STATES OF SOLAR

Q4 2024 Report & 2024 Annual Review **Executive Summary**



DSIRE insight

January 2025



AUTHORS

Emily Apadula Rebekah de la Mora Justin Lindemann Brian Lips Vincent Potter Autumn Proudlove David Sarkisian

The NC Clean Energy Technology Center is a UNC System-chartered Public Service Center administered by the College of Engineering at North Carolina State University. Its mission is to advance a sustainable energy economy by educating, demonstrating and providing support for clean energy technologies, practices, and policies. The Center provides service to the businesses and citizens of North Carolina and beyond relating to the development and adoption of clean energy technologies. Through its programs and activities, the Center envisions and seeks to promote the development and use of clean energy in ways that stimulate a sustainable economy while reducing dependence on foreign sources of energy and mitigating the environmental impacts of fossil fuel use.

CONTACT

Autumn Proudlove (<u>afproudl@ncsu.edu</u>) Rebekah de la Mora (<u>rmdelamo@ncsu.edu</u>)

PREFERRED CITATION

North Carolina Clean Energy Technology Center, *The 50 States of Solar: 2024 Policy Review* and Q4 2024 Quarterly Report, January 2025.

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Cover design by Amira Ferjani and Justin Lindemann

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Full editions of and annual subscriptions to the 50 States of Solar may be purchased <u>here</u>.

The 50 States of Solar is a quarterly publication. Previous executive summaries and older full editions of *The 50 States of Solar* are available <u>here</u>.

The NC Clean Energy Technology Center also publishes the *50 States of Grid Modernization*, the *50 States of Electric Vehicles*, and the *50 States of Power Decarbonization* on a quarterly basis. Executive summaries of these reports may be found <u>here</u>. Please contact us for older issues of the 50 States of Solar.



ABOUT THE REPORT

PURPOSE

The purpose of this report is to provide state lawmakers and regulators, electric utilities, the solar industry, and other stakeholders with timely, accurate, and unbiased updates on state actions to study, adopt, implement, amend, or discontinue policies associated with distributed solar photovoltaics (PV). This report catalogues proposed and enacted legislative, regulatory policy, and rate design changes affecting the value proposition of distributed solar PV during the most recent quarter, with an emphasis on the residential sector.

The 50 States of Solar series provides regular quarterly updates of solar policy developments, keeping stakeholders informed and up to date.

APPROACH

The authors identified relevant policy changes through state utility commission docket searches, legislative bill searches, popular press, and direct communication with stakeholders and regulators in the industry.

Questions Addressed

This report addresses several questions about the changing U.S. solar policy landscape:

- How are state legislatures, regulatory authorities, and electric utilities addressing fastgrowing markets for distributed solar PV?
- What changes to traditional rate design features and net metering policies are being proposed, approved, and implemented?
- Where are distributed solar markets potentially affected by policy or regulatory decisions on community solar, third-party solar ownership, and utility-led residential rooftop solar programs?

Actions Included

This report series focuses on cataloging and describing important proposed and adopted policy changes affecting solar customer-generators of investor-owned utilities (IOUs) and large publicly-owned or nonprofit utilities (i.e., those serving at least 100,000 customers). Specifically, actions tracked in these reports include:

- Significant changes to state or utility **net metering** laws and rules, including program caps, system size limits, meter aggregation rules, and compensation rates for net excess generation
- Changes to statewide **community solar** or **virtual net metering** laws and rules, and individual utility-sponsored community solar programs arising from statewide legislation
- Legislative or regulatory-led efforts to study the value of solar, net metering, or distributed solar generation policy, e.g., through a regulatory docket or a cost-benefit analysis
- Utility-initiated rate requests for charges applicable only to customers with solar PV or other types of distributed generation, such as added monthly fixed charges, demand charges, stand-by charges, or interconnection fees
- Utility-initiated rate requests that propose a 10% or larger increase in either fixed charges or minimum bills for all residential customers
- Changes to the legality of third-party solar ownership, including solar leasing and solar third-party solar power purchase agreements (PPAs), and proposed utility-led rooftop solar programs

In general, this report considers an "action" to be a relevant (1) legislative bill that has been passed by at least one chamber or (2) a regulatory docket, utility rate case, or rulemaking proceeding. Introduced legislation related to third-party sales is included irrespective of whether it has passed at least one chamber, as only a small number of bills related to this policy have been introduced. Introduced legislation pertaining to a regulatory proceeding covered in this report is also included irrespective of whether it has passed at least one chamber.

