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MISSOURI PUBLIC SERVICE COMMISSION
FILE NO. ER-2012-0166
REBUTTAL TESTIMONY
OF
PAMELA G. MORGAN
ON
BEHALF OF
THE NATURAL RESOURCES DEFENSE COUNCIL

I. Background and Qualifications

Q. Please state your name, address, and affiliation.

A. My name is Pamela Morgan. My address is 17 Masaryk, Lake Oswego, Oregon 97035. I am President of Graceful Systems, LLC, the company I formed after I finished my 20-plus year career at Portland General Electric (PGE). Graceful Systems helps stakeholders in the energy utility system engage in collaborative processes to explore, understand, and develop generative strategy in response to complex challenges and opportunities. Because these complex challenges and opportunities are dynamic across time and space, and interrelate with many other challenges and opportunities, there is no single solution or path to success. Rather, stakeholders need practices by which they collectively can see current reality, loosen old ideas to make room for innovation and creativity, and adjust continually their collective actions to improve progress toward overcoming the challenges and seizing the opportunities.

Through Graceful Systems and often in partnership with others, I have engaged in diverse activities ranging from the development and delivery of a systems thinking training program for energy utility regulatory agencies, to assisting a Commission with a collaborative review and assessment of its resource planning and procurement practices. I have also appeared as an expert witness for the Natural Resources Defense Council (NRDC) on a number of occasions and participated in their work on national energy policy issues of importance to electric utilities, including a major review of the results of decoupling policies nationwide.

Q. What are your educational background and professional qualifications to appear in this proceeding?

A. I am a graduate of Washington State University and the University of Washington School of Law. I first entered the energy utility field in 1984, representing industrial customers of electric and natural gas utilities in the Pacific Northwest. In 1986, I joined PGE as Associate General Counsel. I held a variety of positions at PGE concerned with regulation, becoming Vice President of Regulatory Affairs in 1996. I briefly left PGE in 1997 to work for a software and services company called ConneXt. I re-joined PGE in 1999 as Vice President of Regulatory Affairs, responsible for state and federal economic regulation, among other things, including strategy as of 2004. During my years in Regulatory Affairs, I worked on many matters pertinent to this docket, including:

- The preparation and review of Integrated Resource Plans, including renewable resources;
- Design and approval of energy efficiency programs;
- All aspects of cost recovery related to energy efficiency, including the collaborative development of a decoupling mechanism that was in place for PGE during 1995 and 1996;
- The development of regulatory guidelines on competitive bidding and subsequent Requests for Proposals done by PGE under those guidelines;
- The development and filing of avoided costs;
- All cost recovery and rate-related matters, including revenue requirement, rate spread, and rate design;
- Regulatory accounting; and

- Cost of capital, including the issue of imputed debt from long-term contractual commitments.

In addition, my roles in Regulatory Affairs, Strategy, and Government Affairs required that I be conversant with many electricity and energy policy issues, including those involved in these dockets. For NRDC, I have appeared as a witness in cases in Iowa, Indiana, Michigan, and Missouri.

Q. On whose behalf are you testifying?

A. I am appearing for NRDC, a party to this case.

Q. Have you previously testified before this Commission?

A. Yes, I testified as an expert witness for NRDC in File No. ER-2010-0036.

Q. What materials have you reviewed in preparation of this testimony?

A. I have reviewed all of the direct testimony filed by Ameren Missouri in this docket, with particular attention to the testimonies of Warner Baxter, John Reed, and Wilbon Cooper. I also reviewed documents from File No. EO-2012-0142, Ameren Missouri's Missouri Energy Efficiency Investment Act (MEEIA) filing, pertinent to the issues on which I am testifying.

II. Summary of Recommendations

Q. On what issues in Ameren Missouri's rate case filing will you be testifying?

A. My testimony addresses two rate design issues:

1. Ameren Missouri has proposed to increase the fixed billing cycle customer charge for both the residential and small general service (non-demand-metered) customer classes. For residential customers, the proposed increase is from the current $8 to $12 per billing cycle, a 50 percent increase. For small general service customers, the proposed increase is from $9.74 to $14.91 per billing cycle for single phase service and from $19.49 to $29.24 per billing cycle for three phase service. Commission Staff's Cost of Service Study proposes increasing the residential customer charge to $9 per billing cycle.

2. Ameren Missouri has not proposed to change the declining rate design it offers residential customers for winter use of electricity.

