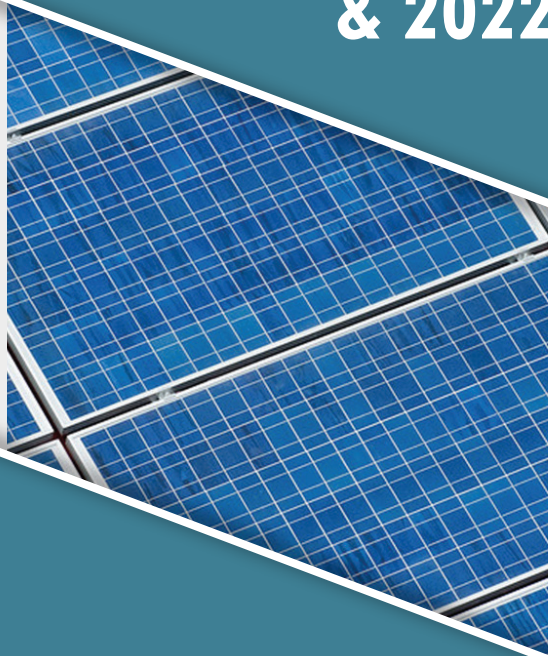


# 50 States of SOLAR

**Q4 2022 Quarterly Report  
& 2022 Annual Review**  
Executive Summary



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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.

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## PREFERRED CITATION

North Carolina Clean Energy Technology Center, *The 50 States of Solar: 2022 Policy Review and Q4 2022 Quarterly Report*, January 2023.

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# 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 fast-growing 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](http://www.dsireusa.org).

# EXECUTIVE SUMMARY

## 2022 SOLAR POLICY ACTION

State and utility solar policies continued to undergo review in 2022, 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 through 2023 and beyond. Table 1 provides a summary of state actions related to DG compensation, rate design, and solar ownership during 2022. Of the 285 actions identified, the most common were related to DG compensation policies (94), community solar policies (79), and residential fixed charge and minimum bill increases (49). The actions occurred across 46 states plus DC in 2022 (Figure 1). The states that saw the most solar policy action, or the most impactful actions, during 2022 are highlighted below.

**Table 1. 2022 Summary of Policy Actions**

Policy Type	# of Actions	% by Type	# of States
DG Compensation Policies	94	33%	32
Community solar	79	28%	24 + DC
Residential fixed charge or minimum bill increase	49	17%	28
Residential demand or solar charge	20	7%	11
Third-party ownership of solar	19	7%	9
DG valuation or net metering study	18	6%	12
Utility-led rooftop PV programs	6	2%	5
<b>Total</b>	<b>285</b>	<b>100%</b>	<b>46 States + DC</b>

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 2022

While nearly every state in the country took some type of action on distributed solar policy or rate design during 2022, some states were particularly active, taking many different actions or especially impactful actions. The following states stood out in 2022 for their solar policy activity:

