State of Maine
Office of the Public Advocate
112 State House Station, Augusta, Maine 04333-0112
(207) 624-3687 (voice) 711 (TTY) www.Maine.gov/meopa

Paul R. LePage
GOVERNOR

Timothy R. Schneider
PUBLIC ADVOCATE

September 2, 2016

Commissioner Travis Kavulla, President
National Association of Regulatory Utility Commissioners
1101 Vermont Ave NW # 200
Washington, DC 20005

Re: Comments on NARUC's Distributed Energy Resources Compensation Manual

We commend NARUC for taking up the task of drafting a manual addressing this timely and complex topic, and for creating a manual that will serve as a comprehensive resource to state regulators, consumer advocates and other stakeholders.[1] Our comments below are intended to strengthen an already strong document. We have framed our comments around the questions NARUC posed stakeholders, but in an order that better communicates our positions.

1. How could the Manual be written in a way that is more useful to regulators?

Straightforward principles can help guide policymakers when they are facing state-specific policy dilemmas.

In our experience, simple guiding principles can be help regulators by highlighting the questions that a given policy must address and clarify the specific tradeoffs that they may need to make in

[1] **Tim Schneider** has served as the Maine Public Advocate since June 2013 and is a member of the Executive Committee of the National Association of State Utility Consumer Advocates. During his tenure, the Maine Office of the Public Advocate has participated in Maine's Value of Solar proceeding, Commission review of net metering, and lead the collaborative effort to develop an alternative to net metering that garnered broad stakeholder support. Tim has also participated in and organized dialogue among consumer advocates and the supporters of distributed solar on compensation mechanisms for distributed solar.

Lon Huber is a consultant providing independent analysis, strategy, and policy solutions to consumer advocates and state regulators. He is currently involved in numerous public proceedings across the US covering such topics as rate design, community solar, energy storage policy, net metering, and the designing of new DER market structures. Previously, Lon worked in the private sector and for the consumer advocate office in Arizona where he shaped high profile decisions around net metering, resource procurement, and utility owned distributed generation.

crafting balanced policy. The Draft Manual provides a set of such principles for rate design, based on the work of James Bonbright. We have used the principles below in our work on behalf of utility customers, and believe they could provide a useful framework for regulators as they develop the next generation of DER policies.

Principle #1: Compensation for DER should be separated from retail rates and decrease as the cost of technology decreases.

Principle #2: DER compensation mechanisms should offer predictability to participating customers, industry, and all ratepayers.

Principle #3: The costs and benefits of DER should be fairly and transparently allocated across all ratepayers.

Principle #4: DER policies should provide equitable opportunities for all customers to participate.

Principle #5: DER policies should be developed and implemented through a collaborative and transparent process.

Principle #6: DER policies should include consumer protection safeguards that ensure customers can make informed decisions, and allocate risk to those best able to evaluate and account for that risk.

2. Does the draft Manual provide sufficient discussion on considerations of equitable treatment between customers in the context of ratemaking?

It is inappropriate to change rate design for all customers to accommodate the challenges posed by DER.

The Draft Manual raises the crucial question of whether the rate structure for all customers of a given class, including DER customers, should be the same, or whether there should be a special rate that applies just to DER customers. It then dispenses with the question in two sentences, noting that there is "a strong argument" rooted in economic efficiency, to make rate design changes that apply to all customers, while observing that there are "a number of reasons" that regulators may decide this is not the best approach. Each sentiment has a corresponding citation to a study by Edison Electric Institute and Lawrence Berkeley National Labs, respectively.

The Draft Manual would be strengthened by a more robust discussion of the potential negative consequences of addressing the increased deployment of DER with rate design changes to

all customers.

First, even in the jurisdictions where DER deployment has been most robust, DER customers remain a minority of their customer class. There are structural barriers to full customer participation. For example, residential customers may not own their homes, or have roofs that cannot accommodate solar or are shaded, or lack the financial means (including credit score or income tax liability) to invest in DER. Absent a robust array of measures to address these structural barriers (*e.g.* community solar, low income DER support, opportunities for third party ownership subject to appropriate consumer protections), making rate design changes for the many to address the challenges posed by a few just doubles down on the inequities described in the Draft Manual's discussion of cost shifting. This is particularly true given that many of the proposed solutions, such as higher fixed charges or residential demand charges, are generally unpopular with residential customers.