Q. What are NRDC's recommendations on these issues?

A. NRDC recommends that:

1. The Commission deny Ameren Missouri's and Staff's proposals to increase the residential customer charge and Ameren Missouri's proposal to increase the customer charge of the small general service class. The most important reason for denying this rate design change is that its effects are directly at odds with achieving the state's goal of capturing all cost-effective energy efficiency. Increasing the customer charge lengthens the payback period that customers face in making energy efficiency investments. Ameren Missouri's own studies show that this has a negative effect on savings. In addition to this compelling policy reason for rejecting the proposed rate design change, few traditional rate design considerations support it. Shifting costs out of the variable charge weakens the

effectiveness of its price signal, contrary to evidence that suggests rising costs. The cost study evidence is conflicting and cost studies ignore important intra-class equity questions. The rate design change will shift costs and, thus, undercut rate stability and predictability. Finally, the change is not necessary to improve revenue stability for Ameren Missouri. This rate design change will not affect Ameren Missouri's disincentives to engaging in energy efficiency programs because the net shared benefits mechanism (referred to as "Ameren Missouri's TD-NSB Share") approved by the Commission in its order approving the unanimous stipulation and agreement in File No. EO-2012-0142 already fully protects Ameren Missouri from the throughput problem. Commission Staff's observation that surrounding utilities have higher customer charges offers no support for raising the charge to Ameren Missouri's customers, particularly given the negative consequences of doing so. The proposal is harmful, unnecessary and unsupported by evidence in the record of this case.

2. The Commission should order Ameren Missouri to engage in further work on the declining block rate design issue, so that parties and the Commission may re-engage with this issue in a broad-based review of Ameren Missouri's rate spread and designs or in Ameren Missouri's next general rate case.

III. The Commission Should Reject Proposals to Increase the Fixed Charges for Residential and Small General Service Customers

Q. How are the effects of Ameren Missouri's rate design changes directly at odds with achieving the state's goal expressed in MEEIA of implementing programs to achieve "all cost-effective demand-side savings" (393.1075.4, RSMo)?

A. The proposed shift of costs from variable to fixed charges is likely to reduce residential and small general service customer participation in utility energy efficiency programs and, thus, reduce the state's capture of all cost-effective energy efficiency.

Under the design of most energy efficiency programs, including those approved in Ameren Missouri's MEEIA case (File No. EO-2012-0142), the utility offers incentives that cover only a portion of the upfront cost involved in increasing energy efficiency. There are good reasons for this because energy efficiency both benefits all customers by postponing utility investments in increased capacity to meet the entire customer base's needs, and the individual investing customers by lowering the monthly utility bills they incur in achieving their energy-related outcomes. These utility bill savings are an important financial and psychological benefit to customers participating in utility programs. Shifting costs from variable, kilowatt-hour charges to the fixed customer charge lessens this benefit by reducing customers' ability to save on their bills by conserving electricity. As a result, customers deciding to participate in the programs will see less upfront benefit from the energy efficiency investment they make. Participating customers will still see benefits, but their monthly bill savings will be smaller and it will take longer for them to recoup the upfront costs of energy efficiency investments. In other words, the payback period will increase.

Q. Do Ameren Missouri's own energy efficiency market potential studies show that payback periods matter to customer participation in utility energy efficiency programs?

A. Yes. Ameren Missouri's studies echo the findings of extensive research showing that customers are reluctant to invest in efficiency unless the payback period they experience will be very short. The concept of payback guides everything from measure selection to program

design. For example, Ameren Missouri's 2010 DSM market potential study defines "maximum achievable potential" (MAP) as the level of energy efficiency that customers would be expected to achieve if the payback periods they could expect on energy efficiency and demand response investments were only one year. The "realistically achievable potential" (RAP) was defined as the level of DSM savings expected with three-year payback periods.[1] The Ameren Missouri analysis showed that more customers would participate in programs with shorter payback periods (MAP) than with longer payback periods (RAP).[2] As a result, the reduction in energy savings from MAP to RAP was approximately 50 percent, a significant drop in energy efficiency potential.[3]

Q. What would Ameren Missouri's options be for meeting the energy savings targets in the approved MEEIA settlement agreement if a higher customer charge lowers customer participation and energy savings?

A. Ameren Missouri's primary option would be to offer higher financial incentives that return customer payback periods to what they would have been before the customer charge increase. Unfortunately, this response would have negative effects on both customers and Ameren Missouri. Customers would pay more for programs that are less cost-effective (fewer energy savings per dollar spent) and would receive fewer overall benefits because program budgets would not stretch as far. Ameren Missouri will also experience greater difficulty achieving its targeted energy savings under its approved program budgets. Because Ameren Missouri's performance award is defined as a percentage of the net benefits

[1] Global Energy Partners, LLC, AMERENUE DEMAND SIDE MANAGEMENT (DSM) MARKET POTENTIAL STUDY: VOLUME 1, Global Report No. 1287-1, January 2010, at ES-20.
[2] *Id*., at ES-20.
[3] *Id*., at ES-3, ES-5, ES-7.

from its MEEIA programs, an increase in program costs (which corresponds to a decrease in net benefits since net benefits are defined as utility avoided costs net of program costs) will also reduce the dollar value of Ameren Missouri's performance award.

