

BEFORE THE PUBLIC UTILITY COMMISSION OF OREGON

DOCKET NO. UM 1716

In the Matter of

OREGON PUBLIC UTILITY COMMISSION

Investigation to Determine the Resource Value
of Solar.

THE ALLIANCE FOR SOLAR
CHOICE COMMENTS ON
ELEMENTS FOR RESOURCE
VALUE OF SOLAR FRAMEWORK

The Alliance for Solar Choice (TASC) appreciates the opportunity to provide comments on the elements that Commission should include in determining a resource value of solar.

TASC advocates for maintaining successful distributed solar energy policies that expand consumer choice in energy supply. Its members represent the majority of the nation’s rooftop solar market and include Demeter Power; Silevo; SolarCity; Solar Universe; Sunrun; Verengo; and ZEP Solar. These companies are important stakeholders in Oregon’s solar energy industry and are responsible for thousands of residential, school, church, government and commercial solar installations in Oregon. TASC’s member companies have brought thousands of jobs and many tens of millions of dollars of investment to Oregon’s cities and towns.

These comments follow a Staff-led scoping process that produced considerable clarity and agreement regarding elements to include. Because of this excellent process, TASC will focus these comments on just the following:

- I. The purposes of the methodology and what those purposes mean for the elements the Commission should include.
- II. The Role of a Commission decision on elements (inputs) to the methodology.
- III. Recommendations on input elements to include in the RFP and resulting consultant statement of work.

I. Purposes of the Methodology¹

The questions at hand – what elements to include as a consultant prepares a draft methodology for parties’ consideration – rest within the larger setting of the docket and it is worthwhile to define this setting before diving in to the specifics. This docket exists to provide the Commission a methodology for determining the resource value of solar so that it may use the

¹ TASC understands “methodology” in the context of this docket as input (both historical data and information forecasted from assumptions), to which techniques are applied to create outputs and any further steps necessary to make meaning from those outputs, such as expressions of uncertainty or qualitative considerations.

methodology as it needs to in making decisions and answering questions. These decisions and questions will arise from a number of different contexts. For example:²

- Setting PURPA avoided cost standard offer prices or determining the appropriateness of negotiated prices for distribution-side³ solar resources;
- Acknowledging IRP Action Plan items concerning distribution-side solar resources;
- Approving RFPs for distribution-side solar resources;
- Considering the appropriateness of any incentive programs offered for distribution-side solar, whether offered by utilities or the Energy Trust of Oregon;
- Considering tariff designs for services utilities may offer owners of distribution-side solar;
- Advising the Legislature’s consideration of state tax or other incentives for distribution-side solar; and
- Advising a local government regarding the value of distribution-side solar to inform its consideration of the barriers its current regulations and practices may form for development of these resources.

These different policy considerations will make different demands on the methodology and its outputs. One policy context may require output from the methodology that reflects more than one perspective, such as a utility cost and a societal perspective. Another context may require more emphasis on historical data and yet another on forecasted inputs. For some answers and decisions, statutes, regulations or prior decisions may dictate or suggest the elements to be included in that particular instance of using the methodology. For others, the Commission may need to consider all possible perspectives and elements.

Staff launched this docket with a goal of a transparent and predictable methodology, capable of supporting standardized calculations, for determining the resource value of solar. The focus on a methodology is wise because the resource value of solar is not a number that one can mathematically determine just by making some additions and subtractions. It is a conclusion in a context based on all of the considerations – numerical or otherwise – important for the purpose at hand. A methodology designed to support a wide range of decisions and answers can include the steps necessary to produce outputs from one or more sets of inputs as relevant to the context. And the process by which the Commission uses the methodology from time to time can include opportunities for stakeholder comments on what perspectives and, thus, inputs a given decision

² This is not an exhaustive list. All indications are that solar resources will grow in variety and installed amounts over the next several decades. We can’t foresee now the decisions and questions that growth will cause the Commission to face.

