

## **Agenda - National Lab Technical Workshop on Distributed-Solar Grid Impacts**

Utah Public Service Commission Docket No. 17-035-61

*Workshop Date: July 11<sup>th</sup>, 1-5 pm*

*Location: Heber Wells Building, Room 401*

---

The technical workshop will be jointly delivered by staff from both Pacific Northwest National Laboratory (PNNL) and Lawrence Berkeley National Laboratory (LBNL).<sup>1</sup> The objective is to provide parties in the above-referenced proceeding with a common understanding of key issues relevant to the development of solar export credit rates, with a primary focus on T&D grid impacts of distributed solar and cost-benefit analysis of those impacts.

**Introduction** by Utah Division of Public Utilities staff (10 min).

- 1. T&D Grid Impacts: Engineering Concepts** (120 min). Distribution system attributes important to assessing the impacts of distributed solar. Potential impacts on the timing and need for capital investments. Impacts of other distributed technologies in conjunction with distributed solar. Impacts on T&D line losses. Ancillary services required for grid operations and potential positive and negative impacts of distributed solar on ancillary services, including voltage and frequency regulation. *Presenter: Kevin Schneider, PNNL.*

**Break** (20 min)

- 2. T&D Grid Impacts: Cost-Benefit Analysis** (30 min). Potential costs and benefits associated with integration of distributed solar energy on the T&D system. Reviewing methods and results from distributed solar cost-benefit studies that have considered T&D impacts. Understanding the context in which these studies are conducted and the associated data and analytical requirements. Applicability of these study results and methods to Utah and to the development of solar export credit rates. Describe the relative significance of T&D costs and benefits compared to other utility system impacts. *Presenter: Juliet Homer, PNNL.*
- 3. Impacts of Solar-Export Credit Rates on Solar Deployment, Utilities and Customers** (30 min). Positioning solar export credit rates within the broader landscape of distributed solar rate reforms. Potential for solar export credit rates to mitigate the impacts of distributed solar on utility ratepayers and shareholders. Potential impacts on solar economics and market development, including adoption rates, system sizing, and co-deployment of solar plus storage. Consideration of export quantities. Key distinctions between residential and C&I customers. *Presenter: Galen Barbose, LBNL.*
- 4. Experiences with Solar Export Credit Rates and other Emerging Solar Compensation Schemes** (30 min). Reviewing the design and implementation of solar export credit rates and other new solar compensation approaches to-date, including compensation for locational value. Understanding what value-elements are included in those rates and how they are computed. Observed impacts on solar market development, including on adoption rates,

---

<sup>1</sup> This assistance is being funded by the U.S. Department of Energy's Office of Electricity, Transmission Permitting and Technical Assistance.

system design, and co-deployment with storage and other load shifting strategies to reduce exports. *Presenters: Juliet Homer, PNNL.*