### 1. California

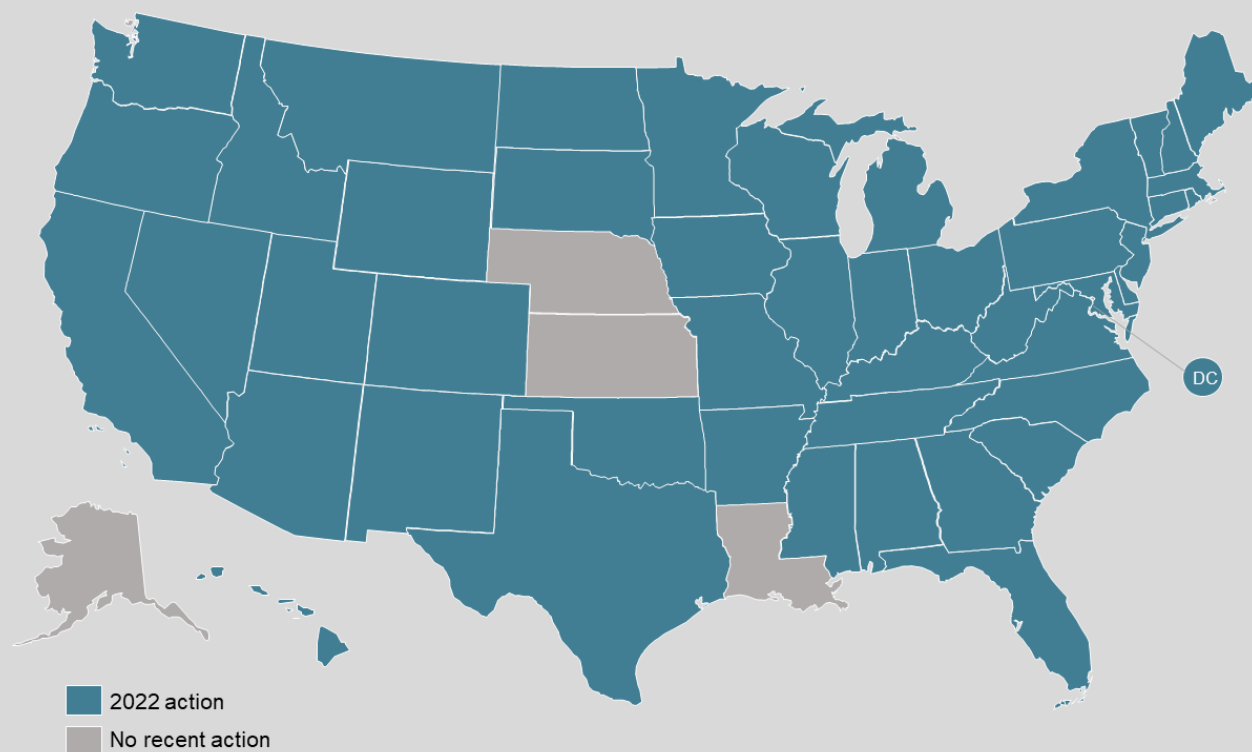
The California Public Utilities Commission approved Net Metering 3.0 rules in December 2022, transitioning the state’s major utilities to a net billing structure with hourly avoided cost rate credits for energy exported to the grid. The Commission declined to adopt a grid participation charge or minimum bill in this proceeding, but will consider these in a broader ratemaking investigation.

State lawmakers also enacted legislation including guidelines for a new community solar program for the state.

## 2. Mississippi

Mississippi regulators considered a variety of changes to the state’s current net billing rules during 2022, ultimately issuing a decision expanding eligibility for the low-to-moderate income benefits adder, creating new upfront incentive programs, and establishing a solar for schools program, among other changes. The Public Service Commission also opened a proceeding to consider community solar rules and plans.

