

**BEFORE THE  
PUBLIC UTILITIES COMMISSION  
STATE OF SOUTH DAKOTA**

**IN THE MATTER OF THE CONSIDERATION OF THE NEW PURPA STANDARDS  
DOCKET NO. EL08-028**

**TESTIMONY OF JON THURBER  
ON BEHALF OF THE COMMISSION STAFF  
AUGUST 2009**

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1 **Q. Please state your name and business address for the record.**

2 A. Jon Thurber, Public Utilities Commission, State Capitol Building, 500 East Capitol Ave.,  
3 Pierre, South Dakota, 57501.

4  
5 **Q. By whom are you employed and in what position?**

6 A. I am a utility analyst for the South Dakota Public Utilities Commission (Commission).

7  
8 **Q. Please describe your education and work experience.**

9 A. I graduated summa cum laude from the University of Wisconsin – Stevens Point in  
10 December of 2006, with a Bachelors of Science Degree in Managerial Accounting,  
11 Computer Information Systems, Business Administration, and Mathematics.

12  
13 In January of 2007, I started my employment with the State of South Dakota as an  
14 auditor for the Department of Legislative Audit. In July of 2008, I joined the Commission  
15 as a staff utility analyst.

16  
17 **Q. Are you familiar with the new PURPA Standards in the Energy Independence and  
18 Security Act of 2007?**

19 A. Yes. I have reviewed the Reference Manual and Procedures for Implementation of the  
20 “PURPA Standards” in the Energy Independence and Security Act of 2007 and the  
21 investor owned utilities’ testimony as it pertains to the standard I am addressing.

1 **Q. What is your role in this docket?**

2 A. I am responsible for providing Staff’s recommendation on whether or not it is appropriate  
3 to implement the PURPA standard “Rate Design Modifications to Promote Energy  
4 Efficiency Investments” (Subtitle D, “Energy Efficiency of Public Institutions,” section 532  
5 of EISA, sections 111(d)(17) and 303(b)(6) of PURPA).

6

7 **INTRODUCTION TO RATE DESIGN MODIFICATIONS TO PROMOTE ENERGY EFFICIENCY**  
8 **INVESTMENTS**

9

10 **Q. Provide the statutes under consideration.**

11 A. **532. UTILITY ENERGY EFFICIENCY PROGRAMS.**

12 (a) ELECTRIC UTILITIES.—Section 111(d) of the Public Utility Regulatory Policies  
13 Act of 1978 (16 U.S.C. 2621(d)) is amended by adding at the end the following:

14 “(17) RATE DESIGN MODIFICATIONS TO PROMOTE ENERGY EFFICIENCY  
15 INVESTMENTS.—

16 “(A) IN GENERAL.—The rates allowed to be charged by any electric utility  
17 shall—

18 “(i) align utility incentives with the delivery of cost-effective energy  
19 efficiency; and

20 “(ii) promote energy efficiency investments.

21 “(B) POLICY OPTIONS.—In complying with subparagraph (A), each State  
22 regulatory authority and each non-regulated utility shall consider—

23 “(i) removing the throughput incentive and other regulatory and  
24 management disincentives to energy efficiency;

25 “(ii) providing utility incentives for the successful management of  
26 energy efficiency programs;

27 “(iii) including the impact on adoption of energy efficiency as 1 of the  
28 goals of retail rate design, recognizing that energy efficiency must  
29 be balanced with other objectives;

30 “(iv) adopting rate designs that encourage energy efficiency for each  
31 customer class;

32 “(v) allowing timely recovery of energy efficiency related costs; and

33 “(vi) offering home energy audits, offering demand response programs,  
34 publicizing the financial and environmental benefits associated with

1 making home energy efficiency improvements, and educating  
2 homeowners about all existing Federal and State incentives,  
3 including the availability of low-cost loans, that make energy  
4 efficiency improvements more affordable.”

