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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 Distributed Energy Resources Compensation Manual
(responses@naruc.org)

Dear President Kavulla:

The Southern Environmental Law Center (SELC), Appalachian Voices, Energy Alabama, Gasp, and the Southern Alliance for Clean Energy (SACE) (collectively, "Commenters") offer these comments in response to questions issued by NARUC in regard to the July 21, 2016 draft of its Distributed Energy Resources Compensation Manual ("draft manual"). Commenters include regional and state environmental, renewable energy, and public interest advocacy organizations that collectively work to promote renewable energy, energy efficiency, demand-side resources, and education, and to protect natural resources, the environment, and public health. We provide the following comments on distributed energy resources (DER) implementation and rate design, with a special emphasis on how these issues impact the Southeast—a region with a larger number of vertically integrated utilities and a lower penetration of solar energy and other DERs than other parts of the country—in order to aid NARUC as it finalizes its DER Manual.

We commend NARUC in its efforts to create a comprehensive manual addressing DERs. The draft manual provides coverage of a number of important and timely rate design and DER issues, and we appreciate NARUC's development of the manual and request for feedback. We also encourage NARUC to consider making the Staff Subcommittee on Rate Design a permanent committee with the purpose of periodically revisiting and re-evaluating the Manual as DER proliferation and utility business models continue to develop over time. We offer the following suggestions for further improving the draft and in response to the questions posed by the Staff Subcommittee on Rate Design:

1. **Has the draft manual addressed the issue in a comprehensive and useful manner?**

On the whole, the manual covers many key issues related to distributed energy resources compensation; however, we note at least two topics that could use more comprehensive coverage in the final version. First, we recommend that the manual give a more balanced view of the benefits of DERs in addition to their costs. Second, we recommend that the final draft be revised to further highlight opportunities that utilities and regulators have to maximize the benefits of DERs to customers, to utilities, to the grid, and to society.

While the draft manual acknowledges that DERs can create both benefits and costs, it spends significantly more time addressing the costs and does not fully address the benefits. For example, the section on DER costs on pages 22-25 is twice as long as the section on benefits that

follows it, and the cost section includes several sub-sections (revenue erosion, cost recovery, cost shifting, etc.). This is just one example of the over-emphasis on costs throughout the draft manual. As the draft manual notes, "responsible encouragement of DER adoption leads to positive cost benefit results" and DERs can represent an opportunity to meet customers' needs on a more cost effective basis. (p. 25). We recommend that the currently limited discussion of DER benefits (see pp. 25, 47) be expanded, and that the Manual discuss DER benefits alongside costs in each subsection where costs are currently addressed in order to provide a more integrated and complete evaluation.

Relatedly, we urge NARUC to facilitate the perspective in its manual that DERs primarily provide an opportunity, rather than a threat, to utilities and regulators. The draft manual notes that increased proliferation of DERs has created regulatory and financial uncertainty for some utilities. Regulators can be a steady hand during these uncertain times, ensuring that the benefits of DERs are maximized and shared by all, assisting utilities in the preparation for an eventual transition to a more decentralized grid. We would suggest that, along these lines, the Manual identify short-term and long-term strategies for maximizing the value of DERs, and provide more focus on the need for utilities to modernize in order to obtain the benefits of DERs. As another recent rate design paper recognizes, "[g]ood rate design empowers customers to control their energy costs through conservation and adoption of emerging technologies while sending price signals that efficiently allocate capital investment, which can lower costs for all ratepayers."[1] DERs present regulators with a whole new set of tools in their toolkit to accomplish these aims. The Manual should highlight this opportunity, reflecting the overarching goal of shifting the utility business model to ensure continued access to affordable, reliable electric service while increasing customer control over energy bills, benefitting vulnerable communities, encouraging innovation and new technologies, and incentivizing conservation of energy.

