STATE OF IOWA
BEFORE THE IOWA UTILITIES BOARD

IN RE:	)	
	)	
	)	**DOCKET NO. RPU-2013-0004**
MIDAMERICAN ENERGY COMPANY	)	
	)	**DIRECT TESTIMONY OF**
	)	**GRAEME MILLER**
	)	

Q. What is your name and business address?

A. My name is Graeme Miller. I am a Research Policy Analyst employed at the Energy Resources Center (ERC) located at the University of Illinois at Chicago. Our offices are located at 1309 South Halsted Street, Chicago, Illinois 60607.

Q. On whose behalf are you testifying today?

A. I am testifying on behalf of the Iowa Environmental Council (IEC) and the Environmental Law and Policy Center (ELPC).

Q. Please describe your background.

A. The ERC is an interdisciplinary public service, research, and special projects organization dedicated to improving energy efficiency and the environment. Based out of the College of Engineering at the University of Illinois at Chicago (UIC), the ERC was established in 1973 by the Board of Trustees as an approved Illinois Board of Higher Education center. The ERC is also the home of the U.S. Department of Energy (DOE) sponsored Midwest Clean Energy Application Center (Midwest CEAC). The Midwest CEAC was established

in 2001 as a regional resource to provide targeted education, unbiased information and technical assistance in the areas of Combined Heat and Power (CHP), Waste Heat to Power (WHP), and District Energy Systems. The Midwest CEAC provides these services to the 12 State Midwest region, which includes the State of Iowa. I have co-authored two studies on utility rates in Iowa (exhibits GHM-1 and GHM-2).

Q: Have you previously given testimony to the Iowa Utility Board?

A: Yes. I have given testimony in both EEP-2012-0001 and EEP-2012-0002, Interstate Power and Light Company (IPL) and MidAmerican Energy Company's pending energy efficiency plan dockets. My testimony covered the benefits and varied methodologies of including CHP in energy efficiency portfolios.

Q. Please describe your experience in the field of electric utility regulation and specifically that of standby rates.

A. Through my time at the Midwest CEAC over the past 3 years, I have been involved in numerous activities related to CHP in the Midwest and the State of Iowa. The majority of implemented CHP systems are interconnected to the local electric utility grid and utilize natural gas as the primary fuel source; therefore numerous discussions and activities of the Midwest CEAC have revolved around gas and electric utility regulation. My specific topic of research has been on electric standby rates and their financial effect on the feasibility of CHP installations. I have researched and co-authored two studies examining standby rates in Iowa – one specifically examining MidAmerican's standby rates and possible structural changes. I have analyzed the technical and economic

feasibility of implementing CHP systems on-site at specific facilities (factoring in the rates and tariff structures of purchased electricity and natural gas). I have also provided education and technical assistance to numerous organizations on the concepts, benefits, and barriers of implementing CHP projects.

Q. What is a standby rate and how might it hinder combined heat and power development?

A: Standby rates, otherwise known as partial service rates, constitute a subset of retail electric tariffs that are intended for customers with on-site, non-emergency distributed generation. They are created to cover those instances when a customer's distributed generation goes offline and the customer must rely on the utility grid for power. These instances are divided between scheduled maintenance periods and unscheduled forced outages. Supplemental rates, those that cover the portion of a customer's load in excess of the on-site generation capacity, are also considered part of the subset of standby rates. The supplemental rates under MidAmerican's proposed tariff are the same as those for full requirements customers. Though standby rates are necessary to recover the fully allocated embedded costs that the utility incurs to provide backup and maintenance service, they can be created in such a way as to financially burden distributed generation customers unfairly and thereby be barriers to distributed generation development. Poorly crafted standby rates provide few, if any, incentives for customer-generators to operate in ways that reduce their burden on the utility. These rates make it difficult for customers to avoid charges when not taking service and can sometimes overcharge customers for their use of shared electrical infrastructure. Well-crafted standby rates should promote

economic efficiency, fairness, simplicity, transparency, and system reliability while penalizing those generators that create large costs to the utility.

