



# The 50 States of Solar

2015 Policy Review  
Q4 Quarterly Report

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## GLOSSARY OF ABBREVIATIONS

d/b/a	Doing business as
DER	Distributed Energy Resources
DG	Distributed Generation
DG-IV	Distributed Generation Integrated Value
IOU	Investor owned utility
kW	Kilowatt
kWh	Kilowatt-hour
MW	Megawatt
NEM	Net Energy Metering
PPA	Power Purchase Agreement
PV	Photovoltaics
REC	Renewable Energy Credits
TOU	Time of Use

# OVERVIEW

## PURPOSE

The purpose of this report is to provide state lawmakers and regulators, electric utilities, the solar industry, and other energy stakeholders with timely, accurate, and unbiased updates on how states are choosing 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 provides regular quarterly updates of solar policy developments, keeping stakeholders informed and up to date on a timely basis. This special year-end version of the report also highlights the key trends and major actions of the 2015 calendar year, providing insights and analysis on the solar policy environment.

## 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 (1) state regulatory bodies and legislatures and (2) 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 focuses on cataloguing 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 this issue include:



- Significant changes to state or utility **net metering** or **community solar** laws and rules, including program caps, system size limits, aggregate net metering rules, and compensation rates for net excess generation
- 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 residential 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 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.

## 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 specifically related 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 policies and incentives are available at [www.dsireusa.org](http://www.dsireusa.org).

# 2015 POLICY REVIEW

## U.S. DISTRIBUTED SOLAR MARKET

Distributed solar PV is booming in America. Today there are more than 867,000 solar PV installations in the U.S., with new systems being installed at a rate of roughly one every two minutes.<sup>1</sup>

Rapid cost declines have been key in propelling recent growth in distributed solar PV. The average cost of a residential system in the U.S. was down from over \$12 per watt in 1998<sup>2</sup> to roughly \$3.50 per watt in Q3 2015.<sup>3</sup> While the majority of the cost declines from 2008 to 2012 were due to falling hardware costs, nearly all of the reductions in residential system price since then have been attributable to falling non-module costs.<sup>4</sup> However, nearly 60% of the cost of a residential system is still attributable to non-hardware costs, including on-site labor, engineering, permitting, and other soft costs.<sup>5</sup>

Congress enacted a long-term extension and eventual phase-out of the federal solar investment tax credit in December as part of a Congressional budget deal, providing an additional boost to the solar industry. GTM Research forecasts that the extension of the federal investment tax credit will increase residential solar PV installations by 35% and non-residential installations by 51% between 2016 and 2020 compared to a scenario without the extension.<sup>6</sup>

### Key State Solar Policies Undergoing Scrutiny

Despite strong growth trends, falling costs, and federal tax credit certainty, state policies and regulations that substantially affect the financial viability of distributed solar PV are experiencing considerable uncertainty and volatility. Against the backdrop of accelerating adoption of distributed solar PV by their customers, a growing chorus of electric utilities have expressed concern about the impact of existing net metering policies, rate design, and proliferating customer-sited distributed energy resources (DER) like solar PV.

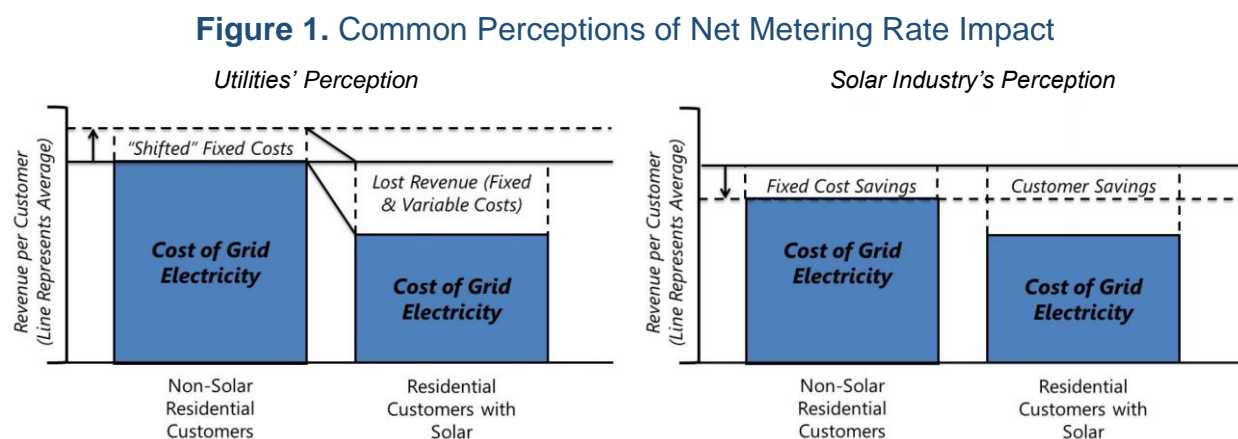
Utilities have argued that the proliferation of DERs can disrupt the traditional utility business model by reducing sales of electricity. Reduced revenue from declining sales could result in utilities failing to fully recover the costs of generating and other grid assets. As more customers implement DER options, the utility serving them could be left with increasing costs to be assigned to a shrinking number of rate-payers and energy sales. Those costs increases in turn could motivate additional customer adoption of DERs. This phenomenon, dubbed the “utility death spiral,”<sup>7</sup> is perceived by some as a significant industry challenge under existing regulatory frameworks and policies like net metering.

A growing number of utilities have been calling for new ways of treating rooftop solar, proposing changes that impose limits on net metering policies, reduce compensation for solar-generated electricity exported to the grid, increase fixed customer charges, add new charges on solar customers, and restrict third-party solar financing models. Some utilities have also proposed entering the solar market themselves by offering their own rooftop solar program to customers.

The solar industry and others have opposed many of these changes, countering that distributed solar PV offers a broad range of services that benefit all ratepayers. Such benefits include, but are not limited to, avoided energy and capacity costs; decreased or deferred generation, distribution, and transmission investments; avoided line losses; and reduced price and supply risks. From this viewpoint, net metering represents a simple and administratively efficient method of accounting for electrons exchanged between the utility and distributed generators during a billing period that reasonably approximates the value of rooftop solar.<sup>8</sup>

In the report *Designing Distributed Generation Tariffs Well: Fair Compensation in a Time of Transition*, published by the Regulatory Assistance Project, the authors point out that because of the number of services distributed generation can provide to the grid, cross-subsidies can flow both ways—either from DER customers to non-participating customers or vice versa—and recommends regulators implement a methodology that fairly considers these benefits and “build policies, regulations and tariffs that recognize the characteristics of their state and utility in question.”<sup>9</sup>

The utility and solar industry perspectives are illustrated in Figure 1. These representations demonstrate that while utilities see lost revenue and cost shifts when they think of rooftop solar, the solar industry sees customer savings and value added to the grid.



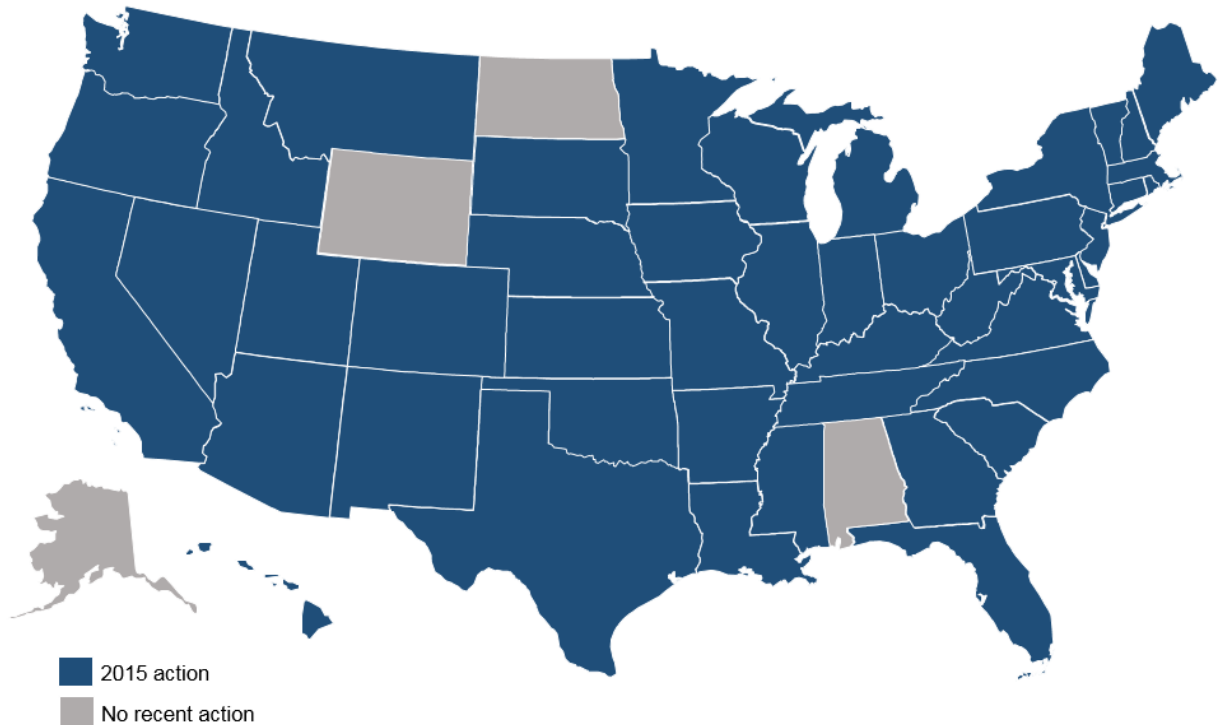
Source: Kennerly et al., 2014<sup>10</sup>

Policies supportive of distributed solar PV are in an important era of transition. How key state policies and rates are adapted will play a significant role in determining the extent to which the industry will continue to grow and in what markets.

## 2015 SOLAR POLICY ACTION

In 2015, regulators, lawmakers, or utilities in at least 46 states studied, proposed, or enacted policy changes pertaining to net metering, valuation of distributed solar, fixed or solar charges, third-party or utility-led rooftop solar ownership, or community solar (Figure 2).

**Figure 2. 2015 Policy Action on Net Metering, Rate Design, or Solar Ownership**



A general overview of the policy trends from 2015 is provided in the following sections. Details on each of these actions, including references and links for each action, as well as summary descriptions, can be found in the policy tables from the 2015 quarterly editions of *The 50 States of Solar*, complementary copies of which are available at the NC Clean Energy Technology Center and Meister Consultants Group websites. The Q4 edition is attached to this report below.

Box 1 highlights some of the most significant trends and policy decisions of the year.

## Box 1. Top Five State Distributed Solar Policy Developments in 2015

### Net Metering and DG Compensation Policies in the Spotlight, from Hawaii to Maine

In the final quarter of 2015, regulators in both Hawaii and Nevada became the first two states to end net metering as it is commonly defined. Instead, customers will be compensated for grid exports at the avoided cost rate, a type of policy known as “net billing.” In contrast, California regulators upheld retail rate net metering until at least 2019, and after lengthy investigations, regulators in both Colorado and Iowa decided to keep existing net metering policies without changes. South Carolina implemented net metering rules for the first time, whereas Mississippi regulators enacted a net billing policy after years of deliberation. Maine, Louisiana, and a number of other states are considering alternative policies to replace net metering.

### Utilities Request Substantial Increases in Fixed Charges, New Solar Charges

Sixty-one utilities in 30 states proposed increasing fixed charges levied on *all* residential customers, making it the most frequent policy proposal impacting distributed solar in 2015. Since fixed charges generally cannot be offset with net metering credits, higher fixed charge components in a utility’s rate design can significantly reducing the financial value of going solar. There were 21 examples in 13 states of utilities proposing extra charges or fees on solar, distributed generation, or net metering customers, but few were approved.

### New York, Arizona, and Utah Among States Studying Costs and Benefits of Solar

The Arizona Corporation Commission and the Utah Public Service Commission are reviewing the costs and benefits of net metering for utility customers in those states. The value of distributed generation is also being studied as part of grid modernization efforts such as the Reforming the Energy Vision proceeding in New York. The results of these studies will influence future net metering policy development and any successor tariffs.

### Minnesota Unlocks Solar Boom with Community Solar Program

Xcel Energy’s community solar gardens program has catalyzed development activity in Minnesota. The program remains one of the most ambitious community solar solicitations in the country. As of January 2016, only one project had been developed with over 1,500 additional applications in the queue, totaling more than 1,400 MW.

### Georgia Clears Path for Third-Party PPAs, as Florida Ballot Initiative Sputters

Third-party ownership (TPO), in the form of solar leases or power purchase agreements (PPAs), is a financing mechanism that has fostered the growth of solar markets throughout the U.S. In 2015, the Georgia legislature passed House Bill 57, which enabled third-party ownership. A Florida ballot initiative to legalize third-party PPAs was postponed until the 2018 election.

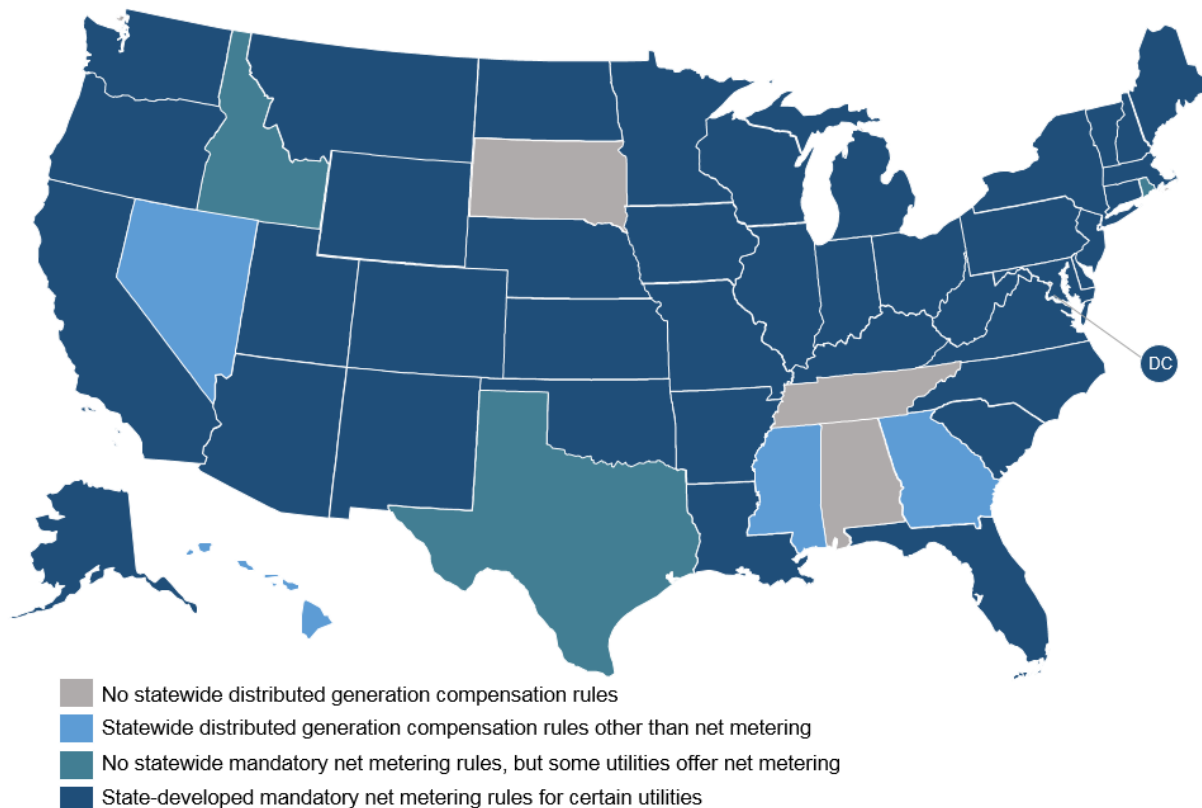
# NET METERING

## Key Takeaways

- As of January 1, 2016, 41 states and the District of Columbia had mandatory net metering rules for certain or all utilities.
- In 2015, there was legislative or regulatory action in 27 states on net metering policies.
- A growing number of utilities approached or reached net metering aggregate capacity limits in 2015.
- There is a lack of consensus between stakeholders on how to compensate customers for electricity generated with on-site solar PV and exported to the grid, and policy proposals are increasingly diverging from traditional retail rate net metering.

As shown in Figure 3, 41 states and the District of Columbia require certain utilities to offer net metering to distributed solar customers as of the beginning of 2016. Before policy changes in Nevada and Hawaii in late 2015, 43 states had enacted net metering policies, making it arguably the most widespread state distributed solar policy in the country.

**Figure 3. Net Metering and Distributed Generation Compensation Policies**

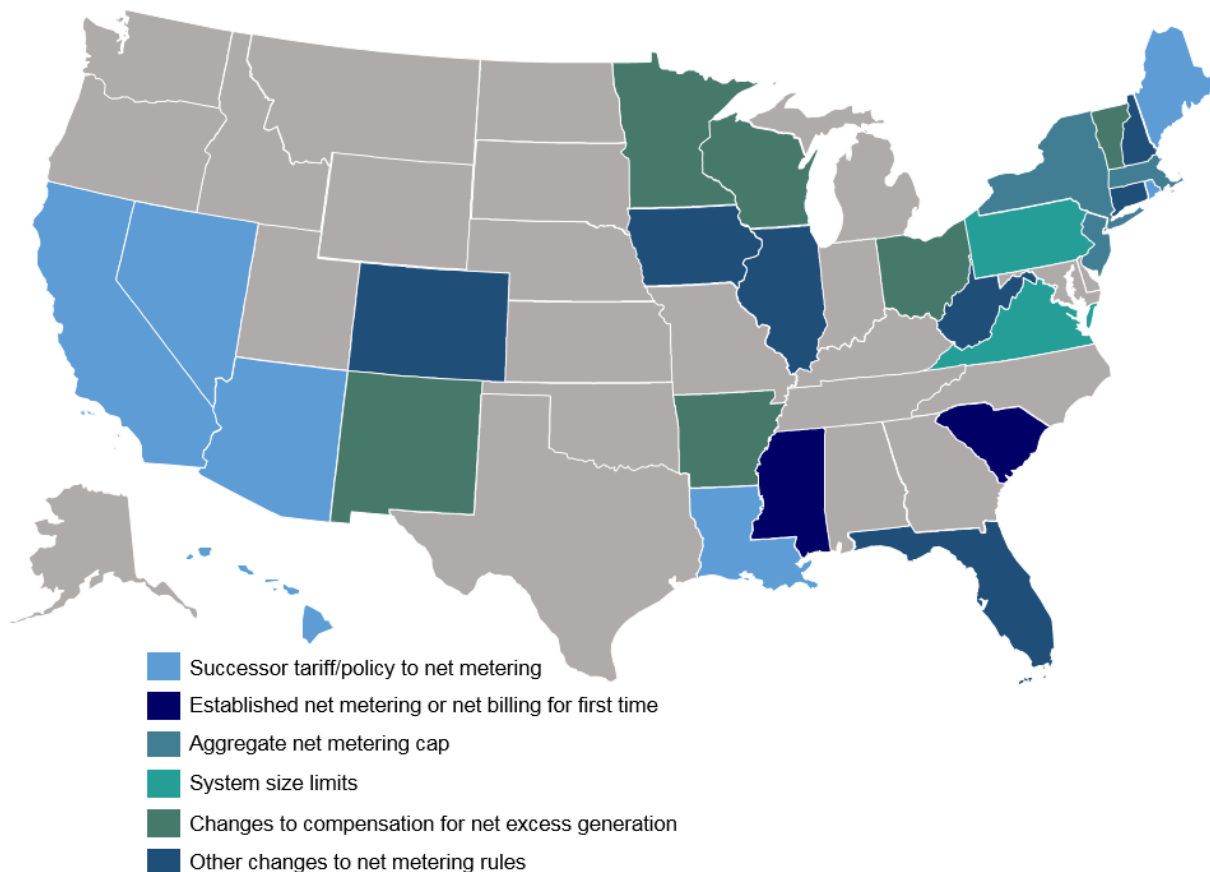


Source: NC Clean Energy Technology Center (NCCETC)<sup>11</sup>

Notes: Georgia, Hawaii, Mississippi, and Nevada offer alternative compensation mechanisms for distributed generation such as net billing, which typically provides a rate of compensation for grid exports below the retail rate. The Idaho Public Utilities Commission has required investor-owned utilities in the state to offer net metering through separate docket proceedings; however, no statewide net metering policy exists. NV Energy's cap was clarified as 235 MW and reached in Nevada in 2015; it was replaced with net billing starting in 2016. SWEPCO and Entergy have reached net metering caps in Louisiana and no longer offer net metering.

