	**Subsidy**	**Rate**	**Subsidy**	
Distribution Rates	$ 0.065	$ 50,353,735	$ 0.065	$ 38,298,116	$ 0.065	$ 3,104,089	$ 91,755,940
Transmission Service Charges	$ 0.013	$ 9,809,669	$ 0.013	$ 7,461,052	$ 0.013	$ 604,723	$ 17,875,444
Total Estimated Cost of Subsidized Energy Credits		**$ 60,163,404**		**$ 45,759,168**		**$ 3,708,812**	**$ 109,631,384**
Estimated Costs of Utility Lost Revenue							
2023 Behind the Meter NEM Use (kWh)	**937,480,619**		**1,156,474,571**		**118,445,058**		**2,212,400,248**
	Rate	**Subsidy**	**Rate**	**Subsidy**	**Rate**	**Subsidy**	
Distribution Rates	$ 0.065	$ 60,684,058	$ 0.065	$ 74,859,755	$ 0.065	$ 7,667,067	$ 143,210,880
Transmission Service Charges	$ 0.013	$ 11,822,172	$ 0.013	$ 14,583,812	$ 0.013	$ 1,493,661	$ 27,899,644
Total Estimated Costs of Utility Lost Revenue		**$ 72,506,230**		**$ 89,443,567**		**$ 9,160,728**	**$ 171,110,524**
Total Annual Ratepayer Cost of NEM		**$ 132,669,633**		**$ 135,202,736**		**$ 12,869,540**	**$ 280,741,909**

Note: Findings are illustrative based on estimates of New Jersey solar generation.
Source: EIA Form 861. Tariffs Sheets from ACE,JCP&L, PSE&G and RECO.

New Jersey rate impacts: renewable energy cost caps

The Clean Energy Act ("CEA") of 2018 currently **includes a cap on the cost to customers from actively promoting clean energy** in New Jersey.

Section 38(d)(2) of the CEA (P.L.2018, c.17) specifies that the cost to customers for the Class I renewable energy requirement **should not exceed 9 percent of the total paid for electricity by all customers in the state for energy years 2019 through 2021**, and **should not exceed 7 percent in any energy year thereafter.**

The Act also authorizes the Board of Public Utilities to take necessary steps, including adjusting the Class I renewable energy requirement, to ensure compliance with these caps.

If the Board continues to use NEM as an active incentive for promoting solar, then the costs of using this policy mechanisms SHOULD BE included in the calculation of the CEA renewable energy cost cap.

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Conclusions and Recommendations

Rate Counsel NEM measurement recommendations

NEM topic	Recommendation	Rationale
Billing and measurement issues	The Board should move to a **“two-channel” or “net billing”** methodology for measuring NEM customers.	Incremental movement to this method will improve measurement **accuracy** and is **consistent with other state NEM reforms**.

Rate Counsel NEM excess generation valuation recommendations

NEM topic	Recommendation	Rationale
Excess generation valuation	The Board should exclusively utilize **market-based generation rates for all NEM customer generation reimbursements** on a forward going basis. Valuations should be established by a **PJM based spot market price.**	This reimbursement method, coupled with two-channel billing, **will assure that other non-DER customers pay for the true opportunity cost of electricity valued in the market**. This approach will **fairly reimburse NEM generation** and facilitate the growth of additional NEM over time by reducing the overall NEM cost burden to non-participating customers.

Rate Counsel NEM size limitation recommendations

NEM topic	Recommendation	Rationale
Installation size limitations. Aggregate system size limitations.	The Board should cap NEM system eligibility at **50 kW for residential installations and 1 MW for commercial installations** Total system limitations should be increased to **15 percent of retail sales.**	NEM should be designed to **support the more difficult to develop installations which tend to be higher unit cost, lower capacity systems.** Most larger systems have beneficial cost characteristics and **do not need special ratepayer financial support**. A **system cap will continue to put a regulator on NEM development**. Once the new threshold is reached, the Board should evaluate whether NEM should be continued with a new cap.