Q. Is the rate design proposal's interference with state energy policy the only reason the Commission should deny the shift of costs to the customer charge?

A. No. There is a long-standing set of considerations that regulators have traditionally applied in establishing energy utility rate designs. In this case, these considerations either do not support the change, support it only weakly, or cannot be applied because Ameren Missouri has presented no evidence through which parties and the Commission could apply the consideration.

Q. Based on your experience, which of the considerations typically applied in establishing rate design are important to the issue in this case?

A. The classic guide on rate spread and design to which I have turned throughout my career is the Principles of Public Utility Rates, by James C. Bonbright. In various editions, he describes between eight and ten considerations that are important. The ones I find applicable here are these, paraphrased in my own words:

1. Quality of the price signal concerning the near-, medium- and long-term cost of using electricity and the highly related effect of price on a customer's willingness to invest in structural changes, appliances or equipment that preserve the customer's desired outcome(s) at a lower use of electricity;

2. Stability and predictability in revenues from the utility's perspective;

3. Stability and predictability in bills from the customers' perspective;

4. Fairness between broad groupings of customers (classes) and within a given customer grouping.

Q. How does consideration of price signal quality inform your recommendation against raising the residential and small general service customer charges?

A. For residential and small general service customers, monthly bills depend largely on the amount of electricity they use in the billing cycle. The more electricity customers use, the larger their bill. The industry relies on this result to signal to customers that higher usage triggers greater cost, both in the short-term because of variable costs such as fuel and in the long-term by triggering need for new investment that almost inevitably will cost more than the depreciated amount of the investment in rates at the time the new investment occurs.

Shifting cost recovery to fixed charges weakens this signal. Under this scenario, customers with relatively lower levels of electricity use will now pay more, with the revenues being shifted from customers with relatively higher levels of use, because fewer costs are linked to the customer's direct electricity use. As a result, the effective rate for higher levels of use is also lower than it would have been without the customer charge increase. Regardless of time frame, and whether specific to Ameren Missouri or more general in the environment, there is nothing to support weakening the price signal with respect to high monthly levels of electricity use.

It is critically important to signal to customers that increased use leads to increased cost. For example, in his overview of the case, Warner Baxter emphasizes the large investment needs facing the utility in the near-term. He states, "While we have certainly

made investments in the past to address, at least in part, our aging infrastructure, the bow wave of investment needs continues to grow." (Baxter direct, page 16, 20–21) These investment needs will be higher if customers do not receive clear price signals about the costs of higher electricity use. Another driver of the rate case is the rising cost of coal and other fuels, variable inputs that likewise point to the need for usage-based price signals. (Baxter Direct, page 7, line 21, through page 8, line 2) Further, while natural gas prices are currently low, few expect those prices to persist. The last several decades have taught us that natural gas prices are extremely volatile; even if long-term forecasts show modest straight-line escalation in natural gas prices, that is unlikely to be what utilities and their customers actually experience. Thus, price signals are also critical in the case of electricity sourced from gas-fired plants.

Q. Does the consideration of price signals relate to customer willingness to make investments to increase energy efficiency?

A. Yes, intuitively customers are more likely to have interest in making energy efficiency investment if they believe that electricity prices in the future will be higher than today.

Q. Could this customer charge increase result in mixed messages to customers?

A. Yes, obviously the financial message is mixed. If this proposed rate design change takes effect, customers using relatively less electricity than others within the residential and small general service classes will experience higher rate increases than customers using relatively more. Ameren Missouri will undoubtedly need to engage in some public relations effort to explain its reasons for making the change to the customers most affected by the

increased customer charge. It is difficult to imagine an explanation that will not raise doubt or at least confusion about the future rising trajectory of electricity costs. For a period during which Ameren Missouri is proposing to spend nearly $150 million of ratepayer funds to help its customers increase their energy efficiency and use less electricity, it seems counterproductive that it must also explain why using less will now cost you more.

Q. How does consideration of stability and predictability in utility revenues affect your recommendation on the proposed rate design change?