Actions Excluded

In addition to excluding most legislation that has been introduced but not advanced, this report excludes a review of state actions pertaining to solar incentives, as well as more general utility cost recovery and rate design changes, such as decoupling or time-of-use tariffs. General changes in state implementation of the Public Utility Regulatory Policies Act of 1978 and subsequent amendments, including changes to the terms of standard contracts for Qualifying Facilities or avoided cost rate calculations, are also excluded unless they are related specifically to the policies described above. The report also does not cover changes to a number of other policies that affect distributed solar, including solar access laws, interconnection rules, and renewable portfolio standards. Details and updates on these and other federal, state, and local government policies and incentives are available in the NC Clean Energy Technology Center's Database of State Incentives for Renewables and Efficiency, at www.dsireusa.org.



EXECUTIVE SUMMARY

2024 SOLAR POLICY ACTION

State and utility solar policies continued to undergo review in 2024, with nearly every state in the country considering policy or rate design changes – a trend which has continued over the past several years and is likely to continue. Table 1 provides a summary of state actions related to DG compensation, rate design, and solar ownership during 2024. Of the 269 actions identified, the most common were related to DG compensation policies (102), residential fixed charge increases (74), and community solar policies (54). The actions occurred across 47 states plus DC and Puerto Rico in 2024 (Figure 1). The states that saw the most solar policy action, or the most impactful actions, during 2024 are highlighted below.

Policy Type	# of Actions	% by Type	# of States
DG Compensation Policies	102	38%	32 + DC, PR
Residential fixed charge or minimum bill increase	74	28%	38 + DC
Community solar	54	20%	24 + DC
DG valuation or net metering study	23	9%	16 + DC, PR
Third-party ownership of solar	9	3%	6
Residential demand or solar charge	5	1%	4
Utility-led rooftop PV programs	2	1%	2
Total	269	100%	47 States + DC, PR

Table 1. 2024 Summary of Policy Actions

Note: The "# of States/ Districts" total is not the sum of the rows, as some states have multiple actions. Percentages are rounded and may not add up to 100%.

TOP TEN MOST ACTIVE STATES OF 2024

While nearly every state in the country took some type of action on distributed solar policy or rate design during 2024, some states were particularly active, taking many different actions or especially impactful actions. The following states stood out in 2024 for their solar policy activity:

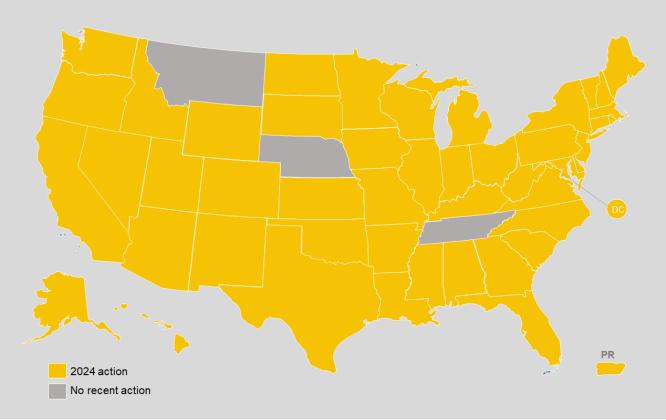
1. Virginia

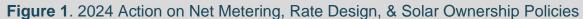
Appalachian Power filed a net metering successor program utilizing hourly netting and crediting exports at the avoided cost, while Virginia lawmakers expanded solar leasing to allow third parties to own, maintain, and operate net-metered solar arrays. Lawmakers also expanded Dominion Energy's shared solar program, increasing the program cap by 50 MW and adding an additional

150 MW under a potential second phase; lawmakers also directed Appalachian Power to create a 50 MW program using the same rules.