5 (b) NATURAL GAS UTILITIES.—Section 303(b) of the Public Utility Regulatory  
6 Policies Act of 1978 (15 U.S.C. 3203(b)) is amended by adding at the end the  
7 following:

8 “(6) RATE DESIGN MODIFICATIONS TO PROMOTE ENERGY EFFICIENCY  
9 INVESTMENTS.—

10 “(A) IN GENERAL.—The rates allowed to be charged by a natural gas  
11 utility shall align utility incentives with the deployment of cost-effective  
12 energy efficiency.

13 “(B) POLICY OPTIONS.—In complying with subparagraph (A), each State  
14 regulatory authority and each non-regulated utility shall consider—

15 “(i) separating fixed-cost revenue recovery from the volume of  
16 transportation or sales service provided to the customer;

17 “(ii) providing to utilities incentives for the successful management of  
18 energy efficiency programs, such as allowing utilities to retain a  
19 portion of the cost reducing benefits accruing from the programs;

20 “(iii) promoting the impact on adoption of energy efficiency as 1 of the  
21 goals of retail rate design, recognizing that energy efficiency must  
22 be balanced with other objectives; and

23 “(iv) adopting rate designs that encourage energy efficiency for each  
24 customer class.

25  
26 **Q. What is the purpose of this standard?**

27 A. The reference manual provides the following context for the standard, “There has been  
28 concern in recent years that standard ratemaking practices may not encourage, or could  
29 even discourage, utilities from adopting energy conservation measures. This concern  
30 has led some states to “decouple” utility earnings from the sales of electricity or natural  
31 gas or use other means to modify the rate design. This standard directs states to

1 consider the incentives that utilities have to use and invest in energy efficiency  
2 measures.”<sup>1</sup>

3  
4 **Q. How will you evaluate the standard?**

5 A. I will evaluate each of the six policy options for electric utilities independently. For  
6 natural gas utilities, the policy options are very similar to the electric utilities. I will  
7 consider separating natural gas fixed-cost revenue recovery from the volumetric rate for  
8 transportation or sales service as part of the discussion on removing the throughput  
9 incentive for electric utilities. Otherwise, the evaluation of electric utility policy options (i)  
10 through (iv) will cover the natural gas policy options.

11  
12 **SHALL THE COMMISSION REMOVE THE THROUGHPUT INCENTIVE AND OTHER**  
13 **MANAGEMENT DISINCENTIVES TO ENERGY EFFICIENCY?**

14  
15 **Q. Please explain the context behind this policy.**

16 A. The throughput incentive refers to the link between utility sales and earnings in  
17 traditional cost-based regulation. When rates are set, the fixed charge on the monthly  
18 bill does not typically cover all fixed costs nor include all of the return on investment  
19 (ROI) necessary to serve customers. Since the volumetric portion of the bill also  
20 contains fixed costs and ROI, a decrease in sales will lead to a decrease in earnings.  
21 Therefore, there is a disincentive for a utility to offer energy efficiency.

22  
23 The Commission is asked to consider rate design options that remove the throughput  
24 incentive. Although the standard is titled “Rate Design Modifications to Promote Energy  
25 Efficiency Investments”, implementing this policy option by itself will not promote energy  
26 efficiency investments. Removing the throughput incentive only makes utilities neutral  
27 on energy efficiency investments. There are many mechanisms used to allow for the  
28 recovery of fixed costs. Two of the more common options are revenue decoupling and  
29 straight fixed-variable pricing, and these will be discussed below in further detail. I will  
30 also discuss the incentives provided in the energy efficiency plans that have been  
31 recently approved by the Commission.

32  

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<sup>1</sup> Rose, Kenneth and Mark Murphy, “Reference Manual and Procedures for Implementation of the  
“PURPA Standards” in the Energy Independence and Security Act of 2007”, NARUC, August 2008, p. 47.

1 **Q. Please define revenue decoupling.**

2 A. Costello describes revenue decoupling as “a ‘tracking’ mechanism that adjusts rates and  
3 revenues whenever sales deviate from their targeted level.”<sup>2</sup> This assures the recovery  
4 of the approved revenue requirement regardless of sales. The revenue requirement, or  
5 target level as described by Costello, is usually automatically adjusted annually based  
6 on such factors as the number of customers, input inflation, productivity growth, or a  
7 multiple year forecast of the growth in total cost.