³ TASC suggests that the methodology apply only to solar resources located on the distribution side of substations within a utility’s service territory, which we refer to in these comments as “distribution-side” solar resources.

or answer should reflect.⁴ This will be possible, however, only if the methodology can handle a broad range of inputs and that is what frames the comments TASC provides below on the elements in the matrix Staff has developed with input from the parties.⁵

II. The Role of this Decision on Elements (Inputs) to the Methodology

While the purpose of this docket is to develop a robust methodology to support whatever answers or decisions the Commission must provide involving the resource value of solar, the docket is still in its initial stages. The purpose the Commission's initial decision following these comments is only to determine what an expert in developing a resource value of solar includes in a draft methodology for the consideration of the Commission, Staff and the parties. For the reasons explained below, TASC urges the Commission to direct this expert to include all potentially relevant elements at this time. Excluding elements such as societal and environmental benefits now means that the consultant will not explore them and it will be hard – if not impossible – to resurrect them later. This may prove detrimental if, for example, the Commission wishes to consider any modifications to the statutory net metering program, which requires the Commission to consider the “distribution system, environmental and public policy benefits” of net metered systems as a prerequisite to modifying net metering rates or program enrollment limits.⁶

A. This selection of elements determines only what the Commission requests of a consultant; it does not decide either what the final methodology includes or how the Commission will apply that methodology from time to time. With the general agreement of the parties, Commission Staff intends to issue a Request for Proposals (RFP)⁷ and, from the responses thereto, choose a person or firm highly experienced in resource valuation to develop a resource value of solar methodology for the Commission. Staff's schedule provides parties:

1. An opportunity to comment on the scope of work the consultant performs
2. Two workshops for parties to influence how the draft methodology becomes a final methodology as recommended by the consultant
3. One more round of comments to influence Staff's recommendation to the Commission with the methodology

TASC urges Staff to stay open to providing further opportunities for interaction and comment as the schedule proceeds. The methodology will serve the Commission best if it focuses stakeholder concerns and arguments at each application on those related to

⁴ The process issue arose in the workshops but is not ripe for Commission decision at this point and is not part of the consultant's work. Staff will undoubtedly continue to work on this as a component of its Final Report to the Commission.

⁵ Staff attached the matrix, titled “List of Elements and Parties Responses” to its July 15, 2015 Comments, which were filed in this docket.

⁶ See ORS §§ 757.300(2)(c) and (6).

⁷ See Staff's flowchart. Kevin – same question as above – can we just reference this by some official name or do we actually need to attach it?

how to apply the methodology in that particular instance, rather than on the inputs and techniques included within the methodology.

B. The consultant's work will help parties reach a much deeper understanding of the elements before the Commission now⁸ and use this understanding to clarify and pinpoint their concerns about any of them. TASC expects that, for the elements the Commission decides to include, the expert's work will include at least:

1. Identifying historical data relevant (whether it currently is collected or not) to determining a value, values, or range(s) of values for each element, sources for that data and any steps necessary to transform the data into useful information;
2. Identifying assumptions necessary to forecasting a value, values, or range(s) of values for each element and sources and techniques for making those assumptions, as well as ways of expressing uncertainty around major assumptions;
3. Specifying the techniques necessary to calculate a resource value for solar for a specific set of inputs expressing those element at a specific time;
4. Suggesting the periods (months, years, or per signposts) the Commission might expect there to be a need to refresh the inputs and assumptions and re-apply the techniques to reflect changed conditions; and
5. Potentially, explaining why and to what extent the Consultant believes the methodology should NOT include any of the proposed elements.

All of this will help parties identify areas of disagreement, articulate why the disagreement exists, and develop ways to resolve the disagreement.

C. Given the purpose of this docket and the point in the methodology's development we are at, the RFP should permit the consultant to suggest other elements for the parties' consideration in its draft report on the methodology. There is no need to presume that the parties to this docket have thought of every element that might be relevant to determining the resource value of solar. It is most efficient to be comprehensive and inclusive at first and then discard or limit the applicability of inputs, techniques and possible outputs of a methodology.