In 2015, there was legislative or regulatory action in 27 states on net metering policies. As shown in Figure 4, proposed changes to net metering policies focused on a variety of topics. Perhaps most significantly, a number of states moving away from traditional net metering and toward new ways of compensating residential customers with solar. Most proposed or finalized changes were on the subject of compensation levels for either net excess generation credits accrued during a billing period or instantaneous grid exports, increasing or clarifying aggregate cap amounts, or miscellaneous changes to rules (Table 1).

**Figure 4.** Proposed or Enacted Changes to Net Metering Policies in 2015



Note: Many states considered multiple types of changes to their net policies in 2015. This map depicts the variation in net metering issues considered, but is not comprehensive in showing all the types of changes a specific state considered in 2015. For details, please refer to the tables in the quarterly editions of *The 50 States of Solar*.

**Table 1. Summary of Net Metering Policy Action in 2015**

Type of Change	# of Instances	# of States/Territories
Net Metering Rules	25	21
Compensation for Net Excess Generation or Exports to Grid	15	13
Aggregate Cap	14	10
System Size	5	5
Meter Aggregation	6	5
REC Ownership	2	2

## Aggregate Caps

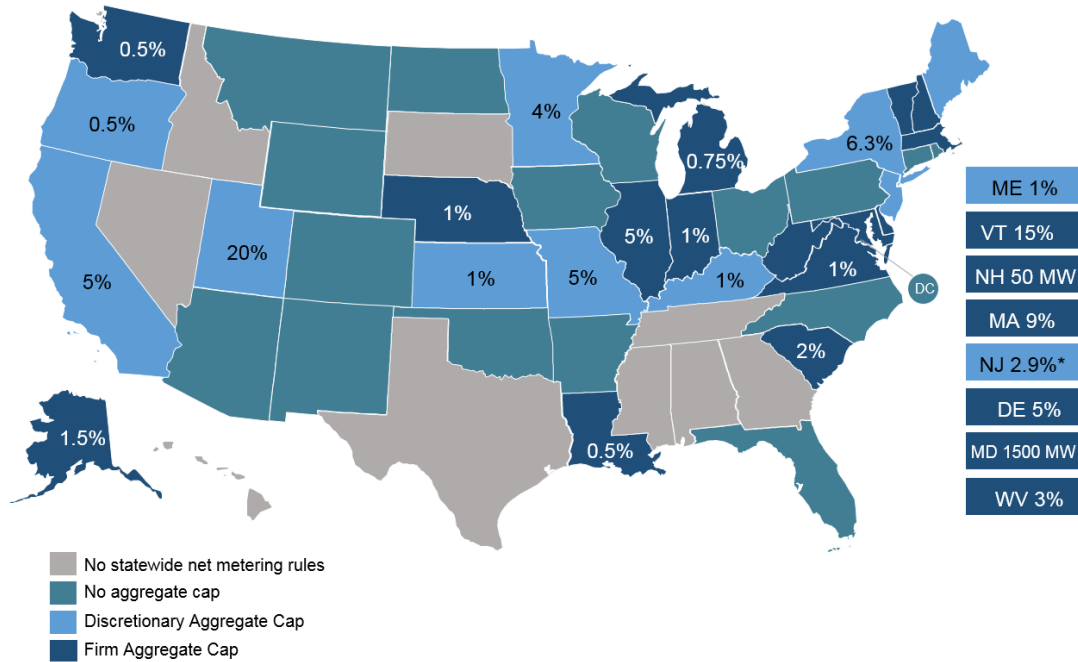
Aggregate caps are typically a limit on the total amount of net-metered capacity in a utility service territory. State net metering policies can include no aggregate cap, have a discretionary aggregate cap, or specify a firm aggregate cap (Figure 5). Caps have historically been set on an ad hoc basis, rather than an evidence-based determination of the technical limits of what the grid can accommodate; over time, many states have increased their caps (Figure 6).

An increasing number of utilities across the U.S. are reaching state-mandated aggregate caps, prompting many state legislatures and public utility commissions to consider increasing caps or creating a post-net metering policy framework for compensating solar hosts for the electricity they put into the grid:

- **Nevada's** IOU, NV Energy, hit the aggregate cap several months after the state legislature passed legislation clarifying the aggregate cap as 235 MW.
- **New York** is looking at comprehensive reforms as part of its Reforming the Energy Vision process. Until the issue of net metering and distributed resource valuation is addressed in this process, the state has temporarily lifted its aggregate cap.
- **Massachusetts** legislators introduced several bills that would increase the state's aggregate cap as several utilities reached the cap (although none made it through to a vote before the legislative recess at the end of November).
- **Vermont** regulators intentionally left the aggregate cap blank in the state's new draft net metering rules. Green Mountain Power (GMP), Vermont's largest utility, has already reached the state's 15% cap. Until the cap is increased or GMP receives permission to exceed the cap, the utility will reject new applications.
- **New Hampshire** legislators are considering proposals to raise the state's 50 MW net metering aggregate cap as several utilities already reached or are approaching their caps.
- **Louisiana** utilities are also approaching the state's aggregate cap; Entergy Louisiana and Southwestern Electric Power Company have both reached the cap and discontinued net metering for new solar customers in 2016.



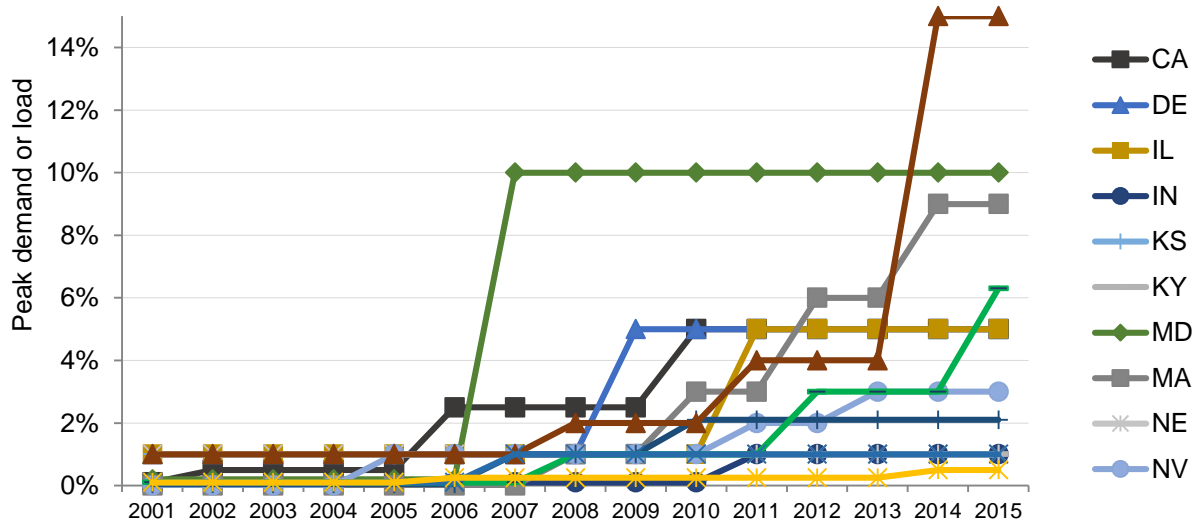
**Figure 5. Aggregate Caps under State Net Metering Rules as of January 1, 2016**



Sources: EQ Research<sup>12</sup> and NCCETC<sup>13</sup>

Notes: Percentages generally refer to peak demand or load. California's percentage refers to non-coincident peak demand. Delaware's percentage refers to aggregate customer monthly demand. New Jersey's percentage refers to total state retail sales. Massachusetts has separate caps for private (4%) and public (5%) sectors; some small systems are not subject to the cap. Nevada's cap was clarified as 235 MW and reached in 2015.

**Figure 6. Firm Aggregate Caps in State Net Metering Policies, 2001-2015**



Sources: Heeter et al. (2014)<sup>14</sup> and NCCETC<sup>15</sup>

Notes: States that have not made revisions: Alaska, Kansas, Kentucky, Louisiana, Michigan, Missouri, South Carolina, and West Virginia. See Figure 5 for aggregate caps in those states. Massachusetts has separate caps for private (4%) and public (5%) sectors; some small systems are not subject to the cap. Nevada's cap was clarified as 235 MW and reached in 2015. New Hampshire and Maryland capacity caps were converted to peak demand caps; California and Delaware use non-coincident peak demand and aggregate customer monthly demand, respectively. In 1998, California's cap was revised from 0.1% of the utility's 1996 peak demand forecast to 0.1% of aggregate peak customer demand (AB 1755). In 2012, aggregate customer peak demand was interpreted by the PUC to mean the sum of customers' non-coincident peak demands (CPUC Decision 12-05-036, Docket 10-05-004).

## The Beginning of the End of Net Metering?

Hawaii, Nevada, and California all developed net metering successor policies in 2015. As commonly defined, net metering allows the energy a customer exports to the grid to offset that customer's consumption on a one-to-one basis over the billing cycle. Under this definition, Hawaii and Nevada became the first states to end net metering, now offering net billing options instead, compensating customer-generators at the avoided cost or wholesale rate (rather than the retail rate) for all energy exported to the grid. Hawaii regulators decided to allow existing net metering customers to continue net metering while requiring new net metering customers to choose between two new tariffs. In contrast, a December 2015 decision by the Public Utilities Commission of Nevada (PUCN) did not grandfather existing net metering systems, but phases in the new "net metering" tariffs over time. (Note that while the PUCN and NV Energy still refer to the new tariffs "net metering" or "NEM 2.0," the tariffs do not meet the standard definition of net metering.)

Hawaii regulators decided to grandfather existing net metering customers, allowing them to continue net metering while requiring new net metering customers after October 12, 2015 to choose between a grid-supply and self-supply tariff. In contrast, a December 2015 decision by the Nevada Public Utilities Commission did not grandfather existing net metering systems, eliminating net metering for all solar customers, existing and future.

California also developed a net metering successor policy in December 2015, as the three large IOUs in the state are only required to offer net metering until July 2017 or when they reach the aggregate cap, whichever occurs first. The successor tariff will not apply to customers entering into a net metering agreement before the existing cap or end date is reached. The proposed policy was approved on January 28, 2016, and maintains the existing full retail rate (minus non-bypassable charges) for excess generation; the decision will be covered in detail in *The 50 States of Solar: Q1 2016 Quarterly Report*.

Maine and Louisiana are also in the process of developing a successor to net metering. On the heels of its investigation into the value of distributed solar, Maine passed legislation directing the Public Utilities Commission to convene a stakeholder group to design an alternative to net metering. The group's report is due to the legislature in January 2016. At the end of December, the Louisiana Public Service Commission issued a notice of proposed rulemaking. The Staff's proposed changes would change the state's policy from net metering to a net billing arrangement, where all electricity exported to the grid by a net metering customer during a billing period would be credited at the avoided cost rate. Notably, the proposed changes do not specify that existing solar net metering customers would be grandfathered under their existing net metering arrangement.

South Carolina implemented and Mississippi adopted mandatory "net metering" rules for the first time in their states' histories. However, Mississippi's rules suggest that the policy will be implemented as net billing with a performance-based incentive, where all energy exported to the grid after self-consumption is credited at the *avoided cost rate* plus a premium of \$0.025 per kWh to recognize the value of distributed generation on the grid. Under a net metering policy as commonly defined, excess electricity exported to the grid during a billing period is credited at the *retail rate*, offsetting electricity imported from the grid at a one-to-one rate.

Table 2 summarizes key policy proposals changing net metering bill credits.

**Table 2. Summary of Major Bill Credit Policy Changes and Proposed Changes in 2015**

State	Status	Former Policy	New Policy	Grandfathering?
AZ	Proposed	Net metering	Net billing; self-consumption with all exports to the grid credited at the utility-scale renewable energy purchase rate	✓
HI	Enacted	Net metering; net excess credited at retail rate	Net billing; self-consumption with all exports to the grid credited at avoided cost ("grid-supply" tariff option)	✓
NV	Enacted	Net metering; net excess credited at retail rate	Net billing; self-consumption with all exports credited at avoided cost	X
CA	Enacted*	Net metering; net excess credited at retail rate	Net metering; net excess credited at retail rate, but customer pays non-bypassable charges (\$0.02-\$0.03/kWh) on all grid imports	✓
SC	Enacted	No policy	Net metering; net excess credited at retail rate; utility net metering tariffs approved in 2015	✓
MS	Enacted	No policy	Net billing; all excess credited at avoided cost, plus \$0.025/kWh for "non-quantifiable expected benefits"	N/A
LA	Proposed	Net metering; net excess credited at retail rate	Net billing; all excess credited at avoided cost	X
LA (Entergy)	Effective 1/1/2016	Net metering; net excess credited at retail rate	Buy-all, sell-all at avoided cost rate	✓
LA (SWEPCO)	Effective 2/1/2016	Net metering; net excess credited at retail rate	Net billing; self-consumption with all exports credited at avoided cost	✓
VT	Proposed	Net metering, plus performance-based incentive: net excess credited at retail rate	Net metering; net excess credited at retail rate plus \$0.02/kWh siting incentive and \$0.03/kWh REC premium (if applicable)	✓

\* The proposed decision was approved on January 28, 2016. See the forthcoming Q1 2016 edition of *The 50 States of Solar* for more on the decision.



In the cases of Hawaii and New York, these examinations are part of wider regulatory reform efforts to restructure the entire electricity market to accommodate the influx of customer-focused energy technologies.

Most states had narrower and less ambitious goals and state intentions such as better educating the commission (Florida, Ohio), improving integrated resource planning (Georgia, Tennessee), examining particular elements of net metering such as cost-shifting (Oregon, South Carolina, West Virginia), or providing guidance on proposed or possible changes to solar rates (Utah, Minnesota, Texas).

Some states have produced conflicting outcomes that indicate the lack of consensus regarding valuation approaches and methodology. The Public Service Commissions of Louisiana commissioned a study of the impacts of net metering and found that NEM customers do not pay the full cost of service and are subsidized by other rate payers. A similar study commissioned by regulators in the neighboring state of Mississippi in 2014 found that the net grid impact of distributed generation exceeded the retail rate of electricity.

Many states have turned to stakeholder processes to determine reasonable distributed generation methodologies. Tennessee, for instance, convened a multi-month Distributed Generation Integrated Value (DG-IV) stakeholder process to identify possible value components of distributed generation. The stakeholders rated components based upon two key criteria: (1) which components had a methodology for valuation that would produce a reliable and actionable result; and (2) which components would be appropriate include in integrated resource planning or possible future rates. Components with the most consensus were included in the DG-IV methodology. Components without consensus were kept as placeholder topics for future discussion or were listed as important program design considerations.

Regulators in Georgia conducted a similar, but more streamlined process to produce a report that will be used as a tool in upcoming integrated resource planning discussions.

Some states engaged in stakeholder engagement efforts for education purposes. Regulatory bodies in Ohio and Florida conducted a handful of public workshops with key stakeholders to solicit opinions and to educate the commission and the public about solar costs and benefits.

Some studies originated as regulatory checks to utility proposals to impose solar-specific charges to solar net metering customers' bills. In Utah, Rocky Mountain Power was ordered by the Public Service Commission to justify a proposed monthly solar charge with a cost-benefit analysis of distributed solar.<sup>17</sup> The Arizona Corporation Commission opened an inquiry on the value of solar and potential cost-shifting after Arizona Public Service proposed increasing its solar charge. These and other examples indicate the importance of a transparent and rigorous empirical analysis in order to justify imposing any new charges on solar customers.

Although the stated end goal of many of these inquiries and studies is to come to a more thoughtful, data-driven understanding and policy direction for distributed generation, it is still

largely unclear what, if any, trends will emerge. However, the inquiries themselves demonstrate a pathway towards deriving solar policy outcomes through participation by multiple stakeholder groups.

# COMMUNITY SOLAR

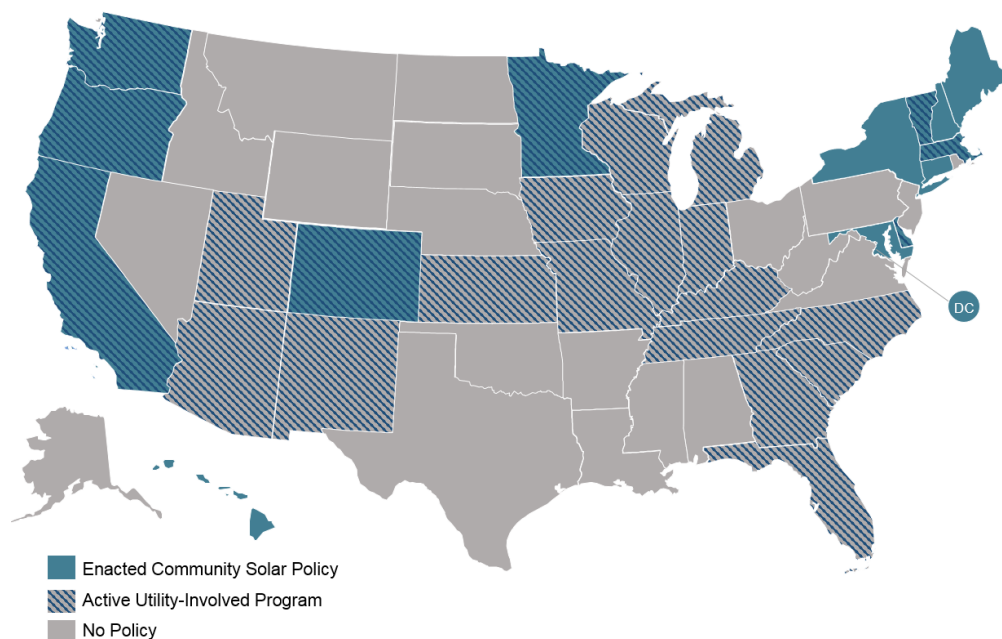
## Key Takeaways:

- In 2015, seven states and the District of Columbia had policy action on community solar.
- In total, 14 states and the District of Columbia have enacted community solar legislation.
- Most households still do not have access to the benefits of community solar gardens, with a lack of enabling state policy the key barrier to more widespread adoption.

Community solar (or shared solar) is rapidly expanding across the country. Roughly 100 MW of community solar was installed through the end of 2015 through more than 75 community solar gardens.<sup>18</sup>

However, community solar growth remains confined to states that have passed enabling legislation, which is necessary to remove regulatory barriers. For example, community solar legislation could require utilities to provide participating customers on-bill credits for electricity generated by an off-site installation. Fourteen states and the District of Columbia have enacted community solar or shared renewables legislation that enables such systems (see **Figure X**). Community solar in states without enabling legislation is generally confined to utility-sponsored programs, which are typically the only opportunity for residents of these states to participate in community solar. At the end of 2015, a total of 20 states had neither enacted a community solar policy nor seen an active utility-involved program.

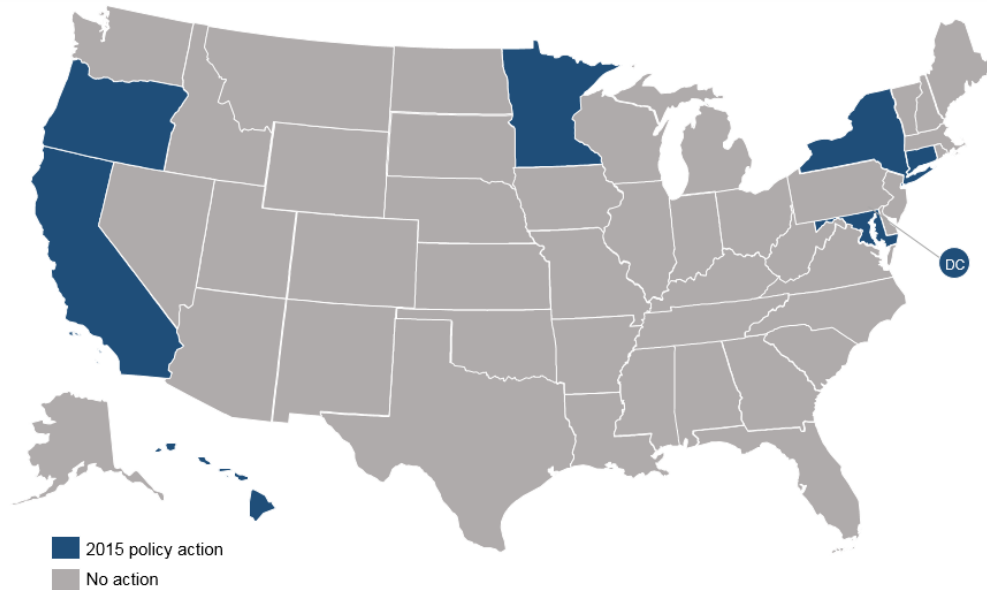
**Figure 8. Community Solar Policies and Programs**



Sources: Solar Electric Power Association<sup>19</sup>, Vote Solar,<sup>20</sup> and NCCETC and Meister Consultants Group (MCG) research

In 2015, Oregon and Maryland enacted key enabling legislation for community solar. Utilities in New York and Hawaii were directed to file tariffs that would enable community solar projects for the first time in both states. California also made steady progress towards developing its 600 MW Green Tariff Shared Renewables program.