8  
9 **Q. What are the arguments for revenue decoupling?**

10 A. Costello compiled the following arguments in support of revenue decoupling from  
11 regulatory proceedings<sup>3</sup>:

- 12 • Standard cost-based ratemaking practice may discourage utilities from offering or  
13 carefully managing energy efficiency programs.
- 14 • Regulatory lag may mean that any loss of sales revenue from efficiency programs  
15 could build up over time and lead to a significant loss of earnings between rate  
16 cases.
- 17 • A utility should be allowed an opportunity to recover authorized fixed costs between  
18 rate filings, particularly when revenue loss was beyond the utility’s control or due to  
19 efficiency programs.
- 20 • Unless state commissions are willing to remove fixed costs from the volumetric  
21 charge, revenue decoupling is the only viable alternative in protecting shareholders’  
22 interest from fluctuating sales.
- 23 • Revenue decoupling is critical in transforming a utility from a seller of least-cost gas  
24 service to a provider of least-cost energy services.
- 25 • By stimulating energy efficiency initiatives, revenue decoupling can benefit both gas  
26 consumers and society in the long run (for example, lower consumer gas bills from  
27 the pursuit of these initiatives).
- 28 • Revenue decoupling could reduce overall gas demand, thereby placing downward  
29 pressure on wholesale gas prices.

30  
31 The same arguments apply to electric service for the last three bullet points.

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<sup>2</sup> Costello, Ken, “Revenue Decoupling for Gas Utilities”, NRRRI Briefing Paper, April 2006, p. 9.

<sup>3</sup> Costello, Ken, “Revenue Decoupling for Gas Utilities”, NRRRI Briefing Paper, April 2006, p. 14-15, 17.

1 **Q. What are the arguments against revenue decoupling?**

2 A. Additionally, Costello compiled the following concerns about revenue decoupling<sup>4</sup>:

- 3 • Regulated utilities are not guaranteed to earn the authorized rate of return due to
- 4 changes in demand or consumption patterns.
- 5 • Shifts risks away from the utility toward consumers.
- 6 • A rate case is the proper forum to adjust rates to new consumption patterns.
- 7 • There is no proof that decoupling is necessary to encourage utility-funded energy
- 8 efficiency programs since they existed before revenue decoupling and in areas that
- 9 do not have decoupling.
- 10 • Revenue decoupling rate increases may be borne disproportionately by those least
- 11 able to make conservation investments.
- 12 • Singling out revenues for "tracker" ratemaking treatment without considering
- 13 deviations in actual and test-year revenue requirements represents faulty
- 14 ratemaking.
- 15 • A core function of a gas utility should not include the promotion of energy efficiency.
- 16 • Revenue decoupling represents a blunt tool by allowing for rate adjustments
- 17 irrespective of the reason for a decline in sales.

18  
19 I also believe guaranteed revenue recoveries remove utilities' overall efficiency motives  
20 and may lead to inflated costs and rates.

21  
22 **Q. What is your recommendation in regards to revenue decoupling?**

23 A. Revenue decoupling removes the disincentive for utilities to promote energy efficiency  
24 investments at the expense of other ratemaking objectives. The revenue decoupling  
25 mechanism allows the utility to adjust rates for sales deviation regardless of cause.  
26 Along with energy efficiency sales reductions, utilities are protected from sales variations  
27 due to weather, economic forces, consumption patterns, and their own inefficiency.  
28 Historically, utilities bore these risks and navigated through changing business  
29 environments with efficient operation and cost management. If after efficient operation  
30 and cost management the utility was not able to earn a fair return, a rate case can be  
31 filed and the Commission can review all expenses, investments, cost of capital, and  
32 revenue in a test year to determine the revenue requirement and just and reasonable

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<sup>4</sup> Costello, Ken, "Revenue Decoupling for Gas Utilities", NRRRI Briefing Paper, April 2006, p. 15 - 17.

1 rates. The guarantee of revenue requirement recovery shifts too much risk to  
2 consumers and in turn removes much of the need for a utility to operate efficiently.

3  
4 I do not recommend the Commission adopt revenue decoupling to remove the  
5 throughput incentive. I believe there are more effective ways to explicitly promote  
6 energy efficiency investments that won't sacrifice business efficiency.