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

While the draft manual has effectively addressed many issues surrounding DERs, we recommend that the Manual emphasize that customers' right to self-generate is fundamental, and that regulators should strive to encourage – not stifle – customer choice. Customers have the right to reduce their use of electricity and to generate electricity for their own use, while still being connected to the local electric system.[2] Customers will increasingly seek to self-generate electricity and implement energy efficiency measures as DERs continue to proliferate—from smart thermostats to solar panels. Regulators should assist utilities in their adjustment to the reality of low or even negative load growth, while still protecting customers' right to choose how

[1] Vote Solar, SEIA, et al., Rate Design for a Distributed Grid at 1 (July 21, 2016) (hereinafter "Rate Design for a Distributed Grid"), *available at* http://www.seia.org/sites/default/files/resources/Rate_Design_for_Distributed%20Grid_8-11-2016_FINAL.pdf.

[2] *See, e.g.*, Jon Wellinghoff and Steven Weissman, *The Right to Self-Generate as a Grid-Connected Customer*, 36 Energy L.J. 305, 317 (2015) (hereinafter "Wellinghoff, *Right to Self-Generate*") ("The benefits a QF receives under [PURPA] include (1) the right to *interconnect* with its host utility by paying a nondiscriminatory interconnection fee approved either by the state commission or non-regulated utility; (2) the right to *purchase* certain services from utilities; (3) the right to *sell* energy and/or capacity to its host utility; and (4) *relief* from certain state and federal *regulatory burdens*. While a QF's right to *use* its generated power is not expressly stated in PURPA, this right is apparent in light of the foregoing four rights….").

much energy they use. The draft manual states "a customer who lowers their use creates an additional burden on others." (p. 7). However, customers should not be required to pay the utility because they did not use as much electricity as the utility believed they would. Utilities are not *entitled* to revenue from customers, and they may only recover real costs, not hypothetical ones.

The Public Utility Regulatory Policies Act of 1978 (PURPA) requires utilities to interconnect small power production facilities (qualifying facilities or "QFs") and to sell power to them on a non-discriminatory basis.[3] Many states similarly require that rates be "just and reasonable." The Manual should emphasize the central duty of regulators to ensure that rates imposed on customers – those with DERs and those without – are fair and non-discriminatory. In some states, such as Tennessee, state law expressly prohibits public utilities from discriminating in rates against customers who self-generate using solar or wind resources.[4] Moreover, all states generally prohibit undue discrimination in rate setting.[5] Rates should be based on the cost to serve these customers and should not discriminate against them. Utilities commissions and courts have rejected charges that discriminate against customers with solar or that do not provide adequate justification for their implementation.[6] The Manual should alert regulators of the need avoid discrimination in utility rates.

The QF interconnection and non-discrimination requirements under federal and state law presume a right to self-generate power and use that power to offset customers' consumption "behind-the-meter." The right to self-generate should prevent a utility from *requiring* a buy-all sell-all arrangement, because such a requirement would extinguish customers' right to self-generate power behind-the-meter for their own use.[7] A customer should be able to use any power generated onsite behind-the-meter, and the relevant inquiry should only concern any power that is exported back to the grid. The Manual should recognize this right to self-generate as fundamental to the integration of DERs.[8] Additionally, the Manual should indicate the need for utilities to integrate DERs into resource planning to right-size their systems, to plan for higher penetration, and to capture the full value of DERs.[9]

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

The draft manual includes a broad range of compensation options. However, the draft manual's treatment of retail rate net metering largely indicates that NEM is no longer an appropriate compensation methodology for customers with solar PV systems. The draft manual

