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Power by Association℠

Edison Electric Institute

Edward H. Comer
Vice President, General Counsel & Corporate Secretary

Friday, February 14, 2014

Docket Control, Arizona Corporation Commission
1200 West Washington Street
Phoenix, AZ 85007

Re: EEI Comments on Value and Cost of Distributed Generation (Including Net Metering) E-00000J-14-0023

Whom it may concern,

Attached please find an original plus 13 copies of the Edison Electric Institute (EEI) filing comments in response to Value and Cost of Distributed Generation (Including Net Metering) Docket Number E-00000J-14-0023.

EEI appreciates the opportunity to provide comments. Questions may be directed to Edward Comer: ecomer@eei.org and (202) 508-5002.

Sincerely,

Edward H. Comer
Vice President, General Counsel & Corporate Secretary
Edison Electric Institute
701 Pennsylvania Avenue, NW
Washington, DC 20004

BEFORE THE
ARIZONA CORPORATION COMMISSION

Value and Cost of Distributed Generation; (Including Net Metering)	)))	Docket No. E-00000J-14-0023

COMMENTS OF
THE EDISON ELECTRIC INSTITUTE

In response to the January 27, 2014, Arizona Corporation Commission ("ACC" or "Commission") notice ("Notice") issued in the above-referenced docket, the Edison Electric Institute ("EEI"), on behalf of its members, respectfully submits its comments to assist the Commission in its inquiry into the relevance and significance of various categories for assigning monetary values to distributed generation ("DG") benefits and costs.

DG systems will play an increasing role in our nation's generation mix. The electric industry supports rate policies that appropriately recognize the value that the grid provides to DG customers and DG customers provide to the distribution system. It is very important that state commissions, such as the ACC, consider updates to current rate policies for DG, particularly as the levels of DG penetration become more significant, because current policies that create cross-subsidies among customers are neither equitable nor sustainable. The Commission should keep prominently in mind that, even as the nation continues to see its generation resource portfolio evolve, the traditional rationale for cost of service regulation, namely the protection of customers, has not abated.

Accordingly, EEI's comments identify for the Commission's consideration some basic principles applicable to developing rates for utility services. EEI's comments also discuss the merits of including certain categories of DG costs and benefits in any approach for calculating

the appropriate compensation for DG and the services provided by the electric grid that are consistent with Commission policy and precedents and are fair to all customers.

EEI is the association of all U.S. investor-owned electric companies. Its members provide electricity for 220 million Americans, directly employ more than 500,000 workers, and operate in all 50 states and the District of Columbia. With more than $85 billion in annual capital expenditures, the electric power industry is responsible for millions of additional jobs. Reliable, affordable, and sustainable electricity powers the economy and enhances the lives of all Americans. EEI has 70 international electric companies as Affiliate Members, and 250 industry suppliers and related organizations as Associate Members. Organized in 1933, EEI provides public policy leadership, strategic business intelligence, and essential conferences and forums. EEI submits these comments because the relative costs and benefits of DG are an issue facing the investor-owned utility industry as a whole. EEI and its member companies therefore have a substantial interest in this proceeding.

COMMENTS

EEI is pleased to submit comments responding to the Commission's questions as to what factors should be considered in developing a process and methodology for assigning prices to DG benefits and costs. EEI commends the Commission for establishing this inquiry because clarity as to what costs and benefits belong in setting rates for electricity and grid services will provide all customers with greater transparency in pricing and is an essential tool in preventing cost shifting and inequities for electricity customers. It is very important that this process and methodology work in a sustainable way to enable new distributed generation customers to participate fairly in electricity markets. If such a process and methodology sets artificially high

prices for DG power, then it will result in market distortions that adversely impact both utilities and their customers, in particular the customers least likely to install a DG system.

There is an important role for all kinds of electric generation, including distributed generation such as rooftop solar generation, but it is important to integrate these sources in a manner that achieves the lowest cost, reliable and environmentally sustainable approach for all customers. EEI believes that rates paid to DG customers must be developed in a way that is consistent with the methodologies used to develop rates for utility services and as compensation for other comparable resources in order to avoid double-counting and long-term market distortions. Moreover, any incentives for DG should be transparent and periodically reexamined, especially in light of existing market maturity. While incentives such as limited net metering were instituted to jump-start nascent markets for DG systems, markets have substantially evolved and as a result these subsidies have served their intended purpose and should not be extended or expanded.

