WASEIA
Washington Solar Energy Industries Association

Dec. 14, 2021

Re: DOCKET UE-210804
Comments from Washington Solar Energy Industries Association

Solving the puzzle of how to best fit DERs into the electrical grid starts with data and modeling.

CETA's biggest priority in utility resource planning is the fundamental shift from "least reasonable cost" resources to "lowest reasonable cost carbon free resources." DERs -- particularly when paired with storage -- meet that second criteria, but because of their geographic dispersion and the relatively small generating capacity of individual DERs, their benefits (including cost-effectiveness) are inadequately demonstrated in existing modeling schemes.

As shown by the CEIP filings of Washington's three investor-owned utilities in the second half of 2021, their preference for adding renewables to the grid are utility scale wind and solar. DERs are addressed, but essentially as an afterthought and added in generic 20, 50 or 75-100 mWh blocks with a nebulous or non-existent deployment strategy. Why? Existing modeling schemas are simply not granular enough to properly model DERs and incorporate them into the grid.

Distribution lines below 69 kV are improperly modeled. But modernized approaches to resource modeling clear show that utility scale renewables and distributed solar + storage are ideal complements.

WASIEA recommends that the UTC mandate the use of more advanced resource modeling that allows for the "rightsizing" of DERs. This modeling needs to include distribution level voltage below 69kV which is where DERs exist. Additionally this modeling needs to be able to scale down to smaller geographic areas -- an area of 3 sq km or smaller is recommended. Given the often small size of DERs, the modeling needs to account for DERs in 1kW increments of power over the course of 5 minute periods of time.

The above would comply with **Principle 1 (Treat DERS as a Utility System Resource)**, **Principle 4 (Account for Relevant, Material Impacts**) and **Principle 5 (Conduct Forward Looking, Long-term, Incremental Analyses)**.

We point to examples where sophisticated models demonstrate widespread, rapid deployment of DERs and storage are crucial to grid to cost-effective decarbonization over a short time frame such as the April 2021 report prepared by the DOE National Renewable Energy Laboratory for the Los Angeles Water & Power District, a municipal utility[1].

[1] NREL, LA100: The Los Angeles 100% Renewable Energy Study, March 2021

"The real-world impact of approaching 100% renewables cannot be analyzed using just one method or model—so LA100 took a new approach. The study uniquely integrated diverse capabilities across the lab and its study partners, including detailed electricity demand modeling, power system investments and operations analysis, distributed energy resources and distribution grid modeling, economic impact analysis, life cycle GHG analysis, and photochemical air quality modeling, among others."

Another modeling tool to consider is the **WIS:dom®-P** schema from Vibrant Clean Energy. WASEIA previously urged study of WIS:dom®-P to UTC in our comments regarding the final draft of the 2021 Washington State Energy Strategy.

WIS:dom®-P (Planning Model) – Vibrant Clean Energy

"WIS:dom®-P simultaneously co-optimizes the capacity expansion requirements (generation, transmission, and storage) and the dispatch requirements (production cost, power flow, reserves, ramping, and reliability) for the entire electric grid of interest.
WIS:dom® utilizes high-resolution (spatially and temporally) weather data to determine resource properties over vast spatial-temporal horizons. Thus, WIS:dom® can be used on scales as small as campuses, cities, counties or states/provinces; but uniquely can also be used for sovereign entities and continents. Moreover, these scales can be nested, allowing high-fidelity local modeling accompanied with lower-fidelity larger areas to create feedbacks within the model that simulate outside influences on local markets."

The following links demonstrate real-world usage of the Vibrant Clean Energy modeling:

LocalSolarRoadmap_FINAL.pdf (vibrantcleanenergy.com)

Reports – Vibrant Clean Energy

Insistence on granular scale, data intensive model also supports all of the points outlined in **Table 3: Policy Goals Related to DERs**. In particular:

• *Ensure all customers benefit from the transition to clean energy through the equitable distribution of energy and non energy benefits and reduction of burdens to vulnerable populations and highly impacted communities* by targeting DER + storage deployments to these communities and populations;

• *Ensure all customers benefit from the transition to clean energy through energy security and resiliency.* DER + storage, especially those incorporated into a local microgrid, are strong drivers of grid resiliency.
• *Develop lowest reasonable cost resources*. Advanced modeling has conclusively demonstrated that optimized DER deployments are the lowest cost solution to a carbon free grid.

• *Enable significant and swift reductions in greenhouse gas emissions.* DERs + storage are the fastest clean energy resource that can be deployed

• *Maintain system reliability.* Properly modeled DER's will assist an aging distribution grid in peak summer conditions such as this summer's heat dome.

Answers to Staff Questions:

1. Do the policy goals identified in Table 3 appropriately and sufficiently cover the applicable policy goals for Step 1 of the process to develop a Commission specific primary test for DERs?

WASEIA agrees with the policy goals identified in Table 3 **with the addition of the need for local clean energy jobs,** which DERs provide.

2. Do any of these policy goals apply to some DERs but not others? Please discuss the advantages and disadvantages of applying some of the policy goals to different DER Types.

Distributed solar will be at a great disadvantage if it is not analyzed independently of storage at this moment in storage technology's historical pricing. Storage can always be added later when prices have decreased as supply chains ramp up.

