



Dustin Johnson, Chair
Gary Hanson, Vice Chair
Steve Kolbeck, Commissioner

SOUTH DAKOTA PUBLIC UTILITIES COMMISSION

500 East Capitol Avenue
Pierre, South Dakota 57501-5070
www.puc.sd.gov

Capitol Office
(605) 773-3201
1-866-757-6031 fax

Warehouse
(605) 773-5280
(605) 773-3225 fax

Consumer Hotline
1-800-332-1782

June 13, 2007

Patricia VanGerpen

VIA E-Mail Only: Patty.VanGerpen@state.sd.us

Re: EL06-018

Dear Ms. VanGerpen:

This letter shall serve as PUC Commission Staff's recommendations regarding implementation of the PURPA standards heard by the Commission on May 30, 2007. Nathan Solem conducted cost benefit analysis studies of both the Smart Metering and the Interconnection Standards. Both documents are attached hereto.

I. Smart Metering

Staff is not aware of any particular study or analysis done to precisely understand the alleged costs to implement smart metering in South Dakota. Nearly all parties to this action testified, however, that it will impose significant costs and is of only questionable benefit. Staff's analysis and study of the topic therefore, is restricted to the information submitted into the record.

Staff dissected the available information and, as a result, does not believe there is compelling evidence to adopt this rule. Please see the attached cost benefit analysis for additional detail. Staff does not rule out the possible effectiveness of Smart Metering at a future date. Smart Metering does not, however, appear to be a positive option for South Dakota at this time. Staff recommends rejection of the proposed PURPA rule.

II. Interconnection Standards

The evidence and testimony in the record appears to indicate benefit regarding implementation of interconnection standards. This conclusion is supported by the attached cost benefit factor analysis of submitted testimony. Staff believes adoption of the PURPA interconnection standard would provide foundation for further investigation and development of an implementation plan and "best practices" standards. Testimony at the hearing clearly indicated utility companies currently, upon request, make interconnection services available to any electric consumer. Further, testimony supports the use of IEEE Standard 1547 when offering such services. Testimony indicated although companies have standards and requirements above and beyond Standard 1547

when interconnecting customers, it is a standard already in use. Staff does not believe, therefore, based on party testimony the required use of the PURPA standard would impose initial burden on utility companies.

Finally, the proposed interconnection rule requires the Commission establish best practices and other procedures for future implementation. More specifically, staff recommends the following schedule regarding development of best practices procedures.

- a) All companies with an interconnection tariff shall submit such document to the Commission within 30 days of receipt of the Commission Order adopting the PURPA rule.
- b) Commission Staff shall then compare and contrast the company tariffs to create a working list of similarities and differences. PUC Staff will then coordinate and plan to meet with utility companies before March 2008 to discuss the same.
- c) Throughout 2008 Staff recommends it schedule workshops intended to facilitate the creation of "best practices". The workshops are intended to include a cross-section of a variety of utilities and special interest groups to aid in drafting a "best practices." Such standards shall not be restricted to the status quo but may include standards in the literature and proposed rules by other states and shall truly represent a working model for success in South Dakota.
- d) At the conclusion of the workshops, Staff recommends a formal hearing for public testimony and Commission decision regarding Staff's proposed "best practices."

In conclusion, Staff does not find sufficient supporting "smart metering" evidence to recommend Commission adopt Section 1252(a) of the EAct of 2005, Additional PURPA 111(d) Standard. It does, however find compelling reasons to recommend acceptance of Section 1254 of EAct of 2005, Additional PURPA 111(d) Standard, the Interconnection Standards. Staff does, however, condition its recommendation based upon sufficient opportunity to investigate and create "best practices" for implementation.

Sincerely,



Kara Van Bockern

Memo

To: Kara Van Bockern
Patricia Van Gerpen

From: Nathan Solem

CC:

Date: June 13, 2007

Re: EL06-018: Cost/Benefit Analysis of Smart Metering Implementation in South Dakota

Staff submits this cost benefit analysis of the testimony provided regarding smart metering in the May 30, 2007 hearing with the recommendation that this standard not be implemented in South Dakota.

The PURPA Standards Reference Manual suggests the following key benefits and costs to considering regarding smart metering.

Benefits	Costs
Mitigated price spikes in the cost of power purchased in wholesale markets	Investments in meters
Reduced energy prices and/or lower consumer bills	Technology and data collection upgrades
Environmental benefits from reduced total consumption	Support for technology and data analysis

Key testimony from the May 30, 2007 hearing included:

- Montana Dakota Utilities (MDU) - If customers don't change behavior, they will pay more under time of day rates. P 32 L 14-19.
- Northwestern Energy (NWE) – Need 700 – 1400 KW load moved off peak to be economic for timed based metering. P 44 L 11-14.
- Xcel – Incremental cost of \$5 per month, need to shave 43 kwh to break even. P62 L 22 – P 63 L9.
- Mid American (MA) – Large customers already have technology in place. P 22 L 8-17.
- Black Hills Power (BHP) – Need at least a shift of 5-10 MW to save a block of energy purchase. P 58 L 6-10.
- BHP – Significant investment in automated equipment. P 57 L11-15.