Rate Counsel NEM reform date and grandfathering recommendations

NEM topic	Recommendation	Rationale
Reform date and grandfathering	Rate Counsel recommends **NEM reforms** go into place by **January 2026**. Rate Counsel **supports grandfathering provisions** for those NEM customers taking service as of December 31, 2025, **for a period not to exceed five years**.	Reforms **should go into place as quickly as possible** in order to **reduce unnecessary ratepayer costs** of NEM implementation and solar energy development. **Grandfathering strikes a fair balance** between reform and supporting the **expected terms and conditions for NEM systems at the time of their installation**. A **five-year grandfathering provision is fair** since most **solar installations are at grid parity** in New Jersey five years **should not disrupt originally anticipated pay-back dates**.

Rate Counsel NEM cost of service recommendations

NEM topic	Recommendation	Rationale
Cost of service	EDCs should be required to **separate NEM customers for cost-of-service study ("CCOSS") purposes** in order to ascertain the (a) **degree to which these customers cost characteristics differ** from other residential/commercial customers and (b) **estimate revenue under-recoveries**, if any.	This will **assure that NEM customers are making a fair contribution to the costs of supporting the distribution grid**. Rates cannot be considered discriminatory if there is a **cost and usage differential between NEM and non-NEM ratepayers**.

Rate Counsel NEM rate design recommendations

NEM topic	Recommendation	Rationale
Rate design	The Board **should consider changing its policy**, which may require a change to its current rules to **allow for separate NEM tariffs or riders if there are reasonable cost of service or usage rationales for tariff differentiation.**	Separate tariffs or riders will assure that **NEM customers are paying their fair share of the embedded cost of the electric distribution grid**. Any separate tariff should be **support by fully vetted CCOSS or other comparable cost analyses/results**.

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New Jersey Utilities Association

Net Metering Reform

Dr. Joey Gurrentz
Director of External Affairs

NJUA
NEW JERSEY UTILITIES ASSOCIATION

NJUA

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atlantic city electric

AN EXELON COMPANY

Jersey Central Power & Light

A FirstEnergy Company

PSEG

Rockland Electric Company

NJUA Position

We Support

- Policies that provide for deployment of renewable energy in New Jersey
- Policies that enable residents and businesses to benefit from owning solar energy generation
- Utility billing that is based on an equitable distribution of costs

Major Concern

- Current net metering policies subsidize participating customers with increased cost for others who do not or cannot participate directly.

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Anticipated Growth of Solar Energy

- NJ is ranked 10th in the Nation per Solar Energy Industry Association https://seia.org/solar-state-by-state/

- NJ Energy Master Plan goal of 32 GW by 2050

- New Jersey Integrated Energy Plan least-cost path proposal of 5.2 GW of solar by 2025, 12.2 GW by 2030, and 17.2 GW by 2035 for 100% clean energy by 2050

That's a lot of solar!

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Priorities for Net Metering Reform

Prioritizing Affordability

- Implementation of Cost Causation Principles
- Fair balance of Delivery, Supply, and Societal Benefits Charges

Prioritizing Accessibility

- Expanding access to all residents and businesses

Positive Examples in Extant Policies

Expanding Participation

- Community Solar
- Remote Net Metering
- NJSIP
- Diverse projects – landfill/brownfield projects, net metered, grid-scale, rooftop, ground mount, carport projects, etc.

Reducing Costs to Customers

- Lower [S]REC Prices
- ADI Program
- Removal of non-bypassable charges from the net metering credit

General Recommendations for Net Metering Reform

- Protect customers from higher bills with high levels of net metering
- Use customer funds in support of solar development as efficiently and universally as is practicable
- Keep the incentive cost as low as necessary
- Encourage competition where possible while continuing to support the industry
- Establish a long-term, durable incentive structure that reduces regulatory uncertainty
- Ensure the future NJ net metering construct is aligned with FERC Order 2222 wholesale market requirements

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New Jersey Utilities Association