D. Outputs from the workshops⁹ do suggest two boundary decisions the Commission could make now regarding the RFP. First, parties discussed but did not resolve the scale of solar resources for which the methodology will be developed.¹⁰ TASC suggests that the methodology apply only to solar resources located on the distribution side of substations within a utility's service territory. Oregon Integrated Resource Planning (IRP) and resource procurement processes already provide inputs and techniques for comparing transmission-side solar resources to other transmission-side resource choices and to each other and any revision of these should occur in those contexts. What Oregon is missing

⁸ As listed in Staff's spreadsheet

⁹ This is Staff's Table Three: Concepts To Consider For The Resource Value of Solar Methodology Development.

¹⁰ See Item 2 on Table Three.

is a methodology for identifying the resource value of solar located within the distribution system. Second, TASC suggests that the methodology identify any differences in size or technology that might exist among the distribution-side solar resources that would necessitate different treatment in terms of inputs or techniques.¹¹

III. TASC’s Recommendations on Input Elements to Include in the RFP and Resulting Consultant Statement of Work

The Table Staff used to help parties understand where there was and was not agreement on elements to include in the RFP and consultant’s statement of work contributed greatly to the process. For purposes of these comments, TASC has re-ordered the elements into the categories by which we address them:

- A. Include Utility Direct Costs or Benefits (Elements 1-13, 16, 18 and 25)
- B. Include Elements 20 And 25, If Clarified
- C. Include External Costs or Benefits (Elements 15, 17 and 26)
- D. Exclude Items That Are Not Really Inputs (Elements 19 and 21)
- E. Exclude Elements That Are Matters To Be Evaluated Using Methodology Outputs (Elements 14, and 22-24)

We have attached a complete version of our re-ordered table as an appendix to these comments. The elements related to each section appear at the start of the discussion in that section. TASC has slightly modified or expanded the names of the elements, which were understandably shortened for purposes of the spreadsheet used to gather parties’ positions on them. Each includes the number with which it is associated in the spreadsheet and the percentage of responders that said an element should be included. We offer these modifications and expansions in the spirit of improving the clarity of the Commission’s decision and resulting RFP.

Although the level of clarity in these elements is sufficient for the RFP, it is particularly important that the subsequent agreement with the consultant and the consultant’s draft report define each of these elements both in words and through identification of the historical data or forecast assumptions relevant to expressing the element. The draft report should also address the nature and extent of uncertainty around quantifying each element. This additional clarity will allow parties to refine or alter their positions in commenting on the draft methodology report, the consultant to respond to these comments in the final report, and Staff to consider all of this in making its final report to the Commission.

A. Include Utility Direct Costs or Benefits

	Utility Cost or Benefit Inputs	
1	Avoided energy impacts	100
2	Avoided capacity additions	100

¹¹ See item 1 on Table Three.

3	Line losses	100
4	Avoided transmission and distribution maintenance and capital additions	100
5	Avoided compliance expenditures (operating or capital) associated with a Renewable Portfolio Standard	100
8	Benefits, costs and revenues associated with interconnecting distribution-side solar resources into the utility system	92
7	Benefits, costs, and revenues associated with integrating distribution-side solar resources into the utility system	100
10	Benefits, costs, and revenues associated with utility customer service and accounting for distribution-side solar resources	92
11	Benefits, costs, and revenues associated with operational support of distribution-side solar resources	86
12	Benefits, costs and revenues associated with ancillary services and grid support provided by distribution-side solar resources	85
6	Effect of distribution-side solar on reliability, resiliency, and disaster recovery within the utility system	100
9	Effect of distribution-side solar production on wholesale market energy and capacity costs	92
25	Avoided environmental compliance costs associated with operations of existing plants or avoided generating system additions for energy or capacity (current and forecasted for carbon)	80-91
13	Avoided fuel price hedging	85
16	Avoided natural gas delivery infrastructure	67
18	Effect of distribution-side solar resources on the utility's cost of capital	57

In light of our comments in Sections I and II above, TASC supports including all of these in the RFP and Consultant's statement of work. During the workshops, TASC opposed 11 and 18 and may still do so after seeing the clarity the Consultant can bring to these elements through written description, identification of sources of historical data, and assumptions to generate forecasted information. It may be that the historical data necessary for quantifying these effects does not yet exist because no one has ever looked for it. It may be difficult without historical data to create forecasted values.

