BEFORE THE
PUBLIC SERVICE COMMISSION OF WISCONSIN

Joint Application of Wisconsin Electric Power Company and Wisconsin Gas LLC, both d/b/a We Energies, for Authority to Adjust Electric, Natural Gas, and Steam Rates	)))))	05-UR-107

DIRECT TESTIMONY OF CHARLES CICCHETTI

Q. Please identify yourself.

A. I am Charles J. Cicchetti, Ph.D. The Milwaukee Metropolitan Sewerage District ("MMSD") has asked me to review Wisconsin Electric Power's ("WEPCO") Biennial Review of Costs and Rates for Test Year 2015.

Q. Are you familiar with Wisconsin's energy sector?

A. Yes. I was the principal economist for the Environmental Defense Fund ("EDF") in the very important Madison Gas and Electric rate design proceeding in the early 1970s. Subsequently, I secured a leave of absence from the University of Wisconsin-Madison ("UW-Madison") to become the Director of the Wisconsin Energy Office in 1974 and 1975. In 1977, I became the Chair of the Public Service Commission of Wisconsin ("the Commission") and served as a Commissioner until 1980. During this time, the Commission addressed time-of-use ("TOU") pricing, marginal cost pricing, and held the first statewide long-range planning proceeding.

Q. Please describe your academic background.

A. I earned a B.A. in economics in 1965 from The Colorado College after attending the U.S. Air Force Academy for nearly three years. I earned a Ph.D. in economics in 1969 from

Rutgers University. After earning my Ph.D., I spent three years engaged in post-doctoral research at Resources for the Future ("RFF") in Washington, D.C.

In 1972, I joined the faculty at UW-Madison, ultimately earning a tenured full professorship in both Economics and Environmental Studies. In 1987, I became the Deputy Director of the Energy and Environmental Policy Center at the John F. Kennedy School of Government at Harvard University. Between 1988 and 2006, I held the Miller Chair in Government, Business and the Economy at the University of Southern California (USC).

I ended my teaching activities in 2010, except for a series of on-line lectures and class discussion in the Electrical Engineering Department at USC.

Q. Please describe your business career.

A. In 1980, I co-founded Madison Consulting Group ("MCG"), which was sold to Marsh McClennan in 1984. I became a Senior Vice President of one of its affiliates, National Economic Research Associates ("NERA"). In 1988, I became a Managing Director of Putnam, Hayes & Bartlett, becoming co-Chairman before I left in 1992.

In 1992, I founded Arthur Andersen Economic Consulting. After leaving Arthur Andersen in 1996, I co-founded Pacific Economics Group ("PEG"), which eventually had offices in Pasadena, California and Madison, Wisconsin. We sold the latter part of the firm to our Wisconsin partners in 2008.

Since 2008, I have been a Senior Advisor to Navigant Consulting, PEG, and Rothstein Kass & Company. I also own Cicchetti Associates, Inc., where I conduct various consulting exercises. I co-own PEG and co-founded and serve on the Board of Directors of Sally's Rescue, Inc.

Q. Can you summarize your consulting activities and various business activities?

A. I sometimes describe the majority of my work as providing economic, finance, and statistical work to "pipes and wires" companies. These include companies within the electricity, natural gas, telecommunications, cable, oil, and other related industries. I have written several books based on my work on topics such as utility rate design, marginal cost analysis, quantitative environmental studies, financial matters, energy conservation, and renewable energy. Ex.-MMSD-Cicchetti-1 lists my activities, publications, and testimonies before regulatory bodies and courts.

Q. What is the purpose of your evidence in this proceeding?

A. The primary purpose of my testimony is to discuss Wisconsin Electric Power Company's ("WEPCO") proposed changes to its customer-owned generating ("COGS") and standby service ("SS") tariffs. I will discuss concepts and principles that the Commission should consider when deciding whether to accept these changes, and address the economic and financial assumptions that WEPCO uses in establishing those tariffs. Much of my testimony responds to and critiques the testimony of WEPCO witnesses Michael O'Sheasy and Eric Rogers.

Q. How is your testimony organized?

A. I will begin by addressing Mr. O'Sheasy's testimony, which is couched in broad, theoretical terms. For this reason, my discussion will follow a similar trajectory. After this discussion, I will analyze WEPCO's proposed changes to its customer-owned generation service ("COGS") and standby service ("SS") tariffs, which are presented in Mr. Rogers' direct testimony. I will focus on WEPCO's proposed changes to the Cp-1 and Cp-4 tariffs, as applied to current Cp-1 customers such as MMSD.

I also briefly discuss the negative economic and public policy aspects of these proposed changes for self-generation, particularly for customers that self-generate electricity from renewable resources such as biomass.

Q. Are you sponsoring any exhibits?

A. Yes. I am sponsoring the following exhibits:

1. Ex.-MMSD-Cicchetti-1: My Curriculum Vitae.
2. Ex.-MMSD-Cicchetti-2 (PSC REF#: 213898): Response to 1-TASC-5(b).
3. Ex.-MMSD-Cicchetti-3 (PSC REF#: 214033): Response to 1-TASC-9(a).
4. Ex.-MMSD-Cicchetti-4 (PSC REF#: 213916): Response to 1-TASC-23(a).
5. Ex.-MMSD-Cicchetti-5 (PSC REF#: 213944): Response to 1-TASC-1(b).
6. Ex.-MMSD-Cicchetti-6: Excerpts from Direct Testimony of Eric A. Rogers on behalf of WEPCO in Docket No. 05-UR-103.
7. Ex.-MMSD-Cicchetti-7: Excerpts from Direct Testimony of Eric A. Rogers on behalf of WEPCO in Docket No 05-UR-104.

Q. Will you summarize your review of Mr. O'Sheasy's testimony?

A. Yes. I find that Mr. O'Sheasy's conceptual discussion incorrectly states principles of utility rate design and regulatory principles that address public policy.

First, he propounds an outdated rate design concept, which leads to the false conclusion that regulated energy companies should recover their fixed capital costs mostly in parts of their tariff that are not usage sensitive. He compounds the error in this erroneous conclusion with how he explains marginal cost.

