BEFORE THE STATE CORPORATION COMMISSION

OF THE STATE OF KANSAS

DIRECT TESTIMONY

OF

DIANE MUNNS

ON BEHALF OF

ENVIRONMENTAL DEFENSE FUND

DOCKET NO. 15-WSEE-115-RTS

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Diane Munns. My business address is 257 Park Avenue South, 17th Floor, New York, NY 10010.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed as Senior Director of Collaboration, Clean Energy Program by the Environmental Defense Fund ("EDF").

Q. ON WHOSE BEHALF ARE YOU SUBMITTING TESTIMONY?

A. I am testifying on behalf of EDF.

Q. WHAT IS EDF'S ROLE IN THIS PROCEEDING?

A. There is a clear connection between energy policy choices, such as those proposed in this proceeding and continued reduction of greenhouse gas emissions. EDF believes that the goals of Westar, its customers and the environmental community can be aligned and implemented to provide adequate revenues to Westar, more options for customers and environmental sustainability. To that end, EDF supports cost-effective, structural solutions that permit scalable results and favors solutions which generate accurate economic price signals without cross-class subsidy. In other words, customers should pay for the value of the services they receive from the electricity system and customers should receive compensation for the value they contribute to the grid. In June 2015, EDF received a ranking of 20 out of over 200, for its work on climate and energy by the International Center for Climate Governance's public ranking of the best think tanks active in the field of climate economics and policy. The ICCG ranking

assesses the performance of a think tank in conducting high quality research and its role in influencing climate-related and energy policy. It is this thinking and expertise that EDF wishes to contribute to the discussion in Kansas.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. My testimony is intended to oppose the residential rate design changes proposed by Dr. Faruqui for Westar customers in his testimony. EDF does not support fixed charge increases to address revenue erosion issues and particularly opposes the fixed charge option proposed to be offered to solar distributed generation customers. EDF is interested in Westar's attempt to design a three-part rate but believes it falls far short in its execution and supporting analysis and should not be adopted. My testimony offers the Commission reasons why it should not adopt proposed changes in this docket and instead should offer an alternative forum for discussing the issues raised by increasing distributed generation as well as broader issues raised by the changing use of the grid. The results from information learned in that forum could form the basis for rate design changes in future rate cases.

Q. PLEASE INTRODUCE ANY OTHER EDF WITNESSES AND DESCRIBE THEIR TESTIMONY.

A. Paul Alvarez is also testifying on behalf of EDF. Mr. Alvarez is President of Wired Group, an electric utility industry consulting firm specializing in grid modernization. Mr. Alvarez will testify on how data from smart meters and other sources can be used to inform the process of developing residential tariffs. My testimony will use Mr. Alvarez's testimony as one basis for my recommendation

that the Commission should require Westar to do further research and engage in a stakeholder collaborative before implementing any new rate structures purportedly designed to address the impacts of distributed resources.

II. QUALIFICATIONS

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND WORK EXPERIENCE.

A. I graduated with a B.A. from the University of Iowa in 1975 (cum laude, Phi Beta Kappa). I graduated with a J.D. from Drake University in 1982 (Order of the Coif). I worked at the Iowa Attorney General's office from 1982-1983. I worked at the Iowa Utilities Board from 1983-2007, starting as Assistant Counsel and later promoted to General Counsel. I was first appointed as a Board member (this is the same as commissioner in other states) and later became the Chair and held this position for four years. I also served as President of the National Association of Regulatory Utility Commissioners ("NARUC") while a member of the Board. During my term as president of NARUC, I also served as co-chair of the National Action Plan for Energy Efficiency, with Jim Rogers of Duke Energy as my Co-Chair. From 2007-2008, I was Executive Director of Retail Energy Services for the Edison Electric Institute. From 2008-2014, I was Vice President for Regulatory Relations and Energy Efficiency for MidAmerican Energy Company ("MidAmerican"), until I assumed my present position with EDF.

Q. WHAT ARE YOUR RESPONSIBILITES AS SENIOR DIRECTOR OF COLLABORATION, CLEAN ENERGY PROGRAM FOR ENVIRONMENTAL DEFENSE FUND?

A. I am responsible for defining the overall strategy for EDF Clean Energy Program's collaborative efforts, including identifying potential partners and nurturing shared dialogue to maximize clean energy advances. I also develop opportunities to leverage common work and implement tactical joint efforts to achieve effective collaborative alliances. I serve as a key contact point with external partners, such as policymakers, industry allies and other non-governmental organizations in the clean energy sector, and act as a national thought leader and expert on topics including energy efficiency, smart grid, renewables, and utility business models.