**Figure 1. 2022 Action on Net Metering, Rate Design, & Solar Ownership Policies**



## 3. Hawaii

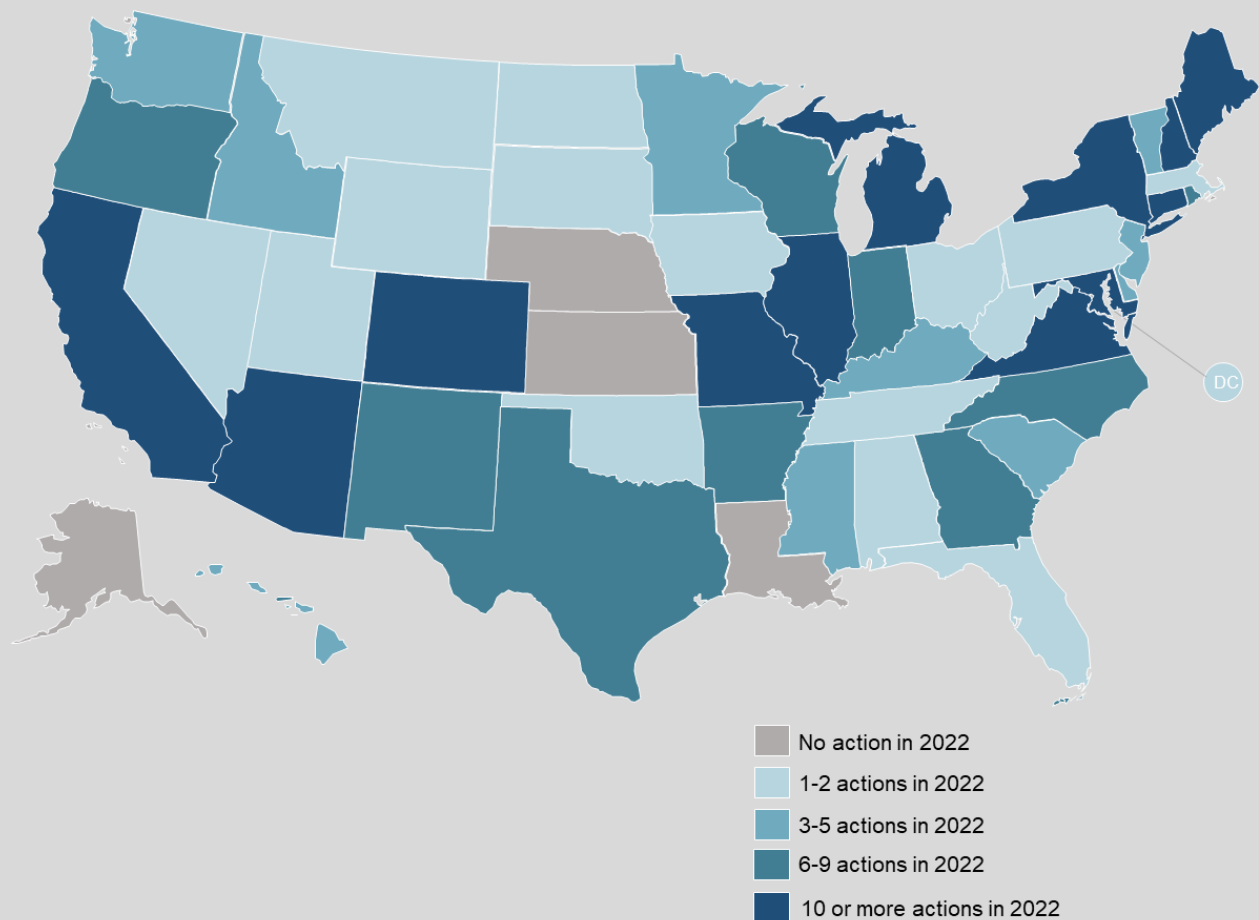
Hawaii regulators issued decisions on the program and advanced rate design tracks of its distributed energy resources (DER) proceeding during 2022. The Commission approved new Smart DER and Bring Your Own Device tariffs, while increasing the aggregate caps for its existing Customer Grid-Supply Plus program. The Commission also established foundational elements for new time-of-use rates and approved the future implementation of a grid access charge, while rejecting a proposal to apply traditional demand charges to DER customers.



#### 4. North Carolina

The North Carolina Utilities Commission considered a proposed residential net metering successor tariff for Duke Energy during the year, with several parties reaching agreement on a “bridge rate” that would serve as a transition to the successor tariff. Duke Energy Progress also filed a proposed net metering successor tariff for non-residential customers, and the Commission issued a declaratory ruling allowing a third-party solar power purchase agreement at a military facility to proceed.

**Figure 2.** 2022 Solar Policy & Rate Design Action, by Number of Actions



#### 5. Michigan

Consumers Energy and DTE Electric proposed changes to their distributed generation programs as part of rate cases filed in 2022. Both utilities requested approval to set outflow credit rates at MISO locational marginal prices and to implement additional fees. A decision on DTE’s proposal set the outflow credit rate at the power supply rate plus transmission, while rejecting the additional



fee. A settlement agreement filed in Consumers' case would also set the outflow credit rate at the power supply rate plus transmission, while rejecting proposed fees.

## **6. Maine**

Maine lawmakers enacted legislation in 2022 making changes to the way credit rates are set for the commercial and industrial net energy billing tariff rate program, while the state's distributed generation (DG) stakeholder group developed a proposed DG successor program framework. The successor program framework incorporates a competitive procurement program and a first-come, first-served program with compensation set at the capacity-weighted 20<sup>th</sup> percentile of selected bids.