Net Metering Reform

Conclusion

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Rockland Electric Company

NEM Program Considerations

Rockland Electric Company

Kristen Barone – Department Manager, Clean Energy Planning

Yan Flishenbaum – Department Manager, Rate Engineering

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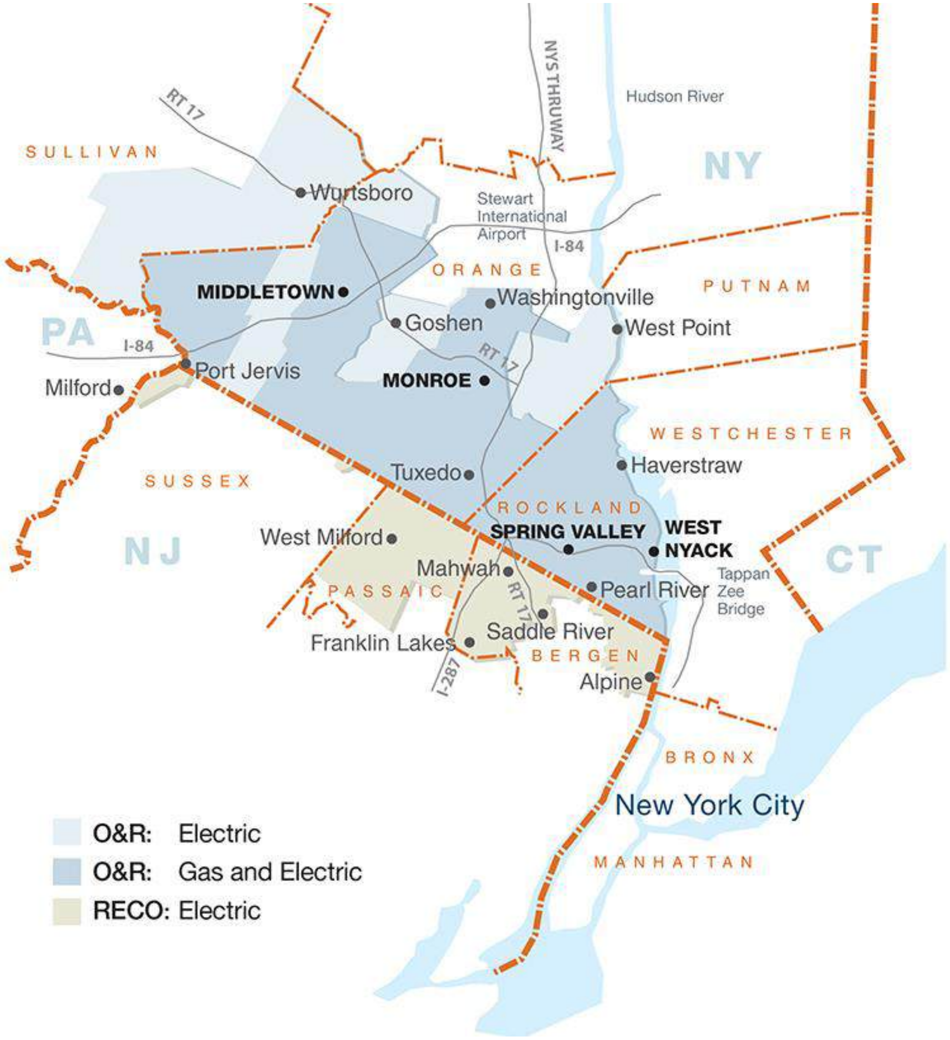
February 10, 2025

Orange and Rockland Utilities, Inc.
Rockland Electric Company

300,000 electric customers across New York and New Jersey

140,000 gas customers in New York

2.5% of New Jersey's electric demand (**80% residential, 20% C&I**)



Introduction

RECO has experience with the NEM Successor Program in New York through its parent company, Orange and Rockland Utilities, Inc.

New York established a **NEM Successor Tariff** and a **Value Stack** mechanism to address specific customer classes and more accurately capture the value of DER in strategic locations

NEM Successor Tariff

- Mass market transition mechanism
- Introduced Customer Benefit Contribution (CBC)
  - Monthly charge based upon the size of system
- Balance between "stewardship of ratepayer funds and the need for stability of rates and support of the clean energy industry"*

Value Stack

- For commercial customers
- Allows for use of capacity thresholds
- Also introduces complication

*Order Adopting Net Metering Successor Tariff Filings with Modifications 8/13/21 PSC Case 15-E-0751 page 8.