2. West Virginia

The Public Service Commission approved Monongahela Power and Potomac Edison's net metering successor tariffs, which shift to instantaneous netting and set the compensation for excess generation at the wholesale power cost; existing customers would be grandfathered into the original program. Appalachian Power and Wheeling Power filed a similar successor tariff later in the year, with exports credited at the avoided cost, based on customer voltage.





3. Washington

Washington lawmakers ordered the Department of Commerce and the State Academy of Sciences to investigate the value of distributed solar and recommend options for methodologies to implement after the statutory net metering threshold is met. The Utilities and Transportation Commission approved various revisions to net metering tariffs, including extending Puget Sound Energy's net metering tariff to new customers through the end of 2025, even if the program cap is reached.

4. California

The Governor of California vetoed a bill that would have replaced the buy-all/sell-all mechanism for multi-tenant buildings and public schools with 15-minute interval net billing. The Public Utilities Commission approved an income-based graduated fixed charge framework for residential customers; utilities have begun to formally request approval of their proposed graduated charges. The Commission also adopted a new Community Renewable Energy Program and expanded the existing Disadvantaged Community Green Tariff Program by 84 MW.

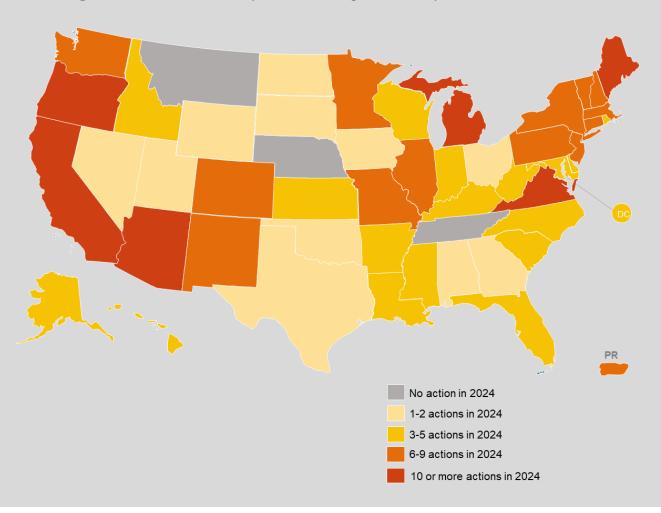


Figure 2. 2024 Solar Policy & Rate Design Action, by Number of Actions

5. Connecticut

Connecticut regulators made various changes to the state's net metering and community solar programs, including integrating multifamily buildings into the Residential Renewable Energy Solutions Program and public schools into the Non-Residential Program. Lawmakers enacted

legislation extending the Shared Clean Energy Facilities (SCEF) Program an additional two years and requiring a study on successors to the Renewable Energy Solutions and SCEF programs.

6. New Jersey

The Board of Public Utilities began considering amendments to the Community Solar Energy Program, including changes to site eligibility, treatment of unallocated capacity, colocation, and municipal participation. The Board approved changes to the Remote Net Metering Program, in compliance with a 2023 bill, including increasing the system size limit, allowing colocation and municipal utility participation, and clarifying participation in associated incentive programs. The Board also initiated a stakeholder process to develop a net metering successor tariff.

7. Colorado

Colorado lawmakers completely overhauled the state's Community Solar Garden program, dedicating the new iteration to inclusive community solar development. The Public Utilities Commission also implemented a 2023 bill that created a new fixed credit option for community solar garden subscribers; customers would receive the same credit rate for each year of their participation, unlike the standard credit option where utilities change the credit rate each year.

8. Arizona

Staff at the Corporation Commission recommended that the state continue its Resource Comparison Proxy rate compensation for DG customers as-is, after commissioners opened an investigation into this last year. The Commission issued a decision sunsetting Arizona Public Service's utility-owned rooftop program and approving a new per-kW charge for residential solar customers. Parties also petitioned the Federal Energy Regulatory Commission that Salt River Project's net metering program violates PURPA by discriminating against rooftop solar customers.

9. Alaska

Alaska lawmakers directed the Regulatory Commission and utilities to develop community energy programs; the bill left most program details up to the regulatory process, but did allow for utility or third party ownership, require prevailing wages, and prevent participation in both net metering and community energy. The Commission also opened a proceeding to consider increasing the aggregate cap for net metering from 1.5% to 20% of a utility's average retail demand.