7  
8 **Q. Please define straight fixed-variable (SFV) pricing.**

9 A. Under straight fixed-variable pricing, the customer and/or demand charge covers all the  
10 fixed costs associated with serving the customer, and any consumption is billed at the  
11 actual cost of the commodity. This removes the throughput incentive because lost  
12 revenue is offset by reduced incremental cost.

13  
14 **Q. What are the arguments in support of straight fixed-variable pricing?**

15 A. According to Costello, "this rate structure provides price signals conducive to efficient  
16 gas consumption."<sup>5</sup> Also, SFV pricing provides earnings stability and makes utilities  
17 neutral on energy efficiency investments.

18  
19 **Q. What are the arguments against straight fixed-variable pricing?**

20 A. The primary arguments against straight fixed-variable pricing are policy oriented.  
21 Significantly higher monthly fixed charges typically present public acceptability problems.  
22 In addition, low usage customers within a customer class would have a greater increase  
23 than high usage customers. Although this rate structure removes the disincentive for  
24 utility promotion of energy efficiency, it may also reduce the benefit for consumers to  
25 participate in energy efficiency and use less of the commodity.

26  
27 **Q. What is your recommendation in regards to straight fixed-variable pricing?**

28 A. Straight fixed-variable pricing is attractive from an economics point of view but conflicts  
29 with important policy objectives. Consumers will have difficulty accepting large up front  
30 price increases and low usage customers will not feel as though they are being treated  
31 fairly. In the process of removing the utilities disincentive to offer energy efficiency

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<sup>5</sup> Costello, Ken, "Decision-Making Strategies for Assessing Ratemaking Methods: The Case of Natural Gas", NRRI Briefing Paper, September 2007, p. 39.



1 programs, SFV pricing could discourage consumers from making energy efficiency  
2 investments because of the low volumetric rates.

3  
4 I do not recommend that the Commission adopt straight fixed-variable pricing to remove  
5 the throughput incentive. As utilities file rate cases, Staff recommends increasing the  
6 fixed monthly charge by a publicly acceptable amount in a movement towards equitable  
7 cost recovery. That will move us in a gradual manner toward SFV pricing, but will do so  
8 in a manner that allows customers to adapt more easily.

9  
10 **Q. Please describe the recently approved energy efficiency plans by the**  
11 **Commission.**

12 A. The Commission has approved three energy efficiency pilot programs submitted by  
13 utility companies. The Commission worked with the utility to determine the most cost-  
14 effective programs. After programs are selected, direct cost recovery is allowed along  
15 with an incentive. The Commission has the opportunity to review the plan annually and  
16 adjust the programs as needed.

17  
18 **Q. What is your recommendation in regards to removing the throughput incentive**  
19 **and other management disincentives to energy efficiency?**

20 A. I do not recommend the Commission remove the throughput incentive in traditional cost-  
21 based regulation. Revenue decoupling and straight fixed-variable pricing are used to  
22 promote utility energy efficiency investments at the expense of other regulatory goals.  
23 The Commission can promote energy efficiency investments by setting rates that  
24 generally mirror costs and approve targeted energy efficiency programs that provide  
25 incentives to utilities for meeting specified energy efficiency goals. The Commission can  
26 also flatten rate structures so the utility will not have an incentive to sell relatively large  
27 amounts to customers.

28  
29 **SHALL THE COMMISSION PROVIDE UTILITY INCENTIVES FOR THE SUCCESSFUL**  
30 **MANAGEMENT OF ENERGY EFFICIENCY PROGRAMS?**

31  
32 **Q. Please explain the context behind this policy.**

33 A. As the Reference Manual contends, "If energy efficiency programs have a negative  
34 effect on utility earnings, then any program the utility is required to provide could be

1 undermined by financial disincentives that negate the incentive to fully pursue  
2 implementation of the programs.”<sup>6</sup> Utility performance incentives not only remove any  
3 disincentives but provide an incentive to compensate utilities for implementing energy  
4 efficiency programs.