Second, binding all customers together is a setup for failure given the pace of technological change. As the Committee is well aware, the price of energy storage is declining at a rate similar to that of solar. A rate design for an entire customer class tailored to respond to rising investment in solar PV could prove wholly ineffective once it becomes cost-effective to pair that solar with storage—particularly if the rate design makes it cost effective to make that investment. Rate design for large classes of customers could not, and should not, change quickly enough to respond to these rapid technological changes. But more rapid changes can be accommodated through treating new technologies as separate rate classes and exploring innovative rate designs within each class.

The lesson from the Draft Manual's extensive discussion of cost shifting under net metering is that regulators should adopt equitable rate design that reflects the costs of each customer class, and sends appropriate signals to customers to make investments and engage in behaviors that benefit the electric system and reduce costs. Here, the Draft Manual's discussion of the reasons why it may be appropriate to create a separate DER class is instructive.

As this discussion notes, "[t]raditionally, customers are separated into classes based on some important distinction in the service provided . . . which affects the cost to serve those customers." Regulators should recognize that customers with DER are now partial requirements customers, and should be billed accordingly. "Partial requirements," while sometimes anathema to DER advocates, accurately reflects that DER customers self-supply a portion of their needed capacity and energy. It is this self-supply that provides many of the general system benefits cited by DER advocates and identified in VOR analysis described on page 45 of the Draft Manual.

Treating these customers as a separate class does not necessarily mean discouraging DER. If these customers cost less to serve, then they should pay less. As a separate class, DER customers may be offered specific rate designs such as time of use rates or demand charges that would be unacceptable to the general body of ratepayers. More sophisticated rate design can also provide more granular incentives for DER through locational pricing, or rates to encourage different technology pairings (e.g. solar plus storage or west facing panels with advanced inverters). These rate designs would not be appropriate for non-DER customers. Finally, certain rate plans that may undervalue DERs, like those typically offered to industrial customers, could have more suitable alternatives offered in parallel for DER adopters.

2. Are there any other considerations not included in the draft Manual that impact Distributed Energy Resources?

Delaying revisions to DER policy until higher levels of DER penetration are achieved is likely to make such changes more difficult to implement, and exacerbate the challenges posed by grandfathering existing customers.

The Draft Manual suggests that "[f]or jurisdictions with low DER penetration . . . reforms may not be as time sensitive." Low DER penetration is described as levels of less than 5% of peak distribution gird loading system-wide. This could represent a substantial number of customers, depending on the load profile of the jurisdiction and the typical customer's installation size.

The Manual should note the interplay between the thorough discussion of the complexity regarding grandfathering and this recommendation. Allowing penetration to reach 5% of peak load before making revisions to DER policies could create large numbers of customers who would seek to be grandfathered as part of any change. One way to mitigate the complexity and potential inequity of grandfathering these customers is to limit the number of such customers in the first instance. Moreover experience has shown that as DER penetration increases, industries base their business models around the existing regulatory framework. These businesses, their employees and their existing customers become vocal advocates for status quo. This can make forward-looking regulatory changes more challenging to implement. The best approach is to build robust DER policy that is capable of scaling to meet growth at the outset, rather than attempting to correct policies that do not scale once they no longer work.

The Draft Manual's discussion of the limitations of the Value of Resource methodology should be expanded.

The Draft Manual's discussion of the "Value of Resource" methodology does not adequately address critiques of this approach. As a general matter, the various VOR studies (almost exclusively Value of Solar) have primarily been used by solar advocates to support continuation of net metering, by suggesting that the cross subsidy concerns detailed in the Draft Manual are either invalid or overstated. There are very few examples of actual implementation of VOR-based compensation, and with good reason.

