



IN THE MATTER OF SOUTHWESTERN )  
PUBLIC SERVICE COMPANY'S )  
APPLICATION FOR APPROVAL OF )  
ELECTRIC ENERGY EFFICIENCY AND )  
LOAD MANAGEMENT PROGRAMS AND )  
PROGRAM COST TARIFF RIDERS )  
PURSUANT TO THE NEW MEXICO PUBLIC )  
UTILITY AND EFFICIENT USE OF ENERGY )  
ACT )

Case No. 07-00376-UT

Direct Testimony of

**Howard Geller**

on behalf of

**Coalition for Clean Affordable Energy (CCAЕ)**

January 7, 2008

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3 A. My name is Howard Geller. I am the Executive Director of SWEEP, the Southwest  
4 Energy Efficiency Project. My business address is 2260 Baseline Rd. Suite 212,  
5 Boulder, Colorado 80302.

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7 A. I am testifying on behalf of the Coalition for Clean Affordable Energy (CCAIE).

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9 A. CCAIE is a coalition of environmental and public interest organizations working to  
10 advance energy efficiency and renewable energy in New Mexico. CCAIE was formed  
11 in 1997 and has participated in other Commission dockets. Attachment HG-1 lists the  
12 members of CCAIE.

13 Q. ■

14 A. I have 26 years of experience working on energy efficiency policy and program  
15 design, analysis, evaluation and advocacy. Prior to founding SWEEP in 2001, I  
16 served as Executive Director of the American Council for an Energy-Efficient  
17 Economy (ACEEE) in Washington, DC. I have authored or co-authored four books  
18 on energy efficiency and energy policy, and published dozens of reports and articles  
19 on these topics. I have testified before the public utility commissions of Colorado,  
20 Illinois, Maryland, Nevada, New Mexico, Utah, and the District of Columbia.  
21 Attachment HG-2 summarizes my professional qualifications.

22 ■

23 A. In my testimony I will comment on the Southwestern Public Service Company's  
24 (SPS's) proposed electric demand-side management (DSM) programs, make

1 recommendations on how I believe SPS's DSM programs should be expanded and  
2 improved, and comment on the incentive mechanism proposed by SPS.

3 Q. ■■

4 A. I support SPS's proposed DSM programs but recommend expansion of some of these  
5 programs as well as three additional programs. I recommend expansion of the home  
6 lighting, low income, and business custom efficiency program. I recommend addition  
7 of refrigerator recycling, residential evaporative cooling, and business direct  
8 installation programs. In total, I recommend a budget of \$2.84 million for SPS's  
9 initial DSM programs, a 56% increase over the total budget proposed by SPS. I  
10 estimate that first year energy savings will equal approximately 17.79 GWh per year  
11 if my recommendations are approved, a 58% increase over the first year energy  
12 savings SPS projects for its proposed programs.

13 Regarding the incentive mechanism proposed by SPS, I support the shared  
14 savings approach proposed by SPS but suggest that a cap on the incentive be added,  
15 namely a cap of 30% of DSM program expenditures in any particular year. Second, I  
16 recommend use of a tiered incentive approach that links the level of incentive in  
17 terms of the share of net economic benefits that SPS is allowed to retain to the  
18 amount of energy savings achieved. This would give SPS an incentive to maximize  
19 both energy savings and net economic benefits. In addition, I present an alternative  
20 incentive proposal for the PRC and other parties to consider.

21 Q. ■■

22 A. I support the DSM programs proposed by SPS. All the programs are likely to achieve  
23 energy savings and/or peak load reductions, and do so cost effectively. However, I  
24 think these programs can and should be improved in ways that I explain below. In

1 some cases, I recommend implementation of expanded programs. Furthermore, I  
2 think there are additional cost-effective DSM programs that SPS should implement in  
3 order to take advantage of further cost-effective energy efficiency opportunities that  
4 exist.

5 Q. ■

6 A. Yes I do. There are a number of critical assumptions that influence the cost  
7 effectiveness analysis of potential DSM programs including the assumption about  
8 free riders (net-to-gross energy savings ratios) and the avoided costs used to value  
9 energy savings and peak demand reductions.

10 First, regarding net-to-gross energy savings ratios, some of the values  
11 assumed by SPS appear to be on the high side. In particular the value of 100% for the  
12 business cooling efficiency and business custom efficiency is optimistic in that it  
13 assumes no projects would be implemented without utility promotion and incentives  
14 (see witness Sundin testimony, Attachment DLS-1, page 49). I recommend using  
15 somewhat more conservative value, namely a net-to-gross ratio of 90% for these  
16 programs. Even with this modification the programs are cost effective by a wide  
17 margin.