Guiding Principles for a NEM Program Successor

Revenue Sufficiency

Equitable

Efficiency

Stability

Reflective Costs

Non-Discriminatory

Simplicity

Rate Solutions

Potential Rate Structure Design Considerations to Eliminate Cost Shift

Cost-Benefit Balance

How to ensure participating customers will contribute to the costs of using the grid and maintain equity among all customers?

- **Option 1:** Supply-side only crediting
- **Option 2:** The customer benefit contribution (CBC) charge should cover the entire cost shift
  - CBC can be phased in over time
  - Each customer within a service class will pay the same rate
  - Individual impact will depend on the capacity of solar equipment
  - Existing customers could be grandfathered

Eligible Technologies

What technologies should be considered and how to incorporate future technologies?

- At least solar and hybrid (solar + battery)
- New technologies to be approved through BPU

Customer Experience and Benefits

Simple and Familiar Design

- NEM Successor Tariff in New York is a good first step in a NEM transition framework
- For mass-market customers, Value Stack can lead to utility and customer complications (e.g., ability to participate, building out the system)

Transparency

- Customers can see a clear breakdown of their energy use, CBC calculation, CBC definition and credits on their utility bills, enhancing transparency and trust
- Have a roadmap for NEM transition and have clearly defined goals

Annual Review

- Rates are reviewed annually and published on the RECO website so customers can be informed of the latest rates

Thank you.

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February 10, 2025

Advancing Equitable and Sustainable NEM Reform in NJ

Kevin Thompson | Clean Energy Strategy

Powering a Cleaner, Brighter Future for Customers

6 T&D- only utilities
Operate across seven regulatory jurisdictions

4 major metro areas served
Including Washington DC, Baltimore, Chicago, Philadelphia