**Figure 9. Community Solar Policy Action in 2015**



Minnesota passed landmark solar legislation in 2013 and began implementing the community solar program through Xcel Energy in late 2014. While the program is uncapped, regulatory decisions in 2015 effectively limit the size of individual community solar gardens to 5MW or less. Nevertheless, Xcel Energy’s website indicates that solar developers had submitted applications for more than 1,400 MW at more than 1,500 community solar gardens across Xcel’s service territory—of which 755 had been reviewed for completeness, 46 had been approved, and only 1 had been built.<sup>21</sup> Even if many of these proposed projects are not built, the program has the potential to be the largest in country.



## FIXED CHARGES

### Key Takeaways:

- In 2015, 61 utilities in 30 states proposed increasing monthly fixed charges on *all* residential customers by at least 10%. The median increase requested in these cases was 62%.
- The median fixed charge increase requested by utilities in 2015 was \$5. This fixed charge increase would result in a residential solar customer paying an *extra* \$1,500 in bill charges over a 25-year PV system lifetime.
- Of the 37 utility-proposed fixed charge increases that were decided in 2015, the median initial fixed charge was \$9, the median proposed fixed charge was \$17.25, and the median approved fixed charge was \$10.85.
- In 16 of these cases, no fixed charge increase was approved.

A fixed charge, also called a “customer charge” or a “basic service charge,” is a per-month charge that applies to every customer in a rate class regardless of the amount of electricity consumed. Most electric utilities charge all residential customers, regardless of whether they have an on-site solar PV system, some type of fixed monthly charge.

The purpose of a residential fixed charge typically is to compensate the electric utility for the customer-specific costs associated with one additional residential customer (i.e., costs associated with metering, billing and collection, and customer assistance), which is typically \$5-\$10 per residential customer.<sup>22</sup> However, many utilities have recently requested fixed charge increases substantially higher than this, arguing that fixed charges should reflect the “fixed” proportion of a utility’s cost structure such as grid infrastructure, maintenance on generation assets, and other costs that do not vary in the short term with the amount of electricity sold. Such a change to rate design would imply increasing customer fixed charges and decreasing the price of electricity.

A report from the Regulatory Assistance Project<sup>23</sup> noted several of the drawbacks of changing rate design in this way:

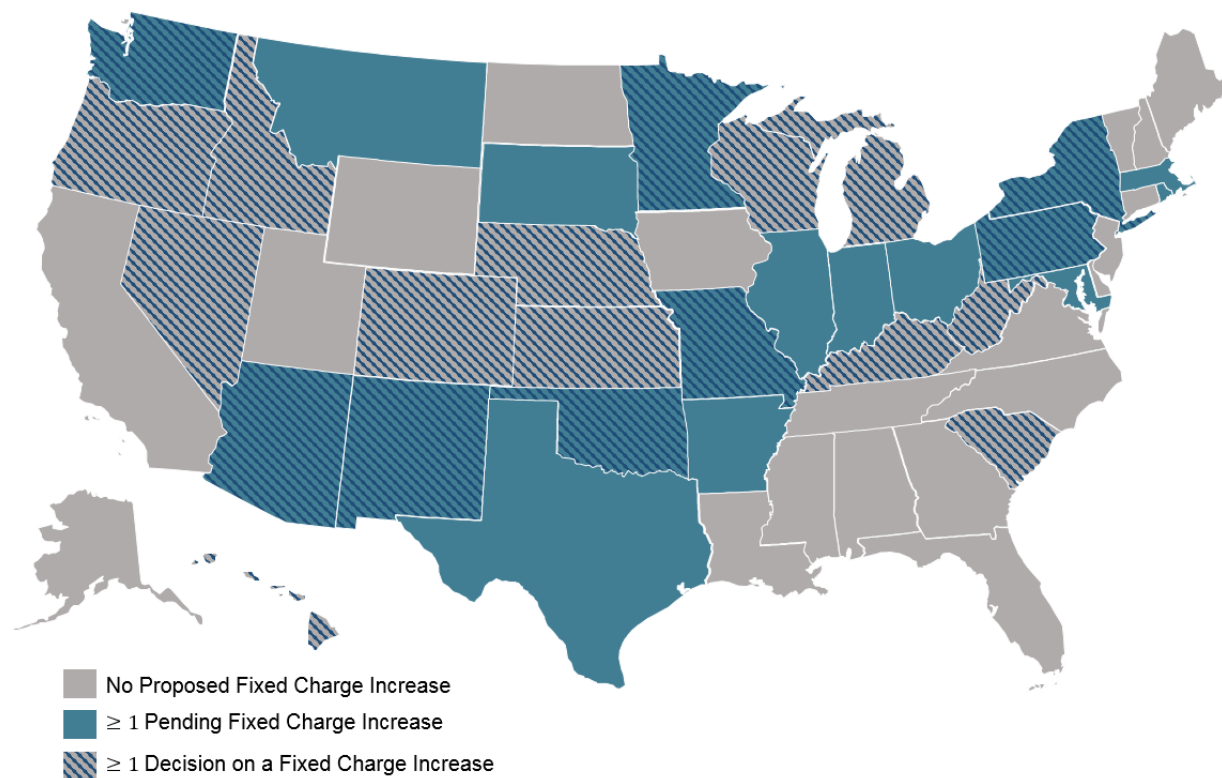
This approach deviates from long-established rate design principles holding that only customer-specific costs — those that actually change with the number of customers served — properly belong in fixed monthly fees. It also deviates from accepted economic theory of pricing on the basis of long-run marginal costs. The effect is to sharply increase bills for most apartment dwellers, urban consumers, highly efficient homes, and customers who have DG systems installed, while benefitting larger homes and suburban and rural customers. Also often [negatively] impacted are low-income customers who tend to be low-use customers.

These fixed charge increases also impact the financial value of solar to residents by limiting the portion of their electric bill that can be reduced through self-generation and—if accompanied by a corresponding decrease in per-kilowatt-hour (kWh) rates—reducing the implied value of any net metering credits that residential solar systems generate.

All other things equal, each one-dollar increase in the fixed charge component of a residential bill translates to a \$300 decrease (undiscounted) in the financial value of a net-metered PV system designed to offset 100% of on-site annual electricity generation.<sup>†</sup>

In 2015, 61 utilities in 30 states requested a 10% or greater increase in the residential monthly fixed charge (Figures 10 and 11). The median initial fixed charge was \$8.89, and the median proposed fixed charge was \$14.47, and the median difference between proposed and initial fixed charges was \$5.00.<sup>‡</sup> The median fixed charge increase requested by utilities was 62% above the initial fixed charge.

**Figure 10. Pending and Decided Utility Residential Fixed Charge Increases in 2015**



While a \$5 monthly increase to the fixed charge component of an electric bill may seem insignificant if offset by lower energy charges, it is equivalent to an extra \$1,500 in charges over a 25-year PV system lifetime.<sup>§</sup> It is important to note that many of these proposed fixed charge

<sup>†</sup> Assuming a 25-year lifetime of a rooftop PV system, the simple impact of a one-dollar increase in the fixed charge is calculated as follows: \$1/month \* 12 months/year \* 25 years = \$300. This represents a decrease in the financial value of a PV system because customers cannot offset fixed charges with net metering bill credits.

<sup>‡</sup> Using arithmetic averages instead of median values: The average initial fixed charge was \$9.79, the average proposed fixed charge was \$17.65, and the average difference between the proposed and initial fixed charges was \$7.85. Medians better describe the data here due to outlier, \$50+ fixed charge proposals at Hawaii utilities.

<sup>§</sup> \$5/month \* 12 months/year \* 25 years = \$1,500

increases were accompanied by other proposed rate design changes (e.g., TOU and seasonally-varying rates, new solar charges, reduced energy charges, changes to compensation for net excess generation, etc.); therefore, the exact net effect varies considerably based on a customer's electricity consumption patterns.

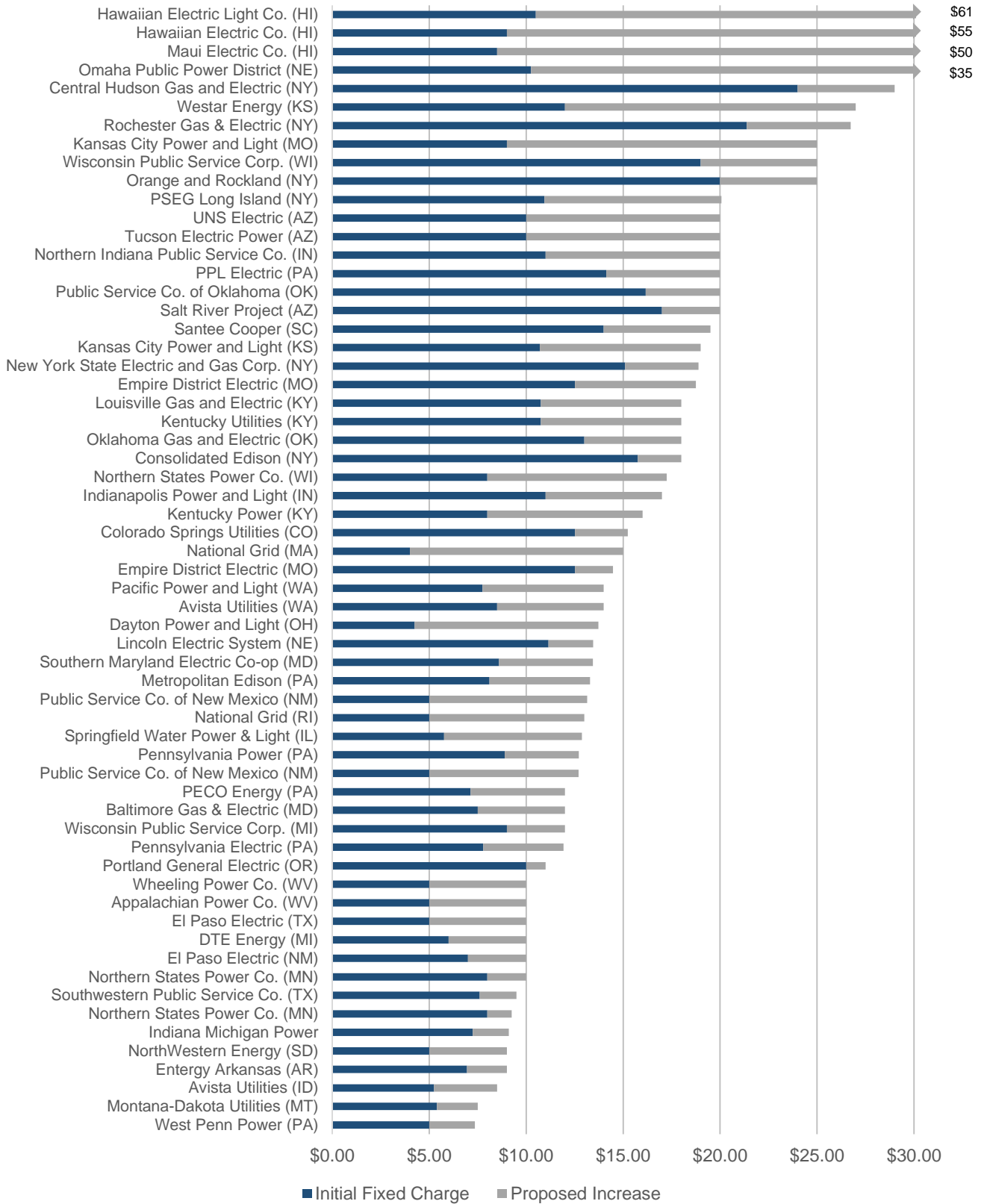
Twenty-four rate cases were pending at the end of 2015.

Utilities were largely unsuccessful at gaining substantial increases to fixed customer charges in 2015. Of the 37 rate cases that were decided in 2015, the median initial fixed charge was \$9.00, the median proposed fixed charge was \$17.25, and the median approved fixed charge was \$10.85 (Figure 12). In 16 rate cases regulators ruled to keep the existing fixed charges without an increase.\*\*

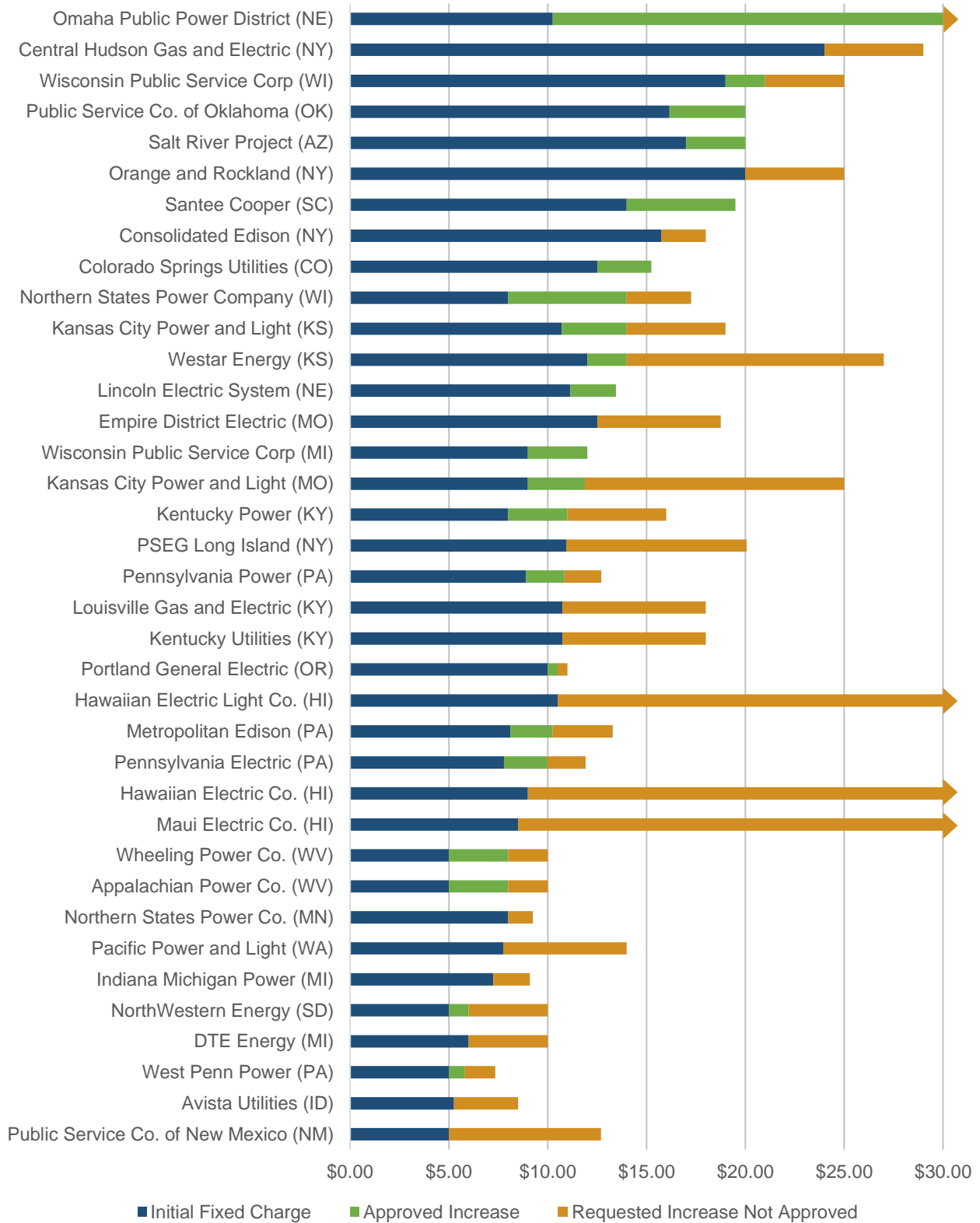
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\*\* Excluding the 16 rate cases in which there was no approved increase to fixed charges, and only looking at the 21 remaining cases in which there was a decision on the requested fixed charge increase: the average approved fixed charge was \$12.00 and the median difference between the approved and initial fixed charges was \$2.88.

**Figure 11. Utility-Proposed Residential Fixed Charge Increases in 2015**



**Figure 12. Residential Fixed Charge Increases Approved in 2015**



# SOLAR CHARGES

## Key Takeaways:

- In 2015, there were 21 pending or decided utility proposals to add or increase solar charges in 13 states.
- Thirteen utilities proposed a demand charge—the most common type of proposed additional charge—on solar customers, and the median charge requested was \$4.80 per kW per month.
- NV Energy was the only IOU in the country that succeeded in getting solar charges approved. We Energies had their solar charge, approved by regulators in December 2014, struck down by the Dane County Circuit Court.

A growing number of utilities have recently proposed adding demand charges, standby charges, or flat monthly fees on the bills of residential customers with rooftop solar, or putting solar customers into a separate rate class with different rates than other residential customers. This report refers to these types of proposed changes as “solar charges.”

## Background

Historically, only a few IOUs have implemented solar charges on net-metered residential customers, with examples including Alabama Power (AL) and Dominion Power (VA). In most cases, residential customers entering into a net metering arrangement are otherwise treated identically to non-net-metered customers.

While an increasing number of utilities have recently proposed solar charges, those proposals generally faced organized opposition and few have been approved by regulators. During 2013 and 2014, state regulators rejected, or utilities withdrew, solar charges proposed by Idaho Power (ID), Black Hills Power (SD), Rocky Mountain Power (UT), Central Maine Power (ME), and Georgia Power (GA).

In the two states where solar charges were approved in 2013 and 2014, the effect of the approvals may be limited. Regulators approved a monthly charge of \$0.70 per-installed-kW—totaling \$4.90 per month for a typical 7-kW PV system—for Arizona Public Service solar customers, an amount substantially below the initial request. We Energies (WI) successfully persuaded the Wisconsin Public Service Commission to approve a charge on solar customers in December 2014; however, the Dane County Circuit Court, citing a lack of sufficient supporting evidence, struck down the charge in October 2015.

Non-IOU utilities, including electric cooperatives, municipal utilities, public utility districts, and state-owned utilities, have been more likely to implement extra charges on solar customers. These utilities typically do not need approval from state regulators to change customer rates.