Contrary to the Draft Manual, VOR does not treat all resources similarly. Many of the values in the VOR value stack are set based on alternatives (transmission, distribution, grid-scale generation) that are priced based on cost-based compensation or market-based mechanisms. Utility customers do not, and never have, paid "value" for these resources because the services they provide are typically provided by regulated monopoly, and provide the basic underpinnings of modern life. Applying the same cost or market-based methods to DER resources would result in lower levels of compensation than suggested by VOR studies, as shown by reverse auction mechanisms found across various jurisdictions, the most well-known of which is California's RAM program. Distribution level solar can be procured for a much lower price than the calculated valuation. Using these approaches would capture the same "value" as a VOR-based approach at a lower cost to electricity ratepayers.

The difference between this value and the price paid represents a potential consumer surplus that, if the Value of Solar studies are to be believed, may be substantial. For example, Maine's 2014 Value of Solar Study calculated the 25 year levelized value of solar at 33 c/kWh.[2] Recent procurements for distributed solar in Maine have yielded long term fixed rate contracts at less than a third of that price. Paying "value" for these resources would eliminate this consumer surplus. At the margin, ratepayers as a class would be indifferent to an arrangement that compensated at the full level of the value received.

Given the limited track record, there is no standard VOR approach. We note however that many of the benefits described in the Draft Manual include corresponding tradeoffs. For example, if VOR-based compensation changes with the change in value, it does not provide customer certainty that is necessary for customer investment. If it does not change, there is a substantial risk that the compensation could be greater than the value provided by the DER in the future as DER

[2] http://www.maine.gov/mpuc/electricity/elect_generation/documents/MainePUCVOS-ExecutiveSummary.pdf

penetration levels increase.

3. Are there other compensation options not included in the draft Manual?

Market based crediting mechanisms can accomplish win-win outcomes for stakeholders that address many of the concerns with DER compensation described in the Draft Manual.

A Market Based Crediting mechanism is a concept gaining traction in certain jurisdictions. A new program, based on this concept, was just approved in Arizona.[3] The program (titled RPS Credit Option) provides a fixed 20-year credit to a solar adopter based on the production of their PV system. A customer can select to have the fixed credit rate applied to all the production of their PV system or just exports. Maine also explored a similar "Market Based Aggregation" approach based on a white paper prepared by the Maine Office of the Public Advocate and Strategen consulting.[4] This policy was more fully developed through a five-month stakeholder process administered by the Maine Public Utilities Commission. Consensus legislation based on the outcome of this process that would have replaced net metering was endorsed by utilities, solar developers, environmental advocates and consumer advocates, but ultimately fell two votes shy of the super majority needed overcome a gubernatorial veto. The approach is expected to be taken up again in the next legislative session.

At its most simple, this approach creates a crediting mechanism that can adapt at the speed of the market instead of the speed of rate cases, while create predictability for DER customers, investors, utilities and all ratepayers. A DER customer receives a monetary credit that can be applied to any underlying rate plan, mitigating the risk that about changing rate design or fixed charges will undercut the expected value of their investment. This also protects consumers from misleading sales practices from certain DER providers, by providing a predictable revenue stream that does not rely on the providers' future estimate of retail rates. Finally, this approach benefits all ratepayers by allowing the credit rate for new customers to decrease as the price of DER decreases, capturing the benefits of DER at a lower cost and passing those savings to all ratepayers.