Regardless, all of the elements above fall within the category of potential direct utility costs or benefits (cost reductions) and should not be excluded now. Even though parties were not unanimous with respect to including 9, 10, 11, 12, 13, 16, and 18, TASC urges the Commission to include all of these for this next step, acknowledging that parties may renew their objections after learning more about the element through the consultant's work.

With respect to environmental compliance costs (Element 25), Oregon's Integrated Resource Planning (IRP) methodology for considering new resources, which states¹²:

¹² Order Nos. 07-002 and 07-047, Guideline 8.

“Utilities should include, in their base-case analyses, the regulatory compliance costs they expect for carbon dioxide (CO₂), nitrogen oxides, sulfur oxides, and mercury emissions. Utilities should analyze the range of potential CO₂ regulatory costs in Order No. 93-695, from zero to \$40 (1990\$). In addition, utilities should perform sensitivity analysis on a range of reasonably possible cost adders for nitrogen oxides, sulfur oxides, and mercury, if applicable.”

Accordingly, TASC believes all current compliance costs for carbon, NO_x, SO_x, particulates, mercury and other such values should be included. In addition, the estimated future cost of carbon should be included in the methodology. Staff’s July 15, 2015 Comments appear to agree with this approach. TASC agrees with the Staff recommendation that the consultant include “a range of carbon values based on potential future compliance scenarios.”¹³ TASC also notes that an April 16, 1992 memorandum from the Oregon Department of Justice to the Commission opines that the Commission has the authority to consider external costs and may require utilities “to anticipate external costs that may be internalized in the future and to include such costs in their [procurement plans].”¹⁴

B. Include Elements 20 And 25, If Clarified

	Other Direct Inputs Includable If/As Clarified	
20	Production of the distribution-side solar, separated into that used behind-the-meter and that exported to the utility system where necessary	50
25	Environment: Compliance Impacts (Forecasted)	78 - 80

TASC can understand the elements above as direct inputs but it requires explanation to reach this understanding. First, with respect to number 20 (Behind-the-Meter Production During the Billing Month)¹⁵ – which TASC opposed during the workshops – it is possible to understand this as part of the necessary input that is more clearly stated as “Production of the distribution-side solar, separated into that used behind-the-meter and that exported to the utility system where necessary.” Expressed thus, this element—the production (energy and capacity) of various categories (technology and size) of distribution-side solar resources – is a critical input to the methodology and other parties may well agree with this clarification. Indeed, it is difficult to imagine how the methodology could calculate avoided energy or capacity costs – or any of a number of other elements for which there was unanimous support – without it.

¹³ Staff Comments at page 10.

¹⁴ See Memorandum from Paul A. Graham to Lee Sparling, re Commission Authority to Consider External Environmental Costs, page 6 (April 16, 1992). TASC understands that OREP will be attaching this Memorandum to its comments filed today.

¹⁵ Element 20 is part of a group of three – 14, 20 and 22 – all related in some way to net metering. TASC opposes including 14 and 22 as explained below. TASC initially indicated support for 14 in responses to Staff’s spreadsheet. As it developed these comments and considered all of the elements together, however, it became clear that this one did not fit, for the reasons explained.

The production may or may not be behind the meter and it may or may not be associated with a customer account that is using net metering. It will likely be different depending on various groups of characteristics (e.g., location, angle of the panels) that TASC expects the consultant will identify. As an input, this element will likely need to include data and assumptions at a much finer level than monthly. To determine avoided energy and capacity costs, it may be necessary to gather historical hourly (or even finer) data and develop methodologies to forecast such hourly information for future periods. It should be part of the RFP and statement of work.

TASC also urges inclusion of 25, more clearly expressed as Environment: Compliance Impacts (Forecasted). Above we recommend that all current environmental compliance costs should be included plus the forecasted cost of carbon using a range of scenarios. In addition, the consultant should also include estimated future environmental compliance costs. This is no different in nature or more difficult than forecasting natural gas prices or other future utility costs or cost reductions. Again, TASC expects that the consultant will define this and identify the assumptions and information sources that are useful to quantifying it.