18 Second, regarding avoided costs, the avoided T&D costs and avoided  
19 marginal energy costs used by SPS appear to be reasonable in my view. But the  
20 avoided generation cost of \$67.58 per kW-year appears to be on the low side. This  
21 value is based on a combustion turbine being the avoided power generation type.  
22 However, a simple cycle combustion turbine is only one type of generating plant that  
23 utilities build and operate, mainly for meeting peak demand. Utilities such as SPS  
24 also build and operate combined cycle and steam turbine power plants, as well as

1 renewable energy-based generating facilities. The DSM programs proposed by SPS  
2 do not emphasize peak demand reduction. Therefore, it is not reasonable in my view  
3 to assume that avoided generation is purely a combustion turbine. I recommend  
4 basing the avoided generation cost assumption on either the current mix of power  
5 plants SPS relies on or the mix of power plants that the utility is planning to construct  
6 in the future, in the absence of aggressive DSM programs; an average generation cost  
7 across different types of generating facilities. Assuming a higher avoided generation  
8 cost will increase the economic benefits and improve the cost effectiveness of the  
9 DSM programs.

10 Q. ■■

11 A. Heat pumps can be an efficient space heating and cooling technology especially in hot  
12 climates such as southern New Mexico. But installation of a heat pump in an existing  
13 home where natural gas or some other fuel was previously used for space heating can  
14 result in a net increase in electricity use in that home because of the shift from fuel-  
15 based to electricity-based heating . This is in effect fuel switching at least for space  
16 heating. Consequently, I recommend approval of the proposed air-source heat pump  
17 program but with the caveat that SPS not be allowed as part of its DSM program to  
18 promote or provide incentives for installation of heat pumps in existing homes which  
19 did not previously have electrical space heating. This should apply to all types of  
20 housing, i.e., manufactured homes, multifamily housing, and single family housing.

21 Q. ■■

22 A. CFLs are a very cost effective energy efficiency measure, but the proposed home  
23 energy lighting program offering incentives for consumers to purchase CFLs is much  
24 too modest in my view. SPS is proposing both in-store rebates and direct CFL sales.

1 Based on experience in other Xcel Energy jurisdictions, most of the participants will  
2 take advantage of the in-store rebates.

3 This type of DSM program, featuring manufacturer and vendor incentives so  
4 that the customer gets a discounted CFL at the point of sale, has been very effective  
5 in other jurisdictions.<sup>1</sup> Other utilities in the region that have successfully implemented  
6 this type of program include Nevada Power Company and Arizona Public Service  
7 (APS). In March 2007, APS won an ENERGY STAR Partner of the Year award from  
8 the U.S. EPA and Department of Energy for its CFL buydown program. APS, which  
9 serves about 1.0 million households, projects that its customers will purchase 1.2  
10 million CFLs through its program in 2007 alone, in addition to the more than two  
11 million CFLs that participants purchased through the program in 2005 and 2006.<sup>2</sup>

12 PNM is implementing an in-store CFL buydown program as part of its DSM  
13 programs. PNM is projecting that participants will purchase 391,000 CFLs in the first  
14 year of its program, nearly one CFL per residential customer. PNM is projecting its  
15 program will have a benefit-cost ratio of 1.60 under the TRC test. The program has  
16 experienced a very good response so far with approximately 80,000 CFLs purchased  
17 in the first month alone.<sup>3</sup>

18 Based on the experience of other utilities in the southwest region and PNM's  
19 new program, I recommend that the PRC direct SPS to expand its home lighting  
20 program participation target to 50,000 CFLs in year one. This target, combined with

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<sup>1</sup> H. Geller. 2005. *Policies and Programs for Increasing the Adoption of High-Efficiency Lighting in Homes in the Southwest*. Boulder, CO: Southwest Energy Efficiency Project. Oct.  
[http://www.swenergy.org/pubs/Lighting\\_Policy\\_Report.pdf](http://www.swenergy.org/pubs/Lighting_Policy_Report.pdf)

<sup>2</sup> Personal communication with Jim Wontor, Arizona Public Service Company, Nov. 15, 2007. Also "EPA and DOE Name Arizona Public Service 2007 Energy Star Partner of the Year." Press Release. Arizona Public Service Co. March 2, 2007.

[http://www.aps.com/general\\_info/newsrelease/newsreleases/NewsRelease\\_368.html](http://www.aps.com/general_info/newsrelease/newsreleases/NewsRelease_368.html)

<sup>3</sup> Personal communication with Gerard Ortiz, Public Service Company of New Mexico, Nov. 15, 2007.