Q. PLEASE DESCRIBE YOUR EXPERIENCE IN THE AREAS OF RATE DESIGN AND VALUING DISTRIBUTED RESOURCES.

A. I frequently worked on and decided rate design issues during my thirty years in regulation with the Iowa Utilities Board, the Edison Electric Institute and MidAmerican. As a former commissioner and general counsel, I analyzed the impact of rate design in a number of rate cases. I have also worked on these issues during my time with MidAmerican and with EDF. Most recently, I testified as an expert witness in a North Carolina proceeding on valuing distributed resources in an avoided cost case. I participated as a witness last year in a Hawaii proceeding proposing new rate designs to accommodate increasing penetration levels of distributed resources. I am actively participating in New York's Reforming Energy Vision ("REV") case, which involves rate design and valuing distributed resources issues. Earlier this year, I helped develop an all-day meeting on pricing in cooperation with the New York Public Service Commission.

III. OVERVIEW AND SUMMARY OF TESTIMONY

Q. PLEASE EXPLAIN HOW YOUR TESTIMONY IS ORGANIZED.

A. First, I discuss the rate proposals under consideration and why a change from the status quo may be desirable at some point in the future. Second, I explain the rate design principles which EDF has developed to apply in fairly allocating costs and in managing the transition. Finally, I propose the creation of a stakeholder process that would provide a sound basis for understanding changes and their impact on customers prior to any implementation. My testimony addresses the three-part rate being proposed as we believe it offers a place to start the discussion of necessary components for the proper allocation of costs. We do not specifically address the proposals for fixed charge increases as we do not believe they are supported nor should they be considered as an adequate solution.

Q. PLEASE SUMMARIZE YOUR TESTIMONY.

A. Due to unprecedented technology change in the electric industry, the rapid growth in deployment of distributed energy resources such as rooftop solar, batteries, energy efficiency, and demand response programs, are resulting in flattening electricity sales growth for the first time in utility history. All these activities at the customers' homes reduce the amount of electricity that customers use, and the utility's need to recover its costs invested to maintain the system on which these customers rely remains relatively unchanged. Utilities are understandably concerned about their ability to adequately and fairly recover the costs associated with delivering electricity under the historic regulatory recovery system. The status quo of most residential electricity pricing is a flat volumetric rate, charging

customers for the number of kWh consumed in each month. In a growing economy and increasing usage, this simple method of pricing proved beneficial for the utility and for the consumer: it provided both an increasing revenue stream and a simple customer bill with a message of "use less, pay less/use more, pay more." Not only is the expansion of these distributed resources cutting into the utility's revenue stream, it is ever more clear that use of a volumetric rate to recover the utility's costs does not fairly reflect cost causation and allocate these costs accordingly nor does it incent the type of customer response and behavior that will be beneficial to all customers on the system. Westar offers a rate design fix in response to these charges and to manage an anticipated increase in the number of solar PV customers. My testimony will demonstrate that Westar's proposed fix is inadequate and unsupported and that the impact of the small, but growing, customer segment that generates its own electricity, is a part, but not the only part, to be considered in changing rate design. We will request the Commission to initiate a stakeholder process, outside this rate case, to review all the issues related to utility compensation and customer contribution in a broader context, based on Westar data and best available national data.

Q. AT PAGE 7 OF HIS DIRECT TESTIMONY, MR. FARUQUI DISCUSSES SEVERAL CHANGES OCCURRING TO THE ELECTRIC UTILITY INDUSTRY. DO YOU AGREE WITH HIS DESCRIPTION OF THESE CHANGES?

A. While I agree with his description of changes occurring within the industry I disagree with his conclusion that these changes justify residential rate design

changes for Westar customers at this time. Mr. Faruqui accurately points out that distributed resources, demand response, digital metering and energy efficiency are playing a growing role, and that utilities are experiencing flat sales across the country as a result of these new technologies and customer interaction. These changes have led public utility commissions in a number of other states to begin review of whether to revamp their existing residential rate structure to provide utilities with a better opportunity to recover their costs and to allocate costs among customers more fairly. EDF has been involved in a number of these cases, as I discussed earlier in my testimony. The approaches taken by different utilities and commissions differ, from simply moving collection from volumetric charges to larger fixed charges, which EDF opposes, to the comprehensive stakeholder process undertaken in New York's REV proceeding, which is considering fundamental changes to the basic roles, rights and obligations of utilities, customers and new market participants in light of industry changes. The imperative to change also differs from state to state, with Hawaii, California, and Arizona at the forefront due to faster solar adoption in those states than in most other states.