5  
6 **Q. What incentives have been previously approved by the Commission as part of the**  
7 **energy efficiency plans?**

8 A. The last two energy efficiency plans approved had shared-savings incentives that were  
9 capped at a percent of the proposed annual spending. The incentive is designed to  
10 have a lower and upper bound incentive level based on a predetermined energy savings  
11 goal. Anything less than the minimum goal results in no incentive payment.

12  
13 **Q. What is your recommendation in regards to providing utility incentives for the**  
14 **successful management of energy efficiency programs?**

15 A. If the Commission wants utility companies to voluntarily manage meaningful energy  
16 efficiency programs, an incentive should be provided to compensate utilities for the  
17 effect these programs have on earnings. Since the energy efficiency plans are in the  
18 early stages of implementation, the incentive mechanisms may need to be modified as  
19 we review the actual results.

20  
21 **SHALL THE COMMISSION INCLUDE THE IMPACT ON ADOPTION OF ENERGY**  
22 **EFFICIENCY AS ONE OF THE GOALS OF RETAIL RATE DESIGN, RECOGNIZING THAT**  
23 **ENERGY EFFICIENCY MUST BE BALANCED WITH OTHER OBJECTIVES?**  
24

25 **Q. Please explain the context behind this policy.**

26 A. As the Reference Manual indicates, “Most states have general regulatory goals or  
27 objectives that they consider during the ratemaking process. These include quality of  
28 utility service, public safety, reliability, just and reasonable rates, efficient utility  
29 operation, and economical and fair regulation. State commissions may consider adding  
30 the encouragement of cost-effective energy efficiency programs as a regulatory goal.”<sup>7</sup>  
31 Costello also points out that “the ratemaking process is complex and interactive,

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<sup>6</sup> Rose, Kenneth and Mark Murphy, “Reference Manual and Procedures for Implementation of the  
“PURPA Standards” in the Energy Independence and Security Act of 2007”, NARUC, August 2008, p. 48.

<sup>7</sup> Rose, Kenneth and Mark Murphy, “Reference Manual and Procedures for Implementation of the  
“PURPA Standards” in the Energy Independence and Security Act of 2007”, NARUC, August 2008, p. 48.

1 involving groups with different goals, interests and agendas. Different ratemaking  
2 options also have varying propensities to advance those objectives, with the usual  
3 situation where one option would advance some objectives while impeding others.”<sup>8</sup>  
4

5 **Q. Please describe the Commission’s current ratemaking process.**

6 A. The Commission operates under the legislative authority of SDCL 49-34A-6 to set rates:  
7

8 *49-34A-6. Rates to be reasonable and just--Regulation by commission. Every rate made,*  
9 *demanded or received by any public utility shall be just and reasonable. Every unjust or*  
10 *unreasonable rate shall be prohibited. The Public Utilities Commission is hereby authorized,*  
11 *empowered and directed to regulate all rates, fees and charges for the public utility service of all*  
12 *public utilities, including penalty for late payments, to the end that the public shall pay only just*  
13 *and reasonable rates for service rendered.*  
14

15 The Commission has used a combination of cost-based principles and policy-based  
16 objectives for ratemaking purposes. A class cost of service study is used to determine  
17 the cost allocation for each customer class and service. According to Costello, “The  
18 cardinal principle underlying cost allocation is that customers and services should bear  
19 those costs that they cause.”<sup>9</sup> The class cost of service study is used as a guide for  
20 setting rates to collect those costs, with modifications based on policy objectives that  
21 advance the public interest. Some of the policy objectives that have been employed in  
22 the past include public acceptability, rate stability, gradualism and equity or fairness.  
23

24 The promotion of energy efficiency investments has been a priority of the Commission.  
25 Recently approved energy efficiency plan costs are recovered from customers through a  
26 rider that appears as a separate line item on the monthly bill. The Commission has  
27 made the encouragement of energy efficiency a regulatory goal without making  
28 significant departures from traditional ratemaking practices.  
29  
30  
31

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<sup>8</sup> Costello, Ken, “Decision-Making Strategies for Assessing Ratemaking Methods: The Case of Natural Gas”, NRRI Briefing Paper, September 2007, Executive Summary.