C. Include External Costs or Benefits

	External Costs or Benefits	
26	Avoided environmental externalities associated with operations of existing plants or avoided generating system additions for energy or capacity	
	Carbon—Societal Impacts of Carbon	73
	Carbon—Ocean Warming and Acidification	64
	NOx/SOx/Particulates—Societal Impacts	64
	Avoided water usage—for Thermal Power Production or Fracturing-Related	64
15	Effect of distribution-side solar resources on economic development (e.g. business investment, jobs) within the utility’s service territory	67
17	Effect of distribution-side solar resources on health outcomes within the utility’s service territory affected by utility infrastructure	64

All of the above elements – restated in an attempt to increase clarity – should move forward to the RFP and consultant’s statement of work. Staff’s July 15, 2015 Comments conclude that these elements are “outside the scope of the OPUC’s activities” and are therefore “outside the scope of this investigation” because they are “not considered in OPUC’s rate making process.”¹⁶ TASC respectfully disagrees. Consideration of these elements will be important to Commission decision making across a range of proceedings, many of which allow the Commission to take such information into account (see examples listed above in Section I of these comments). Moreover, the Commission is not bound by any precedent to ignore these elements, which are consistent with Commission considerations in the IRP process.

These are elements critical to those Commission decisions and answers that require a broader context than near-term utility revenue requirements, such as rate spread and design. While

¹⁶ See Staff Comments, page 8, with respect to Element 16 (we assume Staff meant to refer to element 15 – Societal: Economic Development).

externalities are not part of revenue requirement and are not charged to electricity users, they are an important part of the context into and for which the Commission is making decisions about revenue requirement and, therefore, rates. It is prudent and efficient to have the consultant provide written definitions of these elements and identify sources for relevant historical data or forecasting assumptions.

This is the first proceeding in which the OPUC will be developing a methodology to identify the resource value of solar generating resources in Oregon. The history cited by Staff in its July 15, 2015 Comments does not limit the Commission's determination of the resource value of solar in this docket.¹⁷ For example, Docket 1559, which is discussed in Staff's Comments, dealt only with the implementation of the statutorily mandated Volumetric Incentive Rate Pilot Program and specifically the requirements of ORS 757.365. Staff notes correctly that Order 12-396, which was issued in Docket 1559 to address the statutory requirements, did not choose a specific approach to calculating a resource value of solar.¹⁸

Staff's Comments also discuss a 2014 "Solar Report," which resulted from an "Investigation into the Effectiveness of Solar Programs in Oregon" that was required by HB 2893, which extended the Volumetric Incentive Rate Pilot Program.¹⁹ The 2014 Solar Report did not adopt a methodology for determining the resource value of solar. It did, however, refer to the resource value of solar for the purposes of the 2014 Solar Report as "the value of the benefits that solar generation brings to the utility system and ratepayers in general."²⁰ Such a limited scope may have made sense in the context of the Solar Report. However, the limited scope taken in the Solar Report is not binding on the Commission in this docket, and is inconsistent with the Commission's IRP framework.

With respect to distributed generation, Oregon's IRP methodology states²¹:

"Electric utilities should evaluate distributed generation technologies on par with other supply-side resources and should consider, and quantify where possible, the additional benefits of distributed generation."

TASC agrees. Social benefits, and their flip side social harms, must be part of any rigorous risk assessment. As Oregon's IRP guidelines specify²²:

"The plan must be consistent with the long-run public interest as expressed in Oregon and federal energy policies."

In sum, TASC suggests that this docket rely heavily on, and strive for consistency with, the full scope of elements that are relevant in making IRP decisions, with extra focus on costs and benefits of distributed generation at the electricity systems' distribution level.

¹⁷ *Id.* at pages 1-3

¹⁸ *Id.* at page 2.

¹⁹ *Id.*

²⁰ Solar Report at 2.

²¹ Order Nos. 07-002 and 07-047, Guideline 8.