1 the 32,000 CFLs I recommend that SPS give away in its low-income program (see  
2 comments below), means that SPS would facilitate acquisition of approximately one  
3 CFL per household on average through its various 2008 programs. The home lighting  
4 program could be scaled up by including more retailers, increasing advertising, and/or  
5 offering in-store incentives for a greater portion of the year. APS, for example,  
6 sponsors in-store rebates year-round rather than just during a month or two of the  
7 year.

8           Scaling up the program in this manner will provide more energy savings and  
9 will also improve the benefit-cost ratio by spreading the marketing and administration  
10 costs over a greater number of participants. The program budget should be increased  
11 by approximately \$120,000 to accommodate this expansion. First year electricity  
12 savings would increase by about 2,260,000 kWh per year relative to the more modest  
13 program proposed by SPS (savings at the generator).

14 Q. ■

15 A. There is a high fraction of low-income households in the SPS service territory.  
16 Helping these households use electricity more efficiently is especially important  
17 given the high energy cost burden that low-income households face. I support the  
18 three program elements proposed by SPS—giving away CFLs, refrigerator upgrades,  
19 and weatherization of additional households with electric heating. The CFL  
20 component of the program is especially cost effective with an estimated benefit-cost  
21 ratio of 3.0 under the TRC test. I believe that the benefit-cost ratio could be even  
22 greater than this value assuming that CFLs are purchased in bulk and that  
23 administrative costs are minimized. Consequently, I urge that this component of the  
24 program be increased to 32,000 CFLs in year one, allowing participating households

1 to take up to 8 lamps per household. The program budget should be increased by  
2 approximately \$50,000 to accommodate this change, resulting in additional first year  
3 electricity savings of about 1,200,000 kWh per year (at the generator).

4 Q. ■

5 A. The commercial and industrial sectors are the “bread and butter” for utility DSM  
6 programs in general. This is true for SPS’s proposed programs as well. SPS is  
7 proposing to achieve about 78% of the lifetime energy savings and 73% of the net  
8 economic benefits from its business programs (see testimony of SPS witness Sundin,  
9 p. A-1).

10 The business programs proposed by SPS are reasonable in my view as  
11 incentive programs go, with a few exceptions. First, the custom efficiency program is  
12 expected to generate far more energy savings than any of the other DSM programs  
13 proposed by SPS. SPS is projecting first year energy savings of 4,609,000 kWh per  
14 year (at the generator) with a program budget of only \$263,500. The proposed  
15 incentive, \$200 per kW of reduced peak demand, is relatively modest and may not be  
16 large enough to achieve the savings target in my view. According to the DSM  
17 potential assessment carried out for SPS, achievable energy savings from commercial  
18 building retrofits doubles when the incentive is increased from 50% to 75% of  
19 measure cost (see SPS witness Sundin testimony, Attachment DLS-2, page 53). SPS  
20 should consider offering a larger incentive, say \$300 per kW and paying up to 75% of  
21 the incremental cost of efficiency measures, if the \$200 per kW incentive is not  
22 sufficient to reach the savings goal projected for the program. This can be done  
23 without compromising the cost effectiveness of the program but would require  
24 additional funds of up to \$115,000 per year for incentives. I recommend the PRC



1 approve a higher budget for the business custom efficiency program, namely a total  
2 budget of \$378,500, in case additional funds are needed to meet the proposed savings  
3 goal. I am not suggesting a higher savings goal for this program, only an expanded  
4 program budget in case higher incentives are needed.

5 Second, many smaller businesses have a difficult time participating in  
6 traditional utility rebate programs due to lack of time, lack of know-how, and lack of  
7 money available for taking on energy efficiency projects. Consequently, some utilities  
8 include a direct installation component or program for small businesses as part of  
9 their suite of business energy efficiency programs. This means hiring a contractor (or  
10 multiple contractors) to conduct marketing and install energy efficiency measures for  
11 free or at a deep discount (e.g., paying an incentive of 75-80% of the installed cost)  
12 for small businesses. In addition, some utilities offer to finance the remainder of the  
13 project cost with a low interest or zero-interest loan. This type of program minimizes  
14 the “hassle” and upfront monetary cost for small businesses, resulting in much greater  
15 program participation for small businesses compared to rebates alone. Programs  
16 along these lines have been successfully implemented by various utilities in New  
17 England and California, and have been proposed elsewhere.<sup>4</sup> Several small business  
18 direct installation programs have been recognized as exemplary programs by the  
19 American Council for an Energy-Efficient Economy (ACEEE).<sup>5</sup>