<sup>9</sup> Costello, Ken, “Decision-Making Strategies for Assessing Ratemaking Methods: The Case of Natural Gas”, NRRI Briefing Paper, September 2007, p. 3.

1 **Q. What is your recommendation in regards to including the impact on adoption of**  
2 **energy efficiency as one of the goals of retail rate design?**

3 A. I believe the Commission can promote energy efficiency investments without modifying  
4 base rates. By separating energy efficiency costs from base rates, the Commission can  
5 maintain adequate oversight and modify the plans as results are reported. Base rates  
6 that generally mirror costs will send accurate price signals and consumers can make the  
7 proper energy efficiency investments.

8

9 **SHALL THE COMMISSION ADOPT RATE DESIGNS THAT ENCOURAGE ENERGY**  
10 **EFFICIENCY FOR EACH CUSTOMER CLASS?**

11

12 **Q. How does the Commission set rates for each customer class?**

13 A. As noted above, a class cost of service study is used as a guide to determine the costs  
14 of each customer class. The goal of the class cost of service study is to have each  
15 customer class contribute the same rate of return on its share of rate base and have no  
16 cross-subsidies between classes. Rates are then designed to mirror costs and  
17 accomplish policy based objectives.

18

19 Recently approved riders for energy efficiency costs are either applied at the same rate  
20 across all customer classes or allocated across customer classes in proportion to  
21 benefits. The energy efficiency plans are designed so that each customer class is  
22 eligible for at least one of the programs.

23

24 **Q. What is your recommendation in regards to adopting rate designs that encourage**  
25 **energy efficiency for each customer class?**

26 A. I recommend adopting rate designs for each customer class that generally mirror costs.  
27 Accurate price signals will allow consumers to make informed decisions on energy  
28 efficiency investments. If the Commission wants to provide additional energy efficiency  
29 incentives to consumers, a rider is a more appropriate ratemaking tool.

30

31

32

33



1 on-site audits, and grants to public entities. There are also demand-side management  
2 programs that include cycling air conditioners and rebates for residential demand control  
3 equipment that notifies customers of the need to curtail energy demand in exchange for  
4 a reduced rate.

5  
6 **Q. Has the Commission already implemented this policy option?**

7 A. Yes. The Commission educates the public about energy efficiency and advertises the  
8 financial and environmental benefits of smart energy use. The Commission also  
9 promotes any State or Federal incentives and works with utilities to develop cost-  
10 effective energy efficiency and demand-side management programs.

11  
12 **CONCLUSION**

13  
14 **Q. Please summarize your recommendations.**

15 A. I do not recommend that the Commission remove the throughput incentive in traditional  
16 cost-based regulation. The Commission can promote energy efficiency investments by  
17 setting rates that generally mirror costs and approve targeted energy efficiency  
18 programs that provide incentives to utilities for meeting specified energy efficiency goals.  
19 The Commission can also flatten rate structures so the utility will not have an incentive to  
20 sell relatively large amounts to customers.

21  
22 I believe the Commission can promote energy efficiency investments without modifying  
23 base rates. By separating energy efficiency costs from base rates, the Commission can  
24 maintain adequate oversight and modify the plans as results are reported. Base rates  
25 that generally mirror costs for each customer class will send accurate price signals and  
26 consumers can make the proper energy efficiency investments.

27  
28 The Commission allows for the timely recovery of approved energy efficiency-related  
29 costs through a monthly surcharge on a per unit basis.

30  
31 The Commission educates the public about energy efficiency and advertises the  
32 financial and environmental benefits of smart energy use. The Commission also  
33 promotes any State or Federal incentives and works with utilities to develop cost-  
34 effective energy efficiency and demand-side management programs.

1 The Commission can and may need to modify the energy efficiency plans to best  
2 accomplish multiple regulatory goals. As results are reported and measurement tools  
3 are improved, we can fine tune the programs to promote cost-effective energy efficiency.  
4 There is no way to pick one method now and declare it will be relevant for the long term.  
5 Change will be constant as we work toward achieving multiple regulatory goals.  
6

7 **Q. Does this conclude your testimony?**

8 A. Yes.