Second, Mr. O'Sheasy explains his conceptual conclusions virtually entirely from the perspective of utility shareholders seeking to ensure recovery "of" and "on"—and

potentially not "used and useful"—fixed sunk costs. He gives short shrift to other stakeholders, including both ratepayers and society more broadly defined.

I will explain why I conclude that Mr. O'Sheasy's conceptual conclusions and the rates derived from them should be rejected. In the alternative, if utility shareholder cost recovery is virtually guaranteed under the proposed tariffs, I would urge the Commission to consider how the utility's resulting lower risk profile should be used to reduce WEPCO's authorized Return on Equity ("ROE") and/or the equity thickness of its cost of capital, or Rate of Return ("ROR").

Q. Please summarize your critique of Mr. Rogers' testimony.

A. Mr. Rogers bases his discussion of WEPCO's proposed tariff changes on Mr. O'Sheasy's flawed concepts of rate design and marginal cost. There should be no weight given to any numbers produced by Mr. Rogers that have Mr. O'Sheasy's flawed concepts as their predicate.

Q. Why do you disagree with the approach that Mr. O'Sheasy adopts for designing rates for customers that own their own generation resources?

A. Mr. O'Sheasy would redesign WEPCO's tariffs based on various concepts that mostly amount to nothing more than support for a claim that shareholders would prefer revenue and earnings stability. I will explain that this biased view would do more harm than good and is very much exaggerated.

Q. How will you address these conceptual conclusions found in Mr. O'Sheasy's evidence?

A. I begin with a summary of my views on cost of service ("COS") regulation, rate design, marginal cost and TOU, competition, and energy efficiency, including distributed and

customer-owned generation. I will be relatively brief. For parties interested in more detail, I refer them to five books I have written on these subjects:

- Perspective on Power, A Study of the Regulation and Pricing of Electric Power. Berlin, Edward, Charles Cicchetti and William Gillen. (Cambridge, Massachusetts: Ballinger Publishing Company, 1974, with Ford Foundation support);
- The Marginal Cost and Pricing of Electricity, An Applied Approach. Cicchetti, Charles, William Gillen, and Paul Smolensky. (Cambridge, Massachusetts: Ballinger Publishing Company, 1977, with National Science Foundation support);
- Restructuring Electricity Markets, A World Perspective Post – California and Enron, 2nd Edition. Cicchetti, Charles, Colin Long and Kristina Sepetys. (New York: Visions Communications, 2003);
- The California Electricity Crisis: What, Why, and What's Next. Cicchetti, Charles, Jeffrey Dubin, and Colin Long. (Boston, Massachusetts: Kluwer Academic Publishers, 2004);
- Going Green and Getting Regulation Right: A Primer for Energy Efficiency. Cicchetti, Charles. (Vienna, Virginia: Public Utility Reports, 2009).

Q. Please describe in general terms the historical and conceptual framework that should inform the Commission's approach to WEPCO's proposed changes to its COGS and SS tariff.

A. Some economic enterprises have inherent cost savings related to scale. Larger diameter pipes, for example, generally increase in cost linearly with diameter, while their capacity increases more based on the pipe's diameter squared. These industries often involve

networks that are less costly if there is a single provider, which is called a natural monopoly. For example, the electricity sector historically has been referred to as a natural monopoly because it is more efficient for one firm (rather than a multitude of firms) to provide service to customers (at least as far as distribution and transmission is concerned). Economies of scale and technical improvements also helped historically to reduce average generation costs. Government policy traditionally seeks to capture the savings of scale and the monopoly provision of what most often are essential societal services by granting monopoly franchises to entities with these characteristics. In return, these entities are either governmentally-owned and/or comprehensively regulated.

The regulation of utilities evolved under a principle sometimes referred to as the "regulatory compact." This means that regulated entities, such as WEPCO, would generally be provided a reasonable opportunity to recover their "prudent" and "used and useful" costs of service. The relevant costs typically include the recovery "of and on" the capital investments of the regulated entity.

This is called Cost of Service ("COS") regulation and is the cornerstone of how the Commission regulates WEPCO. The fundamental objective of COS regulation is to secure the least cost provision of essential services, while achieving "just and reasonable" prices and authorized regulated returns comparable to competitive firms with similar risks. The authorized earnings are typically understood to be an opportunity, but not a guarantee, to earn the returns authorized.

For many decades, electric utilities in the United States used tariffs that followed rate designs developed by Dr. John Hopkins in 1892 and Mr. Arthur Wright in 1896. These rate designs had three components:

1. A customer charge based more or less on the cost of connecting to the utility network, including service drops, meters, and meter reading.
2. A demand charge based on customer specific maximum usage, measured typically on a per-kilowatt ("kW") basis during a given month or year.
3. An energy charge based on the total volume of electricity used in a billing period, measured in kilowatt-hours ("kWh").

Lower voltage customers have historically paid charges that roll-in demand components—and sometimes customer components—into energy charges that typically had declining block charges. This meant that as more electricity was used, the average price per unit was reduced.

Q. How has this traditional approach to rate design change evolved?

A. In the early 1970s, environmental and consumer advocates began to challenge the aggressively pro-growth aspect of declining block pricing that they called volume discounts. This led to the seminal Madison Gas & Electric case before the Commission, as well as three similar cases in Michigan, New York, and California. Three things emerged from these cases that are very much a part of this proceeding some 40 years later.

First, time of use ("TOU") pricing was introduced to the electric industry in North America, meaning prices during on-peak hours would be greater than prices during off-peak hours. The goal was to replace volume discount declining block tariffs with tariffs that varied by season, time-of-week, or time-of-day. Second, the basis for designing utility tariffs shifted to engineering and economic concepts to determine a utility's

marginal cost. Previously, policymakers and utilities used accounting concepts that focused too heavily on a utility recovering its fixed costs. Under this approach, relatively little utility revenue recovery depended on actual customer use. Third, in 1978, the United States Congress enacted the Public Utility Regulatory Policies Act ("PURPA"), which required state regulators to consider new rate design principles consistent with time-of-use rates, and which encouraged growth of customer-owned co-generation, self-generation, and independent power.