²² Order Nos. 07-002 and 07-047, Guideline 1(d).

D. Exclude Items That Are Not Really Inputs

Technique Matters		
	Utility: Production Impacts (IRP Process)	
19	Levelized cost of production over the lifetime of the project based on an assumed annual capacity factor (\$/MWh)	55
21	Resource Need	44

These two elements may well be part of the RFP and resulting consultant statement of work but it is necessary to clarify that these are not inputs but, rather, techniques applied to the inputs to produce outputs. The RFP should request that the consultant specify in detail the techniques proposed. If creating a levelized cost of production over the lifetime of the resources being compared is part of the techniques, which is likely, several technique decisions will be important:

- What lives to assume for the resources involved. The assessment period used in the value of solar methodology should be consistent with Oregon’s IRP guidelines and, at a minimum, cover the expected life of solar resources, which is at least 25 years.²³
- How to deal with unequal lives for the resources being compared; i.e., what to assume at the end of the life of the shorter-lived resource
- What discount rate to use (different discount rates apply to different groups the whose perspectives the Commission may be considering in making a given decision or answering a question)

Similarly, if “Resource Need” is understood as the future year in which a utility needs to increase the size of its supply portfolio, then the technique for avoided cost may well use avoided costs associated with the near-term before this date and associated with long-term avoided costs after this date. The timing of a utility’s resource need is typically a part of the technique applied to a variety of historical data and assumptions to determine avoided costs. It is not a separate input.

E. Exclude Elements That Are Matters To Be Evaluated Using Methodology Outputs

Elements to Exclude		
	Matters To Be Evaluated Using the Output of the Methodology	
14	Net Metering Credits	75
23	Tax credits (State and Federal)	22
	Other	
22	Rate Impacts: Lost Utility Revenue	25
24	DSM Alternative Impacts	0

²³ See Order Nos. 07-002 and 07-047. With respect to the planning horizon for considering costs and benefits, Oregon’s IRP methodology states: “The planning horizon for analyzing resource choices should be *at least 20 years* and account for end effects. Utilities should consider all costs with a reasonable likelihood of being included in rates over the long term, which extends beyond the planning horizon *and the life of the resource.*” (italics added)

Despite the reasoning in sections I and II, the Table of Elements through which parties registered positions during the workshops does contain a handful of “elements” that do not qualify as either inputs or techniques and, thus, should not be part of the RFP or consultant’s statement of work. These are in two categories: “Matters To Be Evaluated Using the Output of the Methodology” and “Other.”

Element 14: “Rate Impacts: Net Metering Credits” is best understood as a reason the Commission might need output from the methodology. One of the purposes of the methodology is to answer the question what price the utility should pay for distribution-side solar energy. In other words, use of the methodology, from time to time, will allow the Commission to evaluate the appropriateness of the amounts paid for all types of solar output, whether the “net” exported from a customer-sided solar resource or the total from a feed-in or otherwise distribution grid-connected solar resource. In the case of net metering, the methodology may either:

- Identify the reasons to consider the solar energy used on site as different from the solar energy exported to the utility system and quantify the benefit and cost differences associated with these reasons; or
- Make clear that that the value of distribution-side solar resources does not differ if some of the resource output is used at a particular site and some made available to the grid.

In either case, outputs from the resource value of solar will help the Commission assess the resource value of the solar production and the appropriateness of any financial incentive the utility may be providing that solar through the price paid or credit given for exported power.

Element 23: “Tax Credits” is very similar, except in this case the Commission would likely be answering a question rather than making a decision and the question would include the perspectives of everyone in the state, not just the utility revenue requirement. Tax credits cannot be an input to the very methodology used to evaluate them.

In the other category fall two elements: “Rate Impacts: Lost Utility Revenues” (Element 22) and DSM Alternative Impacts (Element 24). The latter is easiest to address because it was not discussed in the workshops and its meaning is too unclear to comment. The fact that it received no support attests to this.²⁴ This is a good example, however, why the statement of work should permit the consultant to identify and consider any elements that may be missing from this list. Perhaps there is something to DSM Alternative Impacts that is important to the resource value of solar. If so, the consultant – an expert in such studies – is likely to identify it.