I. Compensation for Distributed Generation Should be Cost-Based

Over many years of utility regulation, regulators have adopted, as a fundamental rule, the proposition that regulation should be based on the costs of service, not the value of service. They developed this approach because costs are readily observable whereas "value" of service propositions are inherently uncertain and speculative and tend to lead to much greater uncertainty. Therefore, rates for utility service like electricity, transmission and distribution services are set so that customers pay for the costs of the services they receive from their utility and the electric power grid. Furthermore, regulation attempts to allocate costs so that customers pay for the costs incurred to serve them, not for costs incurred to serve other customers. These

principles should apply to the services electric utilities provide to all customers, including customers with DG systems. Proper cost identification and allocation are essential to fair ratemaking and the avoidance of hidden cross-subsidies. Deviations from this policy lead to distorted incentives and diseconomies that are not sustainable over time.

The rationale for, and benefits of, cost of service regulation have not disappeared: Consumer protection. These cost of service principles do not allow for rate making based on subjective valuations. Electric rates have historically been based on the known and measurable cost of providing electric service, as approved by state regulators, and EEI believes this well-established approach to setting rates must apply to any methodology for determining adequate compensation for DG.

Many DG advocates argue that the benefits DG installations provide to utility systems and to society are very large and that such benefits should be used to offset a substantial portion of the costs utilities incur to serve DG customers. Essentially, they argue that the benefits of DG should be priced on the basis of its value, while the benefits of electricity service, as well as other generation resources, should be priced based on their cost. This approach is fundamentally unfair, unduly discriminatory and inconsistent with the traditional approach to regulation. Rate-regulated utilities are able to recover only those actual costs they incur, as reflected in their books of account, and only that portion that was prudently incurred. These costs make their way into required revenues and are recovered in rates approved by state regulatory commissions. This process provides certainty and transparency, and is the basis for consumer protection. Furthermore, this is the construct that investors rely on when providing capital to investor-owned

electric utilities and that underlies the U.S. Supreme Court's standards for just and reasonable rates.

II. Any DG Compensation Methodology Should Be Non-Discriminatory and Resulting Rates Based on Known and Measurable Costs

It is important to establish that the basic payment system for power produced by both distributed and utility generators is consistent and not unduly discriminatory. This is particularly critical in light of the Commission's finding that the net-metering tariff does cause a cost-shift between DG and non-DG customers.[1] To do this, amounts of electricity purchased by and sold to DG customers should be separately quantified and separately valued. Simply subtracting the amount of electricity that a DG customer generates from the amount of electricity the customer purchases from the local utility (as is typically done under current net metering) does not occur simultaneously and therefore does not accurately reflect the cost of electricity and grid services that utilities provide to a DG customer. Thus, this shifts substantial costs to customers that do not self-generate.

Correspondingly, customers with DG systems should pay for all of the services that electric utilities provide to them, including distribution, transmission, and standby generation. Customers who do not net meter should not subsidize those who do. DG customers should be required to pay for grid services because these customers are connected to and still use the grid, but in more complex ways than other customers. This is confirmed by the fact that as DG installations increase then utilities must invest in new control systems, modify operating

[1] EEI also appreciates that the ACC has indicated that evaluation of this cost-shifting will be an ongoing process and that this cost-shifting will be evaluated in the future.

procedures, and train operating personnel to safely and reliably accommodate DG systems on the grid.

DG customers should be compensated for their electricity sales at rates commensurate with what it costs electric utilities to serve their customers by producing electricity or purchasing it in the wholesale market. DG customers should receive a credit for reducing electric utility costs only if there are identifiable, verifiable costs that utilities save as a result of DG systems being added at specific locations. Including intangible or difficult to measure components in the process will ultimately lead to lack of confidence in the end product. Moreover, less-than-credible inputs will lead to significant disagreement among stakeholders, resulting in a costly and less-than-optimal process. Furthermore, basing rates on the "value of solar" will have the unintended consequence of constituting a regulatory barrier to other renewable technologies or types of generation resources.