After demonstrating the viability of non-utility owned generation, independent power producers emerged with the support of additional legislation and the Federal Energy Regulatory Commission ("FERC"). This has resulted in expanded wholesale competitive markets for electricity and open-access transmission. Competition now sets the price for electricity generation in much of North America. Generation is now mostly viewed as a commodity, transmission service is provided without exclusively being part of a localized vertically integrated electric utility, and retail competition through energy service providers is expanding in many places. At the same time, conservation, demand-side management ("DSM"), and distributed generation are on the rise. Local distribution networks mostly remain and survive as natural monopolies.

Q. What insights do you derive from this historical analysis and how are they relevant here?

A. Two things are important to understand about these changes over the past one hundred or more years. First, many electric utility companies eschew risk and prefer to collect their authorized revenue without being concerned with variations in the weather, economy, or customer preferences. However, achieving a high degree of revenue collection and

earnings certainty is in direct conflict with the increased use of TOU and marginal cost tariff designs, increases in customer-owned generation and distributed generation, more competition, more customer choice, and energy efficiency and conservation programs.

Second, it is equally problematic when a utility has too much capacity, because competition and greater customer choice would reduce the usefulness of this capacity and potentially strand these assets.

As I will explain, in this case, Mr. O'Sheasy endorses and Mr. Rogers seeks to implement a "back to the past" approach to rate design, the goal of which is to preserve and protect WEPCO's revenue recovery at the expense of other stake-holder interests and society more broadly defined and considered.

Q. Mr. O'Sheasy states that, in theory, economic efficiency would be maximized if variable costs were recovered through volumetric charges, and fixed costs were recovered through fixed charges. How do you respond?

A. I disagree with him on three levels. **First**, if one of the goals of rate design is to maximize economic efficiency, as Mr. O'Sheasy suggests, it is inappropriate to use, as he does, accounting concepts of fixed and variable costs. Consider instead wholesale competitive market concepts. Wholesale electricity markets trade electricity as a commodity. Markets, in effect, ignore sunk or fixed costs. Competition determines the price of the flow of electricity using a per kWh or mWh price, which reflects the value of capacity and energy costs in one price.

Similarly, when seeking the goal of maximizing economic efficiency, engineering and economic concepts such as marginal cost are more appropriate. Dr. Ralph Turvey, a British economist who best explained the engineering aspects of marginal costs to

American regulators and policymakers, used two rules that I have long ago adopted as the best formulation of marginal cost:

The Short-Run Pricing Rule:

Marginal cost equals marginal running costs, adjusted for voltage and location when there is sufficient capacity to satisfy demand. This is akin to the engineers' concept of "system lambda," which economists also use to maximize economic efficiency while satisfying a load constraint.

When demand exceeds the available supply that can be delivered, marginal cost equals marginal opportunity cost, which is the competitive price that will clear the market and restrict demand to the available supply. This is akin to locational marginal prices ("LMP") in competitive wholesale markets.

The Long-Run Pricing and Investment Rule:

This means investments should be made when the marginal cost of capacity additions is equal to or less than the prices needed to restrict demand in the short-run to the available supply, *i.e.* marginal opportunity costs.

Marginal capacity costs equal the levelized per unit cost of new capacity additions less the present value of any associated fuel savings for the least cost type of capacity that would be added. This means that gas turbines have higher marginal capacity costs because they do not have any appreciable fuel savings compared to other types of generation.

These concepts are well known and understood. Inexplicably, Mr. O'Sheasy confuses these concepts and reduces things to a simplistic and, more importantly, conceptually flawed conclusion that accounting fixed costs should be collected in fixed prices that do not vary with use, and accounting variable unit costs should be collected using prices based on actual use. I do not question his right to his opinion, but I do protest when he embraces economic efficiency as his rationale. Markets and TOU tariffs that are correctly designed based on economic and engineering principles are in conflict with what Mr. O'Sheasy concludes.

Q. Please continue with your response.

A. **Second**, there is little doubt that maximizing economic efficiency through competitive markets operating in real time with relative ease of entry and exit is the best way to determine marginal cost, better even than the best engineering and economic estimate of marginal cost on a before-the-fact, or *ex ante*, basis. Despite ignoring this truth in most of his testimony, Mr. O'Sheasy seems to agree when, on page 26 of his testimony, he discusses LMP pricing for some customer-owned self-generation. If using marginal cost proxies are appropriate for paying self-generators, Mr. O'Sheasy fails to explain why the concept should be ignored when analyzing WEPCO's cost recovery needs.

Third, economic efficiency begins with how prices are determined with respect to the willingness of consumers to pay and the marginal cost of providers that supply a product. Regulation can properly be viewed as a proxy for competition, meaning that regulation seeks, as best it can, to achieve pricing and returns that would mimic competitive markets.

However, Mr. O'Sheasy seems to base his regulatory proposals by focusing solely on the utility and its shareholders. At a minimum, I would urge the Commission to broaden its focus to include the utility ratepayers and, more broadly, society. Price signals and customer choice deserve regulatory attention. External benefits or costs also deserve additional consideration. Mr. O'Sheasy gives both matters short shrift and instead concentrates on how customer preferences, the economy, and even the weather could increase uncertainty for utility revenue and earnings.

Q. Do you agree with Mr. O'Sheasy's assertion, on page 3 of his direct testimony, that slow economic growth and customer efficiency improvements mean consumers of electricity providers "avoid paying" fixed costs?[1]

A. I find this concept to be completely unfounded. As Mr. O'Sheasy acknowledges, everything from weather to conservation to sluggish economic growth can affect utility revenues and fixed cost recovery. These are risks that the utility assumes by conducting business. But the utility is not entitled to charge rates that categorically protect it from these risks. Utilities, like any other business, make forecasts of future sales and decide how to serve their markets accordingly.

If customer tastes change in the breakfast cereal market, customers are not "avoiding paying" the fixed costs of the manufacturer and there is no competitive market recourse against the customer. In competitive markets, businesses have no recourse if sales fail to meet expectations—they must simply adjust. In my experience, the same is also true in regulated markets. Regulation does not guarantee recovery of authorized returns. In fact, utilities often face risks related to fixed cost recovery in the form of (1) *ex post* prudence review; (2) stranded cost recovery (when competition makes assets

[1] Direct-WEPCO/WG-O'Sheasy-3:11-14.

uneconomic to operate); and (3) cost of service recovery disallowance, if assets are no longer deemed to be used and useful.