²⁴ Staff’s July 15, 2015 Comments recommend inclusion of this item under the theory that “as utility revenues fall, less funding will go to the public purpose charge resulting in less investment in energy efficiency.” TASC respectfully disputes the assumptions underlying in this statement. There is no basis for the assumption that utility revenues are falling or will fall. Nor is there any basis for assuming that public purpose charges cannot be decoupled from utility revenue. Colorado, for example, requires net-metered customers to pay for public purpose charges on the basis of electricity use irrespective of whether electricity is supplied by a utility.

The inappropriateness of the element for Lost Revenues requires more explanation. This is a calculated amount, not an observed one. The calculation starts from the production of the account's solar resources, subtracts what was exported to the utility system and assumes the remainder is energy (and demand where applicable) the account would have purchased from the utility except for the solar panels. While in the first several months after installing solar, that assumption might be reasonable, it gets less reasonable as time goes on. What might the occupant at that account have done if he or she had not invested in the solar resource? We can never know. The "Lost Revenues" then are calculated by applying the applicable utility tariff to this assumed amount not taken from the utility system.

This is not a "cost" of solar resources any more than kWh not taken from the utility are a "cost" of a more efficient HVAC system or motor. Second, the data underlying the Lost Revenues is a part of the data the Commission would examine in deciding whether the design of a given tariff equitably addresses the customer accounts covered by that tariff which, in turn, depends upon a judgment regarding the degree to which those accounts are similarly situated with respect to the energy and capacity they take from the utility. Some of the inputs to the value of solar resource methodology will be useful to a decision about rate design but they will not provide all of the information needed for that decision.

IV. Conclusion

TASC appreciates the opportunity to file these comments and looks forward to continued participation in this docket.

Respectfully submitted this 20th day of July, 2015

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Appendix A

#	Should these elements be included for exploration for a methodology to lead to a resource value of solar?	Agreement %
Utility Cost or Benefit Inputs		
1	Avoided energy impacts	100
2	Avoided capacity additions	100
3	Line losses	100
4	Avoided transmission and distribution maintenance and capital additions	100
5	Avoided compliance expenditures (operating or capital) associated with a Renewable Portfolio Standard	100
8	Benefits, costs and revenues associated with interconnecting distribution-side solar resources into the utility system	92
7	Benefits, costs, and revenues associated with integrating distribution-side solar resources into the utility system	100
10	Benefits, costs, and revenues associated with utility customer service and accounting for distribution-side solar resources	92
11	Benefits, costs, and revenues associated with operational support of distribution-side solar resources	86
12	Benefits, costs and revenues associated with ancillary services and grid support provided by distribution-side solar resources	85
6	Effect of distribution-side solar on reliability, resiliency, and disaster recovery within the utility system	100
9	Effect of distribution-side solar production on wholesale market energy and capacity costs	92
25	Avoided environmental compliance costs associated with operations of existing plants or avoided generating system additions for energy or capacity (current and forecasted for carbon)	91
13	Avoided fuel price hedging	85
16	Avoided natural gas delivery infrastructure	67
18	Effect of distribution-side solar resources on the utility's cost of capital	57
Other Direct Inputs Includable If/As Clarified		
20	Behind-the-Meter Production During Billing Month	50
25	Environment: Compliance Impacts (Forecasted)	80-91
External Costs or Benefits		
26	Avoided environmental externalities associated with operations of existing plants or avoided generating system additions for energy or capacity	
	Carbon—Societal Impacts of Carbon	73
	Carbon—Ocean Warming and Acidification	64
	NOx/SOx/Particulates—Societal Impacts	64
	Avoided water usage—for Thermal Power Production or Fracturing-	64

	Related	
15	Effect of distribution-side solar resources on economic development (e.g. business investment, jobs) within the utility’s service territory	67
17	Effect of distribution-side solar resources on health outcomes within the utility’s service territory affected by utility infrastructure	64
	Technique Matters	
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	Elements to Exclude	
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