## Legal Issues

Some intervening parties in cases where utilities have proposed solar charges have raised the possibility that these charges could contravene federal law.<sup>24</sup> Federal Energy Regulatory Commission (FERC) regulations implementing the Public Utility Regulatory Policy Act (PURPA) of 1978 prevent an electric utility from discriminating against net metering customers—who are considered a PURPA “qualifying facility” (QF)<sup>25</sup>—in its electric rates compared to other customers.<sup>26</sup> An electric utility can set different rates for net metering customers, but only if the different rates are “based on accurate data and consistent system-wide costing principles” and only “to the extent that such rates apply to the utility’s other customers with similar load or other cost-related characteristics.”<sup>27</sup>

For example, the New Mexico Public Regulation Commission (PRC) issued an order in October 2015 rejecting a request by El Paso Electric to put residential distributed generation customers in a separate rate class.<sup>28</sup> Specifically, New Mexico statute implementing PURPA requirements states that “Customers shall be billed for service in accordance with the rate structure and monthly charges that the customer would be assigned if the customer had not interconnected a qualifying facility.”<sup>29</sup> Likewise, the Dane County Circuit Court ruled in October that the Wisconsin Public Service Commission did not have sufficient evidence to justify a We Energies demand charge on solar customers.<sup>30</sup>

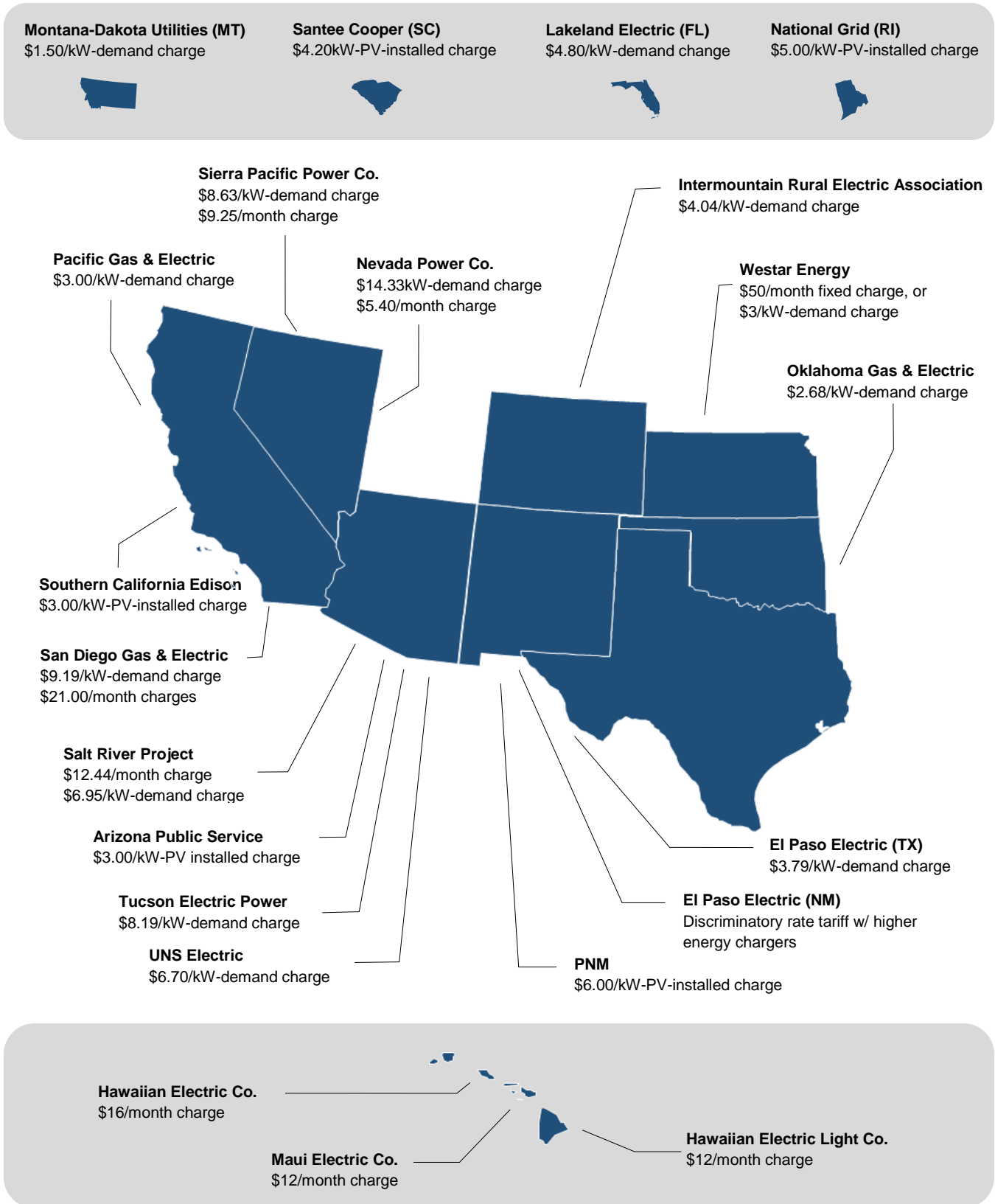
## 2015 Policy Action

In 2015, there were 21 pending or decided utility proposals to add or increase solar charges in 13 states (Figure 13). NV Energy was the only IOU to gain approval for new solar charges in 2015. By 2028, the extra charges on solar customers will total \$29.18 in NV Energy’s northern service territory (Sierra Pacific Power) and \$25.76 in NV Energy’s southern service territory (Nevada Power). Four non-IOU had their proposed solar charges approved by their boards: Intermountain Rural Electric Association (CO), Lakeland Electric (FL), Salt River Project (AZ), and Santee Cooper (SC).

Demand charges, which are based on a customer’s maximum power demand during a month measured in kilowatts (kW), were the most common type of solar charge proposed in 2015 (Figure 14). While common for commercial and industrial customer rate classes, demand charges have rarely been implemented for residential customers, who are typically charged instead a fixed charge and an energy (per-kWh) charge.

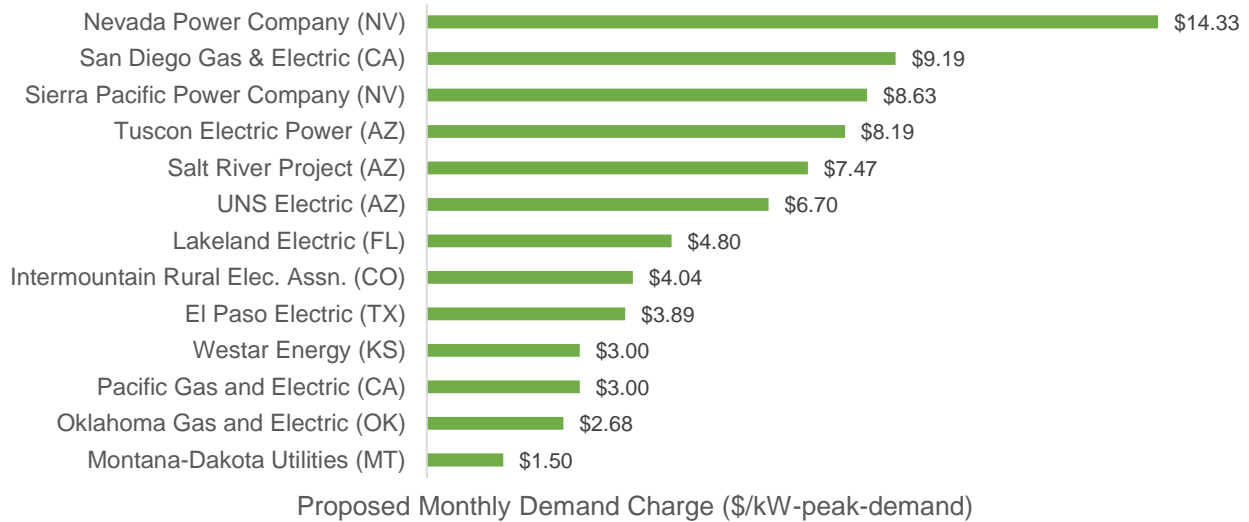
The median demand charge pending in 2015 was \$4.80 per kW per month. While no state public utility commission approved demand charges on solar customers in 2015, two large municipal utilities, Salt River Project (AZ) and Lakeland Electric (FL), and one electric cooperative, Intermountain Rural Electric Association (CO) implemented demand charges. Six proposed demand charges (Tucson) were pending at the end of 2015. (The two California proposals were officially rejected in January 2016).

**Figure 13. Utilities Proposing Solar Charges in 2015**



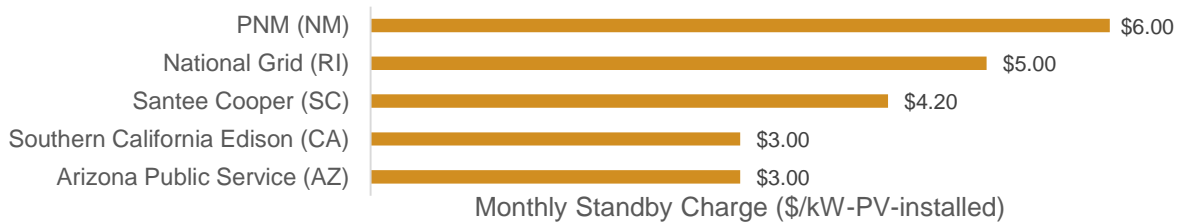


**Figure 14. Utility-Proposed Demand Charges on Residential Solar Customers in 2015**

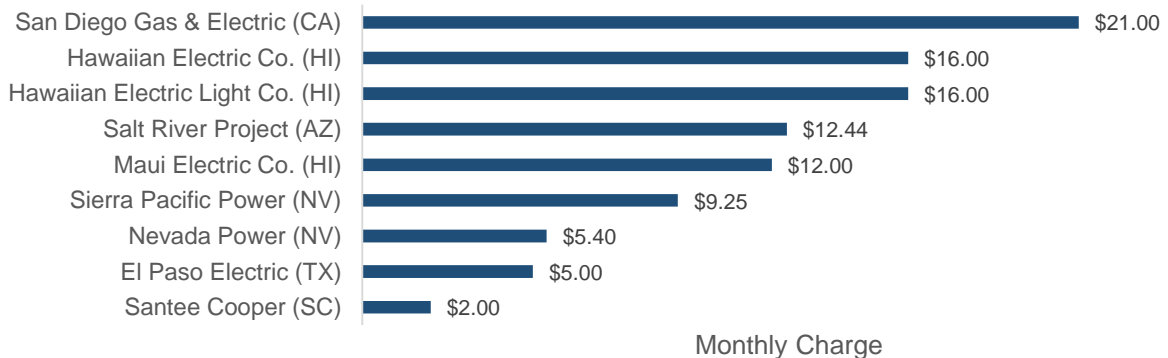


Notes: All three Arizona utilities proposed tiered demand charges. We assume an average monthly maximum demand of 8.5 kW to calculate the monthly weighted average per-kW charge. Salt River Project's demand charge also varies by season; the charge shown for SRP is a weighted average across all months of the year. Intermountain Rural Electric Association's demand charge is assessed only in months when a customer has a load factor below 9% or 10%.

**Figure 15. Utility-Proposed Standby Charges on Residential Solar Customers in 2015**



**Figure 16. Utility-Proposed Extra Charges on Residential Solar Customers in 2015**



Notes: The monthly charge is calculated by comparing the monthly fixed charges and fees applicable to a non-net-metering customer to those of a net-metering customer. Regulators in Nevada approved charges significantly higher than those shown above for customers of NV Energy, to be implemented in phases. By 2028, additional monthly fixed charges on solar customers will total \$29.18 in NV Energy's Sierra Pacific Power service territory and \$25.76 in NV Energy's Nevada Power service territory.

Less commonly proposed than demand charges were standby charges, which vary by the total capacity size of a system. Utilities in five states proposed standby charges averaging \$4/kW-installed-PV/month in 2015 (see Figure 15). Regulators in New Mexico and California rejected PNM's and Southern California Edison's respective requested standby charges. APS agreed to withdraw its proposed increase when the Arizona Corporation Commission opened an investigation into the costs and benefits of distributed solar. Only Santee Cooper (SC) implemented a new standby charge in 2015; as a state-owned utility, it did not need to gain approval for the charge from the Public Service Commission.

Nine utilities in six states proposed flat monthly fees on solar customers averaging \$11 per month (Figure 16). The Nevada Public Utilities Commission order implementing post-net metering tariffs created a separate customer class for distributed energy customers, making it the only example in 2015 of state regulators approving higher fixed monthly charges exclusively for residential distributed generation customers, and the only IOU getting approval from state regulators for any type of new solar charge. Both Santee Cooper (SC) and Salt River Project (AZ) also approved higher flat monthly charges for solar customers; however, neither charge had to be approved by the states' public utility commission. Regulators in New Mexico denied a request from El Paso Electric to put net-metered customers in a separate rate class, finding it inconsistent with state law.

# THIRD-PARTY OWNERSHIP OF ROOFTOP SOLAR

## Key Takeaways:

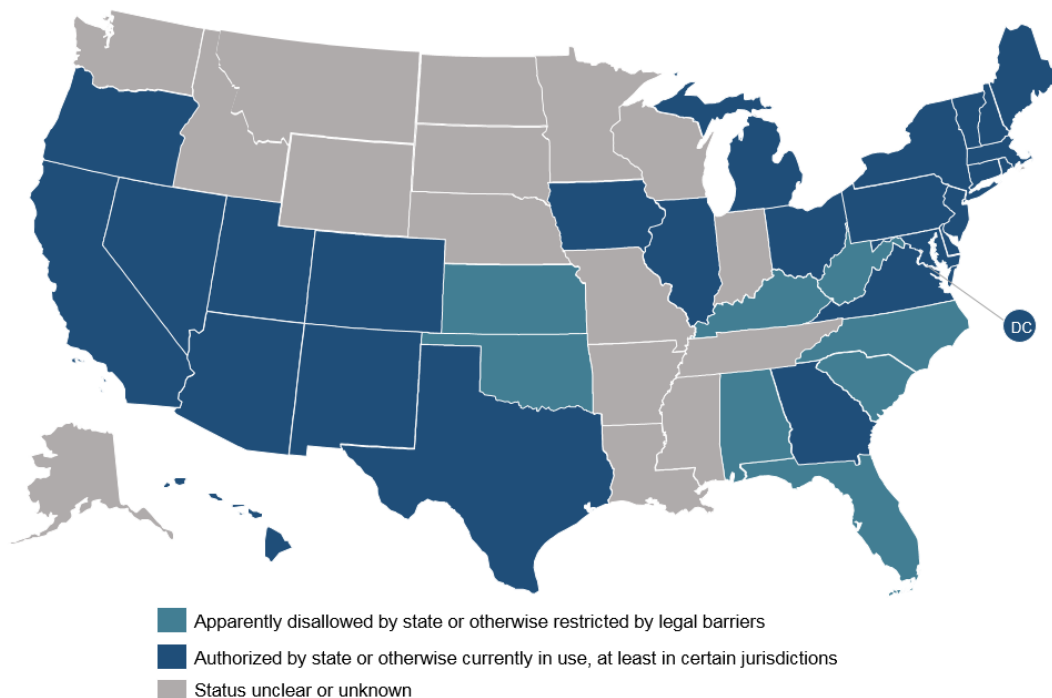
- Third-party solar PPAs are allowed in at least 26 different states, the District of Columbia, and Puerto Rico.
- Eight states prohibit third-party solar PPAs, and the legal status is unclear in 16 states.
- In 2015, six states had legislative or regulatory actions on the legality of third-party PPAs.
- In 2015, Georgia became the 26<sup>th</sup> state to make clear that third-party solar PPAs are not illegal.

Third-party ownership models for residential solar include both leasing solar panels and third-party power purchase agreements (PPAs). In the third-party PPA model, a solar company installs and owns the solar systems on the customers' premises and sells the electricity generated by the system to the system host via a long-term contract. In a leasing arrangement, the lessee pays a fee for leasing the solar equipment and owns any system output.

One advantage of these financing arrangements is that the host does not have to pay the up-front cost of the solar PV system, thus making solar systems much more affordable and attractive to a larger group of customers. More than 72% of residential systems were third-party owned in 2014, with 63% of new systems in 2015 projected to be third-party owned.<sup>31</sup>

As of December 2015, third-party solar power purchase agreements (PPAs) were allowed in at least 26 different states, the District of Columbia, and Puerto Rico (Figure 17).

**Figure 17. Third-Party Solar PPA Legality**



Source: NCCETC<sup>32</sup>

Note: In February 2016, the Kansas Department of Revenue ruled that only a utility can sell power to a residential customer.<sup>33</sup>

## Legal Issues

Although third-party PPAs have been successful in many states, other states have regulations that do not allow third-party PPA's. In most of these states, selling electricity via a solar PPA would mean the entity would be regulated as a "public utility," effectively preventing the financing option.

## 2015 Policy Action

In 2015 there was a push to expand third-party ownership financing models in southeastern states (Figure 18). Bills legalizing third-party PPAs were proposed in Georgia, North Carolina, and Florida, with only Georgia enacting legislation. The success in Georgia was the biggest development for third-party PPAs in 2015.

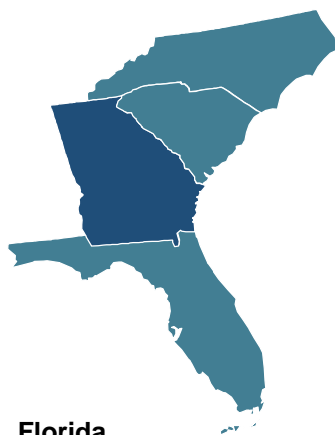
Both bills introduced in North Carolina and Florida failed to gain sufficient support to earn a vote in a legislative chamber. Despite the legislative efforts failing in both states, parties have sought to legalize third-party PPAs via other means. In Florida, the group Floridians for Solar Choice launched a ballot initiative to amend the state's constitution. This effort was countered by a utility-backed solar ballot initiative. In North Carolina, the local non-profit NC WARN signed a solar PPA with a church in Greensboro and requested that the NC Public Utility Commission issue a declaratory ruling allowing the arrangement to the objection of Duke Energy.

Similarly, in 2015, Vivint Solar filed with state regulators in Delaware and New Hampshire for declaratory orders to clarifying that they would be exempt from "public utility" status in offering solar PPAs in the respective states. Notably, solar companies in both states already finance solar systems via third-party PPAs.

**Figure 18. Policy Action in 2015 on Third-Party Solar PPA Legality**

### North Carolina

A nonprofit organization petitioned to legalize third-party solar PPAs. H.B. 245, which would legalize third-party solar PPAs, did not make it out of Committee.



### South Carolina

Net metering and solar leasing, but not third-party PPAs, became options

### Georgia

H.B. 57 legalized third-party solar PPAs in Georgia starting July 2015.

### Florida

A campaign to legalize third-party solar PPAs via a ballot initiative has been postponed to the 2018 elections. S.B. 1118, which would legalize third-party solar PPAs for commercial entities, did not make it out of Committee.



### Delaware and New Hampshire

Vivint Solar petitioned state regulators in Delaware and New Hampshire for declaratory rulings clarifying that it would not be regulated as a public utility by offering third-party solar PPAs and leases to residential customers.

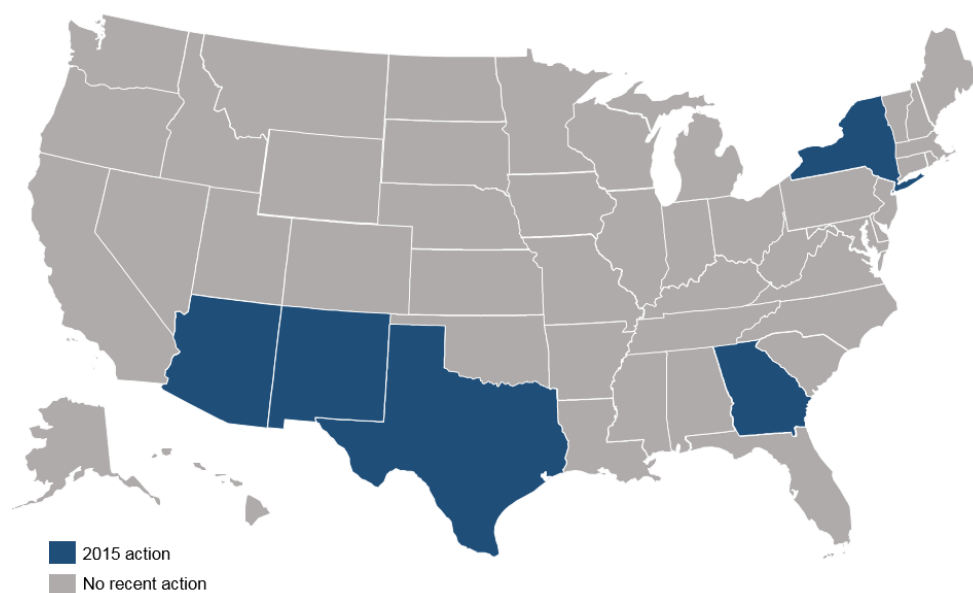
## UTILITY-LED ROOFTOP SOLAR PROGRAMS

### Key Takeaways:

- Utility-led rooftop solar is an emerging business model, with several pilot programs in development.
- In 2015, five states had action on utility-led rooftop solar policies or programs.

In a utility-led rooftop solar program, a utility typically pays the upfront cost of a solar installation located at a customer site and compensates customers for hosting a solar PV system in the form of a flat monthly payment, exemption from future increases in electricity costs, or through another type of incentive.<sup>34</sup> Several utility-led rooftop solar programs began in 2015. Utilities in four states implemented or announced plans to develop programs for utility ownership of customer-sited rooftop solar systems, and regulators in New Mexico are weighing the pros and cons of utility-ownership of distributed generation more broadly (Figure 19).

**Figure 19.** Utility-Led Rooftop Solar Programs and Policy Action in 2015



Utility-led rooftop solar programs provide an opportunity for utilities to participate directly in the distributed solar market and to respond to customer demand for rooftop solar. Fifty-nine percent of utility executives surveyed by *Utility Dive* thought their utility should build a business model around owning and operating DERs and rate-basing these investments, and 29% thought it should be done through a regulated subsidiary.<sup>35</sup> (Only 5% thought their utility should not have a business model around DERs.) However, specific utility-led rooftop solar programs have been criticized by some as having an unfair competitive advantage and favoring utility-led options over traditional installer offerings.<sup>36</sup>

The market context and program design of utility-led rooftop solar programs has differed.

## Arizona

Two of Arizona's major utilities, Arizona Public Service (APS) and Tucson Electric Power (TEP) first announced plans to implement utility-led solar programs in 2014. Arizona's utility-led programs were announced in the context of a relatively stronger and more mature solar market compared to most other states and contemporaneous to a highly contentious state policy battle over additional charges for solar customers.

## Georgia

Georgia's residential solar market is nascent, with only 367 residential solar customers as of November 2015.<sup>37</sup> In 2015, the Georgia state legislature approved third-party ownership options. In response, Georgia Power announced plans to offer third-party owned and financed distributed solar systems through its unregulated affiliate. This approach differed from other states, in which regulated utilities implemented their own rooftop solar programs.