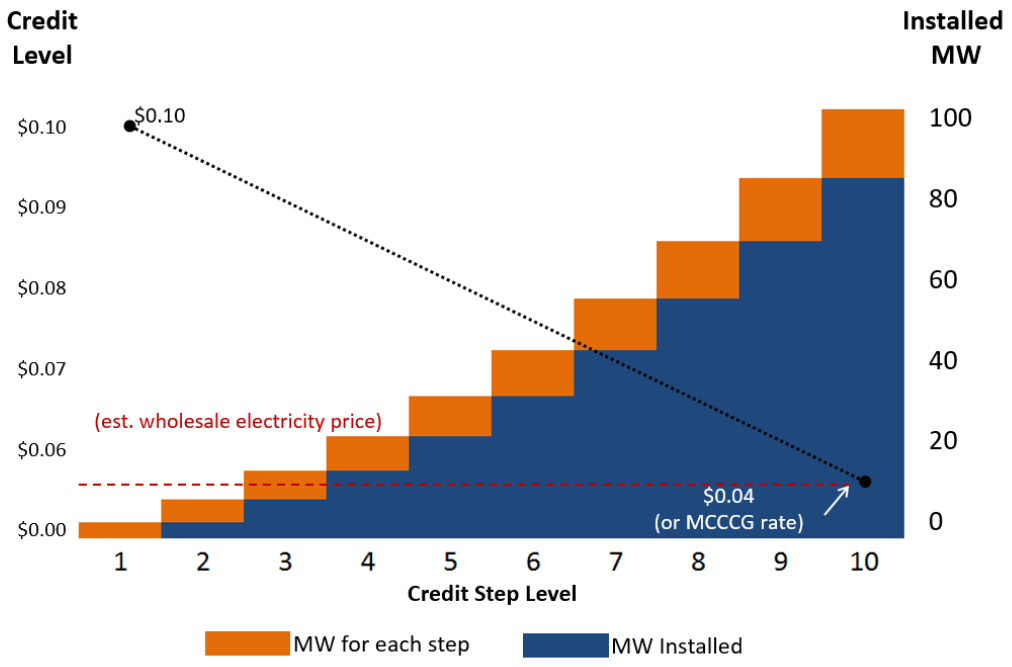
---

[3] *See* http://images.edocket.azcc.gov/docketpdf/0000172481.pdf

[4] Whitepaper: http://www.maine.gov/meopa/news/Maine%20VOS%20White%20Paper%20V2%202.pdf

This decrease in cost is accomplished using market-based mechanisms, or proxies to set the price paid to each class of DER resource (residential, community, commercial & industrial). Existing customer have their rates locked-in for specific amount of time, and new customers receive a lower credit rate as technology costs decline and solar penetration increases the credit rate paid decreases for new customers. The decreases can be tied to specified installation targets that provide the DER industry of an advance look at the future pricing they will need to meet (see chart below). For larger installations, the market-based methodology uses regularly scheduled reverse auction mechanisms to set their credit rate.

In Maine, this approach was paired with aggregation and sale of the energy, capacity and environmental attributes into the relevant wholesale markets. This revenue would be used to offset the cost and reduce costs for all ratepayers. Comparing the cost of the contracts with the revenue received allows regulators and policymakers to understand the cost of this approach and allocates these costs equitably across all customers. Analysis in the Maine stakeholder process indicated that, under conservative assumptions about future revenue, this approach would increase Maine's level of solar installation by 10 times while reducing costs for all ratepayers.



This market based credit approach addresses many of the concerns set forth in the Draft Manual with the various compensation mechanisms for DER:

1. Allows full cost recovery for the utility because it is not a monetary, not kWh-based offset.
2. A fixed price, long-term contract eliminates the need to allow grandfathering, while providing a path to integrate legacy DER customers.
3. The value proposition to DER customers does not depend on the underlying rate design, reducing conflict between rate designs to address DER and conservation efforts.
4. All ratepayers capture the benefits of solar as the price of the technology declines.
5. Locational value, technology-based (west facing, advanced inverter) and reliability adders can easily be integrated into credit rates.
6. Allows regulators and policymakers to target specific levels and types of installations.
7. Using regular check-ins and adjustment mechanisms regulators can respond to changing market conditions and technological developments.
8. Reduces consumer protection issues tied to installer estimates of future rate increases and impact of lease escalators.
9. Transparently allocates costs and benefits across all customers.
10. Provides a path to integrating DER into regional markets and comparing costs with alternatives.

Thank you for your consideration of these comments, and the Rate Design Committee's continued attention to these important issues

Respectfully submitted,

Timothy R. Schneider
Public Advocate

Lon Huber
Director