[3] 18 C.F.R. §§ 292.303(b)-(c); 292.305(a).
[4] Tenn. Code Ann. § 65-4-105(d) (prohibiting discrimination by its rates, fees or charges or by altering the availability or quality of energy against consumers who use solar or wind-powered equipment as a source of energy).
[5] *See, e.g.* N.C. Gen. Stat. Ann. § 62-140 (prohibiting unreasonable prejudice or disadvantage with respect to rates for customers).
[6] *See, e.g.*, *TASC and Renew Wis. v. Pub. Serv. Comm'n of Wis.*, No. 15-CV-153 (Cir. Ct. Wis. Nov. 20, 2015) (rejecting the imposition of a "demand charge" fee on customers with solar); *In the Matter of the Application of Centerpoint Energy Res. Corp. d/b/a Centerpoint Energy Minnesota Gas for Auth. to Increase Nat. Gas Rates in Minnesota*, G-008/GR-15-424, 2016 WL 3128274, at *59 (June 3, 2016) (rejecting a significant increase in fixed customer charges).
[7] *See, e.g.*, Wellinghoff, *Right to Self-Generate* (discussing the right to self-generate and use electricity).
[8] Southern Environmental Law Center, Solar Bill of Rights (2015), *available at* https://www.southernenvironment.org/uploads/news-feed/Solar_Bill_of_Rights.pdf.
[9] Rate Design for a Distributed Grid, at 2.

states that "NEM developed as a straightforward method for interconnection of very small distributed energy systems at a time when residential electric meters were analog systems designed to be read manually." (p. 41). The draft manual also states that, with respect to NEM, "[o]ver a longer period, such as a year, it is possible for a customer [to] achieve a negative net balance for the whole period, thereby avoiding all charges associated with electricity service." (p. 43) and that "NEM necessarily is imposing those avoided costs on the nonparticipants" (p. 44). With respect to the statement that customers with solar "avoid all charges", the Manual should specify that even if customers zero out their monthly bill, they only avoid *volumetric* energy charges but will still be required to pay fixed customer charges.[10] More generally, these statements restate the positions that many utilities take in opposition to NEM, many of which are in states with high penetrations of rooftop solar.

These statements also fail to reflect results from many cost-benefit studies from around the country that have shown a net benefit to all customers from NEM policies. For example, a 2016 report by the Brookings Institute concluded that "a significant body of cost-benefit research conducted by PUCs, consultants, and research organizations provides substantial evidence that net metering is more often than not a net benefit to the grid and all ratepayers."[11] As two additional examples, in 2013 Vermont's Public Service Department conducted a study that concluded that "net-metered systems do not impose a significant net cost to ratepayers who are not net-metering participants."[12] A 2014 study commissioned by the Mississippi Public Service Commission concluded that the benefits of implementing net metering for solar PV in Mississippi outweigh the costs in all but one scenario.[13]

Additionally, in many states in the Southeast, rooftop solar remains at low penetration levels. We recommend that, particularly with respect to states with lower penetrations of solar, the Manual reflect that retail rate net metering can be retained as a fair rate of compensation. Further, the Manual should encourage pilot programs to explore how NEM could be paired with rate designs such as time-of-use (TOU) rates and minimum bills. A TOU rate more accurately reflects the time-specific value of any energy that flows back to the grid, and a well-designed minimum bill can ensure fixed cost recovery for utilities in states without widespread advanced metering infrastructure (AMI) like smart meters. While we fully support the transition to greater proliferation of AMI, we recognize that many utilities may still be in a period of extended transition to AMI for all customers. Particularly in such cases, NEM remains a fair rate of compensation for customers, and the Manual should reflect this.

We also note that the draft manual's treatment of "Valuation Methodology" (p. 44) provides a generally robust analysis of value of solar methodologies, but appears to conflate the valuation of solar with compensation mechanisms. (pp. 44-45). For example, a utilities commission may assess the effectiveness and benefits of NEM through a valuation of solar, ultimately deciding to maintain NEM. Other utilities commissions may take a different policy

[10] This provides an example of how a well-designed minimum bill can help ensure that utilities recover the cost to serve the specific customer while not over-charging the customer by imposing a high fixed charge or other similar fee. We discuss minimum billing in greater depth below.

[11] Mark Muro and Devashree Saha, "Net Metering is a Net Benefit" The Brookings Institute (May 23, 2016).