## New York

New York State is in the midst of a large-scale electricity industry planning effort, called Reforming Energy Vision (REV). As a REV pilot demonstration project, Con Edison (the utility serving New York City) announced plans to develop a network of combined solar and storage projects, which would be owned by the utility. These residential solar plus storage installations are intended to be deployed as virtual power plants. Residential customers will also pay a small fee for back-up power provided by the battery system in the event of an outage.

## Texas

CPS Energy, the municipal utility serving San Antonio, announced plans to operate a utility-led solar program in May 2015, and has since entered the implementation phase. CPS' program is the only utility-led rooftop solar initiative in a municipal utility context.

# Q4 QUARTERLY REPORT

## OVERVIEW OF Q4 POLICY CHANGES

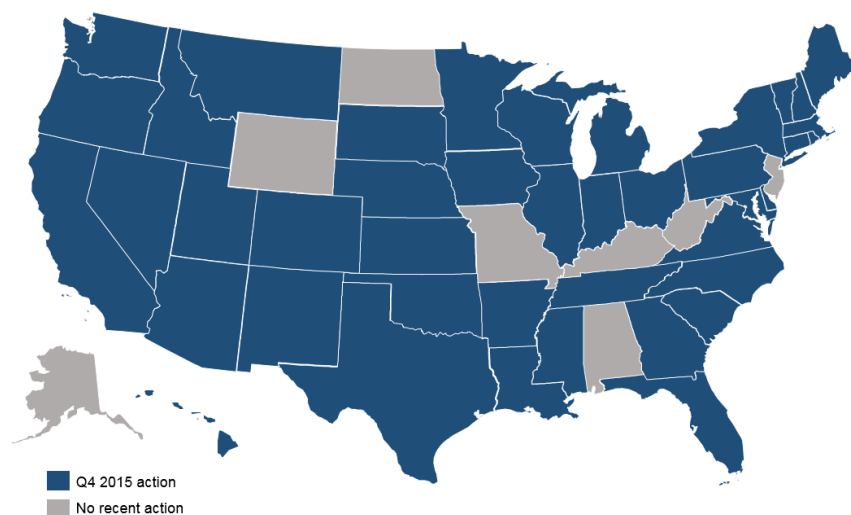
Table 3 provides a summary of state actions related to net metering, rate design, or solar ownership during Q4 2015. Of the 99 actions catalogued, the most common were related to fixed charge increases (34), followed by net metering policy changes (25), solar charges (16), and state solar valuation or net metering studies (9). The actions occurred across 42 states in Q4 2015 (Figure 20). Box 2 highlights some of the key trends and actions of Q4 2015, described in greater detail in the following sections.

**Table 3. Summary of Policy Actions (Q4 2015)**

Policy Type	# of Actions	% by Type	# of States
Residential fixed charge increase	35	34%	24
Net metering	28	27%	17
Residential solar charge	16	16%	11
Solar valuation or net metering study	9	9%	9
Community solar	6	6%	6
Third-party ownership of solar	5	5%	5
Utility-led rooftop PV programs	4	4%	4
<b>Total</b>	<b>103</b>	<b>100%</b>	<b>42 States</b>

Note: Percentages do not add up to 100% due to rounding. The “# of States/ Districts” total is not the sum of the rows, as some states have multiple actions.

**Figure 20. Action on Net Metering, Rate Design, & Solar Ownership Policies (Q4 2015)**



## Box 2. Top Five State Solar Policy Developments in Q4 2015

### **Nevada ends retail rate net metering**

The Nevada Public Utilities Commission released an order ending the existing net metering policy. Solar generation exported to the grid will be reduced in phases, eventually compensated at the average annual wholesale rate in 2028. This represents a decrease in compensation of approximately \$0.10 per kWh.<sup>38</sup> The new policy will apply to both existing and new solar customers.

### **Louisiana regulators propose new rules to succeed net metering policy**

Two utilities in Louisiana exceeded their aggregate net metering cap of 0.5% of peak demand and are no longer offering net metering. Entergy opted to shift solar customers to a buy-all, sell-all model for future distributed generation. SWEPCO is offering new solar customers a net billing arrangement. In December, the Public Service Commission Staff proposed new rules that would replace net metering with net billing, compensating exports to the grid at the avoided cost rate. The proposed rules do not state that existing net metering customers would be eligible for grandfathering once a utility reaches its aggregate cap.

### **Hawaii moves from net metering to grid- or self-supply options**

The Hawaii Public Utilities Commission ended its net metering program in October. The islands have seen solar growth at a much higher rate than anywhere in the country. Customers already net metering will continue, but future customers with self-generation will have to export under either a grid-supply supply option with credits based on a utility avoided cost determined by the Hawaii Public Service Commission, or a self-supply option, which will receive no credit for grid exports.

### **New York launches community net metering pilot**

In October 2015, New York began the pilot phase of its community net metering program. The pilot is scheduled to run until April 2016, and targets community solar installations in areas with the greatest benefit to the grid and ability to serve low-income customers. The second phase will enable installations to take place across the state.

### **More utilities propose solar charges and fees**

During Q4 2015, 16 utilities proposed added charges or fees on distributed generation. Several of these proposals were rejected, but four were approved.

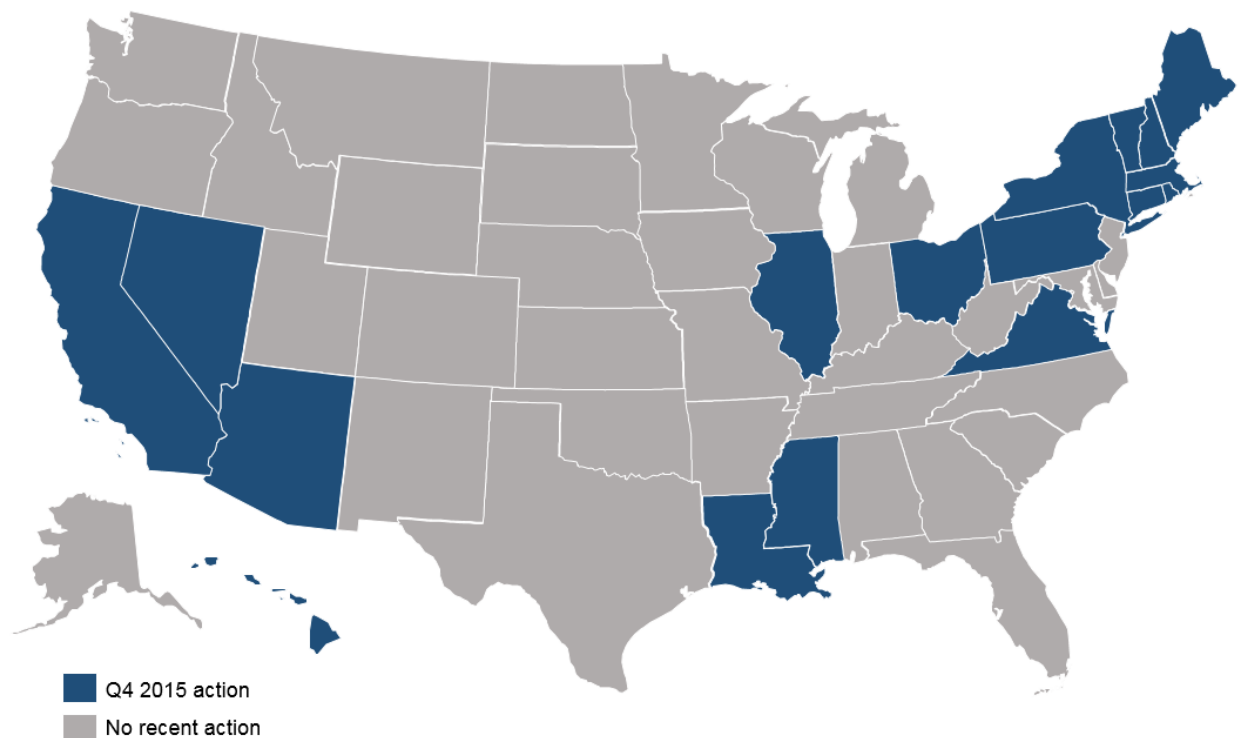


## NET METERING POLICY CHANGES

In Q4, there were 28 actions in 17 states related to net metering policies, excluding ongoing studies or investigations into the value of solar or net metering (see the following section for details).

Most notable in Q4 were decisions in Hawaii and Nevada to replace net metering policies. In Hawaii, new distributed solar customers must choose between a self-supply and grid-supply tariff. Nevada regulators approved a net billing policy as a successor tariff to the state's net metering policy. Under the new tariff, which applies to both existing and new distributed solar customers, electricity exported to the grid during the billing period will be compensated at a rate less than the retail rate and ratcheted down to the average annual wholesale rate by 2028. Subsequently, several national solar developers announced they are ceasing operations in Nevada.<sup>39</sup>

**Figure 21.** Action on Net Metering Policies (Q4 2015)



California regulators finalized a successor tariff that will apply to new solar customers once their utility reaches its net metering cap. The draft order issued in December and approved in January allows new solar customers to earn retail rate compensation for grid exports but requires them to pay a one-time interconnection fee in addition to non-bypassable charges for all grid imports and shift to time-of-use rates. This decision will be discussed in greater detail in the Q1 2016 edition of *The 50 States of Solar*.

In Q4 2015, utilities in a number of states approached or reached legislatively-set net metering aggregate caps. Two investor-owned utilities in Louisiana reached their net metering caps and are implementing alternative compensation mechanisms for new solar customers; Entergy Louisiana is shifting to a buy-all, sell-all model for new customers, and Southwestern Electric Power Company is shifting to net billing with all exported energy credited at the avoided cost rate. Some utilities in New Hampshire, Vermont, Massachusetts, and New York also reached their aggregate caps, and policy discussions are underway in these states to increase the caps, shift to a post-net-metering policy framework, or both.

### Box 3. A Note on Net Metering Terminology

**Net excess generation** includes changes to how utilities compensate customers for excess electricity they export to the grid. An **aggregate cap** refers to the maximum limit for net-metered capacity allowed participating in a state's or a utility's net metering program, whereas the **system size limits** are capacity limits allowed for individual systems to net meter. **Aggregate net metering** refers to a program design allowing one or more customers to aggregate multiple electric meters for the purpose of allocating net metering credits. **Virtual net metering** is a type of aggregate net metering where credits from one solar PV system are used to offset multiple customers' electricity bills. **Meter aggregation** is another type of aggregate net metering in which a single customer may offset electrical use from multiple meters on his or her property.<sup>40</sup> **REC ownership** refers to rules that specify whether renewable energy certificates/credits generated by a net-metered system shall accrue to the solar PV system owner or the utility. **Net metering rules** encompass other policy changes to net metering not covered by any of the other categories.

**Table 4. Updates on Net Metering Policies (Q4 2015)**

State	Type of Change	Description	Source
AZ	Net Excess Generation	Tucson Electric Power (TEP) filed a general rate case in November 2015 that includes changes to its net metering tariff. The net metering proposal was originally filed separately in Docket <a href="#">E-01933A-15-0100</a> , but moved to a full rate case by order of the Arizona Corporation Commission. TEP's proposed net metering rider does not allow for the full one-to-one offsetting of generation with consumption. Instead, any exported energy is credited at a utility-scale renewable energy purchase rate. The excess generation credit will be applied to the customer's bill for the same billing period, and may be carried over to the next billing period if the credit is greater than the billable amount. The ACC has set a procedural schedule in which direct testimony must be filed by June 2016, with a hearing in August.	Docket No. <a href="#">E-01933A-15-0322</a>
	Net Excess Generation	UNS Electric filed a general rate case in May 2015 that includes changes to its net metering tariff. The net metering proposal was originally filed separately in Docket <a href="#">E-04204A-15-0099</a> , but moved to a full rate case by order of the Arizona Corporation Commission. UNS's proposed net metering rider does not allow for the full one-to-one offsetting of generation with consumption. Instead, any exported energy is credited at a utility-scale renewable energy purchase rate. The excess generation credit will be applied to the customer's bill for the same billing period, and may be carried over to the next billing period if the credit is greater than the billable amount. A hearing is scheduled for March 2016. A hearing is scheduled for March 2016.	<a href="#">Docket No. E-04204A-15-0142</a>
CA	Net Metering Rules, Aggregate Cap, Net Excess Generation	In December 2015, Administrative Law Judge Anne E. Simon issued a proposed decision on successor net metering tariffs for California IOUs pursuant to A.B. 327. A net metering successor tariff will take effect for the three IOUs on July 1, 2017, or when 5% of the sum of non-coincident customer peak demand is reached for the IOU, with translates to an installed net-metered capacity of 2,409 MW (Pacific Gas and Electric), 2,240 MW (Southern California Edison), and 617 MW (San Diego Gas and Electric). The successor tariff will not apply to customers entering into a net metering agreement before the existing cap or end date is reached.  Under the proposed decision, net-metered customers on the successor tariff would: <ul style="list-style-type: none"> <li>No longer earn full retail rate compensation for electricity exported to the grid, as they would be required to pay all non-bypassable charges (an additional \$0.02-\$0.05/kWh) for each kWh of electricity they consume from the grid</li> </ul>	<a href="#">Docket No. R1407002</a>  <a href="#">Proposed Decision</a>

		<ul style="list-style-type: none"> <li>• Stay on the successor tariff as it existed at the time they interconnected for a period of 20 years</li> <li>• Pay a one-time interconnection fee</li> <li>• Not pay fixed charges, demand charges, or grid access fees that differ from all other residential customers</li> <li>• Be required to go on a TOU rate for systems interconnected in 2018 and thereafter</li> </ul> <p>In January 2016, California voted to uphold retail rate net metering. The final decision will be covered in further detail in the Q1 2016 report.</p>	
CT	Net Metering Rules, Net Excess Generation	In December 2015, the Public Utilities Regulatory Authority (PURA) released its final decision on the issue of credit banking under the virtual net metering program. Previously, virtual net metering credits that were not used to offset a month's bill were classified as unassigned, aggregated over a calendar year, and returned to the host account as a utility bill credit once per year. This policy was unfavorable for host customers who had excess generation in the summer months. In its final order, PURA requires the credits to be banked on a month to month basis to each of the beneficiary accounts in proportion to their historical consumption factor. The rule will be retroactively effective to July 21, 2014.	<a href="#">Docket No. 15-09-03</a>
HI	Net Metering Rules, Net Excess Generation	<p>In October 2015, the Public Utilities Commission issued an order ending net metering. Existing customers were grandfathered into net metering arrangements, but new residential customer generators must choose either a self-supply or a grid-supply option. The order also requires new time-of-use tariffs. Solar advocates led by The Alliance for Solar Choice petitioned unsuccessfully for an injunction of the order on procedural grounds.</p> <p>The grid-supply option allows bill credits for exported energy ranging from \$0.15/kWh to \$0.27/kWh depending on the utility service territory. Monthly net excess generation receives no credit and does not carry over to the next month.</p> <p>The customer self-supply option does not allow for export of electricity to the grid.</p>	<a href="#">Docket No. 2014-0192</a>  <a href="#">Order No. 33258</a>  <a href="#">HECO Website</a>
IL	Net Metering Rules, Meter Aggregation	In April 2015, the Illinois Commerce Commission (ICC) initiated a rulemaking proceeding on the state's net metering rules. The proposed rule adds new, clarifying definitions, enables web-based electronic application procedures, and requires a case-by-case consideration of meter aggregation by the utility and an explanation by the utility to the ICC if the request is denied. The proposed rules also align ICC net metering rules with previously enacted legislation. In November 2015, the ICC submitted its Second Notice on the rulemaking to the	<a href="#">Docket No. 15-0273</a>

		Joint Committee on Administrative Rules (JCAR) for review, after which the rule can be adopted if JCAR does not issue an objection.	
LA	Net Metering Rules, Aggregate Cap, Net Excess Generation	In December 2015, the Louisiana Public Service Commission initiated a two-phase rulemaking proceeding to (1) modify the current net metering rules to address compensation for new solar customers once a utility reaches the net metering cap, and (2) examine appropriate changes to solar policies. Under the Commission Staff's proposed rules (attached to the notice of proposed rulemaking), once a utility reaches 0.5% of its monthly retail peak load, any electricity exported to the grid by a net-metered customer would be credited at the avoided cost rate. The rule did not provide a grandfathering provision for existing net metering customers.	<a href="#">Docket No. R-33929</a>
	Aggregate Cap	Beginning January 1, 2016, Entergy Louisiana will no longer offer net metering to its customers because it has exceeded the 0.5% aggregate cap. New customer-generators will be able to sell electricity through a buy-all, sell-all agreement at the avoided cost rate.	<a href="#">Docket No. R-31417</a>
	Aggregate Cap	Beginning February 1, 2016, Southwestern Electric Power Company will no longer offer net metering to its customers because it has exceeded the 0.5% aggregate cap. New customer-generators will be able to participate in a net billing arrangement in which customers self-consume electricity produced by their system and receive a credit at the utility's average avoided cost rate for any electricity exported to the grid.	<a href="#">Docket No. R-31417</a>
MA	Net Metering Rules	In June 2015, SolarCity submitted a request to the Department of Public Utilities (DPU) for an advisory ruling on the ability of a combined solar and storage project to net meter under current Massachusetts statutes and regulations. SolarCity withdrew the petition in July 2015, because they were able to work with the net metering administrator to submit an application. However, National Grid submitted comments requesting the DPU to still address this question, as the company is unsure whether combined solar and storage projects are eligible net metering facilities. The DPU did not address the question and closed the docket in November 2015.	<a href="#">Docket No. 15-77</a>
	Aggregate Cap, Net Excess Generation	In July 2015, the Senate passed a bill that raises the net metering aggregate cap to 1,600 MW and eliminates the cap altogether once 1,600 MW of capacity is reached. This bill also permits the DPU to adjust the distribution portion of the net metering credit for systems consuming less than 67% of their generation on-site beginning in 2017. The House and Senate did not concur on amendments proposed during Q4, and the Senate substituted a new text for the bill, now filed as S. 2058.	<a href="#">S.B. 1979</a> <a href="#">S.B. 2058</a>