The Commission should instead require a methodology that includes only costs that are measurable and verifiable. This will serve to protect non-DG customers, the vast majority of all customers, from paying for benefits that are speculative, sensitive to unverifiable assumptions, lack standard calculation approaches, or otherwise may not actually materialize as expected. The methodology should rely on standard approaches to quantifying the cost of avoided energy, capacity and system losses, applying the same degree of rigor that is used in evaluating demand side management ("DSM") and similar resources, especially if utilities are required to purchase the output of DG systems. To this end, the evaluation of net metering and other billing policies for DG should include an assessment of the services that DG customers still take from the utility and the appropriate and fair payment for those services.

A. Transmission and Generation Capacity Costs Are Not Avoided Until actual projects are demonstrated to be deferred or canceled

EEI believes that although avoided transmission and distribution may be theoretically relevant to determining adequate compensation for DG, the measurement of such components is too speculative at this time. Currently, data does not support the notion that DG will assist in capacity value for the grid because solar does not generally reduce peak use. This is largely due to the fact that peak demand of residential customers occurs later in the afternoon and in the early evening after solar resources have substantially reduced or even stopped producing energy (*i.e.*, peak-demand is not well correlated with solar output).

Moreover, transmission and generation capacity is not necessarily avoided, but in some cases could be deferred. Nevertheless, even in the case of a possible delayed investment, reliability rules and the way that integrated resource planning ("IRP") or the rules in organized markets work requires that utilities plan as if DG systems were not there at any time during a 20-40 year planning horizon. Rules need to change for utilities to be able to take DG systems into account in their planning processes. Once those rules are in place then coincident capacity savings can potentially occur, but not before. Nevertheless, the threshold for considering whether there are avoided capacity savings arising from DG associated with the distribution system should be whether such benefits are known and measurable to the utility.

B. Any Methodology for Assigning Value to DG Must Account for DG Integration Costs, including Increased Costs of Ancillary Services

With respect to grid support services, EEI believes it is important for the Commission to recognize that because of the wide variability of DG solar systems and their outputs, the need for ancillary services will increase and that will necessarily impose additional cost on the utility.

Furthermore, it makes no sense to provide a credit for avoided grid costs to distributed generators unless they also pay the underlying grid costs themselves.

In considering rates for distributed generators, it is fundamental to recognize the fact that any DG system connected to the transmission and distribution system continues to use grid services. Transmission and distribution system operators must take these new systems into account to preserve the continued reliability, safety, and security of the grid. While customers with DG systems generate some or all of their own electricity, they are still connected to the local electric utility's grid and use the grid both to buy power from their electric utility during times when their DG systems are not producing enough to meet their needs and to sell power to their electric utility when their systems are producing more electricity than the customers need. DG customers are connnected to the grid and using grid services 24/7.[2] In fact, interconnected DG transforms the distribution system from a one-way delivery mode into a complex two-way network for which electricity flows need to be carefully monitored and balanced.

Recent experiences in Germany and Hawaii and a recent study conducted by North American Electric Reliability Corporation and the California ISO all demonstrate that high DG penetration complicates the design and operation of the distribution grid and requires electric utilities to invest in new systems to assure that the grid remains safe and reliable.[3] Without such utility-provided safeguards, the grid and customer equipment can become damaged. In this regard, the Commission should include the integration costs associated with additional DG on a

[2] See attached Exhibit A.

[3] *See* http://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC-CAISO_VG_Assessment_Final.pdf

distribution system into any evaluation of avoided or delayed transmission and distribution system costs.

C. The Commission Should Consider Only Known and Measurable Avoided Costs/Financial Risks

With respect to the cost of energy and its delivery, the avoided energy costs are variable costs associated with the price of energy, such as fuel, variable O&M and generation unit starts that are avoided due to generation of DG. They are reflected directly in utility costs and rates. Therefore it would be double-counting to pay this amount to DG generators. Also, in quantifying displaced resources, current market prices should be used.