[12] Vermont Public Service Department, "Evaluation of Net Metering in Vermont Conducted Pursuant to Act 125 of 2012" (Jan. 15, 2013), available at http://www.leg.state.vt.us/reports/2013ExternalReports/285580.pdf.

[13] Elizabeth Stanton, et al., "Net Metering in Mississippi: Costs, Benefits, and Policy Considerations," (Sept. 19, 2014), *available at* http://www.synapse-energy.com/sites/default/files/Net%20Metering%20in%20Mississippi.pdf.

approach by protecting the right of customers to generate and use solar behind the meter, but impose an export price that reflects a value of solar. We suggest the Manual note the distinction between solar valuation and compensation mechanisms. We also note that the *value of DERs* to a utility's system and its customers should not necessarily be tied to market prices for *utility-scale* renewables because the value of DERs is based on unique characteristics and benefits of that resource, distinct from the wholesale market prices of utility-scale renewables. While the values may be related, the Manual should note that utility-scale wholesale prices are not automatically or directly reflected in DER values. (p. 45).

We additionally suggest that the Manual elaborate on the definitions of the eleven valuation considerations listed in the "Value of Resource" section (p. 45).[14] Finally, we recommend that the Manual indicate more clearly that the inputs included in a value of resource analysis reflect both market values and societal values, and that the Manual make clear that such considerations in valuation methodologies are a policy decision for regulators.

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

i. Compensation methodologies and rate designs

With respect to the draft manual's discussion of compensation methodologies (beginning p. 41), we suggest that the Manual provide more context for this discussion and emphasize the relationship of the different methodologies to each other, rather than simply listing the various options. An introductory paragraph to this section could be a useful way to accomplish this. Similar to the rate design introduction (p. 8), the Manual could describe which rate structures and valuation mechanisms are often used together or which are applied separately.

Additional reorganization and clarification in this section may make it more useful to regulators. The draft manual currently lists methodologies for compensating customers and valuing DERs (NEM, Value of Resource, Value of Service, Transactive Energy) and follows that with a discussion of additional rate design methodologies (demand charges, fixed charges/minimum bills, standby/backup charges, interconnection fees). The Manual should provide more discussion regarding the important distinctions between what appear to be two different categories: 1) valuation and compensation methodologies and 2) rate structures and charges imposed by utilities. We suggest that TOU rates be included as a category in the second section as well, and should be discussed prior to the discussion of demand charges. The Manual should also emphasize the important role of pilot programs in allowing regulators and utilities to test the impact of new rate designs.[15]

The draft manual provides an in-depth discussion of demand charges, and we commend the Committee for noting the important differences between coincident peak and non-coincident peak demand charges (p. 51) and for including a robust analysis of many issues surrounding the

[14] Many states have developed value of solar studies, including Mississippi, Maine, Vermont, Minnesota, Nevada and North Carolina. The Manual could look to these existing studies to develop more concrete and consistent definitions of its resource valuation terms. *See also* Rocky Mountain Institute, A Review of Solar PV Benefit & Cost Studies (Sept. 2013), *available at* http://www.rmi.org/elab_empower.

[15] For example, a recent Colorado NEM settlement in which a TOU pilot will be applied as an alternative to altering NEM and charging additional fees. *See* Julia Pyper, A Landmark Settlement in Colorado Over Solar Grid Fees: 'This Could Be a Model'" Greentech Media (Aug. 16, 2016).

implementation of demand charges for DER customers. In addition to the resources cited in the draft manual, we offer information from a recent paper on demand charges for small customers, published soon before the release of the draft manual. The paper emphasizes the problems inherent in applying demand charges to residential NEM and other DER customers. These problems are due to diversity of electricity usage, significant cost-shifting to lower-use (and often lower-income) apartment residents, the inability to properly account for utility capacity costs through individual demands, and the lack of actionable price signals for customers, caused in part by the complexity of such charges.[16] We also recommend that *if* regulators permit the imposition of a demand charge on residential and small commercial customers, it should be implemented first only as a voluntary pilot program.[17]

