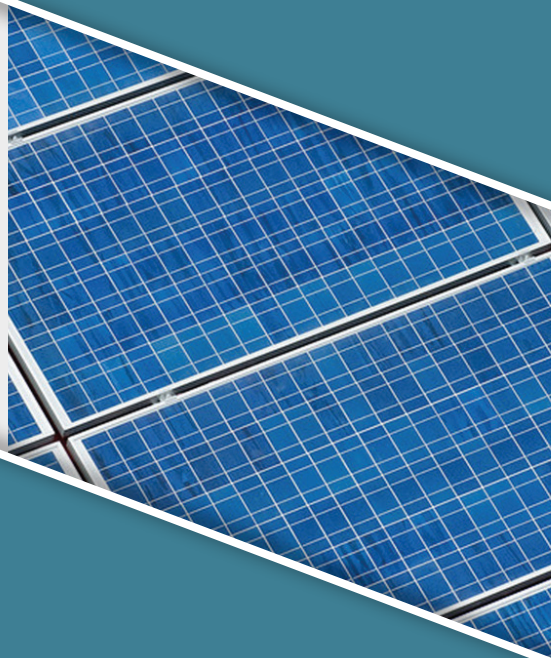


50 States of SOLAR

Q3 2020 Quarterly Report
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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Full editions of and annual subscriptions to the **50 States of Solar** may be purchased [here](#).

The 50 States of Solar is a quarterly publication. Previous executive summaries and older full editions of *The 50 States of Solar* are available [here](#).

The NC Clean Energy Technology Center also publishes the *50 States of Grid Modernization* and the *50 States of Electric Vehicles* on a quarterly basis. Executive summaries of these reports may be found [here](#). 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 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.

EXECUTIVE SUMMARY

OVERVIEW OF Q3 2020 POLICY ACTION

In the third quarter of 2020, 42 states plus DC took a total of 146 actions related to distributed solar policy and rate design (Figure 1). Table 1 provides a summary of state actions related to DG compensation, rate design, and solar ownership during Q3 2020. Of the 146 actions cataloged, the most common were related to DG compensation rules (58), followed by community solar (35), and residential fixed charge and minimum bill increases (21).

Table 1. Q3 2020 Summary of Policy Actions

Policy Type	# of Actions	% by Type	# of States
DG compensation rules	58	40%	29 + DC, FERC
Community solar	35	24%	19 + DC
Residential fixed charge or minimum bill increase	21	14%	18 + DC
DG valuation or net metering study	18	12%	12 + DC
Residential demand or solar charge	7	5%	6
Third-party ownership of solar	5	3%	4
Utility-led rooftop PV programs	2	1%	2
Total	146	100%	42 States + DC