Costs associated with hedging and market price mitigation would only be applicable if it was possible to know exactly what type of generation was displaced by the DG system. Moreover, if there is a reduction of market prices for energy because of DG systems, it is precisely that reduction that represents its compensation. DG systems should not be compensated directly for reducing market prices. For example, wind power is not separately compensated because of its impact on wholesale markets. It is the price for the sale of the power itself that constitutes the compensation. Additionally, solar DG does not avoid Renewable Energy Standard costs, but increases them since it makes procuring renewable energy more expensive than if the utility were to purchase it from lower cost central station renewables.

D. Grid Security and Reliability Values Should Not Be Considered In Rates

Grid security and reliability are significant interests, but values for such measures are difficult to quantify. Maintaining security and reliability require significant investment in the grid by electric utilities, and yet electric utilities are not additionally compensated for the value of providing these essential services to their customers. Rather, compensation is based on the

cost of needed services. Even if it can be determined that DG systems may make known and measureable net contributions to the security and reliability of the system, recognizing that these systems may also present a negative impact to grid security and reliability, they should not receive additional compensation just as utilities do not receive additional compensation for similar contributions.

E. Environmental and Social Externalities Should Not Be Included in DG Rates

While solar energy has an important and increasingly larger role to play in our energy mix, and the "value of solar" is important in considering future investment plans, this "value" has no role in setting wholesale and retail electricity rates. Prices paid for renewable energy from distributed generators should not include a value for externalities such as avoided emissions and jobs, unless these are allowed to be recovered in utility rates. Treatment of such externalities should be consistent for all customers and all resource types.

All sources of electric generation provide substantial jobs and economic benefits; electric utilities are typically major drivers of their state and local economies. EEI is not aware of a public utility commission that allows utilities to recover in their rates any of these values with respect to central station solar, wind, or nuclear power and does not believe it would be equitable for only DG solar to do so. If societal benefits are not charged for in utility rates, they should be excluded from the methodology for developing rates to distributed generators.

In addition, there is no agreed method for measuring and verifying societal benefits. The approaches developed to date, including the federal government's proposals on the "social cost of carbon," ("SCC") are admittedly highly uncertain and speculative. The SCC is a range of estimates of the monetized damages associated with an incremental increase in carbon dioxide

("CO_2") emissions in a given year. The Interagency Working Group ("IWG"), spearheaded by the White House Office of Management and Budget, develops these estimates to allow federal agencies to incorporate the social benefits of reducing CO_2 emissions into the required cost-benefit analyses of regulatory actions that would affect cumulative global emissions. As the IWG has noted, any efforts to assess the incremental impacts of CO_2 emissions suffer from uncertainty, speculation and a lack of information about future emissions, the effects of past and future emissions on the climate system, the impact of changes in the climate on the physical and biological environment and the translation of these estimates into economic damages. Due to the serious limitations, both in terms of quantification and monetization, the IWG presents a range of possible SCC estimates. For example, the 2015 estimates (computed by the IWG 2013) range from $12 to $109 per metric ton of CO_2 in 2007 dollars. These predictions are highly speculative and variations are highly sensitive to small changes in assumption for factors such as the discount rate. Accordingly, EEI does not believe the Commission should consider SCC in a methodology for determining DG compensation.

CONCLUSION

WHEREFORE, for the foregoing reasons, the Edison Electric Institute respectfully requests that the Commission accept these comments, and urges the Commission to adopt the recommendations as set forth above to focus its analysis of the cost and benefits of DG solar on the types of costs and proof requirements that the Commission applies in approving the rates that utilities may charge to their customers.