Regulated utilities, like competitive businesses, are not guaranteed the recovery of their authorized return, which includes explicit and implicit recognition of fundamental business, financial, and economic risks. In my opinion, a utility that seeks to eschew or greatly mitigate such widely accepted competitive market risks is, in effect, proposing to accept a lower authorized return as a *quid pro quo.* My response to Mr. O'Sheasy's proposals to eliminate revenue and earnings recovery risk would be to ask him how many basis points reduction in WEPCO's rate of return he would be willing to sacrifice to eliminate these risks.

Therefore, if the Commission accepts Mr. O'Sheasy's rationale and the tariff designs that are based on that rationale, I would urge the Commission to consider an appropriate reduction in the authorized return for WEPCO, given the substantially reduced risks in the new tariff design.

Q. How would you propose that the Commission adjust the authorized rate of return on equity ("ROE") for WEPCO if the Commission authorizes the proposed tariff changes?

A. I think selecting an ROE typically comes down to determining a reasonable range of return. The starting point is typically the middle of the range. If WEPCO convinces the Commission to reduce its revenue and earnings risk by authorizing the proposed changes in the COGS and SS tariffs, I would urge the Commission to move to the lower end of the reasonable range for the ROE to reflect the reduction in risks that WEPCO would have achieved.

Q. Mr. O'Sheasy notes that there are a number of advantages to aligning prices with variable costs, such as improving price signals to encourage economically efficient use and/or conservation of electricity.[2] Do you agree with Mr. O'Sheasy's position?

A. No. Mr. O'Sheasy's conceptual argument is that the economically efficient amounts of customer use, conservation, and other forms of energy efficiency should be tied to the utility's variable costs. This is a flawed conceptual argument, as I explain below, because markets and customers combine energy and capacity into the time of use exchange value or price of electricity. I have written extensively on this subject for more than 40 years, culminating in my recent book, Going Green and Getting Regulation Right. Therefore, I will keep this relatively brief and focus on my conclusions, which I believe are part of a broader consensus on these matters. I also will stress that Mr. O'Sheasy's conceptualization of how economists and regulators view these matters is out of step because he focuses on shareholders in the near term, not on customers or society.

Mr. O'Sheasy's views on rate design are quite transparent. He wants to return to tariff designs that put virtually no fixed cost recovery, both "on" and "of" rate base, at risk. This would include both earnings and depreciation expenses. His primary concern is revenue collection for the utility, not sensible price signals that improve customer choice and that use market forces to promote prudent utility investments.

Mr. O'Sheasy's primary purpose is to ensure that WEPCO recovers a return on and of its sunk capital investments. I respect some important aspects of the regulatory compact. Nevertheless, many of these sunk costs are not as important or useful today as when they were incurred. Expanding energy efficiency and distributed generation creates jobs and is, in many respects, more consistent with current political and social objectives.

[2] Direct-WEPCO/WG-O'Sheasy-3:3 to 4:2.

This does not mean that regulators should ignore or even minimize fixed cost recovery. However, fixed cost recovery should not be given the primacy that Mr. O'Sheasy proposes.

Q. Do you agree with Mr. O'Sheasy's assertion that conservation will not be efficient unless the price of electricity "reasonably reflects the unit variable cost of supplying it, which is not the case when the price is also used to recover a large amount of customer-related cost"?

A. No. Mr. O'Sheasy's argument is completely unfounded. He reaches an upside-down and erroneous conclusion concerning "conservation." In this context, I interpret conservation to include both customer- and utility-sponsored conservation, as well as efficient customer-owned generation. Let me present what I consider to be the conceptual industry consensus regarding such conservation:

- Consumers would benefit if the marginal cost of energy efficiency is less than or equal to the price of electricity that they expect to pay.
- Non-participating utility customers would benefit from expanded utility-sponsored energy efficiency if the marginal cost of electricity or the utility's avoided costs exceed the price of electricity.
- The definition of marginal cost should include marginal running costs, wholesale power prices, and marginal opportunity costs, including locational aspects.
- Non-participating customers and participating customers both benefit and should financially support expanding energy efficiency if there are marginal external benefits such as reduced pollution, improved national security, economic growth, and the like.

Mr. O'Sheasy puts virtually all the emphasis on what economists would view to be sunk cost recovery. He is almost exclusively concerned with a certain and effectively guaranteed recovery of the utility's authorized revenue requirement.

Moreover, Mr. O'Sheasy overstates his concerns for customers that do not choose to participate in energy efficiency or self-generation when he presumes that non-participating customers have no interest beyond making certain that other customers pay a particular price for utility services. This ignores the possibility that non-participating utility customers might place value on the positive consequences of investments in energy efficiency or customer-owned generation, such as environmental improvement, national security, or economic development.

Q. What does Mr. O'Sheasy say about market forces?

A. Mr. O'Sheasy states, "…when customers…use electricity, the value of doing so should be higher than the cost of supplying this incremental amount of electricity and when they decide not to do so, it will be because the cost of supplying this incremental energy is greater than the value that it would provide."[3] Mr. O'Sheasy merely restates the fundamental relationships between "demand" and "supply" in a competitive market; to wit: in competitive markets, many sellers will compete to supply a product and many buyers will determine their willingness to pay. The aggregate reflection of sellers' marginal cost and consumers' demand will determine the economically efficient quantity and price for the product.

Q. What are your concerns with Mr. O'Sheasy's statements about market forces?

[3] Direct-WEPCO/WG-O'Sheasy-3:21 to 4:3.

A. Two complications arise. First, the prices that WEPCO charges are set by COS regulation. Second, some consumers may not have adequate information and the ability to access energy efficiency products and markets. It is the first complication that is my primary concern. Under Mr. O'Sheasy's approach, WEPCO's proposed tariffs would force customers to pay for a greater portion of service through fixed charges, which would effectively reduce their ability to bypass (i.e., reduce) the payments they make to WEPCO.