## **7. Georgia**

The Georgia Public Service Commission considered the issue of net metering in 2022 as part of Georgia Power's general rate case. The Commission opted not to expand the utility's limited-capacity retail rate net metering program, but increased the current export credit rate to the avoided cost rate plus four cents per kWh. The Commission also approved Georgia Power's proposed resiliency asset service tariff, which will involve deployment of distributed energy resources at customer locations.

## **8. New Mexico**

New Mexico regulators approved community solar program rules in 2022, and utilities filed community solar program tariffs. The community solar program began accepting bids for the first year of the program in December 2022. Xcel Energy also filed its proposal for a standby rate, pursuant to a Commission directive, which would be based on the lower of the customer's generating capacity and demand.

## **9. Indiana**

The Indiana Utility Regulatory Commission approved net metering successor tariffs for multiple Indiana utilities during 2022, pursuant to legislation enacted in 2017 requiring credit rates to be reduced to 1.25 times the wholesale rate beginning July 2022. The Indiana Supreme Court considered an appeal of the Commission's approval for Vectren's successor tariff, issuing an opinion in early January 2023 that upholds the Commission's decision.

## **10. Florida**

Florida legislators passed a bill early in the year that would have established a net metering successor tariff in the state, with export credit rates phasing down to the avoided cost rate. The bill would have also allowed utilities to implement additional fees for customer-generators. This bill attracted significant attention, but was ultimately vetoed by the governor due to concerns about the impact on all ratepayers associated with utility recovery of lost revenues.

# TOP SOLAR POLICY TRENDS OF 2022

## States Moving Away From Traditional Net Metering

Overall, states continued to move away from traditional retail rate net metering during 2022. Most notably, California regulators approved a successor tariff that significantly reduces compensation rates for distributed generation systems, while regulators in Georgia and Mississippi opted to continue with their current net billing structures. One state – Florida – bucked this trend during the year, with the governor’s veto of a bill establishing a net metering successor.

## Net Billing Becoming the Dominant Successor Tariff Structure

Although states continue to take different approaches to the design of net metering successor tariffs, net billing is quickly becoming the dominant structure used by states moving away from traditional net metering. Of the eight states that have transitioned away from retail rate compensation for DG systems, all eight are utilizing a net billing structure, albeit with different export credit rates. Other states that have not had widespread retail rate net metering in place, such as Georgia and Mississippi, are also choosing to continue with the net billing framework.

## States Incorporating LMI-Specific Provisions in Solar Programs

Strong focus on low- to moderate-income (LMI) customer participation in community solar programs continued in 2022, while a growing number of states also considered LMI-specific features for rooftop solar programs. In Virginia, low-income customers will be exempt from the minimum bill applied to community solar participants, and in Mississippi, low-income customer-generators will be eligible for a new upfront solar rebate.

## Focusing on Grid Access Fees and Minimum Bills

Among the various types of additional fees that have been contemplated for customer-generators, the majority of these fees under consideration recently have taken the form of grid access charges or minimum bills. However, utility proposals to implement such fees are having mixed success. While regulators in New York and South Carolina have approved grid access charges and/or minimum bills, regulators in California and Michigan declined to adopt such fees this year. In Arkansas, the Court of Appeals struck down a previously approved grid access charge.

## New States Considering Community Solar Programs

Community solar policy activity has increased steadily each year since 2015. This trend continued in 2022, with community solar seeing its busiest year yet. New states, including Arizona and Mississippi, considered the development of community solar programs through regulatory proceedings, while lawmakers in a number of other states, such as Michigan, Pennsylvania, and Wisconsin, introduced legislation that would authorize community solar. A bill enacted in Missouri establishes a task force that will consider potential community solar legislation.

## **Growing Use of Time-Varying Compensation Rates for Distributed Generation**

A growing number of states are approving or considering the use of time-varying compensation rates for customer-generators. California regulators approved a net metering successor tariff incorporating hourly credit rates, while the Hawaii Public Service Commission approved a framework for new DG programs that would use time-of-use rates. In North Carolina, Duke Energy proposed successor tariffs involving time-varying export credit rates, similar to those approved in South Carolina last year.

