BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of a Working Case to Explore Emerging Issues in Utility Regulation	))	**File No. EW-2017-0245**

MISSOURI DIVISION OF ENERGY'S RESPONSE TO *ORDER SEEKING REPSONSES REGARDING DISTRIBUTED ENERGY RESOURCE ISSUES, AND SCHEDULING A WORKSHOP MEETING*

COMES NOW the Missouri Division of Energy ("DE"), by and through the undersigned counsel, and in response to the questions propounded in the Public Service Commission's ("Commission") *Order Seeking Responses Regarding Distributed Energy Resource Issues, and Scheduling a Workshop Meeting* ("Order") in the above-captioned matter regarding distributed energy resources ("DERs"), states as follows:

What are the current levels of distributed energy resources (energy efficiency, distributed generation, demand-response, etc) in Missouri?

DE maintains a record of distributed renewable energy generation certified under Missouri's Renewable Energy Standard ("RES"). This information is available through the links under the "Missouri Renewable Energy Standard" section of https://energy.mo.gov/resources/renewable-energy. Please note that the lists at the links on our website only include resources certified under the RES, that information on DERs owned by customer-generators is aggregated, and that not all of the resources are located in Missouri (consistent with Section 393.1030.1, RSMo, which allows for the use of out-of-state Renewable Energy Credits for RES compliance). The U.S. Energy Information Administration ("EIA") also maintains data on DERs at various parts of the "Electricity" section of its website (see https://www.eia.gov/electricity/data.php). In DE's experience, EIA data tend to lag by varying

amounts of time. The U.S. DOE Combined Heat and Power Installation Database documents 21 combined heat and power ("CHP") applications in Missouri (https://doe.icfwebservices.com/chpdb/state/MO). The Commission Staff has records of energy efficiency levels achieved by Missouri's investor-owned utilities.

DE would note that it is unaware of any investor-owned electric utility in Missouri asserting that it has reached the statutorily defined limits for net metering. These limits are defined as a total interconnected capacity matching one percent of a utility's single-hour peak load in any particular calendar year, as well as five percent of a utility's single-hour peak load in the prior year (Section 386.890.3(1), RSMo.). Additionally, the American Council for an Energy-Efficient Economy's 2017 scorecard indicates that Missouri's incremental savings from electric energy efficiency programs in 2016 were 0.39 percent of retail electric sales; more than half of the states listed in the report achieved savings of between 0.47 percent and 3.00 percent.[1]

Should previous Commission policy decisions regarding demand-response aggregation be reconsidered?

To the extent allowed by Missouri law, DE supports the ability of customers to reasonably aggregate demand-response resources. Demand-response aggregation could allow utilities and/or customers to more easily participate in any regional demand-response markets that may emerge, and could also enable smaller demand-response resources to cost-effectively participate under the Missouri Energy Efficiency Investment Act ("MEEIA").

Should a model state tariff be designed?

[1] Berg, Weston, Nowak, Seth, Kelly, Meegan, Vaidyanathan, Shruti, Shoemaker, Mary, Chittum, Anna, DiMascio, Marianne, and DeLucia, Heather, 2017, *The 2017 State Energy Efficiency Scorecard*, American Council for an Energy-Efficient Economy, http://aceee.org/sites/default/files/publications/researchreports/u1710.pdf, page 29.

DE is unclear as to the scope of this tariff given the wide variety of DERs (e.g., renewable energy, combined heat and power, energy efficiency, demand response, storage). However, to the extent that a model tariff is designed collaboratively and is based on best practices observed in other states, DE would support the development of a model state tariff for applicable DERs in order to improve clarity and certainty for customers and utilities.

Should changes be made to the Integrated Resource Planning (IRP) process to accommodate increased use of distributed energy resources?

Yes. The IRP process is heavily weighted towards traditional supply-side investments by utilities, and – in practice – often relies on plan selection using the lowest net present value revenue requirement ("NPVRR"). Reliance on the NPVRR is inappropriate, as the "lowest cost" option is not necessarily the "best cost" option – i.e., one that also enables consumer choices, attracts 21st century jobs, and provides consumers with the most cost-effective solutions for saving energy. Long-term planning should consider the strategic timing of investments to avoid clustering too many investments at one point in time. The current reliance on the IRP process for MEEIA program development is a case in point; the statutory goal of MEEIA is to achieve all cost-effective demand-side savings (Section 393.1075.4), not to find the least-cost portfolio of demand-side programs. While the IRP process can provide useful inputs for MEEIA planning (such as utility avoided cost calculations), the IRP process unnecessarily restricts MEEIA program planning by focusing on the lowest cost suite of utility investments, rather than the long-term value of investments for customers. Similarly, customer-sited generation would only be evaluated from a "least cost" perspective.

Part of the solution to this dilemma is to examine DERs from a more comprehensive perspective that incorporates both their benefits and costs. DE recommends that the Commission

initiate a "value of DERs" proceeding that is moderated by a neutral third party in order to determine the next steps for a value of DERs study. A value of DERs study could consider attributes such as resiliency, islanding capability, mitigating the scope of disaster recovery, peak reduction events, grid bypassing incidents, and other aspects of DERs that support flexibility and promote grid optimization. The IRP process should also be modified to use a comprehensive cost-benefit analysis comparison for all resources, rather than an examination of least cost resources.

What information about distributed energy resources do the Regional Transmission Organizations need? What information do the utilities have? And what information are the utilities providing to the Regional Transmission Organizations?