A. I do not see this as a significant consideration in this case, particularly given that Ameren Missouri presented no evidence of the amount of revenue the rate design change would make more predictable nor how variable this revenue has been. Any shift of cost recovery from variable to fixed charges increases the utility's revenue stability and predictability. In this manner, increasing monthly fixed charges operates much like a decoupling mechanism. A decoupling mechanism, however, operates independently of rate design. Such a mechanism requires the utility to return any revenue in excess of the amount set by the operation of the mechanism or to collect any revenue under this amount. The rate designs under which customers pay for electricity are not affected and, indeed, one could pair adoption of a decoupling mechanism with rate design changes that shift costs out of fixed charges into variable charges to improve price signals and encourage customer participation in energy efficiency. In my experience, the consideration of predictability and stability in utility revenues is best addressed by a decoupling mechanism, which enables the Commission and stakeholders to set rate design in the manner most aligned with state policy.

Q. Is this rate design change necessary to remove Ameren Missouri's disincentive to support the MEEIA energy efficiency programs on which it plans to spend $150 million?

A. My understanding is that it is not necessary for this purpose. The parties in File No. EO-2012-0142 have reached a settlement, which the Commission has approved, through which a net shared benefits mechanism (referred to in the settlement as "Ameren Missouri's TD-NSB Share") will hold Ameren Missouri harmless from losing fixed cost-related revenues as a result of its energy efficiency programs. Accordingly, the rate design change that Ameren Missouri proposes in the current rate case is not necessary to remove barriers to Ameren Missouri's pursuit of energy efficiency.

Q. How do the considerations of customer bill predictability and stability and intra-class equity affect your recommendation?

A. The short answer to this question is that we do not know because Ameren Missouri's case presents no evidence on these matters.

Considering customer bill predictability and stability would require information on at least 12 months of bills before and after the change, which I did not find in the filing. Information on Ameren Missouri's expectations of the customer consequences – both desirable and undesirable – of the proposed rate design change is also missing. The complete lack of testimony on these issues makes it difficult to assess the proposal from the perspective of stability and predictability to customers. Moreover, even if this information showed that bills will vary less after the rate design change – an intuitive result given that a

large portion is now fixed – this consideration competes with consideration of price signals and, in this case, loses to overriding state policy.

Considering intra-class equity requires information on a number of matters, including:

- How many customers within the residential and small general service classes will experience a greater than class average rate increase as a result of the proposed increases in the customer charges;
- At what levels of usage these customers will experience an increase and how large such increases will be;
- The characteristics of the customers using relatively lower amounts of electricity, including income levels, size of residence or business, and prior investments in energy efficiency.

The filing contains none of this information.

While Ameren Missouri does support the proposed rate design with its cost of service study, Commission Staff and Public Counsel provide competing cost of service studies which show far lower numbers. Just looking at the residential class, Ameren Missouri identifies the costs appropriately allocated to the customer charge to be $20 per billing cycle; Commission Staff finds them to be approximately $9; and Public Counsel's cost of service study finds them to be under $6. Methodology matters to the study outcome but I am not certain it helps us ascertain truth.

These studies also show that most of the effort involved is for inter-class cost allocation between customer classes, rather than within a class. The studies provide less insight on equity within a class, where differences in when, how much and where class members use electricity surely produce cost differences. For many of these differences, we lack the data to assess and allocate the costs involved. The residential and small general service classes affected by the proposed rate design change do not have demand meters. Accordingly, we do not know who among these classes most contributes to system peak and who has better or worse load factors. We also know that different locations in a utility's service territory cost different amounts to serve and, by historical practice, we ignore those differences in favor of postage stamp rates. Finally, we know that the combined effects of inflation and depreciation mean that customers more recently added to the system probably are "responsible" for relatively larger amounts of the net rate base than customers on the system for many years but we also ignore this difference. For all of these reasons, reliance on cost of service studies in support of rate design changes, as opposed to rate spread decisions, is problematic. Cost of service is not solid support for the proposed rate design change, particularly given the need to consider price signals and the overriding state policy for energy efficiency, which the change undercuts.

Q. Did Professor Bonbright provide any general guidance on rate design matters that you find applicable in this instance?