## **Encouraging Distributed Generation Systems Paired With Battery Storage**

As states consider solar program reforms, many are employing designs that encourage customers to pair distributed generation systems with battery storage, sometimes providing incentives or more favorable compensation for dispatchability. Mississippi regulators approved a battery storage rebate program as part of broader net metering program changes, and Maine's proposed DG successor program framework would require the inclusion of energy storage where it is beneficial.

## **States Tying Labor Requirements to Solar Programs**

Policymakers in a number of states took steps to tie new labor requirements to their distributed solar programs in 2022. California legislators enacted a bill requiring net metering systems over 15 kW installed after December 31, 2023 to meet the labor standards for public works projects, while New Mexico's community solar program includes bid preferences for local labor and workforce training, and Illinois' Adjustable Block Program requires most proposals comply with Illinois Prevailing Wage Act rules.

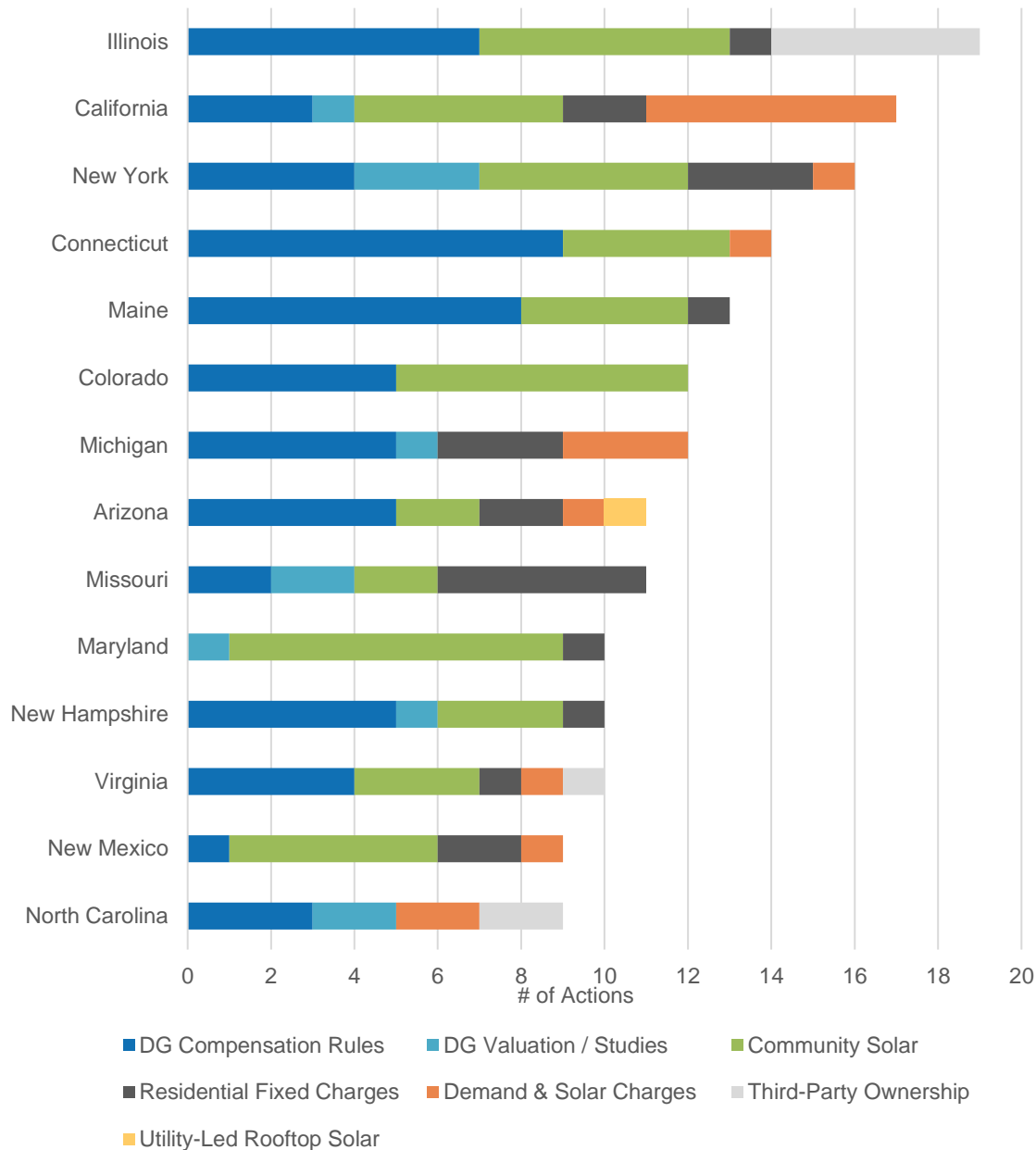
## **Distributed Generation Programs Increasing in Complexity**