20 I recommend that the Commission order SPS to add a direct installation  
21 component or program for small businesses (say those with less than 100 kW of

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<sup>4</sup> APS, for example, has proposed a small business direct installation program to reduce barriers and increase participation of small businesses in its DSM programs. See Arizona Public Service Company, APS Non-Residential DSM Programs, 13 Month Filing, March 23, 2007, <http://images.edocket.azcc.gov/docketpdf/0000069201.pdf>

1 monthly power demand) to its business programs. I recommend a first year budget of  
2 approximately \$175,000 for this effort, which is equal to about 20% of the total  
3 budget for business programs (with this new program component added). The  
4 estimated first year electricity savings is 1,120,000 kWh per year, assuming the small  
5 business direct installation program achieves two-thirds as much energy savings per  
6 program dollar relative to the business rebate programs proposed by SPS.

7 Q. ■■

8 A. Yes there are. First, I recommend that the PRC direct SPS to implement a refrigerator  
9 recycling program for its residential customers. This type of DSM program is being  
10 successfully implemented by other electric utilities in the region including Nevada  
11 Power Company, Rocky Mountain Power (Utah), and the municipal utility in Fort  
12 Collins, CO. Public Service Company of New Mexico (PNM) began a refrigerator  
13 recycling program in the fall of 2007. The program is implemented through a turn-  
14 key contractor who has many years of experience with this type of activity. Payments  
15 to the contractor are tied to the contractor's performance and energy savings  
16 achieved. For PNM, the estimated benefit-cost ratio under the total resource cost  
17 (TRC) test is 2.69<sup>6</sup> which is consistent with experience of other utilities. Nevada  
18 Power Co., for example, estimates that its refrigerator recycling program has a  
19 benefit-cost ratio under the TRC test of 2.39.<sup>7</sup> A refrigerator recycling facility has  
20 been installed in New Mexico as a result of PNM beginning its program. SPS could  
21 make use of this facility for its program as well. Based on the experience of other

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<sup>5</sup> D. York and M. Kushler. 2003. *America's Best: Profiles of America's Leading Energy Efficiency Programs*. Washington, DC: American Council for an Energy-Efficient Economy, March.  
<http://www.aceee.org/pubs/u032.htm>

<sup>6</sup> Direct testimony of Gerard T. Ortiz, Public Service Company of New Mexico, Case No. 07-00053-Ut, Jan. 31, 2007, p. 11.

1 utilities and PNM's first year goal, I recommend an initial target of having SPS's  
2 program recycle 1,700 refrigerators per year with an annual budget of about  
3 \$300,000. Using the unit energy savings value assumed by PNM, a program of this  
4 size should result in about 1,200,000 kWh of first year electricity savings (at the  
5 generator).

6 Second, SPS has pointed out that 23 percent of its residential customers use  
7 evaporative cooling. In general households in the southwest are migrating away from  
8 evaporative cooling to much more electricity-intensive compressor-based air  
9 conditioning. SPS's parent company, Xcel Energy, runs an effective evaporative  
10 cooling incentive program in Colorado that helps to reduce this shift. In 2006, there  
11 were 3,211 participants in the Colorado program with 4.6 MW of peak demand  
12 reduction and 3,099,000 kWh of electricity savings as a result (at the generator).<sup>8</sup>  
13 Implemented on a smaller scale during 2004-2005, the program had a benefit-cost  
14 ratio of 1.30.<sup>9</sup> A program along these lines should be save more energy per participant  
15 and have a better benefit-cost ratio in southern New Mexico where cooling loads are  
16 higher than in Colorado. Based on the experience in Colorado, I recommend an initial  
17 target of 600 evaporative cooling rebates per year with an annual program budget of  
18 about \$200,000. I estimate a program of this size should result in about 750,000 kWh  
19 of first year electricity savings (at the generator) in the SPS service territory.

20 Q. ■

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<sup>7</sup> *Nevada Power Company Integrated Resource Plan 2006*. Volume V – Demand Side Plan. Las Vegas, NV: Nevada Power Co. p. 8.

<sup>8</sup> *DSM Programs Monitoring and Evaluation Report for Activity in 2006*. Xcel Energy – Public Service Company of Colorado, Denver, CO, April 2007.

<sup>9</sup> *Colorado Demand-Side Management Program Impact, Cost Effectiveness, Process and Customer Satisfaction Evaluations*. Final Report prepared by Summit Blue Consulting, LLC for Xcel Energy. March 15, 2006.