MidAmerican's current standby rates provided few incentives for customers to minimize outage duration and frequency and often harshly penalized customers for going offline at all – no matter if that outage occurred during system on or off peak periods. The current standby tariffs were filed before the creation of the Midcontinent Independent System Operator (MISO) and the availability of the wholesale power market and represent a rate structure that no longer applies today. As I explain below, MidAmerican has taken steps to address this.

Q: In the tariff proposal in RPU-2013-0004, how is MidAmerican's standby rate structured?

A: Under MidAmerican's current tariff structure each geographic division had its own standby rate (corresponding to MidAmerican East, North and South). This proposed tariff consolidates the three regions under one standby rate, Rider SPS. Rider SPS is structured into four sections: the reservation charge, the scheduled standby usage charge, the unscheduled standby usage charge and specifications for supplemental power. Rider SPS contains no additional customer charge. \

The reservation charge is divided between generation, transmission, substation, and distribution service, all of which use a $/kW per month rate. The generation service charge is a product of the customer's Forced Outage Rate (FOR) and the generation

service charge of $8.37. For customers with generation under 5 MW the transmission service charge is calculated in a similar fashion (FOR x $1.86). Customers with generation greater than 5 MW pay the full $1.86/kW for transmission service unless they can successfully demonstrate reduced use in the transmission system when called upon by MISO. Under such a condition the customer will receive the same reduction in MISO rates as MidAmerican. A customer's FOR is not used to calculate both the substation and distribution service charges ($0.93 and $1.77/kW, respectively). MidAmerican's current standby rates do not incorporate a customer's forced outage rate when calculating any portion of the reservation charge.

A customer's FOR is calculated using only unscheduled outages and does not reflect the duration of scheduled outages so long as the FORs are scheduled within the allowable times. For new customers the FOR shall be the EFORd rate in the most similar generator class as published by MISO.

The $/kW reservation charge is paid every month and ensures the customer the ability to receive standby power for both scheduled and unscheduled outages when needed.

The scheduled standby usage charge consists of a daily demand charge, an energy charge and a reactive demand charge. The daily demand charge is calculated by taking the OAT demand charge, subtracting the distribution charge included in the standby reservation charge and dividing by 30.4167 days. The daily demand charge shall remain the same no matter historic performance or need for scheduled standby energy. During a scheduled

outage the customer shall pay the greater of the scheduled outage charges for that month or the monthly reservation fee, not both. Scheduled maintenance is available in April, May, October and November.

The unscheduled standby usage charge is the greater of the energy charges found in the customer's otherwise applicable tariff (OAT) or MISO LMP + 10% for energy usage recorded. This charge is in addition to the monthly reservation charge. The amount of allowed hours for unscheduled standby shall be calculated as the customer's Forced Outage Rate multiplied by 8760 hours (number of hours per year). If a customer exceeds that allotment for the year, all additional unscheduled energy and demand will be charged at the otherwise applicable tariff. This may occur if the customer's forced outage rate differs significantly from year to year.

All supplemental power is billed at the Otherwise Applicable Tariff which is the rate the customer-generator would be on but for their on-site generation. The available supplemental rates are as follows: Large General Service Rate, Substation Rate and the Individual Contract Rate. Unlike current rates none of the proposed rates contain a demand ratchet.

Q: What are the strengths of this new standby rate?

A: Rider SPS encourages the efficient use of the grid by tying a customer-generator's standby reservation rate to their forced outage rate; the smaller the forced outage rate the less a customer must pay per month to reserve standby capacity. Additionally, the use

of daily demand charges for scheduled outages and additional energy charges for unscheduled outages provide additional financial incentives for customers to minimize their outages both in duration and in frequency. These are both new features in standby rate structure that are currently not employed by MidAmerican's published standby rates. Another strength of this rate is the ability for the customer to contract for standby capacity less than the nameplate rating of their on-site generator. This allows the customer the flexibility to self-supply a portion of their standby needs or reduce energy usage if it proves more economically efficient than relying on MidAmerican.