Overall, state and utility distributed generation (DG) programs are increasing in complexity, with more granular credit rate structures and intricate program designs being adopted. Hawaii's new distributed energy resource program frameworks approved in 2022 include a variety of customer options that involve time-of-use rates and dispatch incentives. In California, regulators approved a new DG compensation structure with credit rates that vary on an hourly basis.

## **States Taking an Iterative Approach to Distributed Generation Program Design**

A number of states are taking an iterative approach to distributed generation (DG) program design, making continued program refinements rather than establishing a singular long-term program design. California regulators recently approved the state's "Net Metering 3.0" rules, while Hawaii is similarly developing its next iteration of distributed energy resource programs. Mississippi regulators revisited the state's DG program rules this year as well, and multiple states are considering the next version of their community solar programs.

**Figure 3. Most Active States of 2022, by Type of Action**

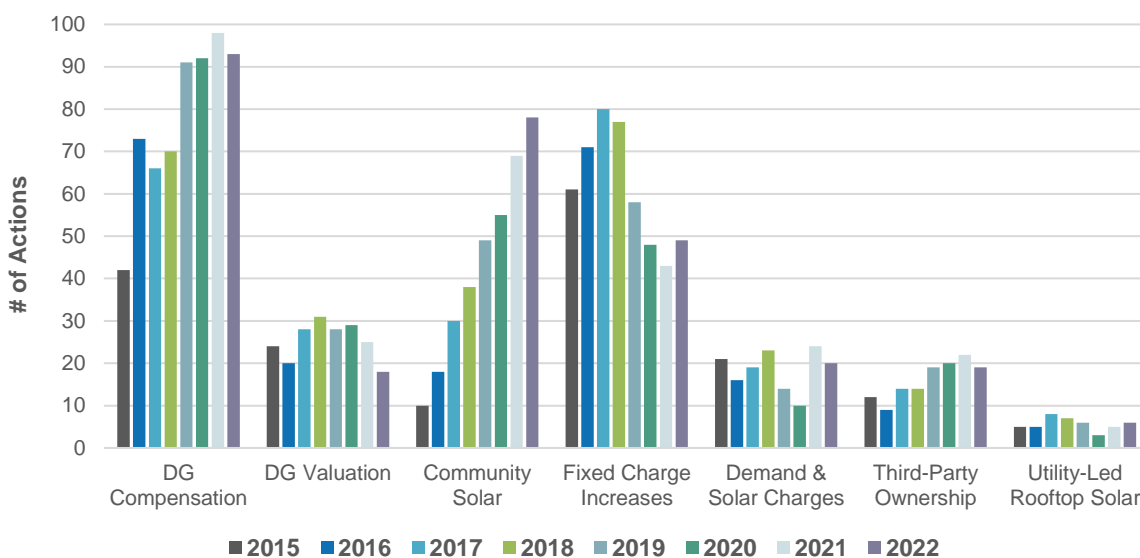


## LOOKING BACK: 2015 - 2022

State and utility action on distributed solar policy and rate design held relatively steady in 2022, with 285 actions taken by states and utilities, as compared to 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.