The draft manual's discussion of fixed charges – especially high fixed charges – also provides a useful analysis of the problematic nature of this type of rate (p. 54).[18] We suggest that the Manual discuss in even greater depth the issues that accompany high fixed charges. Utilities often seek to impose these charges as a quick-fix solution to apparent revenue shortfall, rather than designing and applying smarter alternative rate designs. Increasing fixed charges disproportionately impacts low-use and low-income customers, undermines investments in energy efficiency, encourages utilities to build unnecessary new capacity, and discourages installation of solar.[19] We also suggest that in its discussion of minimum billing, the Manual note that a well-designed minimum bill—one that is set at a level that ensures the utility a consistent level of appropriate revenue, while not penalizing the vast majority of customers or inhibiting efficiency—is preferable to fixed charges for DER customers. We recommend that in its discussion of TOU rates, the Manual also note that TOU rates are preferable to fixed charges.

Similarly, the draft manual's discussion of standby charges describes a number of problems that high standby charges can create for customers with DERs—primarily the discouragement of investment in DERs by customers (pp. 55-58). We note that a number of utilities in the Southeast have implemented or proposed high standby charges that discourage – or will likely discourage – customer investment in DERs.[20] Finally, the Manual could provide guidance in this section regarding cost-based ratemaking, noting that any charges, such as standby charges, should be based on the actual cost to serve customers rather than conjecture, and should include transparent analysis and opportunities for stakeholder input and data sharing.

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[16] *See* Chernick, Colgan, Gilliam, et. al, *A Charge Without a Cause: Assessing Electric Utility Demand Charges on Small Consumers*, Electricity Rate Design Review Paper No. 1 (July 18, 2016), *available at* https://votesolar.org/download_file/view/698/687/; *see also* Rate Design for a Distributed Grid at pp. 8-9.

[17] The recent Colorado DER settlement, discussed in question No. 7 below, included a pilot demand charge.

[18] *See also* Rate Design for a Distributed Grid at pp. 8-9 (noting the negative impacts of high fixed charges).

[19] *See, e.g.*, Rate Design for a Distributed Grid at pp. 8-9 (citing Peter Kind, "Disruptive Challenges: Financial Implications and Strategic Responses to a Changing Retail Electric Business," Edison Electric Institute. January 2013); *see also* Southern Environmental Law Center, *Troubling Trend in Rate Design: Proposed Rate Design Alternatives to Harmful Fixed Charges*, (December 2015).

[20] Both Alabama Power and the South Carolina Public Service Authority (Santee Cooper) have implemented punitive standby charges. *See e.g.* Alabama Power, Rate Rider RGB Supplementary, Back-up or Maintenance Power (effective May, 2013), *available at* http://www.alabamapower.com/business/pricing-rates/pdf/rgb.pdf; Santee Cooper, Distributed Generation Rider (effective Sept., 2016), *available at* https://www.santeecooper.com/pdfs/rates/ratesadjustment/dg-16-rider.pdf. These charges essentially operate as high fixed charges because they are based on the size of the PV system and do not change according to other factors affecting the grid.

ii. Greater discussion of high vs. low penetration

The Manual should provide a more complete discussion regarding the differences in utility service territories with high penetrations of DERs and those with low penetrations of DERs. The Manual should indicate the need for a steady hand and a focus on long-term solutions rather than the application of a high fixed charge or an untested demand charge in response to DERs on utility systems. As such, certain rate design changes may be worth exploring in higher penetration service territories but may not be warranted or appropriate in lower penetration service territories.

The draft manual refers to a "relevant threshold" of DER penetration but does not adequately describe what this means (p. 24). Similarly, the draft manual briefly notes the distinction between high and low penetration, but it does not offer significant discussion of the important differences and the varying paths forward depending on these different penetration levels (p. 62).