3. The cost-effectiveness tests currently employed by Washington investor-owned utilities are the modified total resource cost test and the utility cost test. For stakeholders to have a full understanding of current practice, utilities should provide a table of utility impacts (costs and benefits) currently used for evaluating cost-effectiveness of DERs in response to this question. Specifically, the IOUs should indicate what impacts are currently included for the following different DER resources: energy efficiency, demand response, distributed generation, distributed storage, building electrification, transportation electrification, or other DERs identified in a planning process.

WASEIA is very interested in this question, but as discussed above, we are very concerned that there is not a full understanding of DERs value to the grid, particularly distributed generation, resulting from the current modeling tools being employed. We recommend new modeling tools be required of utility planners to properly analyze this value and that this data is shared in an open source manner. Said tools need to include the ability to model the distribution grid below 69kV, area of 3 sq km or smaller is recommended, 1kW increments of power and 5 minute periods of time or the value of distributed generation is lost.

4. Are there specific questions related to cost-effectiveness from the NSPM or other sources that are necessary to answer during the course of this investigation? For example, choice of

discount rates or incremental cost calculations? Please describe why answers to these questions are necessary to develop a Commission jurisdiction-specific test.

> WASEIA reiterates the importance of advanced modeling to determine the cost-effectiveness of distributed generation..

5. This Docket is focused on electric utility system cost-effectiveness changes due to CETA. Although CETA does not apply to gas utility systems, other recent policy changes indicate a need to examine current cost-effectiveness practices. Please describe the advantages and disadvantages of addressing both electric and natural gas cost-effectiveness in this Docket to ensure a consistent framework is used.

> WASEIA has no comment on this question.

6. The Commission is seeking stakeholder input to develop a workplan for completing this investigation. After reviewing the NSPM, the Commission will convene a series of stakeholder workshops and solicit multiple rounds of stakeholder comments to develop a new primary, jurisdiction-specific test and address other topics raised during stakeholder meetings. We anticipate this process will include five to seven meetings. Please provide feedback on this proposed process, including reasonable timeframes for completion.

> WASEIA would like to see the stakeholders given ample time to review questions from the Commision, six weeks minimum.

7. We anticipate the discussions will cover the key issues outlined below, following the 5-step NSPM process described above. Please provide comments on this list of issues and identify any additional issues the Commission should evaluate.

a. Discuss and confirm relevant policy goals. See preliminary list above.

> WASEIA agrees that the conversation ought to start here.

b. Review and confirm the scope of the BCA framework's application to different regulatory contexts for DERs, as needed, e.g., IOU programs, pricing mechanisms, procurement, rate cases, planning, and grid investments.

> WASEIA reiterates the importance of advanced modeling to determine the cost-effectiveness of distributed generation.

c. Review the decision-making process for DER investments in terms of: BCA,Rate impact analysis, and relevant qualitative and quantitative factors and metrics that may fall outside the BCA and rate impact analyses.

WASEIA reiterates the importance of advanced modeling to determine the cost-effectiveness of distributed generation.

d. Review the utility system impacts currently accounted for in BCA for the range of DERs and identify any gaps and methodologies to account for missing impact factors. What methodologies can be used to quantify or account for "hard to quantify" utility system impacts?

Positive impacts to the grid resulting from DERs are not currently accounted for. We need to be looking at smaller voltages, smaller increments of power, smaller area and smaller increments of time.

e. Determine the relevance of accounting for host customer impacts based on articulated policy goals and objectives. Should the host customer impacts currently accounted for in IOUs TRC test be reviewed? Should the primary test include host customer impacts? Is there symmetrical treatment of costs and benefits? What methodologies can be used to quantify or account for "hard-to-quantify" host customer non-energy impacts?

It is very important to account for the positive impacts DERs have on a host site. Methodologies to include DERs value could include increased appraisal values, lower operation costs in the case of electric vehicles, and improved air quality in the case of energy efficient ventilation.

f. Discuss how to treat "other" fuels, i.e., fuels that are affected by DER but are not provided by the utility funding the DER in the primary test.

WASEIAI has no comment.

g. Determine the relevant societal impacts based on articulated policy goals and objectives. Review the societal impacts currently accounted for in IOUs' TRC test and identify gaps. What methodologies can be used to quantify or account for "hard to quantify" societal impacts?

The transition to clean energy has the potential to create tens of thousand good paying jobs in the DER sector. It is vitally important to these conversations to include the benefit these jobs have to a community. We would recommend a Societal Return on Investment calculation be utilized.

h. Discuss whether and how the primary test can be applied to all DER types.

If advanced modeling is used to correctly determine the cost-effectiveness of distributed generation, we would agree that the primary test can be used for all DER types.

i. Discuss whether secondary tests are warranted and, if so, what those tests should be.

WASEIA has no comment at this time.

j. Review the process and considerations for selecting a discount rate for primary and secondary tests.

In the case of customer owned DERs, we believe that it is worth the Commision exploring whether there needs to be a new process for accounting for the time value of money and riskiness of the utility in incentives to DERs.

Thank you for the opportunity to provide comments.

Respectfully,

Washington Solar Energy Industries Association