The Smart Electric Power Alliance recently released a report addressing issues associated with bundling DERs for use in wholesale markets. Among the identified issues were eligibility requirements, metering and telemetry, and coordination between Regional Transmission Organizations, aggregators, and distribution utilities. This report is available at https://sepapower.org/resource/distributed-energy-resource-aggregations-wholesale-markets/.

Is any new behind-the-meter technology or hardware needed to accommodate or facilitate the development of distributed energy resources?

DE notes that machine learning could facilitate the use of DERs on a smart grid to improve the speed of two-way communications; this would likely require the use of smart meters. Other technologies or hardware may be required under customer-specific circumstances.

Will any distribution system upgrades be required to accommodate or facilitate the development of distributed energy resources?

DE anticipates that improvements to substations, transformers, switches, and so on will be necessary to accommodate or facilitate the development of DERs. Some of these investments may

be needed regardless of DER penetration levels and could be examined through the IRP process to ensure thoughtful implementation. By contrast, other distribution system upgrades may be avoided by optimized planning for DERs. Optimized planning for DERs should also consider how to proactively address clusters of DER penetration in order to avoid the need for sudden, substantial upgrades.

What process should be developed to provide for resource accreditation, including consideration of capacity factors?

DE has no position on this issue at this time, but may submit comments in the future as appropriate.

Are there any other issues related to distributed energy resources that should be brought to the Commission's attention?

DE wishes to re-emphasize that the Commission's planning processes should encourage customer choice, enable Missouri to attract 21st century jobs, and provide consumers with the most cost-effective solutions for saving energy. This will require thorough assessments of investment options that examine not just the costs, but the benefits of utility and consumer investments.

The option to use CHP is generally under-emphasized in DER discussions. CHP can provide increased resiliency in the face of, and support economic recovery from, natural or manmade disasters. Commercial, institutional and industrial customers, as well as communities and critical facilities that could benefit from CHP as the heart of a microgrid, are impeded from considering CHP due to the lack of clear, understandable, and nondiscriminatory interconnection agreements with electric utilities.

Planning processes should be flexible in order to account for the rapidly evolving technological and economic landscape of the utility industry. DE encourages the Commission to

develop rules consistent with the recommendations and objectives in the Missouri Comprehensive State Energy Plan[2] that pertain to DERs. These include the following recommendations:

- 1.1: Modifying the Missouri Energy Efficiency Investment Act (pp. 212-213) –
    - Allow electric utilities to treat conservation voltage regulation measures in the same manner as other energy efficiency measures.
    - Allow electric utilities to treat combined heat and power in the same manner as other energy efficiency measures.
- 1.9: Expanding Energy Improvements in State Facilities (pp. 218-221) –
    - Examine the potential for CHP, geothermal, and solar thermal applications at existing and new state facilities as a means of addressing efficiency on a larger scale.
    - Promote the development of public-private partnerships to implement energy conservation measures, including CHP projects.
    - Examine the potential for generating renewable power at state facilities.
- 2.6: Maintaining Business Affordability and Competitiveness (pp. 226-227) –
    - Continue to review and recommend revisions to regulated utility tariffs to eliminate barriers or incent on-site customer generation of electricity for businesses.
    - Continue to support regulated utility efforts to encourage industrial and commercial businesses to locate or remain in Missouri, especially in geographies where existing energy infrastructure is underutilized.
    - Continue to identify and encourage opportunities for large commercial and industrial customers for cost-effective energy efficiency, demand response

[2] The Missouri Comprehensive State Energy Plan is available at https://energy.mo.gov/comprehensive-state-energy-plan.

programs and on-site generation to help them reduce their energy consumption and resource use and manage their peak energy usage.

    - Review and identify opportunities to address businesses' interest in purchasing clean energy for corporate responsibility commitments as well as incorporating competitive processes for selection of new electricity generation.

- 3.2: Improving Missouri's Interconnection and Net Metering Rule (pp. 228-229) –
    - Establish a working group to develop an approach for consistent implementation of the Net Metering and Easy Connection Act that results in a fair and expedited review process for all types of renewable energy systems.
    - Establish a "Value of Solar" calculation for all net-metered customers that includes costs associated with the use of the grid as well as benefits provided by solar (or other distributed) generation.
    - Use real-time or near-real-time pricing if metering infrastructure allows.
- 3.6: Expanding Combined Heat and Power Applications (pp. 231-232) –
    - Develop a statewide CHP potential study that fully assesses both the technical and economic potential of CHP opportunities.
    - Establish cost-based stand-by rates and interconnection practices that reflect best practices.
- 3.7: Guiding the Development of Microgrids (pp. 232-233) –
    - Adopt standardized microgrid interconnection requirements and develop clear rules for how microgrid owners interact with utilities.
    - Develop tariff structures applicable to microgrids for Missouri utilities for review and approval by the PSC that would:

- Not be punitive or discriminating and appropriately price various types of standby power.
- Encourage microgrid development with an initial focus on areas of the grid that are congested or experiencing rapid demand growth.

- Require that microgrid owners and operators provide utilities with information that could affect planning including information about capacity, system design, and location.

WHEREFORE, the Missouri Division of Energy respectfully files its response to the questions posed in the Commission's Order and prays that the Commission consider the responses herein.

Respectfully submitted,

/s/ Marc Poston

Marc Poston, MBN #45722
Senior Counsel
Department of Economic Development
P.O. Box 1157
Jefferson City, MO 65102
(573) 751-5558
marc.poston@ded.mo.gov
Attorney for Missouri Department of Economic Development – Division of Energy

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing have been served electronically on all counsel of record this 20th day of October, 2017.

/s/ Marc Poston
Marc Poston