10. Maryland

The Public Service Commission initiated a rulemaking to consider how to revise time-of-use rates to accommodate net-metered customers, in response to work group recommendations. The Commission also implemented a permanent community solar program, as required by a 2023 bill; facilities can begin to apply for interconnection under the permanent program rules starting January 1, 2025, though formal regulatory approval is not expected until later in Q1 2025.

TOP SOLAR POLICY TRENDS OF 2024

New States Continue to Move Beyond Traditional Net Metering

States continued to move beyond traditional net metering during 2024, with a number of states and utilities considering alternative compensation structures. Regulators in Kentucky and West Virginia approved successor tariffs proposed by utilities, while the New Jersey Board of Public Utilities initiated the development of a successor tariff. Washington State is conducting a study to inform net metering changes, and Appalachian Power filed a successor tariff proposal in Virginia.

Distributed Solar Programs Integrate Provisions for Multifamily Buildings

Several states are revising distributed solar programs to expand multifamily participation. Connecticut regulators shifted multifamily buildings from the state's non-residential to residential net metering program, implementing rules specifically for master-meter properties. In Washington, Puget Sound Energy created a new tariff to allow multifamily residents to receive solar compensation, and Vermont lawmakers expanded net metering to include systems serving lowincome tenants in multifamily buildings starting in 2025.

Utilities Request Approval for Large Fixed Charge Increases

A number of utilities are requesting significant increases in their residential fixed charges, with multiple utilities requesting increases of over 150%, including Liberty Utilities (California), Idaho Power (Idaho and Oregon), Entergy Louisiana, and Sierra Pacific Power (Nevada). Regulatory commissions only approved Idaho Power's rate increase in Idaho completely (\$5 to \$15), with the smallest partial approval for Sierra Pacific Power (\$16.50 to \$18.50, requested \$44.40).

Formal Studies Inform Net Metering Successor Tariff Design

As utilities shift to net metering successor tariffs, the value of distributed generation is being reviewed in order to inform tariff design. Idaho regulators ordered Rocky Mountain Power to develop a new export credit rate, based on a 2023 on-site generation study. Washington state lawmakers provided funding to the State Academy of Sciences to help determine the value of distributed solar, and study efforts are underway in several other states and territories, including Delaware, Illinois, Puerto Rico, and Wisconsin.

Community Solar Program Updates Dedicated to Low-Income Participation

States are increasingly amending community solar programs to garner more participation from low-income customers. Regulators in both Colorado and New Jersey approved new rules for their community solar programs, focusing the new iterations specifically on low-income customers, while California started a new community renewable program prioritizing low-income customers. All three programs require facilities to reserve at least 51% of capacity for low-income customers.

States and Utilities Reach Net Metering Successor Triggers

A number of states have established dates or capacity-based thresholds that trigger the development or implementation of a net metering successor, and these thresholds are now being reached. Illinois utilities shifted to successor tariffs at the end of 2024, as ordered by 2021 legislation. Virginia utilities began filing successor tariffs, as required by a 2020 bill, and Washington State began reviewing distributed generation valuation in advance of utilities reaching the capacity threshold established in 2019.

Stakeholders Oppose Previously-Approved Distributed Generation Charges

Customers and stakeholder groups are pushing back against bill charges for customers with onsite solar in multiple states. A District Court judge denied a motion to dismiss an ongoing appeal against Alabama Power's back-up power charges in September 2024. Petitioners filed a complaint against Arizona's Salt River Project's time-of-use rate requirements, the rates' associated charges, and the utility's low credit rate. Stakeholders also objected to Arizona Public Service's new Grid Access Charge, though the Corporation Commission later upheld its decision.

States Consider Federal Funding in Distributed Solar Program Design

Regulatory bodies and utilities are considering federal clean energy funding in the design and implementation of some state distributed solar programs. Mississippi regulators paused multiple incentive programs, including programs allowing third-party owned systems for public schools. The Connecticut Public Utilities Regulatory Authority aligned its net metering programs so that system requirements match eligibility for Solar For All funding and federal tax credits. In California, regulators are pursuing the use of Solar For All funding in its new community solar program.