Q. IF WE KNOW THESE CHANGES ARE OCCURRING, WHY DOESN'T IT MAKE SENSE TO RESPOND NOW?

A. Westar is wise to raise this issue to the Commission as these issues will not go away with time, but its proposals to increase fixed charges to stem revenue erosion and its solution to limit rate options for solar customers, in anticipation of additional solar adoption, are premature and could lead to unintended

consequences. Press reports state there are fewer than 300 Westar customers that have interconnected their home solar systems with Westar to date.[1] There is time to consider this issue more thoroughly, in a forum outside this general rate case, to properly consider the full range of issues and options associated with the increasing adoption of distributed resources and other factors that impact system costs. It also gives an opportunity to include the voices of a growing number of stakeholders interested in the outcome. These stakeholders include environmental groups interested in continued greenhouse gas emission reductions as well as consumer groups, Commission staff and new businesses eager to engage with Westar and its customers.

IV. THREE-PART RATES

Q. PLEASE EXPLAIN WHAT A THREE-PART RATE DESIGN IS AND WHERE IT HAS BEEN APPLIED.

A. A three-part rate design consists of three components: (1) a fixed charge; (2) a demand charge; and (3) a volumetric charge. The fixed charge is a monthly set amount designed to collect utility costs that are constant, like the costs of metering and billing. The addition of a demand charge recognizes that the system is engineered to meet peak demand and those customers who drive that peak should receive a price signal for the additional costs they impose. Volumetric charges are appropriate for collection of costs that vary with usage, like the cost of generation.

Three-part rates have traditionally been used for larger commercial and industrial customers to more accurately allocate costs according to cost causation

[1] Springe, David. Interview with Andy Marso, KHI News Service. June 11, 2015. Posted at www.kcur.org.

principles. Commercial and industrial customers have long had access to demand meters and therefore the ability to more accurately assign costs to the different load shapes and system demands associated with the myriad of uses in these sectors. For example, a steel plant with its very large electric arc furnaces has a very different load shape, or impact on the system, than a data center, with a fairly constant, predictable usage. In addition, many of these customers have energy managers and the ability to manage and respond to a more complex rate.

There has been neither the ability, nor the general desire, to use a three-part rate to assign costs to residential customers. Most residential customers have had similar patterns in their usage and did not have the meters to apply a more individualized rate. Moreover, the utility was without the means to communicate with the residential customer to give them the information necessary to manage their behavior and respond to prices. The load in homes has been primarily related to heating and cooling, appliances and lighting. Differences in usage justifying change began to emerge with the advent of air conditioning and electric heat. In addition, prosperity has allowed the size of homes to vary significantly and some people to install higher use equipment, like hot tubs and swimming pools. Now we are seeing the addition of distributed generation, like solar, and the opportunity for grid interaction, like demand response. These changes in use of the system support the need for a more granular approach to the residential sector as the present methodology supports cross-subsidy within the class. With the advent of two-way communications through smart meters and the opportunity presented through the proliferation of the internet, utilities, commissions and

other stakeholders are starting to consider different approaches, including consideration of the three-part rates for residential customers proposed in this case.

Q. WHAT ARE THE BENEFITS OF IMPLEMENTING A DEMAND CHARGE FOR RESIDENTIAL CUSTOMERS?

A. Demand charges are one of the options to consider in moving towards better alignment of cost causation: charging customers based on their maximum coincident demand sends a more targeted signal of "demand less, pay less/demand more, pay more," thus helping utilities to better recover their costs. And, any action by a customer that truly reduces peak demand will help reduce costs for all customers in the long run. Implementing a demand charge ultimately may be part of the solution for better allocating costs among Westar's residential customers. But, as suggested by Dr. Faruqui in his evaluation of Salt River Project's electric rates proposal for residential customers with distributed generation (e.g., rooftop solar) "if these proposed changes are indeed cost-based and represent an overall improvement upon the existing rate structure according to sound principles of rate design, then it could be argued that only making these changes for DG customers is a missed opportunity to improve rate design of the entire residential class."[2] We are in agreement, the Commission should not change the utility rate structure in this case for owners of distributed generation, without further review.