Respectfully submitted,

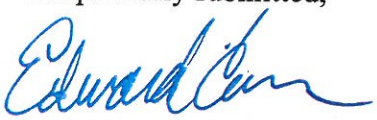

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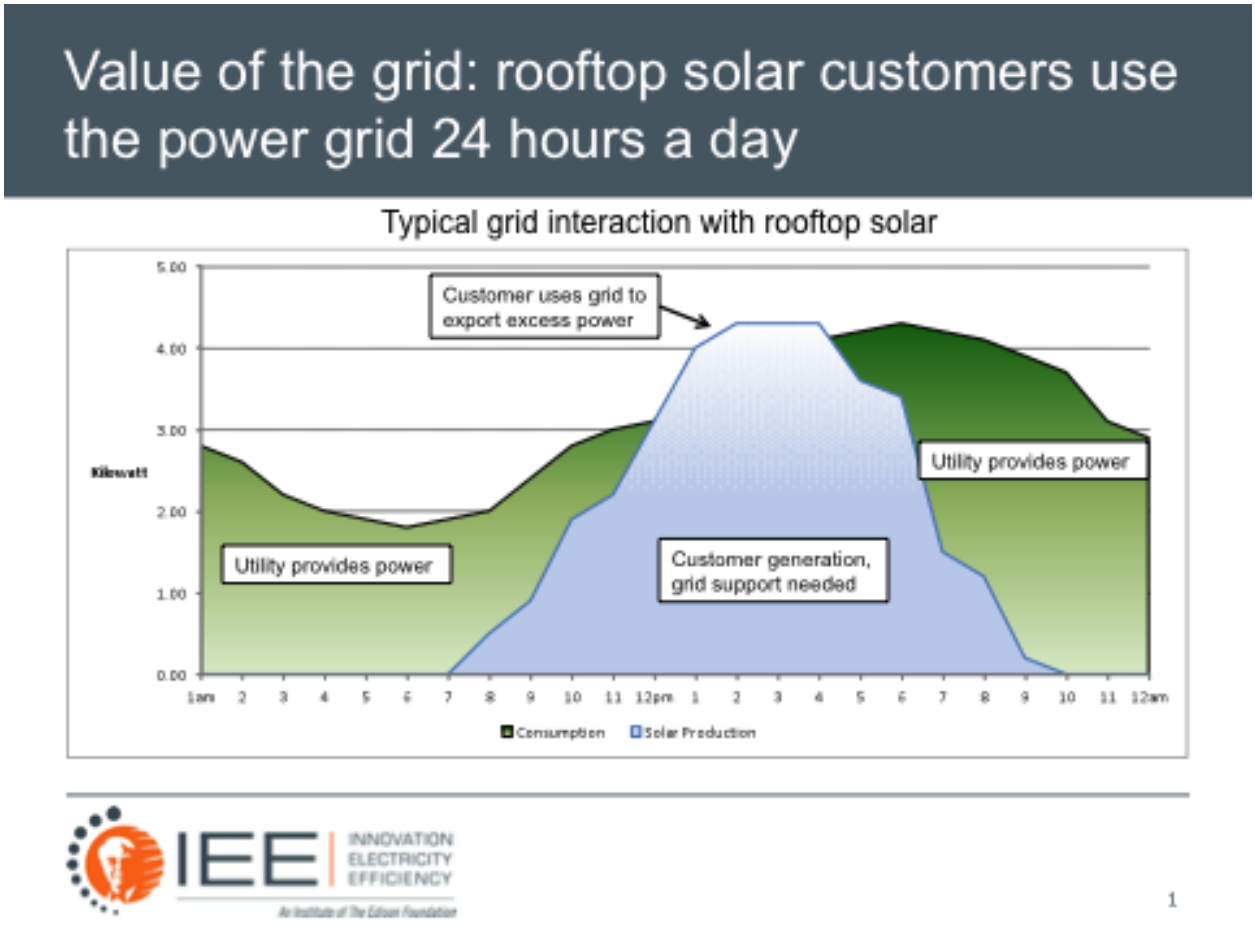
Exhibit A


Value of the grid: rooftop solar customers use the power grid 24 hours a day
Typical grid interaction with rooftop solar
Customer uses grid to export excess power
Utility provides power
Utility provides power
Customer generation, grid support needed
Kilowatt
5.00
4.00
3.00
2.00
1.00
0.00
1am 2 3 4 5 6 7 8 9 10 11 12pm 1 2 3 4 5 6 7 8 9 10 11 12am
Consumption
Solar Production
IEE
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