We suggest that the Manual should, to a greater extent, emphasize the importance of responsible planning now in low-penetration states, and encourage realistic assumptions about the trajectory of DER growth to match utility investments with true demand (see p. 33). This planning should include implementation of pilot rate designs and the continued incorporation of AMI like smart meters. Importantly, such planning should *not* include the preemptive adoption of punitive rates and fees to prevent customers from adopting DERs. Any rate changes should be made incrementally and should allow customers who have made capital investments under existing rate structures to be grandfathered into new rate structures.[21]

It is crucial for regulators, utilities, and other stakeholders to collect and analyze data and create opportunities for collaboration before deciding whether to make dramatic rate design changes. For example, South Carolina engaged in a robust stakeholder process that led to DER legislation and a clear path forward for utilities and regulators.[22] The Manual should suggest that regulators should also consider more comprehensive utility 2.0 proceedings such as the NY REV in New York and NEM 2.0 in California. The manual should also emphasize the need for utilities to update their business models for the future, as even greater benefits of DERs both for customers and for utilities will be found in the long-term.[23]

iii. Greater discussion of "good process"

The draft manual could more effectively emphasize for regulators the importance of *process* in avoiding bad decisions and highly-contested proceedings. This need for good process,

[21] *See, e.g.*, Rate Design for a Distributed Grid at p. 2.
[22] *See, e.g.*, Roddie Burress, "Conservation groups, SC utilities reach solar net metering agreement" The State (Dec. 11, 2014) (discussing the stakeholder process involved in the passage of Act 236), *available at* http://www.thestate.com/news/business/article13924871.html. South Carolina's effective stakeholder process leading to the passage of Act 236 stands in contrast to the decision of the state-owned utility, Santee Cooper, to implement the punitive standby charge discussed above.
[23] Rocky Mountain Institute's report "New Business Models for the Distribution Edge" includes a useful discussion of this topic. Rocky Mountain Institute, *New Business Models for the Distribution Edge* (April 2013), *available at* www.rmi.org/new_business_models. Another tool available to utilities is decoupling—removing the direct connection between revenue and sales of energy. The recent Colorado DER settlement, discussed in question No. 7 below, included decoupling.

particularly in the realm of rate design, should apply a number of principles.[24] Regulators should look at state-specific conditions to determine the need for an appropriate pace of rate design changes. They should encourage an open, docketed process that allows for discussion of an array of rate design options, rather than engage in highly contested rate cases.[25] Regulators, utilities, and stakeholders should define and collect data needed to inform policy decisions, as such data is a critical first step to establishing accurate cost of service studies, which is a necessary prerequisite to establishing any claimed cost shift. The Manual should also emphasize the importance of access to consumer data (p. 9). Regulators should use pilot rate programs, shadow billing, and opt-in rates to test the impact of new rate designs and manage risks to customers. They should pay special attention to low income customers and ensure that rate changes do not undermine home energy security of vulnerable households. Finally, they should ensure that customers can understand and respond to price signals embedded in rate design by promoting and encouraging customer education and access to customer data.

5. Should the draft Manual include a discussion of distribution system planning or distribution system operators?

We recommend that the Manual include a discussion of distribution system planning highlighting the opportunities and potential values to the distribution system from DERs. For instance, a recent Rocky Mountain Institute paper notes that effective system planning should be designed to improve system resilience, help the system adapt to accommodate developing technologies and capabilities, increase customer opportunities, and recognize the significance of the grid's impact on the climate.[26]

The Manual should emphasize the need for regulators to plan ahead for a more efficient and a more localized distributed electric system. In the past, DERs have not been fully integrated into the grid and system planning. While some utilities have applied DERs for demand-side management and efficiency measures to shift peak and decrease wholesale purchase costs, utilities have not historically utilized DERs to provide a range of other services they are capable of providing.[27] However, this is now beginning to change as costs decrease and implementation and adoption increases. States and utilities are now increasingly incorporating DERs into their business model development and utility planning. The Manual should support this trend towards more significant and coordinated distribution system planning which takes advantage of opportunities and values that DERs provide.