- Mid American – Backroom technology to process meter data would be more expensive than the current technology. P 20 L2-13.
- BHP – Tourism and 24/7 operations can't shift load to off peak. P 56 L 12 – P 57 L 6.

Memo: Page and Line references are from hearing transcript.

Staff has placed the above data into a management tool called a factor analysis where the importance of each factor has been weighted from 1 to 5 with 5 being most important. The probability of occurrence has also been assigned by staff. The importance factor is multiplied by the probability factor to obtain the factor weight. As shown by the Net Result Line, Weight column below, this qualitative form of a cost benefit analysis illustrates that the costs outweigh the benefits indicating that the standard should not be implemented.

Factor	Importance	Probability	Weight	Comments
Benefits				
Mitigated price spikes	4	.05	0.2	BHP testimony. Need large shifts. Would require many residential customers on plan
Lower consumer bills	5	0.2	1.0	Uncertain whether residential users can alter behavior significantly
Environmental benefits from reduced consumption	3	0.2	0.6	Same as above
Total Benefits			1.8	
Costs:				
Investments in meters	5	1.0	5.0	BHP: significant investment
Technology/data collection upgrades	4	0.8	3.2	MA
Support for technology and data analysis	3	0.7	2.1	MA
Total Costs			10.3	
Net Result			-8.5	

Memo

To: Kara Van Bockern
Patricia Van Gerpen

From: Nathan Solem

CC:

Date: June 13, 2007

Re: EL06-018: Cost/Benefit Analysis of Interconnection Standards Implementation in South Dakota

Staff submits this cost benefit analysis of the testimony provided regarding interconnection in the May 30, 2007 hearing in support of its recommendation at the hearing that the investor owned utilities file their interconnection standards with the commission and that the filings then be reviewed for commonalities with a future goal of a common standard.

The PURPA Standards Reference Manual suggests the following key benefits while the following key costs from the hearing are offered for consideration regarding interconnection standards.

Benefits	Costs
Increased number of distributed generators offering clean power	Safety issues with generic standards
Economic Benefits	Uniqueness of each companies system make universal standard difficult

Key testimony from the May 30, 2007 hearing included:

- Northwestern Energy (NWE), Mid American (MA) – Additional standards beyond 1547 needed for their unique systems particularly for safety issues with the systems. NWE P 74, L 17-22. MA P 79 L 10-16 & P 86 L 20 – P 90 L 1.
- Mid American, Otter Tail Power (OTP), Black Hills Power (BHP), Montana Dakota Utilities (MDU) – If necessary, each investor owned utility could file their interconnection standards with the commission. OTP P 103 L 14-15. BHP P 112 L 18-21. MA P 94 L18-22. MDU P 124 L7-9.
- Jim Burg – Utilities may not realize their unique standards are deferment to developers. P147 L 11-15.
- Jim Burg – Encourage the cheapest possible generation and the greatest economic development. P 148 L4-6.

Memo: Page and Line references are from hearing transcript

Staff has placed the above data into a management tool called a factor analysis where the importance of each factor has been weighted from 1 to 5 with 5 being most important. The probability of occurrence has also been assigned by staff. The importance factor is multiplied by the probability factor to obtain the factor weight. As shown below, this qualitative form of a cost benefit analysis shows that the benefits greatly outweigh the costs as shown by the Net Result Line, Weight column indicating that the standard should be implemented by having each company file their standards with the commission and then conduct a study searching for commonalities. This analysis is limited to the filing of company standards only and may yield different results if standards beyond the companies' existing standards are developed and adopted.

Factor	Importance	Probability	Weight	Comments
Benefits				
Increased number of distributed generators offering clean power	5	0.5	2.5	Jim Burg stated may be barrier, IOU's in SD say not so 50 % probability used
Economic Benefits	4	0.5	2.0	Noted as important in PURPA manual and by Jim Burg
Total Benefits			4.5	
Costs				
Safety Issues with generic standards	5	0.05	0.25	With each utility still following their own standards but filing them, safety issue should be small
Uniqueness of each companies system	4	0.05	0.2	With each utility still following their own standards but filing them, having standards that fit the technical differences between companies is not an issue.
Total Costs			.45	
Net Result			4.05	