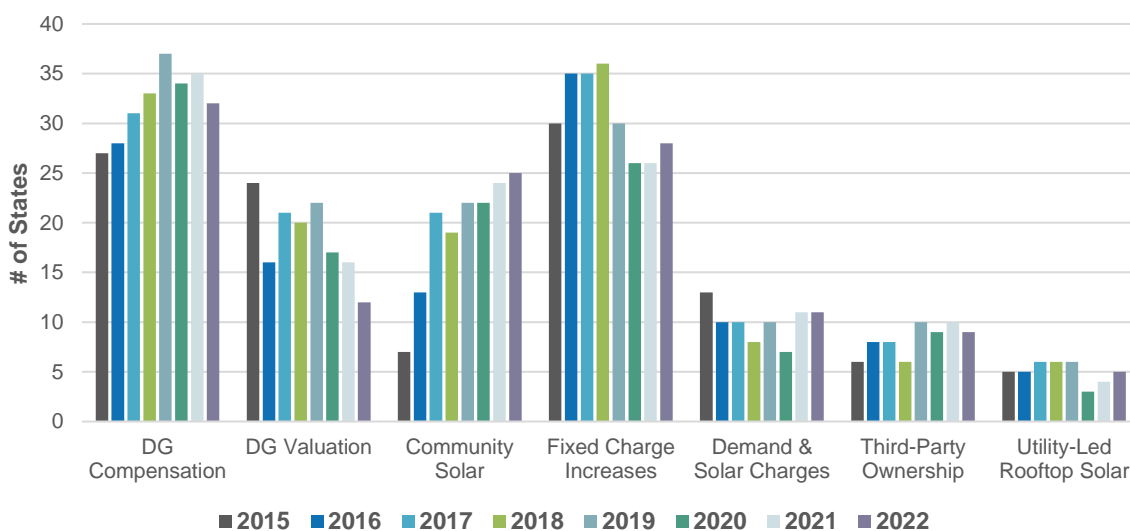
In 2022, activity in community solar, residential fixed charge increases, and utility-led rooftop solar increased, while activity in other categories declined slightly. Community solar activity has shown the steadiest growth, increasing every year since 2015. Activity in most other categories has been relatively consistent for the past few years, except for DG valuation, where activity has been on the decline.

**Figure 4. Number of Solar Policy Actions 2015-2022**



The number of states taking solar policy actions increased or held steady in all categories except net metering, DG valuation, and third-party ownership. Overall, a total of 46 states and DC took actions considering changes to distributed solar policy and rate design during the year.

**Figure 5. Number of States Taking Solar Policy Action 2015-2022**



## OVERVIEW OF Q4 2022 POLICY CHANGES

In the fourth quarter of 2022, 40 states plus DC took a total of 156 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 2022. Of the 156 actions identified, the most common were related to DG compensation rules (48), followed by community solar (38), and residential fixed charge and minimum bill increases (33).

**Table 2. Q4 2022 Summary of Policy Actions**

Policy Type	# of Actions	% by Type	# of States
DG compensation rules	48	31%	22
Community solar	38	24%	19 + DC
Residential fixed charge or minimum bill increase	33	21%	22
Residential demand or solar charge	17	11%	8
DG valuation or net metering study	11	7%	9
Third-party ownership of solar	6	4%	3
Utility-led rooftop PV programs	3	2%	3
<b>Total</b>	<b>156</b>	<b>100%</b>	<b>40 States + DC</b>

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 2022

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

### California Public Service Commission Issues Net Metering 3.0 Decision

The California Public Utilities Commission issued its decision on Net Metering 3.0 in December 2022, officially approving a transition from net metering to net billing. Under Net Metering 3.0, instantaneous grid exports will be credited at an hourly avoided cost rate, with credit rates phasing down to the avoided cost rate over the first five years. The Commission opted not to approve a grid participation charge or minimum bill in this proceeding.

### Georgia Regulators Decline to Expand Georgia Power Net Metering Program

As part of a decision in Georgia Power’s general rate case, the Georgia Public Service Commission declined to expand the limited-capacity retail rate net metering program established in a decision on the utility’s previous rate case. However, the Commission did approve an increase in the export credit rate from the avoided cost rate to the avoided cost rate plus four cents per kWh.