Specifically, as explained below, he would collect generation and distribution costs in fixed stand-by charges, regardless of use. Also, he would not determine marginal cost using economic or engineering concepts because he incorrectly proposes to use accounting definitions of fixed and variable costs to determine tariffs. He places too great an emphasis on the relatively certain recovery of revenue requirements. The correct economic definition of "marginal cost" does not distinguish between short-run and long-run marginal cost. Indeed, the latter plays, at most, a minor role in how economists define competitive markets and economic efficiency.

Wholesale competitive markets such as MISO reflect both marginal capacity and energy costs in the prices for trades. Customers that self-generate and make energy efficiency decisions should have the same information in the price signals that they rely upon. The bundled regulated retail price is a much more accurate signal to guide customers' economically efficient choices than a utility's variable costs of service.

Q. Mr. O'Sheasy argues that fixing the alignment between energy prices and unit variable cost would avoid volatility in revenue due to weather or economic

conditions, improve utility incentives to promote conservation and energy efficiency, and increase utility sales growth. How do you respond?

A. Mr. O'Sheasy's conclusions are misleading at best. Uncertainty related to weather and economic conditions are business risks that affect the authorized rate of return. Virtually every business has risks. Mr. O'Sheasy seeks to shift these risks to regulated utility customers and away from shareholders. If a utility were to reduce these risks in this fashion, other things equal, a lower authorized rate of return should be considered.

In any event, several states have addressed the issue of sales uncertainty by using what are called "revenue" adjustments. An important aspect of these tariff adjustments is to make a utility neutral when customers conserve energy, invest in energy efficiency, or install their own distributed generation systems. I am not advocating any specific adjustments for WEPCO in this area. I am simply pointing out the glaring defect in Mr. O'Sheasy's testimony: that he would revert to outdated nineteenth century rate design logic and not give any consideration to the possibility that WEPCO could address his concerns using a "decoupling" approach. Regardless, the fatal flaw in his approach is that he would effectively vitiate the price signals in current tariffs with his misguided proposals to collect what he calls "fixed" costs in non-by-passable charges.

Q. Has Wisconsin used revenue decoupling?

A. Yes. In 2008, the PSCW approved a decoupling as a "Revenue Stabilization Mechanism" and authorized Wisconsin Public Service Corporation ("WPSC") to implement a four-year pilot program. In December 2012, the Commission extended the

Pilot Program, which lasted until the end of 2013.[4] I now understand that the Commission discontinued the WPS experiment as of January 1, 2014.[5]

Q. Does WEPCO operate under a revenue decoupling order?

A. No. As shown in Ex.-MMSD-Cicchetti-2, Mr. Rogers and Mr. O'Sheasy agree that "revenue decoupling with normalization is sometimes used." In Ex.-MMSD-Cicchetti-3, Mr. Rogers states that "the industry as a whole has looked at revenue decoupling, but the Company has never seriously considered it because Wisconsin has forward looking test years."

Q. Do you consider this to be a valid reason not to consider revenue decoupling?

A. No. I do not have sufficient knowledge of all the facts to be recommending a specific revenue decoupling plan for any Wisconsin utility. However, I have a great deal of expertise concerning how utilities across North America could encourage energy efficiency in the form of demand side management, conservation, and customer-owned generation. At a fundamental level, Mr. O'Sheasy and Mr. Rogers mount a case that would return much of Wisconsin to the "not so good old days." Their logic would turn back the clock based on little more than an unsupported fear of potential lost revenue.

It is very obvious to anyone knowledgeable of prior debates concerning utility-sponsored conservation that lost revenue can be readily addressed through some form of decoupling mechanism. Mr. O'Sheasy apparently gave this approach short-shrift. It is also very hollow to assert, as he does, that the use of forward test years negates decoupling. This is neither correct in practice nor theory.

[4] Application of Wisconsin Public Service Corporation for Authority to Adjust Electric and Natural Gas Rates, 6690-UR-121, 2012 Wisc. PUC LEXIS 648, December 7, 2012.
[5] Application of Wisconsin Public Service Corporation for Authority to Adjust Electric and Natural Gas Rates, 6690-UR-121, 2013 Wisc. PUC LEXIS 669, December 18, 2013.

Q. From a public policy perspective, what sort of effects do you believe WEPCO's proposed tariff changes will have on WEPCO's ratepayers and Wisconsin's economy more broadly?

A. I believe the effects will be negative. The new tariffs would punish businesses, public enterprises, and residential users that have invested time and money responding to past and current incentives to self-generate and improve the economy and the environment. For example, MMSD relied on WEPCO's existing rate structure when it invested tens of millions of dollars in a landfill gas pipeline and landfill gas turbines for its Jones Island facility. The economic benefits of such projects to southeastern Wisconsin could be substantially undermined by WEPCO's proposals. In my opinion, the rate stability Mr. O'Sheasy and Mr. Rogers discuss should include maintaining incentives and tariff terms that other businesses have already acted and relied upon to make their business and economic decisions.

Q. Do you agree with Mr. O'Sheasy's assertion that WEPCO's current TOU pricing structure represents "some degree of revenue exposure to the utility, because a fair proportion of customers could reduce their bills by converting to TOU service while not actually modifying their usage"?[6]

A. No. Mr. O'Sheasy is not concerned with the rather widely accepted objective that tariffs should send reasonable price signals that attempt to approach competitive market outcomes. The so-called peak to off-peak price ratios should reflect estimated marginal cost differences, including marginal operating costs—or more preferably, real time prices in competitive wholesale markets, adjusted for location.

[6] Direct-WEPCO/WG-O'Sheasy-15:16-18.

Q. Do you agree with Mr. O'Sheasy's conceptual approach to and justification for changing WEPCO's COGS and SS tariffs?

A. No. I believe that Mr. O'Sheasy makes three general arguments in favor of his approach. My disagreement with his arguments is the core of my testimony in this proceeding. I will address them each in turn.

Q. Mr. O'Sheasy argues that WEPCO's current COGS and SS tariffs encourage too much self-generation, and that the overall effect of "this over-building of self-generation" is to burden customers who do not own their own generation systems. Do you agree?