Energy Storage Incorporated into Distributed Solar (Re)Designs

More states are revising distributed solar programs to take paired solar and energy storage systems into account. Alaska lawmakers created a community energy program, and the Regulatory Commission may adopt a separate credit rate for storage capacity. Kansas lawmakers amended net metering statutes so energy storage capacity is taken into account when calculating export capacity, and Minnesota regulators opened a proceeding to consider the same issue.

Utilities Differentiate Residential Rates Based on Customer Type

A number of utilities are separating out residential rates and charges for single-family and multifamily customers. Northern Indiana Public Service Company proposed a new rate specifically for multifamily customers, while the Oregon Public Utility Commission approved a fixed charge increase for Pacific Power single-family customers, but not multifamily customers. Meanwhile, California regulators implemented a framework for income-based graduated fixed charges.

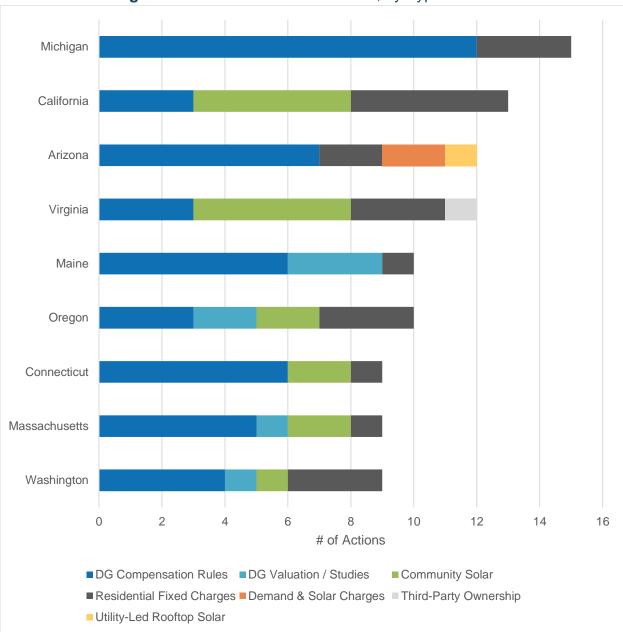


Figure 3. Most Active States of 2024, by Type of Action

LOOKING BACK: 2015 - 2024

State and utility action on distributed solar policy and rate design remained at a very high level, but declined slightly compared to 2023, with 269 actions taken by states and utilities, as compared to 273 actions in 2023, 285 actions in 2022, 286 actions in 2021, 257 actions in 2020, 265 actions in 2019, 264 actions in 2018, 249 actions in 2017, 212 actions in 2016, and 175 actions in 2015. Figure 4 shows the total number of solar policy actions taken in each year, by category, while Figure 5 displays the number of states taking action in each category. Note that several actions were considered over multiple years.



In 2024, activity in DG compensation, DG valuation, and residential fixed charge increases ticked upward, while activity in other categories declined – consistent with the trend seen in 2023. Net metering action has remained very high for the last six years, while residential fixed charge increases are showing a significant rebound and nearing their previous peak.

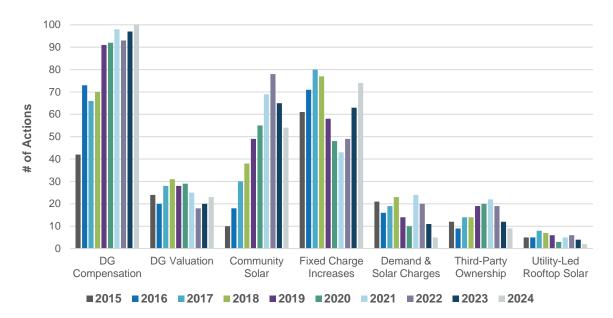
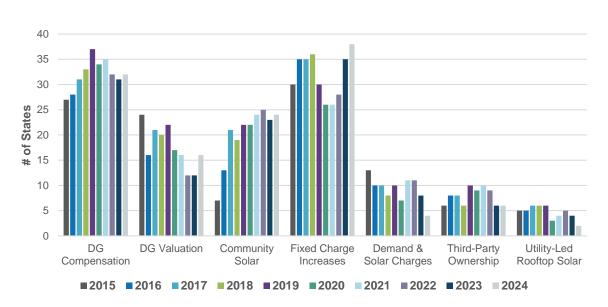


Figure 4. Number of Solar Policy Actions 2015-2024

The number of states taking solar policy actions declined or held steady in all categories except residential fixed charge increases. Overall, a total of 47 states, plus DC and Puerto Rico, took actions considering changes to distributed solar policy and rate design during the year.