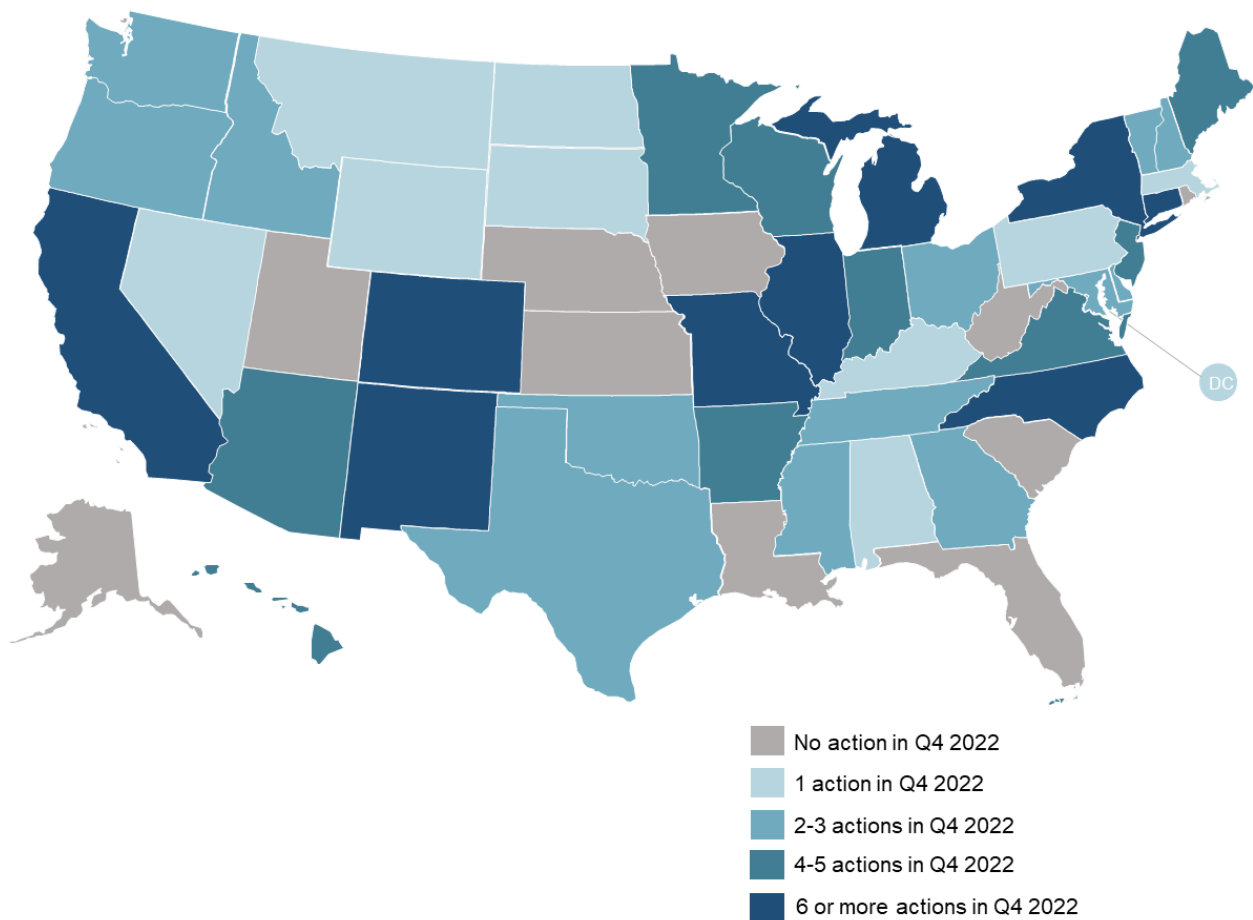




## Duke Energy Files Non-Residential Solar Choice Tariff Proposal in North Carolina

Duke Energy Progress filed a proposal for a new Solar Choice Tariff for non-residential customers in North Carolina as part of its multi-year rate plan application. The tariff would include time-varying export credit rates and avoided cost rate credits for monthly net excess generation. The utility is also requesting approval to increase the system size limit from 1 MW to 5 MW for customer-owned systems.

**Figure 7.** Q4 2022 Action on Solar Policy & Rate Design, by Number of Actions



# 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

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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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- Access rate data that is often buried in regulatory filings

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- 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

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- 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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