A. No. As shown in Ex.-MMSD-Cicchetti-4 and Ex.-MMSD-Cicchetti-5,[7] WEPCO asserts that customers that do not own generation subsidize customers with generation, but simultaneously admits that it "has not performed an analysis of the impact on rates of non-CGS customers if it does not change its existing CGS tariffs." WEPCO did not perform a full cost of service analysis with respect to standby energy and distribution costs. In fact, I view WEPCO's filing to start with revenue requirements and then propose tariff revisions guided by the goal of revenue/earnings stability. In effect, WEPCO is attempting to rationalize these rate changes without any fully analyzed or meaningful empirical support.

In this way, the tariff changes are simply an attempt by WEPCO to virtually guarantee revenue stability. The question of how much customer-owned generation is appropriate is not limited to the stress such generation might place on a utility's virtually guaranteed revenue requirement recovery stability. Sensible and appropriate utility price signals are the best way to determine what customers choose to do. There should be no

[7] *See also* Direct-WEPCO/WG-O'Sheasy-22:10-12 and Direct-WEPCO/WG-Rogers-50:3-4.

undue regulatory concern if existing tariffs cause customers to choose substitutes to utility service, such as self-generation or conservation. In fact, customers should be free to make choices regarding their energy use, just as they make free and rational decisions in other areas of our economy on a daily basis.

Furthermore, since 1978, public policy has encouraged more customer-owned generation because of the benefits it provides. The reasons for this public policy include: (1) creating a yard-stick that utility performance and service can be measured against; (2) conserving resources; (3) improving efficiency; (4) expanding consumer choice; and (5) the innate value of competition, among others. I do not find any particular support for any notion that revenue requirement stability trumps these other objectives.

Q. Mr. O'Sheasy asserts that CGS customers are overpaid under net-metering ("NM") and that if "avoided cost" pricing were used under gross-metering ("GM"), the utility and customer would have a neutral relationship. How do you respond?

A. Mr. O'Sheasy overstates the case against net metering, while appearing to endorse GM. I note that Mr. O'Sheasy later modifies this conclusion, suggesting the need to revisit both charging more for reserves, *e.g.* ancillary costs, and the "credit" for avoided transmission cost, presumably for both NM and GM customers. Mr. O'Sheasy defines "over-payment" using his rather outdated and conceptually incorrect notions to define the appropriate prices used in CGS tariffs. As in other areas, he focuses on revenue requirement stability far too much and at the exclusion of other more relevant rate-making objectives.

His distinction between NM and GM is premised on the belief that NM customers are given preferential treatment when NM customers sell "to" the utility and are

effectively "paid" with an off-setting credit against their utility purchases that equals the same prices used for their utility purchases. He avers this would be too sweet a deal for the NM customer.

My approach would not be to determine appropriate prices using his unreasonable notion of accounting "fixed" and "variable" cost. If utility tariffs reflect user pay/cost causation, which is another way to express marginal cost, there is nothing inherently conceptually wrong with NM tariffs.

Q. Mr. O'Sheasy asserts that self-generators that are provided stand-by services may introduce variability and volatility for utility sales revenue. Do you agree?

A. No. Mr. O'Sheasy proposes that some WEPCO's self-generators should be provided standby service using fixed demand charges that would cover both generation and distribution costs.[8] The only rationale he provides is that this will secure better revenue stability. Mr. O'Sheasy states, "A better match of volumetric price and unit volumetric price and unit variable cost reduces or eliminates variations in fixed cost recovery due to the effects of weather and economic conditions. It can also reduce utility earnings variation and reduce customer bill volatility."[9] This suggestion ignores economic, engineering, and cost causation/user pays regulatory principles and sensible tariff-design concepts.

Things are rather simple: a customer should pay for what it uses and not what Mr. O'Sheasy would assign to stand-by service customers. This is true for distribution and generation. Reservation charges are not the same as use charges. He incorrectly avers

[8] *See* Direct-WEPCO/WG-O'Sheasy-25 to 27.
[9] Direct-WEPCO/WG-O'Sheasy-6:22 to 7:2, 26:15 to 27:4.

such services have mostly fixed cost accounting components, which he claims require the adoption of unavoidable fixed customer fees.

Q. Has Mr. O'Sheasy made a clear case for revising WEPCO's tariffs?

A. No. He fails to make the case that the current rates are not working. Instead, I interpret what he is suggesting is that WEPCO has some captive customers from which it can gain more revenue recovery certainty. I urge the Commission to reject such a transparent abuse of market power over customers that are effectively held hostage after making good faith commitments to follow both price signals and public policy to expand their generation resources.

I use the shocking term "abuse of market power" very intentionally. In my opinion, WEPCO is raising the "lost revenue" straw-man to reduce its risks for shareholders. In a competitive business, this would not be easy to accomplish, particularly in weak economic times. WEPCO invokes mostly outdated and previously rejected logic in an attempt to convince the Commission to let it use its utility monopoly and mostly very limited customer choice to force customers to absorb risks in an unjust and unreasonable manner, which is contrary to economic and public policy objectives.

Q. Given your disagreement with the concepts that Mr. O'Sheasy endorses, what is your position on the actual tariffs that are outlined in Mr. Rogers' testimony?

A. At a conceptual level, Mr. Rogers adopts Mr. O'Sheasy's notions that WEPCO should revise its rate designs or tariffs based on a "stable revenue" objective, which means greater use of unavoidable fixed facilities' charges. Since this approach suffers from all the defects and flaws described above, much of what Mr. Rogers proposes could conceptually be dismissed out of hand. I will not do this because Mr. Rogers is the

company's rate design witness, and my experience is that he would be given some deference, even if his ideas were premised on flawed and inappropriate concepts.

Q. How is your response to Mr. Rogers' testimony organized?

A. I will shift from the high level conceptual discussion of his implementation of Mr. O'Sheasy's conceptual ideas and discuss how the proposed tariff changes are not justified for customer-owned generation, particularly new stand-by services for primary energy large business users served under Cp-1 with no stand-by charges and the newly proposed Cp-4 tariff. I will also discuss more briefly my concerns with the proposed changes in tariffs related to customers that sell excess generation back to WEPCO.