[24] These "good process" principles were reflected a letter submitted on behalf of 32 organizations to NARUC President Travis Kavulla on June 23rd, 2016.
[25] The draft manual discusses the need to address multiple aspects of DER to reach consensus on p. 28.
[26] Dan Crosscall, "New York and California are Building the Grid of the Future", Rocky Mountain Institute (Feb. 18, 2015), *available at* http://blog.rmi.org/blog_2015_02_18_new_york_california_building_the_grid_of_the_future.
[27] *Id.*

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

i. "Lost revenue" vs. "cost-shifting" vs. "not paying a fair share"

In its discussion and analysis of "cost-shifting," "revenue erosion," and "impacts on other customers" the Manual should further distinguish between these issues, and should indicate that regulators should require utilities to engage in cost-of-service and other relevant studies to determine if cost-shifting is actually occurring. (pp. 22-34). The Manual should also emphasize that any lost revenue, or revenue erosion, due to DER implementation, is at worst a short-term problem between rate cases. Revenue shortfalls between rate cases are the result of poor forecasting and reduced sales – both of which occur in the absence of DER – and they are limited to the period between rate cases. If revenue shortfalls become an unexpected problem between rate cases, they can be shored up during the next rate case through the implementation of more effective rate design.

Cost-shifting takes place when one class of customers shift costs to another class, resulting in the latter paying a higher proportion of the costs that the utility is permitted to recover. As the draft manual notes, "[c]ost shifting, or subsidies, are unavoidable in practical rate design…." (p. 23) and they take place at all level of utility rate design. However, even if a cost-shift were to occur – which must be established by a cost-of-service study – such a shift does not indicate that DER customers are not paying their fair share of the utility's cost. For example, a 2013 CPUC study indicated that after installing solar, residential customers still paid 103% of their costs of the grid.[28] The Manual should indicate that even where cost-shifting may be occurring, it's possible that DER customers are still paying their fair share (or more) of the grid.

Additionally, the draft manual appears to single out NEM cost-shifting as more significant than other cost shifts, despite the acknowledgement that "there have always been 'winners' and 'losers' in rate design." (p. 28). For instance, there is no mention of inter-generational cost shifting afforded by construction work in progress (CWIP) and rate-basing construction costs (e.g. nuclear plants). Nor is there a discussion of the lower cost to utilities to serve multi-family homes such as apartment buildings compared to single-family homes.

These sections of the draft manual also appear to presume that cost-shifting is occurring from NEM without proof. The fundamental question is whether the cost savings to the utility resulting from NEM exports are greater than or less than the costs to the utility. When considered over a sufficiently long time horizon, in most cases, the benefits of rooftop solar to non-participants exceed the costs.[29] The Manual should focus on establishing a process through which regulators can accurately analyze the full costs and benefits of DERs rather than preemptively assuming the result of such an analysis.[30] In many cases, customers with solar also

[28] *See* Wellinghoff and Tong, "A common confusion over net metering is undermining utilities and the grid", UtilityDive (Jan 22. 2015).

[29] Rate Design for a Distributed Grid at p. 5.

[30] Specifically, these suggested changes could be incorporated on pp. 22-24's discussion of revenue erosion, cost recovery, and cost shifting; on p. 31

do not "differ significantly" from other customers, so the Manual should discourage the treatment of DER customers as a separate class. (pp. 29 and 34).[31]

Finally, the draft manual briefly discusses low-income customers and rate design as social policy, but we suggest that the Manual address at greater length the significance of these issues. (p. 12). For instance, LMI households in the Southeast spend a higher percentage of household income on energy expenses than higher income families and thus have the most to gain from affordable clean energy.[32] However, even as solar and other DERs decline in price, many LMI families are still unable to benefit from this technology due to existing barriers, including the upfront costs of installation, lack of access to financing options, low credit scores, inability to harness federal and/or state tax incentives, lack of home ownership, and residence in multifamily housing with no control of roof space.