19,100+
Employees across our operating companies

10+ million
Electric and gas customers served across our service territories

25,600
Square miles of combined service territory across our jurisdictions

183,540
Circuit miles of electric and gas distribution lines

11,140
Circuit miles of FERC-regulated electric transmission lines

Pepco
0.9 million
Electric customers

Territory: **MD, DC**
Main City: **Washington, D.C.**
Population: **0.7M**

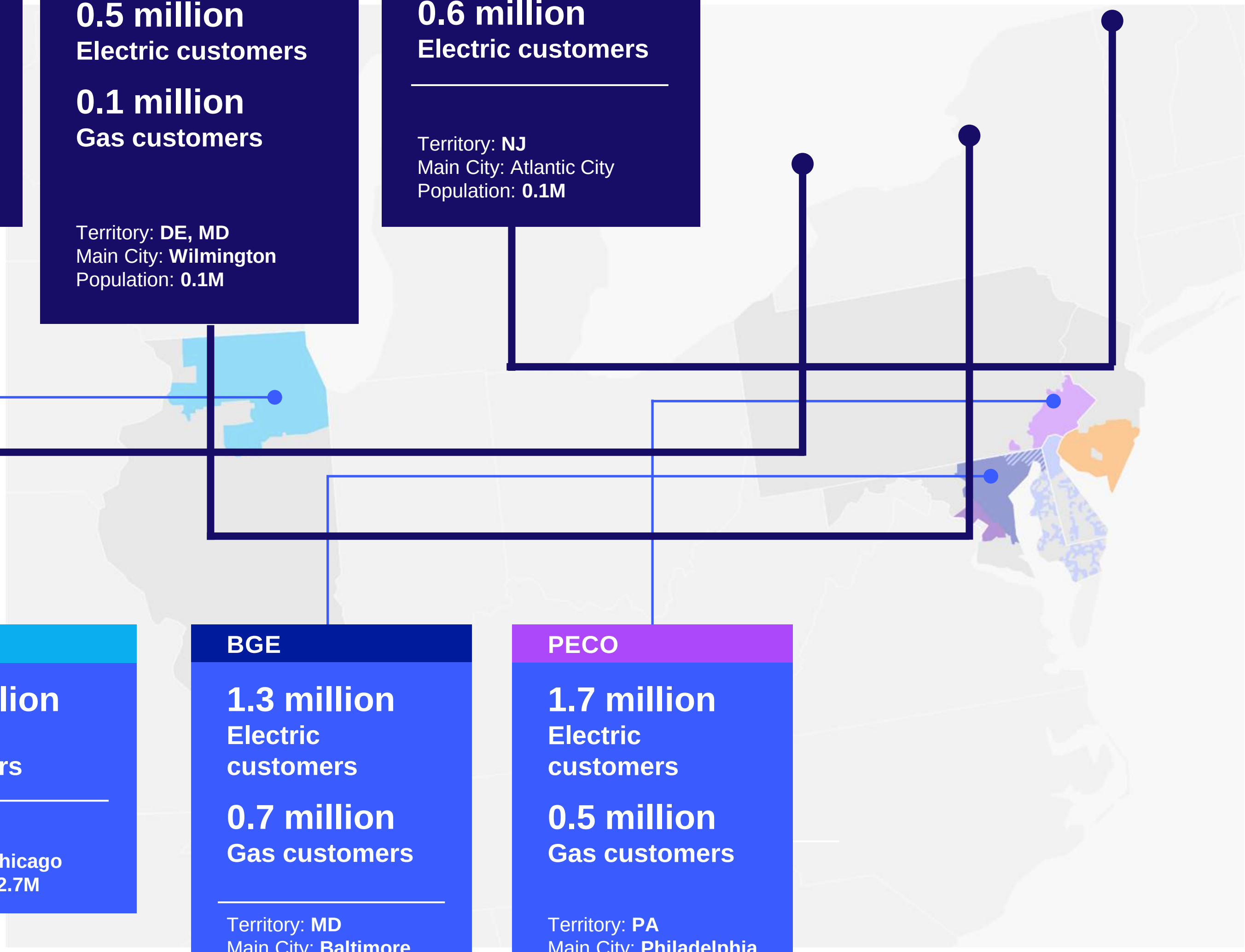
DPL
0.5 million
Electric customers

0.1 million
Gas customers

Territory: **DE, MD**
Main City: **Wilmington**
Population: **0.1M**

ACE
0.6 million
Electric customers

Territory: **NJ**
Main City: Atlantic City
Population: **0.1M**



ComEd
4.1 million
Electric customers

Territory: **IL**
Main City: **Chicago**
Population: **2.7M**

BGE
1.3 million
Electric customers

0.7 million
Gas customers

Territory: **MD**
Main City: **Baltimore**
Population: **0.6M**

PECO
1.7 million
Electric customers

0.5 million
Gas customers

Territory: **PA**
Main City: **Philadelphia**
Population: **1.6M**

Key Principles for NEM Reform

ACE is committed to supporting New Jersey's clean energy goals while ensuring fair cost allocation.

1. **Ensures NEM customers pay their fair share of distribution system fixed costs reflecting their reliance of system capacity**
2. **Compensates NEM customers for the locational and temporal wholesale market generation value of their export to the system**
3. **Enables the utility to employ the distributed generation to reduce peak wholesale market purchases**
4. **Includes a financial consideration to support low-income customers**
5. **Stakeholder collaboration for NEM policy that balances stakeholder interests**

Successor NEM Policy Design Require Further Discussion

Transitioning to a Buy-All, Sell-All, or Net Billing framework introduces several technical, operational, and customer impact challenges that require further discussion to ensure successful implementation.

- ACE recommends the BPU:
  - Establish a structured **stakeholder working group** to facilitate further discussion for a more comprehensive evaluation that balances clean energy adoption, grid reliability, and equity for all customers
    - Consider a potential impact analyses to ensure customer equity and market stability
    - Consider if potential pilots are needed to study the feasibility and scalability of proposed changes
    - Consider alignment with long-term grid modernization and clean energy objectives.