A. Yes. I find the following quote from the 1960 edition of his Principles of Public Utility Rates particularly insightful here:

> "[R]ate-structure problems are far more complex than problems of a fair return even though the latter are by no means elementary; and they are even

> less amenable to solution by reference to definite principles or rules of rate making. . . . In part it is due to the inability of the rate maker to predict the effect of changes in rates on demand for the services and hence on costs of supply – due, in short, to ignorance of demand functions and cost functions. But in part – and this is the most serious theoretical difficulty – it is due to the necessity, faced alike by public utility managements and by regulating agencies, of taking into account numerous conflicting standards of fairness and functional efficiency in the choice of a rate structure. . . . No rational discussion, . . ., of the relative merits of 'cost of service' and 'value of service' as measures of proper rates or rate relationships is possible without reference to the question what desirable results the rate maker hopes to secure, and what undesirable results he hopes to minimize . . . ." (pages 288–290)

Rate design decisions are complex. Proposals to make large increases in the fixed charges deserve more effort and scrutiny than Ameren Missouri and Commission Staff, respectively, provide. The proposed increases in fixed customer charges raise intra-class equity issues, send the rate design price signal in a direction opposite from the direction of costs, result in unknown impacts to individual customers within the classes, and are contrary to Missouri's state energy efficiency goals. Accordingly, I recommend that the Commission deny Ameren Missouri's and Staff's proposals to increase the residential customer charge and Ameren Missouri's proposal to increase the customer charge of the small general service class.

IV. The Commission Should Order Ameren Missouri to Support or Propose a Transition Away from its Residential Declining Block Rates in its Next Rate Case or as part of a Broad Rate Spread/Design Review

Q. Do Ameren Missouri's proposed tariffs in this case include a declining block rate design?

A. Yes. Both the residential and small general service tariffs include a declining block design for winter rates.

Q. What is your opinion regarding use of declining block rates in this second decade of the 21st century?

A. I share the Commission's view that declining block rates do not send a proper price signal and tend to encourage the excessive consumption of electricity. (File No. ER-2010-0036, Order at page 122) Put in place in the days before organized wholesale markets such as MISO, when utilities built generation for the summer peak and could do little with the capacity during the lower usage winter period, this rate design encouraged retail sales that contributed to fixed cost recovery and, at least theoretically, lowered rates for everyone. Moreover, electric utilities requested these rate designs to compete with natural gas companies for winter space heating load. The situation today is different. The ability to sell temporarily excess generation on the wholesale market provides the retail customer base with some relief from bearing the entire fixed cost of generation built to serve a once-a-year peak.

The time has come to re-examine the economics, equity, and policy of declining block rates. While I believe this rate design cannot withstand such examination, our practices require that we make the effort before making the change.

Q. Who can provide the information necessary to enable such a review of declining block rates?

A. Virtually all parties can opine on policy and note broad environmental conditions that weigh against maintaining these consumption-inducing rate designs. The only organization that can provide the information needed to look at economics and equity, however, is the utility. Some of the questions to which it has the necessary data are:

- What is the likely market value (and thus, opportunity cost) of electricity in the winter months?
- How many customers have usage into the second block, when, and who are these customers? How many have electric space heat? Are they good candidates for energy efficiency programs? What would various transition plans look like?

Unfortunately, if the Commission waits for some party other than Ameren Missouri to come forward with this information, it is likely to be waiting a long time.

Q. How would you recommend this review of the declining block rate design occur?

A. My recommendation would be that the Commission open a separate docket to look at rate design generally, addressing the declining block as part of a broad look at the basic rates that are most likely both to provide customers good price signals and to act as a base for innovation. Many of the current issues in this industry – customer-sided distributed generation, electric vehicles, demand response, Smart Grid – implicate both the services a utility offers and the prices it charges for those services. It is no longer just about kilowatts and kilowatt-hours. We need to identify the range of utility services, consider which could or should be optional alternatives or add-ons to the basic service, and which could be competitive, and price everything to achieve identified objectives. As Professor Bonbright noted, the most important questions for the rate-maker is what desirable results he or she wants to see and what undesirable results he or she hopes to minimize.

Alternatively, I encourage the Commission to order Ameren Missouri to address the declining block rate design in its next general rate case and either support it or propose a transition plan to eliminate it.

Q. Does this complete your testimony?

A. Yes, it does.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

County of Multnomah)
) ss
State of Oregon)

AFFIDAVIT OF PAMELA G. MORGAN

Pamela G. Morgan, of lawful age, on her oath states: that she has participated in the preparation of this testimony in question and answer form consisting of 18 pages to be given as Rebuttal Testimony in the above-named case; that the answers were given by her and that she has knowledge of the matters set forth in such answers; and that such matters are true to the best of her knowledge and belief.

Pamela G. Morgan

In witness whereof I have hereunto subscribed my name and affixed my official seal this 9th day of August, 2012.

OFFICIAL SEAL
JILL M KAKEHI
NOTARY PUBLIC-OREGON
COMMISSION NO. 466604
MY COMMISSION EXPIRES APRIL 07, 2016

Jill M. Kakehi
Notary Public, State of Oregon