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Figure 5. Number of States Taking Solar Policy Action 2015-2024

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OVERVIEW OF Q4 2024 POLICY ACTION

In the fourth quarter of 2024, 41 states plus DC and Puerto Rico took a total of 151 actions related to distributed solar policy and rate design (Figure 6). Table 2 provides a summary of state actions related to DG compensation, rate design, and solar ownership during Q4 2024. Of the 151 actions cataloged, the most common were related to DG compensation rules (51), followed by residential fixed charge and minimum bill increases (45), and community solar (34).

Policy Type	# of Actions	% by Type	# of States
DG compensation rules	51	34%	26 + DC, PR
Residential fixed charge or minimum bill increase	45	30%	24 + DC
Community solar	34	23%	17 + DC
DG valuation or net metering study	16	11%	11 + DC, PR
Residential demand or solar charge	4	3%	3
Third-party ownership of solar	1	1%	1
Utility-led rooftop PV programs	0	0%	0
Total	151	100%	41 States + DC, PR

Table 2. Q4 2024 Summary of Policy Actions

Note: The "# of States/ Districts" total is not the sum of the rows, as some states have multiple actions. Percentages are rounded and may not add up to 100%.

TOP FIVE SOLAR POLICY DEVELOPMENTS OF Q4 2024

Five of the quarter's top policy developments are highlighted below.

New Jersey Regulators Suggest Sweeping Changes to Distributed Solar Programs

New Jersey regulators initiated revisions to the state's community solar and net metering programs during Q4 2024. The Board of Public Utilities began its one-year review of the Community Solar Energy Program and suggested various changes, while approving revisions to the Remote Net Metering program. The Board also began a stakeholder process to create a successor tariff to net metering for Class I renewable energy systems.

Appalachian Power and Wheeling Power Propose Net Metering Successor Tariff

As part of a general rate case application filed with West Virginia regulators in November 2024, Appalachian Power and Wheeling Power proposed shifting their net metering program to a successor tariff, utilizing instantaneous netting and crediting all exports at the avoided cost. The successor program would only apply to new customers starting on May 1, 2025; existing customers would be grandfathered into the net metering program for 25 years.

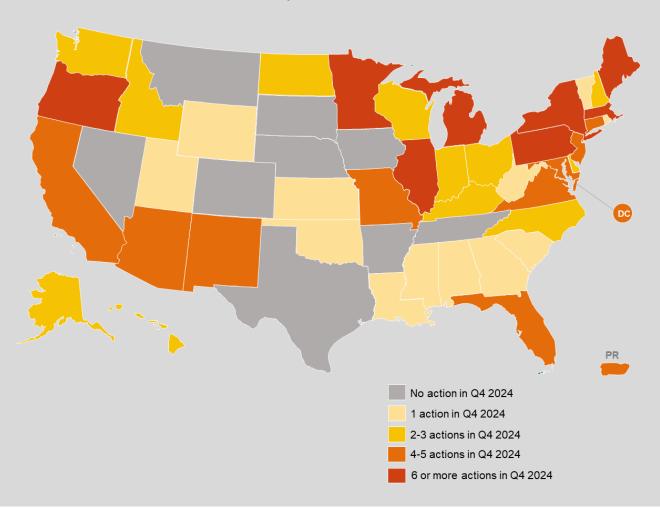


Figure 6. Q4 2024 Action on DG Compensation, Rate Design, & Solar Ownership Policies, by Number of Actions

Kentucky Public Service Commission Approves Duke Energy Successor Tariff

The Kentucky Public Service Commission approved a net metering successor tariff for Duke Energy Kentucky in October 2024. The new tariff uses real-time netting, and export compensation rates include the costs of avoided energy, generation capacity, and transmission and distribution. Existing customers would be grandfathered into the original program for 25 years, but could not participate in any resource aggregation program.