Q. Please describe your understanding of the changes that Mr. Rogers proposes for Cp-1 service.

A. WEPCO proposes to increase fixed periodic customer (*i.e.* facility) charges, increase customer-specific demand charges, and reduce the portion of the customer's bill related to variable energy use. In addition, if large primary energy customers self-generate, WEPCO would force them to pay new charges for stand-by service under the Cp-4 tariff, which would also set the terms of service and rates for primary energy and demand services that the self-generating customers purchase from WEPCO.

Q. Can you be more specific?

A. Yes. In Ex.-WEPCO/WG-Rogers-14 on page 4, Mr. Rogers details the changes between the current charges and proposed charges. I will round off his data in my answer. WEPCO proposes to:

1. Increase the daily Facilities Charge from $17.26 per day to $19.76 per day, which amounts to an increase of 14.5 percent;

2. Increase the on-peak demand charge for medium voltage customers from $12.86 per KW to $14.52 per KW, or a 12.9 percent increase[10];

3. Reduce on-peak medium voltage energy charges from $0.07724 per kWh to $0.07272 per kWh, or minus 5.8 percent; and reduce the off-peak high voltage energy charges from $0.05279 per kWh to $0.05024 per kWh, or minus 4.8 percent.

Q. Does WEPCO's proposed Cp-4 stand-by tariff make things potentially worse for MMSD?

A. Yes. Effective January 1, 2016, a primary energy customer, such as MMSD, would be required to take stand-by service under the Cp-4 tariff. The Cp-4 tariff would effectively add reserved demand charges and standby energy charges to the Cp-1 tariff. The facilities charges, customer demand charges, and on-peak and off-peak energy charges would be the same under the proposed Cp-1 and Cp-4 tariffs.

There are three other problematic charges. First, a medium-voltage primary energy customer with a generation unit that meets the 300 kW/35% on-site load threshold in the tariff would have to pay a reserved demand charge of $1.964 per KW. This reserved demand charge would be based on the "lesser of the customer's generation capacity or the customer's total demand." Second, the basis for the customer-demand charges is the "total consumption by the customer," which equals the sum of the "company-supplied and customer-supplied generation." Third, there are minimum on-peak and off-peak energy charges of $0.03 and $0.02 per kWh.

[10] Jones Island and South Shore (MMSD's water reclamation facilities, which have their own generation) receive power at 26,400 volts and 13,200 volts, which puts them in the medium voltage category.

Q. Do you have problems with the additional components the Cp-4 tariff would impose upon customers that would otherwise be billed under the Cp-1 tariff?

A. Yes. The reserve demand charge is one way the customer that self-generates pays WEPCO for maintaining reserves, but this charge does not account for how that self-generator improves WEPCO's system reliability and reduces generation and reserve requirements. If MMSD were to become a full requirements customer, WEPCO would need to revise its capacity forecasts and reserves.

In addition, the economic and financial assumptions underlying the reserved demand charge are based on several flawed and biased economic assumptions and analyses. Mr. Roger's rates are biased for three reasons:

1) The peaking unit method yields the highest marginal capacity cost estimate because other types of generating capacity with lower fuel costs would have lower present values for the cost of adding capacity to a complex interdependent generating portfolio.

2) The reserved demand charge reflects billing units that may include self-generation related demand in addition to what the customer actually purchases from WEPCO, and about half the charge is for transmission at $78.71 per KW-Year out of a combined generation and transmission total of $160.47 per KW-Year. Transmission implies use of off-site energy, but customer-owned generation is on-site, and does not require use of the transmission network.

3) The 14.5% is the WEPCO reserve requirement. There is **no** apparent connection between this planning percentage and the improbability that all of a self-generator's resources, such as MMSD's multiple units, would go off-

line simultaneously in a given month or year. It appears Mr. Rogers needed a percentage and picked WEPCO's reserve requirement for this purpose with no conceptual support.

Q. What are the other problems you find in WEPCO's proposal?

A. WEPCO proposes to base customer demand charges on total customer demand—both the part that WEPCO supplies and the part that customers (such as MMSD) self-supply through their own generation. In other words, Cp-4 customers would pay for something they do not actually take in the monthly demand charge, *i.e.* the electricity that MMSD generates, which violates a myriad of economic, regulatory, and common sense principles.

Q. What are your concerns with respect to the proposed rationale for the Cp-1 rate increases that MMSD currently pays when they purchase electricity from WEPCO?.

A. WEPCO requests revenue relief in the form of a 2.7 percent overall rate increase. As Mr. Rogers explains, "With the fuel deferral, CSAPR amortization and section 1603 tax grant credit in 2015, however, the overall revenue deficiency is … -0.3% for the large class…."[11] I have several problems with WEPCO's proposed changes in the Cp-1 rate that MMSD would pay.

First, this category should expect a small rate decrease. Nevertheless, WEPCO proposes to increase fixed customer facilities charges by 14.5% and on-peak demand charges by 13.1%. These increases are difficult to reconcile based on a cost of service analysis that suggests an overall rate decrease for these primary energy customers. Any offsetting energy price decreases are unlikely to be sufficient to bring the annual revenue

[11] Direct-WEPCO/WG-Rogers-33:21 to 34:1.

payments of a primary energy consumer like MMSD in line with the cost of service "large customer" rate reduction.

Second, some primary energy customers generate their own energy. For example, MMSD has two water reclamation facilities: Jones Island and South Shore. Jones Island has generated up to 75 percent or more of its energy requirements using natural gas and, more recently, landfill gas with a natural gas back-up. MMSD's generating capabilities are about 29 MWs at Jones Island and 5.4 MWs at South Shore. When a Cp-1 customer that takes electricity at less than 138,000 volts uses energy from WEPCO, it establishes a customer demand requirement that is the basis for ratcheted demand charges it could be required to pay for 12 months, unless subsequent demand exceeds the amount. The daily facilities charges are paid regardless of any demand or energy use in a billing cycle. As a result, a surge in use just one month out of a typical year would mean paying for that surge eleven more times. These are the categories that WEPCO proposes to increase, while reducing energy charges by concomitant smaller percentages of 5.8% for peak use and 4.8% for off-peak use.

A self-generator, such as MMSD, would pay the larger daily and per KW charges, while their relatively smallish energy use charges would decrease. This means that with its large percentage of self-generation, MMSD would very likely pay more each year. The likelihood of paying more will increase, even though WEPCO's cost of service study suggests "large customer" rate decreases.