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 Q3 2020

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

Duke Energy and Solar Advocates Reach Net Metering Settlement in South Carolina

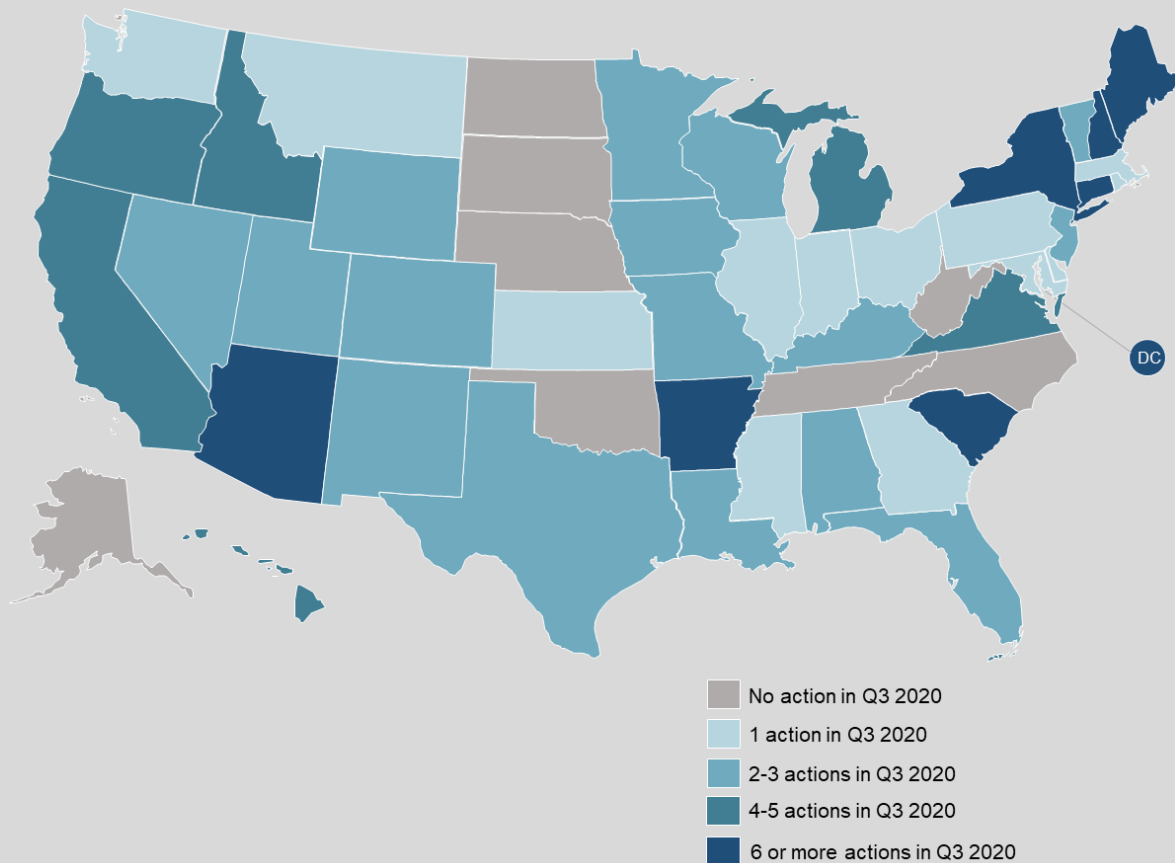
In September 2020, Duke Energy and solar advocates announced a compromise proposal for South Carolina's net metering successor tariff (the "Solar Choice Metering Tariff"). The innovative proposal includes mandatory time-of-use rates and crediting, a monthly minimum bill, certain non-bypassable charges, and an upfront incentive for participation in the utility's smart thermostat program.

New York Regulators Approve Successor Tariff for Mass Market Projects

The New York Public Service Commission approved a net metering successor tariff for mass market projects (residential and small commercial behind-the-meter projects for customers not

using demand billing) in July 2020. The tariff continues retail rate net metering, but includes a new monthly Customer Benefit Contribution ranging from \$0.69 to \$1.09 per kW. The new tariff will take effect for mass market projects interconnected after January 1, 2022.

Figure 1. Q3 2020 Action on DG Compensation, Rate Design, & Solar Ownership Policies, by Number of Actions



Ameren, Solar Advocates, and Regulators Clash Over Net Metering in Illinois

Ameren and solar advocates disputed the formula for calculating distributed generation capacity in Illinois during Q3 2020, with Ameren claiming that it has reached the state’s aggregate cap for retail rate net metering. The Commission opened an investigation in early October to determine whether Ameren has reached this cap. In the meantime, Ameren has closed its net metering tariff to new customers beginning October 2, 2020.

Locational Value of Distributed Generation Study Published in New Hampshire

The New Hampshire Public Utilities Commission Staff filed its locational value of distributed generation study, conducted by Guidehouse Consulting, in August 2020. The study provides

detailed analysis of a subset of locations, finding that the maximum hourly value of capacity investment avoidance ranges from less than \$1 per kWh to over \$4,000 per kWh. The lower values tend to indicate a capacity deficiency occurring over a large number of hours, while the high values represent a capacity deficiency occurring during fewer hours.