Unlike MidAmerican's previous standby rates (particularly that of Eastern MidAmerican), Rider SPS allows for the use of both scheduled and unscheduled standby service without ratcheting demand per the otherwise applicable tariff. This allows the customer to go offline without having to worry about increased demand charges for the next year. If the customer does exceed their allotment of unscheduled standby time their excess demand is billed at the rate found within the OAT. Since MidAmerican's proposed rates do not contain any demand ratchet unlike current rates, the use of OAT demand charges should not overly burden a standby customer. This also keeps the charges of the rate in line with the actual use of service by the customer.

Furthermore, Rider SPS is clear and transparent in how it assesses and charges costs to customers. This is a marked improvement from the standby rates that are currently in place, specifically MidAmerican East's Rider 8 and its deficiency credits. Clear and

transparent standby rates allow developers and customers to accurately gauge the financial impact these rates will have on distributed generation projects.

We use the avoided rate metric as a general measure of the efficacy of standby rates to reduce barriers of distributed generation projects. The avoided rate metric compares the cost per kWh on a full requirements tariff to the avoided cost per kWh on a standby tariff. The avoided cost is a kWh price for the electricity not purchased due to on-site generation (money not paid to utility / electricity not purchased = avoided cost per kWh). This concept is important because, ideally, the reduction in electricity price should be commensurate with the reduction in purchased electricity. When the avoided rate closely matches the full requirements rate the customer experiences greater savings and reduced financial barriers caused from standby rates. The avoided rates as a percentage of the full requirements rates for all MidAmerican divisions are currently below 81%. The proposed tariff increases this figure to upwards of 89%. This is a significant increase.

Q: What are the weaknesses of this new standby rate?

A: While Rider SPS can be considered a significant upgrade to MidAmerican's current standby rates, there remain a few weaknesses within the structure of the rate. The first is that there is no mechanism within Rider SPS to remove the distribution or sub-station reservation charge for customers taking transmission voltage service or that own their own sub-station transformer. A customer should not have to pay to reserve service on infrastructure they will never use.

A corollary to the first point is that the sub-station reservation charge should be structured in such a way to allow for the inclusion of load diversity. Sub-stations and other shared distribution infrastructure are sized to meet the coincident peak of multiple customers – not the maximum peak of all customers. Since the probability of a standby customer exerting their full standby load on shared infrastructure during the coincident peak is far less than that of full requirements customers, they should be charged differently. The use of the FOR to calculate this charge might be appropriate

Secondly, the energy charge to customers taking unscheduled standby service should reflect the costs for MidAmerican to provide such service and not be the greater of two numbers. If MidAmerican must purchase MISO LMP capacity and energy to serve a standby customer then that price should be passed along to the customer. In some instances, that price may be lower than the IUB approved rates. In other instances, the price may be higher. Charging a real-time price only when it is greater than IUB approved rates does not accurately reflect the cost to provide unscheduled standby energy.

Lastly, the minimum contract requirement and the exit fee are inappropriate for inclusion under a standby rate. If MidAmerican must charge customers for the installation and removal costs of any interconnection facilities, it should do so under the interconnection agreement and not the standby tariff.

Q: Do you support MidAmerican's proposed standby rate?

A: The proposed standby rate is a substantial improvement from MidAmerican's previous standby rates. MidAmerican worked cooperatively with stakeholders to address concerns and many of those concerns are addressed in the proposed standby rate. While the proposed rate still has shortcomings that could be addressed as noted above, on the whole, this rate is a significant upgrade to the standby rates currently in place.

Q: Does this conclude your testimony?

A: Yes.

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AFFIDAVIT OF
GRAEME MILLER

STATE OF ILLINOIS)
) ss.
COUNTY OF COOK)

I, Graeme Miller, being first duly sworn on oath, depose and state:

1. that I am a Research Policy Analyst at the Energy Resources Center at the University of Illinois at Chicago;

2. that I have personal knowledge of the facts alleged in the attached testimony; and

3. that said facts are true and correct to the best of my knowledge and belief as of the date of this Affidavit.

Further affiant sayeth not.

/s/ Graeme Miller

Graeme Miller

Subscribed and sworn to before me,
a Notary Public in and for said County and
State, this 9th day of September, 2013.

Notary Public

Official Seal
LaShana H Danzy
Notary Public State of Illinois
My Commission Expires 09/20/2015