In evaluating utility programs that expand DER access to all customers, the Manual should recommend that regulators keep the following guidelines in mind. First, to be effective, programs should guarantee immediate economic savings for LMI participants, allowing families to save more than they pay in year one. Additionally, programs should focus on community development not only through access to solar but also with energy conservation and education, workforce development, local hiring, and siting of projects in disadvantaged and underserved communities where appropriate. The Manual should further note the negative impacts that certain rate designs – such as high fixed charges and residential demand charges – can have on LMI customers, and it should include descriptions of opportunities for DERs to provide real benefits to LMI customers and communities.[33]

7. Since the initial survey and request for information was released in March 2016, have there been any new developments that the Staff Subcommittee should take into account in this draft Manual?

In August, 2016, Colorado stakeholders, including Xcel Energy, filed a universal settlement implicating three separate proceedings. The settlement required Xcel to withdraw a grid use charge and institute two pilot programs: one residential TOU rate, and one residential

[31] For example, data from the residential solar market in Colorado shows that the typical residential customer who installs solar tends to have greater initial usage than an average customer, with an average monthly pre-solar bill of $126 compared to the average residential bill of $77 per month. After adding solar, the typical solar customer's bill drops to $50 per month. *See* "On-Site Solar Industry Answer to Questions set forth in Attachment A of Commission Decision No. C14-0776-I," filed July 21, 2014 in Colorado PUC Docket No. 14M-0235E, at pp. 8-9. In effect, adding solar changes a larger-than-average customer into a smaller-than-average one, but both are well within the range of sizes typical of the residential class. In 2014, the Utah Public Service Commission reached a similar conclusion in rejecting a proposal from Rocky Mountain Power to impose a net metering facilities charge. In Utah, the typical residential customer uses 500-600 kWh per month, with net metered customers falling at the low end of this range at 518 kWh per month. The Utah commission concluded that "[t]hese facts undermine PacifiCorp's reasoning that net metered customers shift distribution costs to other residential customers in a fashion that warrants distinct rate treatment." Utah PSC, *Order issued* August 29, 2014 in Docket No. 13-035-184, at p. 62.

[32] *See* "State Policies to Increase Low Income Communities' Access to Solar Power," Center for American Progress, Sept. 23, 2014, *available at* https://cdn.americanprogress.org/wp-content/uploads/2014/09/LowIncomeSolar-brief.pdf.

[33] Southern Environmental Law Center, Solar for All: What Utilities Can Do Right Now to Bring Solar in Reach for Everyday Folks (2015), *available at* https://www.southernenvironment.org/uploads/words_docs/SolarForAll_InlineDoc_061716_Final.pdf.

demand rate. The settlement also continues a voluntary green tariff allowing customers to obtain their energy needs from solar, and it establishes a version of decoupling, the details of which will be determined at a later time. The settlement will also offer a low income rooftop solar and weatherization program, applying Department of Energy funding, and will continue LMI community solar development.

The settlement provides a significant example of a collaborative stakeholder process, the implementation of pilot programs, and application of DERs to LMI customers.

8. Is the draft Manual missing any key technologies that should be included?

We recommend that the Manual include a more significant discussion of Community and Shared Solar projects. Community and Shared Solar provide opportunities for utilities and local communities to create access to local solar energy for customers who are unable to put solar on their homes or businesses, and they can be incorporated into utility planning and rate design methodologies that can account for the benefits that the resource can provide for customers and for utilities.[34]

Conclusion

We thank NARUC for the opportunity to offer comments on this important DER draft manual.

Respectfully submitted,

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[34] *See, e.g.*, Jason Coughlin, et al., *A Guide to Community Shared Solar*, U.S. Department of Energy and SunShot Initiative (May 2012); Kevin Brehem, et al., *Community-Scale Solar: Why Developers and Buyers Should Focus on this High-Potential Market Segment*, Rocky Mountain Institute (2015); Southern Environmental Law Center, Community Solar: Best Practices for Utilities in the South (2015), *available at* https://www.southernenvironment.org/uploads/publications/CommSolar_Utility_Best_Practices.PDF.

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