Compensation Mechanism Advantages/Challenges

Buy-All, Sell-All

•Customers sell 100% of their generated energy to the grid at a set rate (e.g., avoided cost or feed-in tariff).
•All energy consumption is billed at the retail rate, regardless of on-site generation

Advantages	
Simplifies Billing	Provides clear separation between generation and consumption.
Fair Cost Allocation	Ensures DER owners pay their fair share of grid maintenance and other fixed costs.
Supports Grid Modernization	DER contributions are directly integrated into grid planning and operations

Challenges	
Reduces Customer Incentives	Customers no longer save by consuming their own energy, which could discourage DER adoption.
Equity Concerns	Low-income customers may not be able to afford the upfront investment without self-consumption savings.
Misaligns with Climate Goals	Fewer incentives for storage or demand response, reducing flexibility and emissions reduction potential.
Industry Impact	Reduced customer savings may lead to slower solar adoption, impacting the solar industry.
Metering	Requires the solar array to be separately metered

Net Billing

- Customers self-consume energy generated on-site.
- Exported energy is credited at a rate lower than retail (often based on avoided costs or time-of-use pricing).
- Imported energy is billed at the retail rate.

Advantages	
Encourages Economic Efficiency	• Promotes self-consumption, reducing reliance on the grid. • Aligns exported energy compensation with avoided costs or grid conditions (e.g., through TOU pricing).
Supports Climate Goals:	• Incentivizes solar + storage by allowing customers to save more by storing and using their own energy.
Supports Grid Modernization	• Rewards behavior that supports grid reliability (e.g., exporting during peak demand).
Supports Equity	• Reduces cross-subsidization since export compensation is based on the true value to the grid.
Maintains Customer Incentive	• DER owners can still lower their bills by consuming their own energy, supporting continued solar adoption.

Challenges	
Pricing Accuracy	Requires accurate export pricing to avoid undervaluing DER contributions.
Billing Complexity	Can complicate customer understanding compared to traditional net metering.
Metering	Requires a smart meter with dual channel capability (for imports and exports)

Additional Considerations for Alignment with FERC 2222 Goals

Goal	Net Billing	Buy-All, Sell-All (BASA)
Facilitate DER Aggregation	Strong alignment through flexible self-consumption and export pricing.	Simplifies integration but lacks flexibility.
Encourage Grid Services	Supports ancillary services like peak shaving with storage.	Limited due to lack of self-consumption incentives.
Align with Wholesale Market Rules	Requires dynamic pricing for seamless integration.	Direct alignment, as all energy is sold into the grid.
Promote Flexibility and Innovation	Incentivizes storage and demand response.	Discourages on-site storage use and demand-side management.
Enhance Equity and Access	Supports equity adders and participation incentives.	May be less appealing for low-income participants due to reduced savings opportunities.

Proposed Stakeholder Working Group Topics

Topics	Discussion
Rate Design and Compensation Framework	• Market-based and non-market based pricing and the impact on non-DER customers • A reasonable market-based compensation mechanisms is encouraged but must consider what “market” the DER is participating in to fully understand impacts to non-DER customers. In most cases the market is purely between the DER and utility, resulting in avoided fixed contractual BGS purchase
Customer Impacts & Equity	• Address potential cost shifts and LMI support mechanisms. • Explore Community Solar and targeted incentive programs.
Operational & Technical Challenges	• Role of AMI in accurate DER measurement and billing. • Impact of increased DER penetration on grid stability.
Market & Economic Considerations:	• Assess the impact on DER adoption rates and solar industry viability. • Align with PJM market structures and FERC 2222 opportunities.
Integration with Broader Energy Goals:	• Ensure Net Billing is coordinated with energy storage and grid modernization investments. • Model its contribution to NJ’s decarbonization and clean energy targets.
Pilot Programs & Scalability	• Consider testing policy changes before full implementation. • Identify risks and mitigation strategies through small-scale pilots.
Others?	

By addressing these critical considerations in a collaborative working group, the BPU can develop a framework that balances clean energy adoption, grid reliability, and equity for all customers while enabling EDCs to fulfill their missions to deliver safe, reliable, and affordable energy.

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Thank you