	Aggregate Cap, Net Excess Generation	In November 2015, the House approved changes to H.B. 3854. This bill would increase the aggregate net metering cap by 2% for public and private projects, and reduce the NEG rate for large-scale solar to the wholesale rate. This bill also authorizes utilities to institute a minimum bill.	<a href="#">H.B. 3854</a>
ME	Net Metering Rules, Net Excess Generation	The Maine Public Utilities Commission opened a docket in July 2015, pursuant to LD 1263, to investigate the potential for an alternative to net metering in the state. The Commission convened a stakeholder group to discuss this alternative in Q3 2015 and held work sessions throughout Q4 2015. The final work session is scheduled for January 6, 2016, and a report is due to the legislature by January 30, 2016.	<a href="#">Docket No. 2015-00218</a>
MS	Net Metering Rules, Aggregate Cap, System Size Limits, Net Excess Generation	In December 2015, the MS Public Service Commission adopted final net metering rules. The rules suggest that they will be implemented as a net billing policy, rather than a true net metering policy. Customer-generators will be able to receive full retail value for energy consumed on-site, but will receive the utility's avoided cost rate plus a "Non-Quantifiable Expected Benefits Adder" of 2.5 cents per kWh for all energy exported to the grid. After three years, customers will receive only the utility's avoided cost rate for exported energy. The rules also include a Low-Income Benefits Adder of 2 cents per kWh for the first qualifying low-income customers to participate. Excess credits may be carried forward indefinitely. The aggregate cap is 3% of each utility's current total distribution system peak demand, with a 20 kW system capacity limit for residential customers and a 2 MW limit for non-residential customers. Leased systems are also eligible, but systems operating under a third-party power purchase agreement are not. Renewable energy certificates are owned by the utility if the customer benefits from the "Non-Quantifiable Expected Benefits Adder."	<a href="#">Docket No. 2011-AD-002</a>
NH	Net Metering Rules	In July 2015, the New Hampshire Public Utilities Commission (PUC) began an investigation into the queue process for net-metered customer-generators, following a recommendation from the staff of the Sustainable Energy Division of the PUC. The PUC issued a proposed process in December 2015.	<a href="#">Docket No. DE 15-271</a>
NV	Aggregate Cap, Net Metering Rules	In December 2015, the Nevada Public Utilities Commission approved a successor tariff for net metering customers of NV Energy (in both the Nevada Power and Sierra Pacific Power territories). The new tariffs include an increased monthly service charge and are structured as net billing: rather than allowing for full one-to-one offsetting of generation with consumption, any exported energy is credited at the avoided cost rate. The excess generation credit will be applied to the customer's bill for the same billing period, and the credit may be carried	<a href="#">Dockets No. 15-07041 and 15-07042</a>

		over to the next billing period if the credit is greater than the billable amount. The new tariffs apply to existing as well as new customers.	
NY	Net Excess Generation	In September 2015, several stakeholders petitioned the New York State Public Service Commission to change the way the true-up date for net excess generation credits is currently assigned to residential net-metered PV customers. Net-metered customers currently have a one-time option to select the date on which their excess credits are cashed out each year at the wholesale rate.	<a href="#">Docket No. 15-E-0572</a>
	Aggregate Cap	In October 2015, the New York Public Service Commission (PSC) denied the Orange and Rockland Utility's petition to cease offering net metering once the 6% net metering aggregate cap was met. The PSC ordered all New York utilities to continue accepting applications regardless of the cap until the issue of net metering is ultimately addressed as a part of the New York Reforming the Energy Vision process. In November 2015, the IOUs in New York petitioned before the PSC for rehearing of the order. The utilities argued that the statute provides the PSC only limited authority to increase the net metering cap, not eliminate it altogether. The PSC subsequently filed a Notice of Proposed Rulemaking.	<a href="#">Docket No. 15-01526/15-E-0407</a>
	Remote Net Metering	On October 16, 2015 the New York Public Service Commission issued an order addressing two of the issues raised regarding remote net metering. Under "one host limitation," the utilities do not allow customers to assign multiple host accounts (site of generation) to one satellite account (remote site), and under "net metering limitation" the utilities prohibit interconnection of net metering generation at sites designated as satellite accounts. The Commission ordered the utilities to (1) allow customers to assign credits from multiple host accounts to one satellite account such that the sum of the credits do not exceed 2 MW per satellite account; and (2) permit the satellite accounts with less than 2 MW in host account credits to interconnect on-site generation.	<a href="#">Docket No. 15-01056/15-E-0267</a>
OH	Net Metering Rules	Net metering rules have been before the Ohio Supreme Court since July 2014. AEP Ohio alleges that the net metering rules issued by the Public Utilities Commission of Ohio (PUCO) illegally require payments to be made to customer-generators for electricity not generated by the company. PUCO submitted a joint status report, and the court extended the briefing schedule for a sixth time in December 2015.	<a href="#">Ohio Supreme Court Case 2014-1290</a>  "Net metering in the spotlight" <sup>41</sup>
	Net Metering Rules, System Size, Net Excess Generation	The Public Utilities Commission of Ohio proposed new net metering rules in November 2015. The proposed rules stipulate that excess generation credits are carried forward for 36 months. Utilities are no longer required to pay out a monetary sum for net excess generation, but	<a href="#">Docket No. 12-2050-EL-ORD</a>

		they “may offer a net metering contract at any price, rate, or manner of credit for excess generation.” System sizes are limited to 125% of annual demand. Additionally, the new rules include special provisions for hospitals that net meter.	
PA	System Size	In April 2015, the Pennsylvania Public Utilities Commission (PUC) proposed changing the net metering system size limit from 110% to 200% of historical load for on-site generation. The PUC ended public comment on the rules at the end of May. The rule was pending at the end of Q4.	<a href="#">Docket No. L-2014-2404361</a>
RI	Net Metering Rules	S.B.0081, enacted in June 2015, requires the Rhode Island Public Utilities Commission (PUC) to consider rate design and cost allocation among rate classes, taking into account the effects of net metering and increasing distributed energy resources. Electric utilities are required to file a revenue-neutral allocated cost-of-service study for all rate classes and propose new rates for all customers in each rate class. The PUC can choose to consider any reasonable rate design option, including fixed charges, minimum monthly charges, demand charges, volumetric charges, or any combination thereof. The PUC shall issue an order before March 2016, and the new rates would take effect after April 2016.	<a href="#">S.B. 0081</a> , <a href="#">Docket No. 4545</a>
VA	Net Metering Rules, System Size	In November 2015, the Virginia State Corporation Commission adopted a final rule amending the state’s net metering rules pursuant to a law passed in 2015 that, among other changes, (1) increases system size eligible for net metering for non-residential customers from 500 kW to 1 MW, (2) limits the capacity of a generation facility to the expected annual energy consumption, and (3) clarifies requirements regarding a participant’s obligation to bear the cost of equipment required for interconnection.	<a href="#">Docket No. PUE-2015-00057</a>
VT	Net Metering Rules, Net Excess Generation, Aggregate Cap	In December 2015, the Vermont Public Service Board released new draft net metering rules. The proposed rules would provide siting incentive credits of \$0.02 per kWh for excess generation produced by systems on structures with a primary purpose other than generating electricity, on brownfields, landfills, over parking lots, or in the disturbed portion of gravel pits. In compliance with H.B. 40, passed in June 2015, RECs will be transferred to the utility unless the customer elects to keep them. If the utility owns a customer’s RECs, the customer will receive an additional credit of \$0.03 per kWh of excess generation; if the customer retains ownership of RECs, excess generation will be credited at the retail rate. The rules also leave the aggregate cap intentionally blank and give utilities the authority to require a customer charge to cover fixed costs. The utility has the option of allowing a customer’s bill credits to apply toward this charge or not.	<a href="#">Draft Net Metering Rules</a>



Net Metering  
Rules,  
Aggregate  
Cap

In November 2015, Green Mountain Power (GMP) received sufficient interconnection requests to exceed the aggregate cap. GMP requested permission from the Public Service Board to offer net metering above this cap and is awaiting a decision. In the meantime, GMP notified the Board that they will reject applications above 15 kW until the Board makes a decision on their request to continue offering net metering above the cap. The Board issued an order stating that they will suspend review of applications above 15 kW in GMP service territory until a decision is reached.

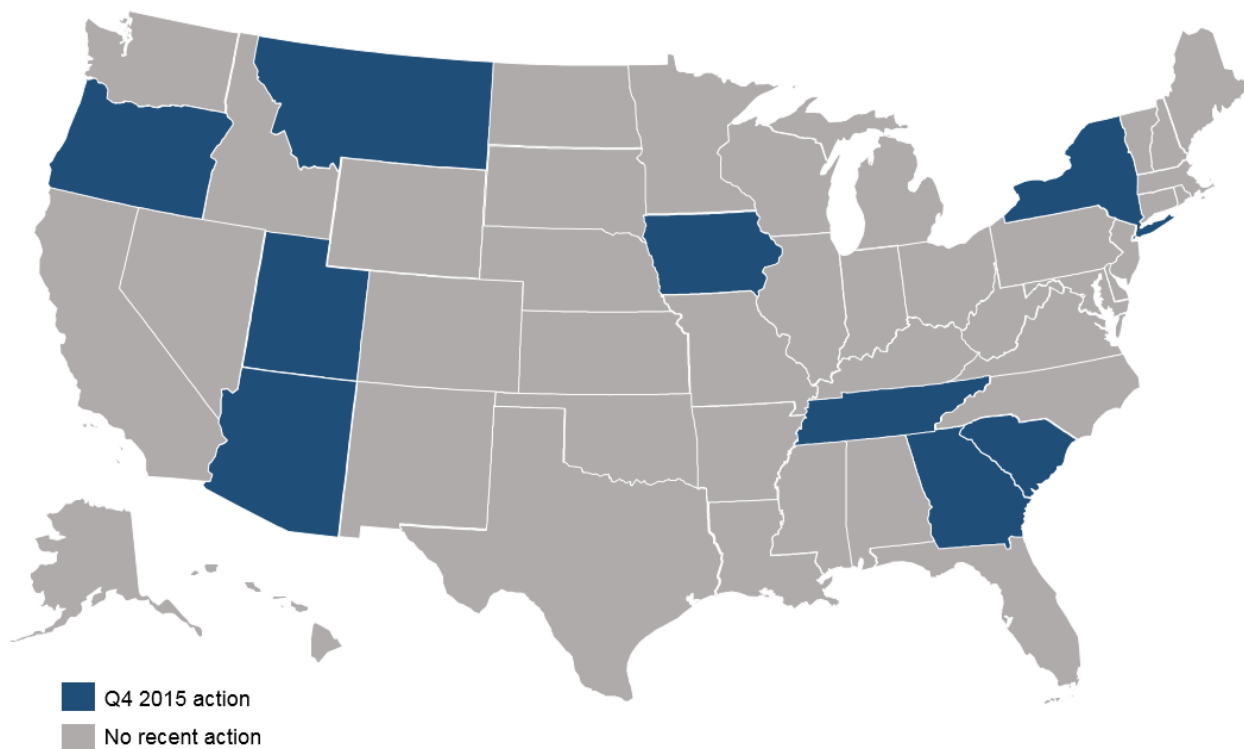
[Order Staying  
Review of  
Certain Net  
Metering  
Applications](#)

[Docket No.  
8652:  
Procedural  
Order](#)

## DISTRIBUTED SOLAR VALUATION STUDIES

In Q4, there were nine states formally examining the value of solar or distributed generation, their costs and benefits, net metering policies, or potential cost-shifts between solar and non-solar customers. In a departure from more typical cost-benefit analysis, the Tennessee Valley Authority convened a stakeholder group to discuss the value of distributed generation in 2014. The group's work concluded in Q4 2015, and resulted in a document that offers analysis of the differing valuation methodologies proposed by stakeholders. Other studies are ongoing, and results from studies in Georgia and Montana are expected in Q1 2016.

**Figure 22.** Action on Distributed Solar Valuation and Net Metering Studies (Q4 2015)



**Table 5. Updates on Distributed Solar Valuation and Net Metering Studies (Q4 2015)**

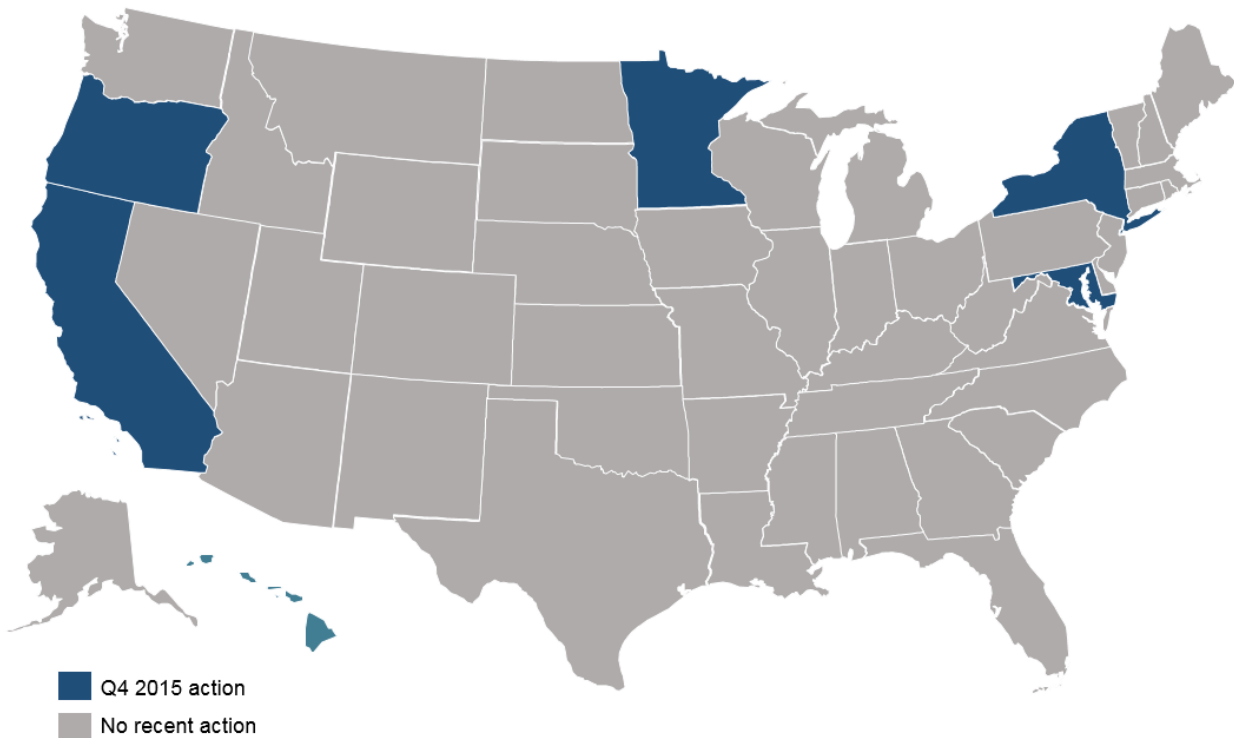
State	Description	Source
AZ	The Arizona Corporation Commission (ACC) opened a generic docket to evaluate net metering issues in 2013. In response to Arizona Public Service's request to re-examine net metering cost shifts, the ACC ruled in October 2015 that issues of cost of service <i>and</i> the benefits of distributed solar should be evaluated in the generic docket. The evidentiary hearing is scheduled for April 2016, with direct testimony due by the end of February. All Arizona electric utilities were joined as parties to the docket.	<a href="#">Docket No. E-0000J-14-0023</a>
GA	As part of Georgia's 2016 integrated resource planning process, the Georgia Public Service Commission has engaged stakeholders in a process to explore the valuation of distributed renewable energy. A draft report was made available in November that outlines major areas of agreement and disagreement among participating parties. A final report is expected in Q1 2016.	<a href="#">Docket No. 39732</a> <a href="#">Draft Report</a>
IA	In January 2014, the Iowa Utilities Board (IUB) issued an order commencing an inquiry into issues surrounding DG, including possible changes to net metering and interconnection rules. In October 2015, the IUB declined to issue a policy goal on distributed renewable generation and decided against a cost-benefit analysis at this time due to the relatively small amount of DG in Iowa presently. Instead, the IUB required Iowa's two IOUs, MidAmerican and Interstate Power and Light, to propose pilot projects on distributed generation in a Preliminary Implementation Plan within 90 days to gather data on issues that potentially include net metering system size limits and net excess generation credits. The board will consider changes to DG rate design in future meetings, including the implementation of a demand charge by MidAmerican on DG customers.	<a href="#">Docket No. NOI-2014-0001</a>
MT	Senate Joint Resolution 12, passed in the 2015 legislative session, requires the Montana Legislature's Energy and Telecommunications Interim Committee to study the costs and benefits of net metering. The Committee is currently in the data gathering phases of the study and will meet again in January 2016 to draw conclusions from submissions it has received and make a recommendation to the Legislature.	<a href="#">Energy and Telecommunications Interim Committee</a>
NY	On October 2015, the NY PSC released Distributed System Implementation Plan Guidance document proposed by the Department of Public Service Staff. The proposal includes each utility to file their assessments addressing their current system and changes required to implement REV policies and a joint utilities assessment. The Commission is accepting public comments on the proposal.	<a href="#">Docket No. 14-M-0101</a> <a href="#">Staff Proposal on DSIP</a>
OR	The Public Utility Commission of Oregon (PUC) opened a docket in January 2015 to determine the resource value of solar. The PUC will use the results of the investigation in reports to the legislature under H.B. 2893 (2013) and H.B. 2941 (2015) if results are ready by those statutory deadlines. The investigation will include three	<a href="#">Docket No. UM 1716</a>

	<p>aspects: the resource value of solar (RVOS), net metering cost shifts, and reliability impacts. There will be three rounds of testimony and an evidentiary hearing starting in June 2016 to determine the RVOS. Workshops on cost shifts were held in November and December, with parties agreeing to hold one additional workshop before beginning an evidentiary phase, recommended to be concurrent with the evidentiary phase of the RVOS phase. A workshop on reliability impacts will be held in January 2016.</p>	
SC	<p>In December 2015, the South Carolina Public Service Commission published a report regarding the cost of its voluntary distributed energy program pursuant to SC Code Section 58-27-1050.</p>	<p><a href="#">South Carolina Act 236 Cost Shift and Cost of Service Analysis</a></p>
TN	<p>In the spring of 2014, the Tennessee Valley Authority (TVA) convened a Distributed Generation – Integrated Value stakeholder group. The group released a final report in October 2015. Notably, the report does not assert a final integrated value but instead makes distinctions regarding the stakeholder consensus of the quality of methods used to derive actionable values for various DG components and the stakeholder consensus on the relevance of various DG components to public service commission processes.</p>	<p><a href="#">TVA Website</a></p>
UT	<p>In August 2014, the Utah Public Service Commission (PSC) opened a docket to review the costs and benefits of Rocky Mountain Power’s net metering program. The PSC issued an order in early November accepting a framework for assessing net metering costs and benefits. The framework will utilize a comparison between a cost of service study assuming no net metering customers and the results of a cost of service study for net metering customers. The utility must file the two studies no later than the date it files its next general rate case. The PSC rejected a petition for clarification and review or rehearing from a group of solar advocates and companies in December.</p>	<p><a href="#">Docket No. 14-035-114</a></p>

## COMMUNITY SOLAR POLICY

Six states acted on policies enabling third-party community solar in Q4. Community solar programs are particularly appealing to policymakers looking to see solar policy benefits passed along to low to moderate-income ratepayers and ratepayers that rent or otherwise cannot install solar where they live.

**Figure 23.** Action on Community Solar Policy (Q4 2015)



### Box 4. What is Community Solar?

**Community solar** refers to a voluntary program for customers where a solar PV system “provides power and/or financial benefits to, or is owned by, multiple community members.”<sup>42</sup> While some community solar projects share similarities with utility-scale solar projects (e.g., large in size, located off-site from consumption, ground-mounted systems, utility-side of the meter), this report treats it as a type of distributed solar, as it is community-focused and allows residential customer participation.

The White House hosted a National Community Solar Summit in November with “68 cities, states and businesses working together to increase access to solar for all Americans.” The event brought together leaders in community solar to share best practices, develop new financing arrangements and business models, create new approaches to customer acquisition and outreach, and engage multifamily dwelling units.

In Minnesota, a revised community solar garden tariff was filed by Northern States Power. New York launched its Community Solar program and final rules in October. The first phase of the program goes through May 2016 and allows for projects up to 2 MW in capacity to be net metered to participants in the same load zone with at least 1 MWh of annual output. Phase one is limited to community solar projects that will be located in specific “opportunity zones” and have a minimum of 20% low-income customer participation.

Maryland took public comments on the launch of its own community solar program slated to start in May 2016. Oregon also opened a docket seeking comments on a community solar program design proposed by the PUC.