New Hampshire Regulators Continue Existing Net Metering Program

After a two-year investigation, New Hampshire regulators chose to continue the state's existing net metering structure, compensation levels, and system size limits through 2040; the Public Utilities Commission also chose to keep the existing grandfathering period instead of extending

it. The Commission did agree to implement new application fees to minimize cost shifting, and to consider the development of a net metering time-of-use rate.

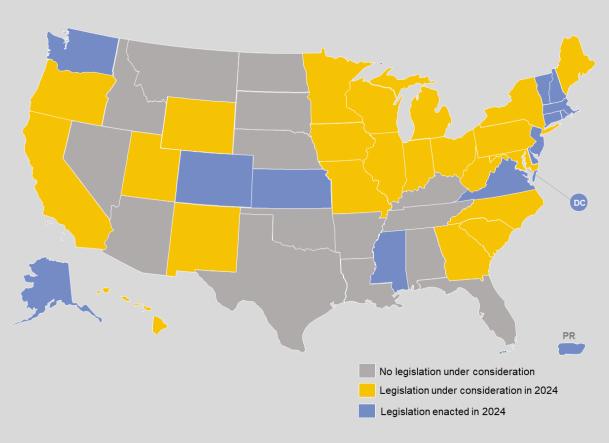


Figure 7. DG Compensation, Rate Design, and Solar Ownership Legislation Under Consideration in 2024

Arizona Corporation Commission Upholds Arizona Public Service Grid Access Charge

Following the Arizona Corporation Commission's approval of Arizona Public Service's new perkW Grid Access Charge in early 2024, the Solar Energy Industries Association filed an application for rehearing of the charge on grounds that it is discriminatory to solar customers. In December 2024, the Commission chose to uphold its approval of the charge, but directed the utility to propose a revenue allocation in its next rate case that improves parity between solar and non-solar residential customers.



FULL REPORT DETAILS & PRICING

FULL REPORT DETAILS

Content Included in the Full Quarterly Report:

- Detailed policy tables describing each pending and recently decided state and utility action regarding:
 - Net Metering
 - Distributed Solar or DG Valuation
 - Community Solar
 - Residential Fixed Charge and Minimum Bill Increases
 - Residential Solar Charges (Demand Charges, Standby Charges, & Grid Access Charges)
 - Third-Party Ownership
 - Utility-Led Rooftop Solar
- Links to original legislation, dockets, and commission orders for each policy action
- Summary maps of action for each policy category above
- Excel spreadsheet file of all actions taken during the quarter and separate Powerpoint file of all summary maps available upon request
- Qualitative analysis and descriptive summaries of solar policy action and trends
- Outlook of action for the next quarter

WHO SHOULD PURCHASE THIS REPORT

The 50 States of Solar allows those involved in the solar and electric utility industry to easily stay on top of legislative and regulatory changes. The report provides a comprehensive quarterly review of actions, an undertaking that would take any one business or organization weeks of time and thousands of dollars in staff time. At a cost of \$500 per issue (or \$1,500 annually), the 50 States of Solar offers an invaluable time and financial savings. With direct links to original sources for all actions, customers may stay on top of legislative and regulatory developments between quarterly reports.

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- > Stay on top of state policy developments relevant to your business

Give your own team a head start in tracking legislative and regulatory proceedings

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- Learn about the approaches being taken by other utilities facing similar challenges
- > Stay on top of relevant state policy developments
- Utilize an objective source of information in legislative and regulatory proceedings

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- Identify new investment opportunities and emerging areas of growth, as well as risky investments
- > Access rate data that is often buried in regulatory filings

Advocacy Organizations

- > Learn about the diverse solar policy and rate proposals in other states
- > Learn about the outcomes of other state's policy and rate decisions
- Utilize an objective source of information in legislative and regulatory proceedings

Researchers and Consultants

- > Access valuable data requiring an immense amount of time to collect first-hand
- > Identify research needs to inform solar policy and rate design proceedings
- > Cite an objective source in your own research and analysis

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