[2] Faruqui, Ahmad; Hledik, Ryan "An Evaluation of SRP's Electric Proposal for Residential Customers with Distributed Generation", Prepared for Salt River Project (The Brattle Group 2014).

There are a number of choices to be explored in designing a demand charge. To give a flavor, these choices include making informed decisions on the following questions:

- What is the appropriate billing demand measurement: the Commission can measure demand during specific hours of the year (i.e., peak hours) or simply use the maximum amount of demand over the entire billing period.

- What is the appropriate time interval of demand: instantaneous demand is unlikely to be measured, so the Commission must decide over how long of an interval to measure the demand. Commonly used measurements are 15, 30, and 60 minutes.

- How should the on-peak hours be defined: if the Commission decides to measure demand only during certain hours of the day, it needs to choose when the on-peak hours occur, trading off covering most peak demand vs incentivizing shifting behavior.

- Should the charge vary by seasons: the Commission must decide whether to vary the demand charge or the on-peak hours by season.

- What is the relationship to other charges: demand charges will not stand alone in a tariff; they are generally paired with charges such as fixed charges or minimum bill requirements. These can complement the demand charges.

The choices have different outcomes and impacts and choices should be evaluated and aligned with the policy objective desired to see if this is a direction the Commission wants to proceed.

Q. MR. FARUQUI STATES IN HIS TESTIMONY THAT WESTAR SHOULD FOLLOW THE FIVE UPDATED PRINCIPLES OF RATE DESIGN ORIGINALLY INTRODUCED BY PROFESSOR JAMES C. BONBRIGHT. DO YOU AGREE WITH USING THESE PRINCIPLES TO GUIDE WESTAR'S RATE DESIGN?

A. Yes, to a point. I agree with the five updated Bonbright principles which Mr. Faruqui describes: (1) economic efficiency, (2) equity, (3) revenue adequacy and stability, (4) bill stability and (5) customer satisfaction. Unfortunately there is no single ultimate/optimal policy solution embodying all these principles. Good policy requires a balancing of these factors in light of circumstances and goals that vary by utility or regulatory jurisdiction. This requires a commission to understand the trade-offs being made and make its decisions accordingly.

In addition to considering these principles, the timing of the transition to a new design should minimize disrupting existing business models that are successfully delivering value to customers and greenhouse gas reductions. Westar appropriately gives a nod to this concept with its proposal to "grandfather" the rate design for existing rooftop solar customers who have made a long-term investment under the existing set of rules. However, more consideration should be given to the potential that premature adoption of a new tariff structure may slow or stop development of a young industry, like solar PV, which has the potential to provide additional customer satisfaction and local economic development opportunities. Finally, the special needs of economically and environmentally vulnerable populations should always be top of mind in the discussion and affirmatively evaluated for impact.

Q. PLEASE DISCUSS HOW THESE PRINCIPLES SHOULD BE APPLIED TO THIS CASE.

A. First, EDF recognizes that the levels of distributed resources and energy efficiency are increasing, and that now is an appropriate time to begin discussing

new rate structures which would not only better allow utilities to recover their costs and more fairly allocate those costs among customers but enable the utility to tap these resources for a more resilient and reliable grid using far less fossil fuels. Westar has taken a first step in proposing a solution, the three-part rate, which has some features that merit further investigation. My main point of concern is that Westar should develop more information before changing its rate structure and that any transition to a new rate structure should consider optimizing the rate structure for all residential customers, not just solar customers. But Westar should be commended for acknowledging the changing needs of the grid and enlisting the services of such a renowned rate design expert as Mr. Faruqui.

Second, any new rate design should address the changing use of the grid by all customers, including the impact of air conditioning and electric heat customers on the grid. It should include all forms of distributed resources – including not only solar generation but also energy efficiency, demand response and energy storage. As I noted earlier, Mr. Faruqui references the growing use of all forms of distributed resources and has in other proceedings acknowledged that making changes only for the owners of solar generation is a missed opportunity. Yet Westar's proposal would limit the options available for customers with distributed generation.

Third, in addition to costs, EDF recommends that when the Commission considers changing residential rate structures, it should also develop a process for fully valuing these distributed resources. Distributed resources provide benefits that can reduce resource and transmission costs for all customers. Fair valuation

for distributed energy resources must be accomplished in parallel to solution(s) to utility fixed cost recovery. Solving one without solving the other places either the utility or the customer at a disadvantage that will undermine optimal development of the needed system. This has not yet occurred in Kansas, which is another reason Westar should not change its residential rate structure at this time.