**Table 6. Updates on Community Solar Policies (Q4 2015)**

State	Description	Source
CA	Pursuant to S.B. 43 of 2013, the California Public Utilities Commission (CPUC) issued a decision in January 2015 outlining steps for IOUs to implement the 600-MW Green Tariff Shared Renewables (GTSR) Program. In Q4 2015, the process remained in Phase IV. Parties submitted comments on both Track A and B issues, including the appropriateness of using the Renewable Auction Mechanism to procure Enhanced Community Renewables projects.	<a href="#">Docket No. A1201008</a>
HI	S.B. 2010, enacted May 2015, allows any person or entity to “own or operate an eligible community-based renewable energy project.” The bill requires utilities to file community renewable energy tariffs with the Hawaii Public Utilities Commission (PUC) by October 1, 2015.  In Q4 all of Hawaii’s major utilities proposed new community-based renewable energy tariffs.	<a href="#">S.B. 2010 Order No. 33086</a>  Docket No. 2015-0382
MD	In November 2015 the MD Public Service Commission published its draft regulations on how the Community Solar Pilot Program would be implemented in the State. The pilot community solar program was enacted as by the state legislature in May 2015. Public comments on the proposed regulations are due by December 4, 2015.	<a href="#">Rule Making (RM56)</a>
MN	In December, Northern States Power Company d/b/a Xcel Energy filed revised solar-garden tariffs reflecting the program changes specified by the Minnesota Public Utilities Commission (MPUC) orders from August and December. Written comments are due April 1, 2016, on whether the MPUC should modify the subscriber-bill-credit rate design (e.g., if the MPUC should replace the Applicable Retail Rate with the Value of Solar Rate) and what actions, if any, the MPUC should take to encourage residential, low-income, and minority participation in the community solar program.	<a href="#">Docket No. 13-867</a>
NY	In July 2015, the New York State Public Service Commission issued an order that established community net metering in the state. Implementation of the program is divided into two phases. The first phase of the program began on October 19, 2015 and will last until April 30, 2016. During this period, the projects will be limited to siting distributed generation in areas where it provides the greatest locational benefits to the larger grid and in areas that promote low-income customer participation. The second phase will begin in May 2016, when the community net metering projects will be fully implemented throughout utility service territories. The proceeding continues with the utilities proposing tariffs and other recommendations for implementing the program.	<a href="#">Case 15-E-0082</a>
OR	Pursuant to H.B. 2941, the Public Utility Commission of Oregon (PUC) has opened a docket in order to recommend a community solar program design to the legislature by November 1, 2015. The PUC submitted its report to the legislature in late October. Among other elements, it recommends an initial aggregate capacity cap of 0.5% of 2014 peak load, individual project sizes of 25 kW to 2 MW, and subscription sizes up to a customer's average annual load. It	<a href="#">Docket No. UM 1746</a>

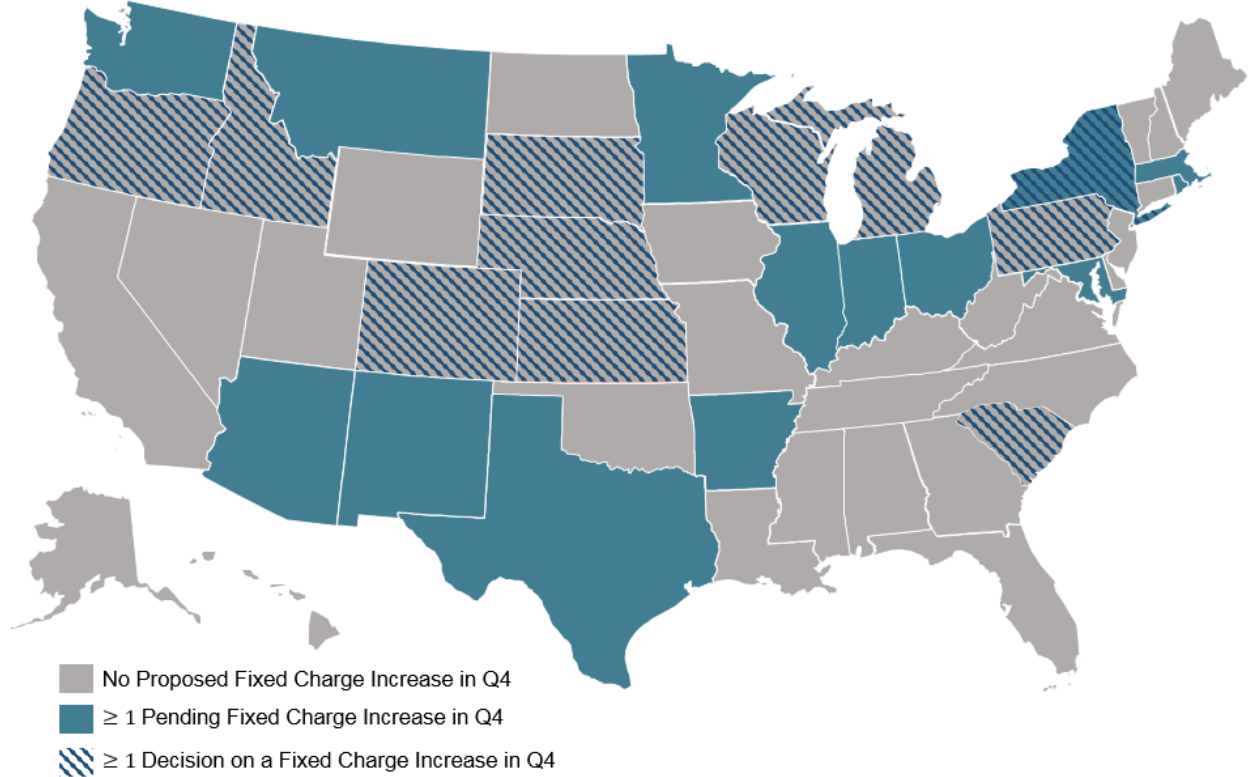
recommends customers receive bill credits to offset home energy use at a rate equal to the resource value of solar (as determined by the PUC), with excess generation credits donated to low income programs at the end of the year. The PUC recommended IOUs be allowed to own and operate projects subject to PUC requirements but that subscribers own the renewable energy credits generated.



## FIXED CHARGES

Thirty-five utilities in 24 states had proposals to increase fixed charges on residential customers pending or decided in Q4 2015. Approved increases in Q4 were all below the requested amount.

**Figure 24.** Proposed Increases to Residential Fixed Charges (Q4 2015)



**Table 7. Updates on Increases to Residential Fixed Charges (Q4 2015)**

State	Utility	Monthly Residential Fixed Charge			Description	Source
		Existing	Proposed	Approved		
AR	Entergy Arkansas	\$6.95	\$9.00	<i>Pending</i>	In April 2015, Entergy Arkansas proposed an increase in its residential monthly fixed charge.	<a href="#">Docket No. 15-015-U</a>
AZ	UniSource Energy Services (UNS Electric)	\$10	\$20	<i>Pending</i>	In May 2015 UniSource Energy Services (UNS) proposed an increase in its residential monthly fixed charge. The rate case also proposes a demand-based rate mandatory for solar customers and changes to its net metering tariff. A hearing is scheduled for March 2016.	<a href="#">Docket No. E-04204A-15-0142</a>
	Tucson Electric Power	\$10	\$20	<i>Pending</i>	In November 2015 Tucson Electric Power (TEP) proposed an increase in its residential monthly fixed charge. The rate case also proposes a demand-based rate mandatory for solar customers and changes to its net metering tariff. A hearing is scheduled for August 2016.	<a href="#">Docket No. E-01933A-15-0322</a>
CO	Colorado Springs Utilities	\$12.52	\$15.24	\$15.24	In August 2015, Colorado Springs Utilities proposed an increase in its residential monthly fixed charge. In December 2015, its board approved the increase.	<a href="#">Residential Rate Sheet</a>
ID	Avista Utilities	\$5.25	\$8.50	\$5.25	In June 2015, Avista Utilities proposed a residential monthly fixed charge increase in its general rate case. In December, the Idaho Public Utilities Commission approved a settlement agreement	<a href="#">Docket No. AVU-15-05</a>

					between Avista and the other parties to the rate case. The settlement keeps fixed charges unchanged at \$5.25/month.	
IL	Illinois	\$5.76	\$12.87	<i>Pending</i>	In Q2 2015, Springfield Water Power and Light Company proposed an increase in its residential monthly fixed charge.	<a href="#">"Springfield officials pitch CWLP electric rate restructuring ..."</a> <sup>43</sup>
IN	Northern Indiana Public Service Company	\$11	\$20	<i>Pending</i>	In October 2015, Northern Indiana Public Service Company proposed an increase in its residential monthly fixed charge.	<a href="#">Docket No. 44688-NONE</a>
	Indianapolis Power and Light	\$6.75 (up to 325 kWh per month) \$11 (>325 kWh per month)	\$11.25 (up to 325 kWh per month) \$17 (>325 kWh per month)	<i>Pending</i>	In December 2014, Indianapolis Power and Light proposed an increase in its residential monthly fixed charge. In November 2015, the Indiana Utility Regulatory Commission issued a proposed order rejecting the increased fixed charge.	<a href="#">Docket No. 44576 - NONE</a>
KS	Kansas City Power and Light	\$10.71	\$19	\$14	In September 2014, Kansas City Power and Light proposed a residential monthly fixed charge increase. In September 2015, the Kansas Corporation Commission approved a non-unanimous partial settlement agreement stipulating a smaller fixed charge increase than originally proposed.	<a href="#">Docket No. 15-KCPE-116-RTS</a>
	Westar Energy	\$12	\$27 or \$50	\$14.50	In March 2015, Westar Energy proposed an increase in its residential monthly fixed charge. In September, the Kansas Corporation Commission approved a settlement agreement that featured a	<a href="#">Docket No. 15-WSEE-115-RTS</a>

					smaller customer charge increase than requested.	
MA	National Grid (Massachusetts Electric Company and Nantucket Electric Company)	\$4	Phase I: \$5.50; Phase II: \$6.00 for customers using 0-250 kWh, \$9.00 for customers using 251-600 kWh, \$15.00 for customers using 601-1,200 kWh, \$20.00 for customers using over 1,200 kWh	<i>Pending</i>	In November 2015, National Grid (MA territories) proposed a two-phased an increase in its residential monthly fixed charge. The Phase I increase will be effective pursuant to the Department of Public Utilities' final order, and the Phase II increase and implementation of a tiered customer charge will be effective no earlier than six months after Phase I changes are effective.	<a href="#">Docket No. 15-155</a>
MD	Baltimore Gas & Electric	\$7.50	\$12	<i>Pending</i>	On Nov 2015, BG&E filed for a fixed charge increase.	<a href="#">Docket No. 9406</a>
	SMECO	\$8.60	\$13.44	<i>Pending</i>	On September 2015, SMECO filed a rate case with the MD Public Service Commission to increase its fixed charge component of its bill	<a href="#">Docket No. 9396</a>
MI	DTE Energy	\$6	\$10	\$6	In December of 2014, DTE Electric proposed an increase in its residential monthly fixed charge. In December 2015, the Michigan Public Service Commission rejected the proposed increase to the fixed customer charge.	<a href="#">Docket No. 17767</a>
MN	Northern States Power Company	\$8	\$10	<i>Pending</i>	In November 2015, Northern States Power Company d/b/a Xcel Energy proposed an increase in its residential monthly fixed charge.	<a href="#">Docket No. 15-826</a>
MT	Montana-Dakota Utilities	\$5.40 *	\$7.50 *	<i>Pending</i>	In June 2015, Montana-Dakota Utilities proposed a	<a href="#">Docket No. D2015.6.51</a>

					residential monthly fixed charge increase. In December, the Public Service Commission rejected an interim rate increase that would have temporarily raised the basic service charge to \$0.22 per day, or \$6.60 per average month. Hearings for the overall rate increase are scheduled for February 2016 with a final order due by March 2016.	
NE	Omaha Public Power District	\$10.25	\$35	\$30	In December 2015, the board for Omaha Public Power District (OPPD) approved a residential/small business monthly fixed charge increase from \$10.25 to \$30 over 4 years, increasing \$5 each year until 2019.	<a href="#">OPPD Website</a>
NM	El Paso Electric	\$7	\$10	<i>Pending</i>	In May 2015, El Paso Electric proposed a residential monthly fixed charge increase.	<a href="#">Docket No. 15-00127-UT</a>
	Public Service Company of New Mexico	\$5	\$13.14	<i>Pending</i>	In August 2015, the Public Service Company of New Mexico (PNM) refiled a rate case, proposing increasing its residential monthly fixed charge. In May 2015, the New Mexico Public Regulation Commission rejected this proposal on the grounds of incompleteness of PNM's previous rate filing that featured a monthly solar charge and an increased fixed charge.	<a href="#">Docket No. 15-00261-UT</a>
NY	PSEG Long Island	\$10.80	\$19.80	\$10.80	The LIPA board approved new rates in December 2015, with no increase in fixed charge for 2016.	<a href="#">Docket No. 15-00262</a>
	New York State Electric & Gas	\$15.11	\$18.89	<i>Pending</i>	In May 2015, New York State Electric & Gas proposed an increase in its	<a href="#">Docket No. 15-</a>

					residential monthly fixed charge.	<a href="#">01092/15-E-0283</a>
	Orange and Rockland	\$20.00	\$25.00	\$20.00	On October 2015, The PSC approved the Joint Proposal for electric rate increase for two years. The joint proposal approved by the PSC includes no changes in customer charge.	<a href="#">Case no: 14-02247/14-E-0493</a>
	Rochester Gas & Electric	\$21.38	\$26.73	<i>Pending</i>	In May 2015, Rochester Gas & Electric (RG&E) proposed a residential monthly fixed charge increase.	<a href="#">Docket No. 15-01094/15-E-0285</a>
OH	Dayton Power and Light	\$4.25	\$13.73	<i>Pending</i>	In Q4 Dayton Power and Light field to increase fixed charges and reduce variable charges for a reported average monthly bill hike of \$4.07 to begin in January 2017. Parties will have an opportunity to comment in Q1 of 2016.	<a href="#">Case No. 15-1830-EL-AIR</a>  <a href="#">"DP&amp;L Seeks Electric Rate Increase"</a>
OR	Portland General Electric	\$10	\$11	\$10.50	Portland General Electric proposed a residential monthly fixed charge increase in its 2015 rate case. The parties to the rate case reached an agreement that included a smaller monthly fixed charge increase (from \$10.00 to \$10.50). The Oregon Public Utilities Commission approved the agreement in November.	<a href="#">Docket No. UE 294</a>
PA	PECO Energy	\$7.13	\$12	\$8.45	In December 2015, the PUC approved the joint settlement for the rate increase filed by PECO. The new rates are effective January 1st 2016.	<a href="#">Docket No. R-2015-2468981</a>
	PPL Electric Utilities	\$14.13	\$20	\$14.13	In November 2015, PA PUC approved joint settlement does not include increase to the fixed charge portion of the	<a href="#">Docket No. R-2015-2469275</a>

					residential bill as proposed by PPL electric.	
RI	National Grid	\$5.00	\$5.25 (250 kWh), \$8.50 (up to 750 kWh), \$13 (up to 1200 kWh), \$18 (greater than 1200 kWh)	<i>Pending</i>	In August 2015, National Grid filed its rate design which includes a framework to shift cost recovery from variable energy charges to fixed charges. The proposal includes a four-tier customer charge based on the customer's electric consumption.	<a href="#">Docket No. 4568</a>
SC	Santee Cooper	\$14.00	\$17.00 (in 2016) \$19.50 (in 2017) \$21.00 (in 2018)	\$17.00 (in 2016) \$19.50 (in 2017) \$21.00 (in 2018)	In Q3, the Santee Cooper Board of Directors accepted public comments on a proposed residential fixed charge increase. In Q4 the proposal was approved.	<a href="#">Santee Cooper Website</a>
SD	NorthWestern Energy	\$5.00	\$9.00	\$6.00	In December 2014, NorthWestern Energy proposed a residential monthly fixed charge increase. In December 2015, the South Dakota Public Utility Commission approved increasing the fixed charge, but not to the full amount requested.	<a href="#">Docket No. EL14-106</a>
TX	Southwestern Public Service Company	\$7.60	\$9.50	<i>Pending</i>	In December 2014, Southwestern Public Service Company proposed a residential monthly fixed charge increase.	<a href="#">Docket No. 43695</a>
	El Paso Electric	\$5	\$10	<i>Pending</i>	In May 2015, El Paso Electric proposed a residential monthly fixed charge increase.	<a href="#">Docket No. 44941</a>
WA	Avista Utilities	\$8.50	\$14	<i>Pending</i>	In February 2015, Avista Utilities proposed a residential monthly fixed charge increase. The fixed charge increase was dropped under a settlement agreement reached in May 2015. The	<a href="#">Docket No. UE-150204</a>

					Washington Utilities and Transportation Commission (UTC) must approve the settlement. Public comment hearings were held in September and evidentiary hearings in October.	
WI	Wisconsin Public Service Corporation	\$19	\$25	\$21	In May 2015, the Wisconsin Public Service Corporation proposed a residential monthly fixed charge increase. In December 2015, the Public Service Commission of Wisconsin approved increasing the fixed charge, but not to the full amount requested.	<a href="#">Docket No. 6690-UR-124</a>
	Northern States Power Company	\$8	\$18	\$14	In May 2015, Northern States Power Company proposed a residential monthly fixed charge increase. In December 2015, the Wisconsin Public Service Commission approved increasing the fixed charge, but not to the full amount requested.	<a href="#">Docket No. 4220-UR-121</a>

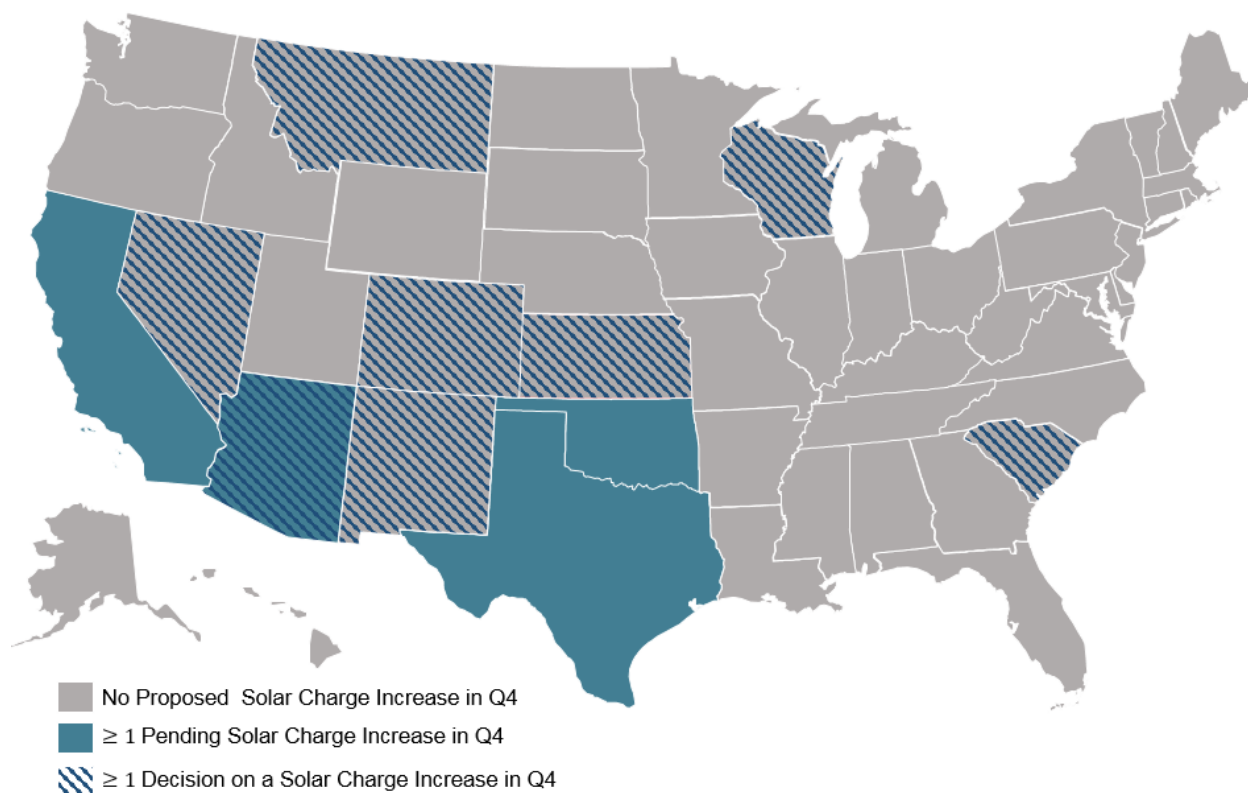
\* Denotes that the utility uses a daily fixed charge for residential customers instead of a monthly fixed charge. All daily charges are converted into monthly charges for this table using the following formula: [(365 days/year)\*(\$[fixed charge]/day)]/(12 months/year) = \$[fixed charge]/month



## SOLAR CHARGES

In Q4, 16 utility proposals to add extra charges on residential solar customers were pending or decided in 11 states. The structure of proposed charges continues to vary significantly, including flat monthly charges, charges based on the capacity of the installed solar system, charges based on measured monthly peak generation, and increases to variable per-kWh charges that would apply only to customers in a net metering arrangement. Four proposals were approved with the highest being those in Nevada. Four of these proposals were rejected in Q4, with the Wisconsin Circuit Court citing lack of evidence for the increase, and the New Mexico Public Regulation Commission citing a state law implementing FERC rules that prevent discrimination against small generators. The remaining eight of these proposed increases are still pending regulatory decision as of the end of Q4.