Third, as noted above, MMSD pays demand charges based on the highest monthly demand in a rolling 12-month period. This means that if MMSD needs to "lean" on WEPCO, it currently pays to do so in the form of higher than actual per KW demand

charges. Mr. Rogers and WEPCO provide no evidence to demonstrate that these demand charges are inadequate to compensate the utility for the customer and distribution facilities that MMSD utilizes. This is a glaring flaw because the current rolling customer demand charges for Cp-1 customers, such as MMSD, taking electricity at less than 138,000 volts pay would be based on their highest specific customer use in 12 months. In effect, temporary unexpected reliance on WEPCO for 15 minutes in a given billing cycle would cause them to pay more for facilities than their actual use for another 11 months. Facts are stubborn things; WEPCO makes unsubstantiated and not particularly sufficient claims that Cp-1 customers do not fully compensate for WEPCO for facilities charges. Simply put, WEPCO's rationale for seeking more revenue certainty based on self-generators, particularly one with MMSD's use characteristics, rests on flawed concepts.

Q. What are your concerns with the standby energy rates that WEPCO is proposing as part of the Cp-4 tariff?

A. As I understand it, for every kWh purchased from WEPCO under the Cp-4 rate, customers must pay the greater of (a) $0.03/kWh (on-peak) or $0.02/kWh (off-peak), or (b) the Locational Marginal Price (LMP) plus a ten percent mark-up. I find no justification for marking up LMP, since fuel and purchase power expenses are pass through costs. Similarly, if the minimum exceeds LMP+10%, there would be no justification for that type of mark-up. It certainly should not be based on the administrative costs that WEPCO already collects and assigns to customer classes, particularly for a category of users that are paying more when WEPCO's cost of service study indicates a rate decrease is warranted. Again, WEPCO has not done a full cost of service analysis. WEPCO has not justified the energy charges based on time of use or

MISO wholesale market prices. WEPCO seems instead to focus on ensuring that WEPCO collects its authorized revenue requirements and, in this part of its tariff, is willing to use higher energy prices in pursuit of that narrow goal.

Q. Do you have additional concerns with applying the proposed Cp-4 tariff to a customer like MMSD?

A. Yes. MMSD has recently made costly investments to expand its capability to self-generate electricity at both its Jones Island and South Shore facilities. At the time, this investment was economically rational because it adhered to the price signals embodied in WEPCO's existing rates. It also advanced the public policy goals of both Wisconsin and the United States. WEPCO is now proposing to pull the rug out from under MMSD by changing the tariff in which it will be enrolled and the charges that it will pay. Changing tariffs in such a profound manner, and for such self-serving purposes, is not justified. A year-long transition period is simply not sufficient to allow MMSD to recover the cost of its investment and adjust to the new tariff charges. At the very least, WEPCO should agree to grandfather existing self-generators, such as MMSD, onto their current tariffs.

Q. Should the Commission authorize WEPCO to implement the changes that it proposes to the Cp-4 tariff?

A. No. WEPCO's self-serving reason for changing its tariffs—which is to preserve revenue stability—should be given little weight, in my opinion. Instead, tariffs and public policy should encourage customers to use renewable fuels such as biofuels, not punish them, as WEPCO, in effect, proposes to do. Using otherwise flared bio-gas to self-generate electricity improves health and safety, reduces harmful emissions, and reduces the use of

fossil fuels, all of which, in my opinion, improve both economic and national security for North America and our friends around the world.

Finally, I recognize the so-called regulatory compact. In my opinion, this does not mean a guaranteed recovery for what are mostly sunk utility costs. This is especially true when the proposed tariffs needlessly block or diminish customer and competitive market innovation, reduce economic efficiency, and suppress job growth in an economy that needs new investments much more than it needs utility revenue stability.

Q. You previously testified that you thought WEPCO's proposed tariff design was an abuse of market power. Why do you describe WEPCO's proposed tariff design for self-generating customers as anti-competitive or reflecting monopoly power?

A. In previous cases, Mr. Rogers raised concerns related to self-generating customers making economically beneficial choices based on the ability to choose and substitute purchases from WEPCO based on tariffs and/or LMP and their own self-generation. He explained in prior proceedings that the Cp-4 tariff has evolved to eliminate or restrict customer choice to inure to the benefit of WEPCO sales revenue.[12] This is an admission that WEPCO is transparent in how it competes with its own customers in terms of selling electricity on favorable pricing terms. I have included excerpts from Mr. Rogers' relevant testimony in Ex.-MMSD-Cicchetti-6. In the current Cp-4 tariff proposal, WEPCO expands its anti-competitive practices. Other tariff revisions also reflect the anti-competitive philosophy WEPCO brings against its own customers that self-generate or seek third party services that compete with WEPCO.

Q. Please summarize your recommendations.

[12] *See* Ex.-MMSD-Cicchetti-6 and Ex.-MMSD-Cicchetti-7.

A. I urge the Commission to reject the misguided concepts that WEPCO has conjured up to help reduce shareholder risks and improve earnings stability. The size of the overall requested rate increase is such that, in my opinion, any delays caused by rejecting WEPCO's proposal could be remedied with deferral accounting and eventual recovery. If this seems too drastic, I would then urge the Commission to grandfather, for a just and reasonable time period, any existing self-generators. I believe that a time period of twenty years is appropriate to allow self-generators time to recover investments that they have made under the existing price signals in WEPCO's current tariffs. This is particularly important for self-generators, such as MMSD, that have relatively recently made new investments predicated on WEPCO's current tariffs.

I urge the Commission to reject WEPCO's proposed Cp-4 tariff, and other proposals that would penalize self-generation, distributed renewable generation, and other forms of energy efficiency. Regardless of the case for earnings stability, in my opinion, other public policy objectives, such as fairness, economic efficiency, increasing renewable energy, environmental improvement, and job creation, trump WEPCO's plea for security in revenue collections. The Commission should favor competition and innovation. Finally, if revenue stability and certainty are improved, I urge the Commission to set WEPCO's return at the low end of the reasonable range of possible returns.

Q. Does this conclude your direct testimony?

A. Yes, it does.