Net Metering 3.0 Proceeding Kicks Off in California

In August 2020, the California Public Utilities Commission kicked off its Net Metering 3.0 efforts. This proceeding will focus on developing a successor to the existing Net Metering 2.0 tariff. A draft “lookback study” was released in August, which examines the cost of service for Net Metering 2.0 customers. The study found that, on average, residential Net Metering 2.0 customers pay lower bills than the cost to serve them and that non-residential customers pay slightly more than the cost to serve them.

THE BIG PICTURE: INSIGHTS FROM Q3 2020

States Exploring Time-of-Use Rates for Net Metering Customers

As states continue efforts to develop successor tariffs to traditional net metering, several have been considering the use of time-of-use rates and crediting for customer-generators. During Q3 2020, Duke Energy and solar stakeholders reached a major settlement in South Carolina’s net metering successor tariff proceeding. The proposed net metering successor tariff (Solar Choice Metering Tariff) would include time-of-use rates with four periods: peak, off-peak, super off-peak, and critical peak. In Virginia, Dominion Energy requested approval to allow customers to net metering under its new time-of-use rate. El Paso Electric has also proposed adding a provision to its time-of-day rate to clarify that net metering customers may participate and receive time-varying net metering credit rates. As advanced metering infrastructure continues to proliferate, it is expected that additional states and utilities will consider time-of-use rates for net metering participants.

State Value of Solar Studies Continue to Show Widely Varying Results

Multiple value of solar or net metering cost-benefit studies were completed during Q3 2020, which continue to show widely varying results. In California, a draft study evaluating the state’s Net Metering 2.0 program found that residential net metering customers pay lower bills than the utility’s cost to serve them, on average. The study also found that non-residential customers pay slightly higher bills than the cost to serve them. Another California study commissioned by the Sacramento Municipal Utility District found that the value of customer solar and solar-plus-storage systems is \$0.03 to \$0.07 per kWh. In Connecticut, a draft value of distributed energy resources study found that the 25-year levelized value for behind-the-meter solar is \$0.141 per kWh and the value for behind-the-meter solar paired with storage is \$0.228 per kWh. Xcel

Energy also filed its 2021 value of solar rate calculation during the quarter, which is \$0.1104 per kWh levelized over 25 years.

COVID-19 Impacting Utility Rate Cases and Regulator Decisions

COVID-19 has been affecting the electricity sector in a variety of ways, including utility and regulator decisions related to rates and solar policy. Since COVID-19 hit the U.S., electric utilities have filed notably fewer rate case applications than in past years. During Q3 2020, only three investor-owned utilities filed rate case applications, with only one proposing a residential fixed charge increase. In Q3 2019, 14 utilities filed general rate case applications, with 10 of these utilities proposing residential fixed charge increases. DTE Electric announced that it will delay its rate case filing until at least March 2021. In Arizona, regulators put off the investor-owned utilities' net metering export credit rate decrease until October 2021, recognizing that many property owners wanting to install solar may have had to delay their plans due to the pandemic and economic circumstances.

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.

Solar Installation and Manufacturing Companies

- Identify new market opportunities, as well as changing and risky markets
- Stay on top of state policy developments relevant to your business
- Give your own team a head start in tracking legislative and regulatory proceedings

Investor-Owned and Public Power Utilities

- 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

Investors and Financial Analysts

- 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

PRICING

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Subscription Type	Annual Subscription	Single Report
50 States of Solar Report	\$1,500	\$500
Single-Tech Subscription (Solar) <i>(Includes 50 States of Solar report, plus biweekly legislative & regulatory solar tracking, policy data sheets, & quarterly webinars)</i>	\$4,500	N/A
All-Tech Subscription <i>(Includes 50 States of Solar report, 50 States of Grid Modernization report, & 50 States of Electric Vehicles report; plus biweekly legislative & regulatory tracking; policy data sheets, & quarterly webinars for solar, grid modernization/energy storage, & electric vehicles)</i>	\$10,500	N/A

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