**Figure 25.** Proposed Charges on Residential Solar Customers (Q4 2015)



**Table 8. Updates on Residential Solar Charges (Q4 2015)**

State	Utility	Monthly Solar/DG Charge(s)			Description	Source
		Current	Proposed	Approved		
AZ	Arizona Public Service	\$0.70 per kW of installed PV	\$3 per kW of installed PV	\$0.70 per kW of installed PV	Arizona Public Service (APS) requested an increase in solar fees to \$3 per kW as a way to address cost shift issues in April, 2015. In September, the voluntarily withdrew the request if the Arizona Corporation Commission (ACC) studied solar cost shifts. In October, the ACC ruled to close the docket for the rate request and review solar costs and benefits in a generic docket ( <a href="#">E-0000J-14-0023</a> ).	<a href="#">Docket No. E-01345A-13-0248</a>
	UniSource Energy Services (UNS Electric)	\$0	\$6.00 per kW from 0-7 kW; \$9.95 per kW for over 7 kW, based on the maximum 60-minute demand during the billing cycle	<i>Pending</i>	As part of its general rate case filed in June 2015, UniSource Energy Services (UNS) proposed a mandatory new rate design for “partial requirements customers,” including new users of solar. The new rate has a three-part structure including a monthly service charge, a demand charge, and volumetric energy charges. This rate is optional for standard residential customers.	<a href="#">Docket No. E-04204A-15-0142</a>
	Tucson Electric Power	\$0	\$7.40 per kW from 0-7 kW; \$11.90 per kW for over 7 kW, based on the maximum 60-minute demand during the billing cycle	<i>Pending</i>	As part of its general rate case filed in November 2015, Tucson Electric Power (TEP) proposed a mandatory new rate design for “partial requirements customers,” including new users of solar. The new rate has a three-part structure including a monthly service charge, a demand charge, and	<a href="#">Docket No. E-01933A-15-0322</a>

					volumetric energy charges. This rate is optional for standard residential customers.	
CA	Pacific Gas and Electric	\$0	\$3 per kW, based on the maximum 60-minute demand during the billing cycle	<i>Pending</i>	In August 2015, Pacific Gas and Electric (PG&E) proposed successor net metering tariffs pursuant to A.B. 327. PG&E's proposal includes a demand charge with commensurately lower time-of-use energy charges. In December 2015, the California Public Utilities Commission issued a proposed order that did not include the proposed solar charge.	<a href="#">Docket No. R1407002</a>
	Southern California Edison	\$0	\$3 per KW of installed PV	<i>Pending</i>	In August 2015, Southern California Edison (SCE) proposed successor net metering tariffs pursuant to A.B. 327. SCE's proposal includes a Grid Access Charge based on the installed AC nameplate capacity of the system. In December 2015, the California Public Utilities Commission issued a proposed order that did not include the proposed solar charge.	<a href="#">Docket No. R1407002</a>
	San Diego Gas and Electric	\$0	\$9.19 per kW, based on the maximum 60-minute demand during the billing cycle, and a \$20.54 fixed customer charge	<i>Pending</i>	In August 2015, San Diego Gas and Electric (SDG&E) proposed successor net metering tariffs pursuant to A.B. 327. SDG&E's proposal includes a Grid Usage Charge based on a customer's demand, a fixed monthly System Access Fee, and a time-of-use rate for energy charges. In December 2015, the California Public Utilities Commission issued a	<a href="#">Docket No. R1407002</a>

					proposed order that did not include the proposed solar charge.	
CO	Intermountain Rural Electric Association	\$0	\$4.04 or \$4.13 per kW, based on maximum 60-minute kW demand during the billing cycle	\$4.04 or \$4.13 per kW, based on maximum 60-minute kW demand during the billing cycle	After withdrawing a proposal in June 2015 that would have reduced compensation for solar electricity sent to the grid and added a demand charge, the Intermountain Rural Electric Association (IREA) proposed a new Load Factor Adjustment Rider that would apply to new residential customers or those installing solar after December 30, 2015. The charge will apply to any residential customer who has a load factor less than or equal to the Load Factor Threshold (9% or 10%) in a billing period. IREA's board approved the measure in its October meeting.	<a href="#">IREA Rates and Regulations</a> (redlined proposal)
KS	Westar Energy	\$0	\$3 per kW (based on the maximum 30-minute kW demand during the billing cycle), or a \$50 per month fixed charge	\$0	In March 2015, Westar Energy proposed two tariff options for new residential solar customers: a demand charge option and a high fixed charge option. Kansas Corporation Commission approved a settlement agreement in September that results in no additional charges to solar customers. A generic docket will be opened to examine solar distributed generation issues.	<a href="#">Docket No. 15-WSEE-115-RTS</a>
MT	Montana - Dakota Utilities	\$0	\$1.50 per kW, based on the maximum 15-minute kW demand	\$0	In its June 2015 general rate case application, Montana-Dakota Utilities requested a new demand charge for net metering customers. Based on a settlement with The	<a href="#">Docket No. D2015.6.51</a>

			during the billing cycle		Alliance for Solar Choice, Montana Dakota Utilities withdrew its request for the demand charge and agreed to not seek to create a new rate class for customers with behind the meter generation. The Commission granted the revised rate request, which still includes increased fixed charges for all residential customers, in December.	
NM	El Paso Electric	\$0	Higher per kWh charges, varying on usage	\$0	In May 2015, El Paso Electric proposed a separate rate class for all existing and future net metering customers. The “Partial Requirements Service Rate” proposed would charge solar customers more per-kWh for electricity than other residential customers. In October the New Mexico Public Regulation Commission rejected the proposal on the basis that it violated FERC rules preventing discrimination against small power facilities.	<a href="#">Docket No. 15-00127-UT</a>
NV	Nevada Power (d/b/a NV Energy)	\$0	\$14.33 per kW of maximum demand, \$1.43 meter charge, a basic service charge of \$5.40 higher than for non-DG customers, and lower energy (per kWh) charges	\$25.76	In July 2015, NV Energy proposed new net metering tariffs. In December, the Public Utilities Commission approved new tariffs that increased fixed charges for solar customers. The new monthly service charge for NV Power net metering customers is \$17.90 in 2016, \$5.15 above non-solar customers. The charge will increase to an additional \$25.76 above non-solar customers in 2028. These charges apply to new and existing net metering customers.	<a href="#">Docket No. 15-07041</a>

	Sierra Pacific Power Company (d/b/a NV Energy)	\$0	\$8.63 per kW of maximum demand, \$1.12 meter charge, a basic service charge that is \$9.25 higher than for non-DG customers, and lower energy (per kWh) charges	\$29.18	In July 2015, NV Energy proposed new net metering tariffs. In December, the Public Utilities Commission approved new tariffs that increased fixed charges for solar customers. The new monthly service charge for NV Power net metering customers is \$5.84 above non-solar customers. The charge will increase to an additional \$29.18 above non-solar customers in 2028. These charges apply to new and existing net metering customers.	<a href="#">Docket No. 15-07042</a>
OK	Oklahoma Gas and Electric	\$0	\$2.68 per kW, based on the maximum 15-minute kW demand during the billing cycle	<i>Pending</i>	In July 2015, Oklahoma Gas and Electric proposed a new demand charge for its residential TOU tariff, which applies to all residential customers that became renewable DG customers after October 31, 2014. The proposal also includes a larger monthly fixed charge of \$18 (compared to a fixed charge of \$13 for customers on the non-TOU residential tariff).	<a href="#">Docket No. 500274</a>
SC	Santee Cooper	\$0	\$9.00 meter charge and a \$4.20 per kW standby charge	\$2.00 meter charge and a \$4.20 per kW standby charge	New solar riders were approved in December 2015 by Santee Cooper's Board of Directors.	<a href="#">DG-16 Rider 2015 Electric System Cost of Service and Rate Design Study</a>
TX	El Paso Electric	\$0	\$3.89 per kW, based on peak demand, and a fixed charge that is \$5 higher than for	<i>Pending</i>	In May, El Paso Electric proposed a new tariff for residential solar customers, "Rate No. 3 - Partial Requirement". It includes a higher monthly fixed charge than for non-solar customers (\$10) but lower energy	<a href="#">Docket No. 44941</a>

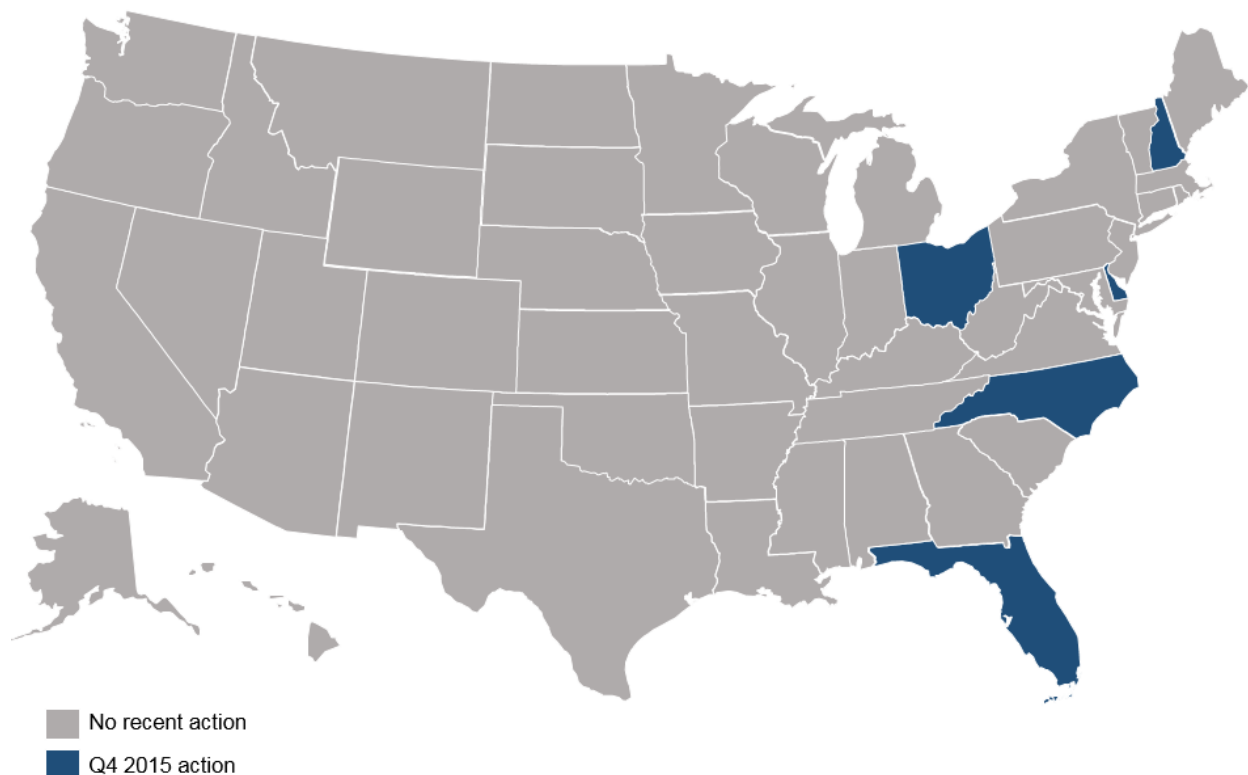
			non-solar customers		(per-kWh) charges and a demand charge.	
WI	Wisconsin Electric Power	\$0	\$3.79 per KW of installed PV	\$0	In December 2014, the Wisconsin Public Service Commission approved a standby charge on solar customers proposed by Wisconsin Electric Power Company d/b/a We Energies. In October 2015, the Dane County Circuit Court struck down the demand charge, citing a lack of evidence.	<a href="#"><i>The Alliance for Solar Choice et al vs. Department of Public Service Commission of Wisconsin</i></a>

## THIRD-PARTY SOLAR OWNERSHIP

Alabama, Florida, Kentucky, North Carolina, Oklahoma, South Carolina, and West Virginia currently prohibit third-party solar PPAs, and the legality is unclear in about 16 other states. Third-party solar developers who finance the upfront cost of a residential PV system and sell the electricity to a household hosting the PV system could be viewed as a “public utility” under existing statutory definitions in these states. The same potential barrier does not necessarily apply when *leasing* a solar PV system, but that type of third-party ownership model has several drawbacks that could make it a less attractive option to some developers and customers.

While no additional states enabled third-party ownership in Q4 2015, decisions are pending in Delaware, North Carolina, Ohio, and New Hampshire that are expected to clarify the regulatory treatment of third-party entities offering solar PPAs. The ballot initiative in Florida that would have allowed third-party PPAs did not obtain enough signatures and will be tabled until 2018.

**Figure 26.** Action on Solar Third-Party Ownership (Q4 2015)





**Table 9. Solar Third-Party Ownership Updates (Q4 2015)**

State	Description	Eligible Sector(s)	Source
DE	In November 2015, the Public Service Commission rejected Vivint's request to be exempt from utility or an electric supplier status as a third-party ownership (TPO) financier. The final order of the decision will be published in following months.	Residential	<a href="#">Docket No. 15-1358</a>
FL	<p>A ballot initiative that would legalize third-party sales for all Florida customers via an amendment to the state constitution was launched by Floridians for Solar Choice backed by the Southern Alliance for Clean Energy in January 2015. In Q4 2015, the Florida Supreme Court approved the specific ballot language. However, with only 217,000 verified signatures of the 683,149 required to be put on the ballot as of mid-December 2015, Floridians for Solar Choice announced they would adjust goals to add the amendment to the 2018 ballot.</p> <p>A utility-backed group called Consumers for Smart Solar Choice advanced its own solar ballot initiative that would <i>not</i> legalize third-party PPAs. It was formed in Q2 and has received enough petition signatures for its own Florida Supreme Court review. At the end of Q4 the group appeared to be on track with enough signatures to join the 2016 ballot, but its language has not yet been approved by the Florida Supreme Court.</p>	Residential, Commercial, Industrial (All)	<p><a href="#">"Florida Utilities, AG Want State Supreme Court to Block Solar Ballot Initiative"</a><sup>44</sup></p> <p><a href="#">Consumers for Smart Solar Website</a></p> <p><a href="#">Floridians for Solar Choice Website</a></p> <p><a href="#">SaintPetersBlog</a></p>
NC	In June 2015, nonprofit organization NC WARN submitted a request for a declaratory ruling to the North Carolina Utilities Commission regarding the organization's proposed power purchase agreement with a church located in the state. North Carolina statute generally defines an entity selling electricity as a "public utility." Comments were accepted throughout October 2015, and reply comments were then accepted until November 20, 2015. The Commission has yet to issue a ruling.	Non-Profit Entities	<a href="#">Docket No. SP-100 Sub 31 NC General Statutes § 62-3(23)</a>
NH	In August 2015, Vivint Solar filed a petition with the New Hampshire Public Utilities Commission (PUC) for a declaratory ruling to clarify whether or not the company will be regulated as a public utility, competitive electric power supplier, or limited producer of electrical energy by offering residential third-party PPAs and solar leases. Vivint argued in its filing that it should not be regulated as any of these. A hearing was held in December 2015. The PUC has not yet issued a decision.	Residential	<a href="#">Docket No. DE 15-303</a>
OH	In response to a complaint about whether property management companies that sub-meter electricity and water services to tenants should be regulated as public utilities, the Public Utilities Commission of Ohio opened	Sub-metered Residential Buildings	<a href="#">Docket No. 15-1594-AU-COI</a>

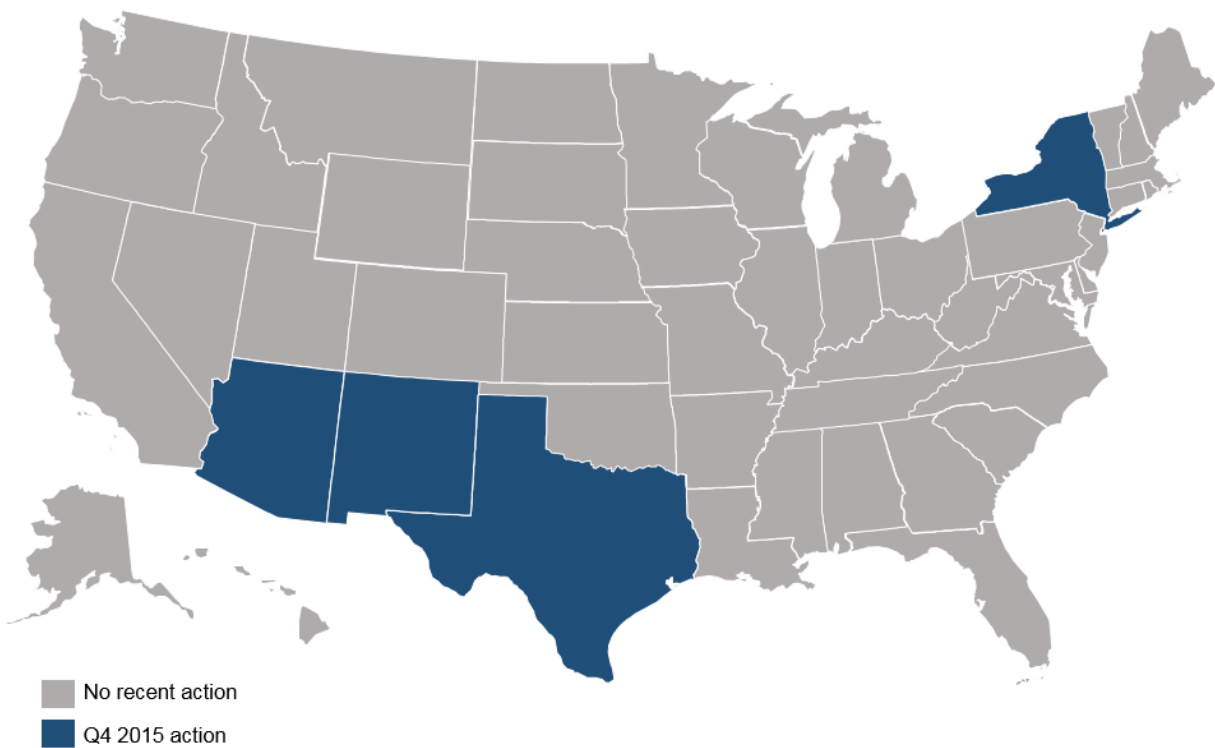
up a docket to determine whether it has legal jurisdiction over sub-metering.

[“Three PUCO dockets to watch in early 2016”](#)

## UTILITY-LED ROOFTOP SOLAR PROGRAMS

Utility-led rooftop solar programs are an emerging trend. In these programs, utility-owned solar systems are installed on customer roofs. These programs provide an opportunity for utilities to participate directly in the distributed solar market. In Q4 2015, utility-led solar programs were formally implemented in Arizona and Texas. In New York, a new pilot program was announced, which would develop a set of utility-owned, combined solar and storage projects to demonstrate the viability of these systems for providing distribution services to the grid while also providing added reliability and resilience for the host site. Finally, regulators in New Mexico are more broadly examining the pros and cons of utility-ownership of distributed generation.

**Figure 27: Utility-Led Rooftop Solar Program Updates (Q4 2015)**



**Table 10. Updates on Utility-Led Rooftop Solar Programs and Policies (Q4 2015)**

State	Utility	Description	Source
AZ	Tucson Electric Power	TEP began accepting applications for its Residential Rooftop Solar program in July 2015. It accepted 200 applications on July 1, another 200 in September, and plans to fill the remaining of the 600 approved spots in October. TEP also applied to expand the size of the program to an additional 1,000 applicants in a filing in July 2015. It is petitioning to use the program to meet compliance obligations under the Renewable Energy Standard and Tariff. A procedural hearing on that matter was held in December.	<a href="#">Docket No. E-01933A-15-0239</a>
NM	El Paso Electric	In November 2015, the New Mexico Public Regulation Commission commenced an inquiry into the desirability of utility-owned distributed-generation facilities that serve specific retail customers. The inquiry was motivated by the recent approval by the Commission of a proposal by El Paso Electric to build a distributed generation facility on, and supply electricity for, Holloman Air Force Base. Generally utilities have not been allowed to undertake these projects due to concerns that they would advantage particular customers, and possibly lead to costs being passed to customers who gain no benefit from the projects.	
NY	Consolidated Edison	The Reforming the Energy Vision (REV) proceeding in New York requires IOUs to file demonstration projects. Con Edison has partnered with SunPower and Sunverge on a proposed Clean Virtual Power Plant demonstration project. The proposal would allow Con Edison to operate a fleet of residential combined solar and storage units to provide grid services. Under the proposal ConEdison would offer the package to customers at a competitive rate and own the storage asset. DPS staff approved the proposal in December 2015.	<a href="#">Con Edison Clean Virtual Power Plant REV Project</a>
TX	CPS Energy	CPS Energy is now accepting applications for pre-enrollment in its SolarHostSA 10-MW pilot program. CPS Energy will own the solar panels installed on residential and commercial customer rooftops and credit the customer \$0.03 per kWh generated by the system. Austin-based installer PowerFin Partners will conduct the installations. There is no upfront cost for participating customers.	<a href="#">SolarHostSA.com</a>

## ENDNOTES

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- <sup>1</sup> Shayle Kann, M.J. Shiao, Cory Honeyman, Jade Jones, Austin Perea, Colin Smith, Tom Kimbis, Justin Baca, Shawn Rumery, & Aaron Holm, *U.S. Solar Market Insight Q3*, GTM Research & Solar Energy Industries Association (SEIA), 2015, <http://www.seia.org/sites/default/files/resources/z528KlnDha.pdf>.
- <sup>2</sup> Galen Barbose & Naim Darghouth, *Tracking the Sun VIII*, Lawrence Berkeley National Laboratory, 2015, [https://emp.lbl.gov/sites/all/files/lbnl-188238\\_1.pdf](https://emp.lbl.gov/sites/all/files/lbnl-188238_1.pdf).
- <sup>3</sup> Kann et al., *U.S. Solar Market Insight Q3*.
- <sup>4</sup> Barbose & Darghouth, *Tracking the Sun VIII*.
- <sup>5</sup> Kann et al., *U.S. Solar Market Insight Q3*, 14, <http://www.seia.org/sites/default/files/resources/z528KlnDha.pdf>.
- <sup>6</sup> Herman K. Trabish, "What Utilities Need to Know about Solar Growth after the ITC Extension," *Utility Dive*, January 7, 2016, <http://www.utilitydive.com/news/what-utilities-need-to-know-about-solar-growth-after-the-itc-extension/411139/>.
- <sup>7</sup> Peter Kind, *Disruptive challenges: Financial Implications and Strategic Responses to a Changing Retail Electric Business*, Edison Electric Institute, 2013, <http://www.eei.org/ourissues/finance/documents/disruptivechallenges.pdf>
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