Finally, EDF recommends that any transition to new rates be done in a thoughtful manner. A recent study by Lawrence Berkeley National Laboratory concluded that low penetration levels of distributed resources have no significant impact on customer rates.[3] In this case, fewer than 300 of Westar's 700,000 customers have installed distributed resources. This penetration level is much lower than the penetration level involved in that study. Accordingly, the Westar's present low level of distributed resources would appear to have no significant impact on customer rates or utility revenues and allows time for a more thoughtful approach.

Q. ARE THERE ANY OTHER CONSIDERATIONS WHICH SUPPORT YOUR RECOMMENDATION THAT WESTAR SHOULD NOT CHANGE ITS RESIDENTIAL RATE STRUCTURE IN THIS CASE?

A. Yes. As more fully explained in Mr. Alvarez's testimony, Westar has deployed smart meters for a portion of its service territory and Westar should use the resulting data to develop additional information on customer energy usage patterns before changing its residential rate structure. If a quick fix rate structure

[3] Ernest Orlando Lawrence Berkeley National Laboratory, *Financial Impacts of Net-Metered PV on Utilities and Ratepayers: A Scoping Study of Two Prototypical U.S. Utilities* (Sept. 2014) at ix (available at: http://emp.lbl.gov/sites/all/files/LBNL%20PV%20Business%20Models%20Report_no%20report%20number%20(Sept%2025%20revision).pdf) (last viewed June 29, 2015).

is adopted now based on incomplete information, customers could be discouraged from investing in distributed resources and lead to economically inefficient outcomes. For example, more complete information may show that a different rate structure should be adopted for distributed resources customers with central air conditioning as compared to distributed resources customers with no central air conditioning, as a recent Brattle report, co-authored by Mr. Faruqui, on Australia' electric utility industry concluded:

> A related point, though not strictly concerning the recovery of residual costs, is that uptake of central air conditioning and rooftop PV in particular is causing significant divergences among customer load shapes. Consider four customers. The first one has central air conditioning, the second one has rooftop PV, the third customer has both central air conditioning and PV, and the fourth one has neither. The four customers will have different load shapes and load factors (ratio of average kW to peak kW) and will therefore impose different costs on the network. It is inequitable and inefficient to charge them the same volumetric tariff. The calculation of LRMC (long run marginal costs) based variable charges depends on an assumed load factor. This may be a reason to shift to demand charges rather than kWh charges for recovering LRMC (if smart meters are available) or a reason to divide customers into multiple classes with different tariffs if smart meters are not available.[4]

As Dr. Faruqui acknowledges, there is a need to develop more information about customer load profiles before changing rate structures based on incomplete information.

[4] The Brattle Group, *Structure of Electricity Distribution Network Tariff: Recovery of Residual Costs* (Aug. 2014) at 43. Available at: http://www.brattle.com/system/publications/pdfs/000/005/076/original/The_Structure_of_Electricity_Distribution_Network_Tariffs_and_Residual_Costs.pdf?1422374425) (last viewed June 29, 2015).

Q. DO YOU HAVE ANY OTHER RECOMMENDATIONS REGARDING WESTAR'S PROPOSAL?

A. Yes. I recommend the Commission take the discussion of rate design related to distributed resources out of the rate case to a broader, less formal proceeding where more stakeholders can participate. At Westar's present low level of distributed generation penetration, my recommendation presents no real risk to Westar. This could be a statewide forum, with time parameters, where the issue can be addressed for all utilities. This would provide a 'no regrets' course for Westar and the Commission. A recent report from the GridWise Alliance shows that Kansas has the potential to do more work in the areas of grid policy and customer engagement.[5] This forum could be used to work on these areas. This type of measured approach accords with Mr. Faruqui's recommendation at page 39 of the Brattle report, which I discussed earlier, where he states that demand charges for residential customers should be implemented deliberately.

VII. CONCLUSION

Q. DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY?

A. Yes.

[5] Gridwise Alliance & Smart Grid Policy Center, *2014 Grid Modernization Index* (Nov. 17, 2014) at 12. Available at: https://www.illinois.gov/dceo/Documents/GWA_14_GridModernizationIndex_11_17_14Final.pdf) (last viewed June 29, 2015).