1 A. SPS has not proposed programs to upgrade the energy efficiency of either new  
2 residential or new commercial buildings. However, it is easier and more cost-  
3 effective to install energy efficiency measures when a building is being constructed,  
4 rather than trying to install such measures via retrofit. Other utilities in the region  
5 have found that it is cost effective to implement energy efficiency programs for new  
6 construction. PNM is implementing an ENERGY STAR new homes program as part  
7 of its initial set of DSM programs. Xcel Energy is implementing effective energy  
8 efficiency programs for new commercial buildings in its CO and MN service areas,  
9 and has won awards for their programs. For example, Xcel Energy's Energy Design  
10 Assistance program for new commercial and industrial buildings received an  
11 Exemplary Program award from ACEEE in both 2003 and 2007. I recommend that  
12 the PRC direct SPS to develop and propose both residential and commercial new  
13 construction programs for year two of its DSM activities, assuming such programs  
14 are cost effective.

15 Q. [REDACTED]

16 A. Attachment HG-3 summarizes my DSM program recommendations and compares  
17 them to SPS's proposed programs in terms of budget and first year energy savings. I  
18 am recommending expansion of the home lighting and low-income programs, along  
19 with three new programs (residential refrigerator recycling and evaporative cooling,  
20 and a business direct installation program). In addition, I am recommending that a  
21 higher budget be approved for the business custom efficiency program. In addition, I  
22 am including an extra \$60,000 for program planning and development. Overall, I am  
23 recommending a total budget of about \$2.84 million, approximately 56% more than  
24 the \$1.82 million proposed by SPS (including 2007 planning costs). With my new

1 and expanded programs, I estimate that the first year energy savings will be  
2 approximately 17.79 GWh per year, 58% greater than the 11.26 GWh per year based  
3 on the programs proposed by SPS (savings at generator). In general I am  
4 recommending a much closer balance between residential and business programs in  
5 terms of budget and energy savings.

6 Q. [REDACTED]

7 A. The level of energy savings I am recommending, about 16.4 GWh per year at the  
8 customer level, represents about 0.75% of SPS's projected electricity sales to  
9 residential, commercial, small industrial and municipal customers in 2008. This  
10 estimate excludes sales to large industrial customers which represent about 44% of  
11 SPS's total electricity sales. For comparison, Xcel Energy has achieved 0.75%  
12 savings, or greater, annually from its DSM programs in Minnesota for many years. In  
13 addition, Xcel Energy has proposed achieving close to this level of energy savings  
14 from its DSM programs in Colorado. Thus, Xcel Energy (SPS's parent company) has  
15 demonstrated the ability to achieve this level of energy savings in other jurisdictions.

16 Q [REDACTED]

17 A I have not performed such an analysis. But I believe all of the new and expanded  
18 programs will be cost effective. Increasing the number of CFLs disseminated through  
19 the home lighting and low income programs will be very cost effective given the  
20 characteristics of this technology. Likewise, refrigerator recycling and promotion of  
21 evaporative cooling has proven to be cost effective in other utility service areas.  
22 Therefore, implementing the new and expanded DSM programs I am recommending  
23 will add to the net economic benefits projected from the programs proposed by SPS  
24 and thereby further benefit consumers in the SPS service territory.

1 Q ■

2 A All customers pay for DSM programs through the tariff rider adopted in New Mexico  
3 and all customers realize benefits over the long run when costly supply side  
4 investments are reduced or deferred. But customers who participate in the programs  
5 will realize short term benefits as well. My proposal will greatly expand the total  
6 number of participants in the DSM programs by increasing the number of CFLs  
7 disseminated both through the home lighting and low income programs, and by  
8 adding new programs pertaining to refrigerator recycling, evaporative cooling, and  
9 direct installation of efficiency measures in small businesses. Thus the overall equity  
10 of the programs will be enhanced if my proposed programs are approved.

11 Q ■

12 A Yes, I have. That mechanism would allow SPS an incentive payment equal to 15% of  
13 the net economic benefits achieved by its energy efficiency programs; i.e. is a shared  
14 savings approach. The incentive would begin in 2010, based on the actual results of  
15 the programs implemented in 2008 and evaluated in 2009. The incentive payment  
16 that SPS estimates for the programs it is proposing to implement in 2008 is \$439,849.

17 Q ■

18 A Yes I do, but I have a number of suggestions for modifying and improving the  
19 specific mechanism proposed by SPS (see below). Before making these suggestions, I  
20 note that the shared savings approach has been successfully implemented in  
21 Minnesota for many years as pointed out in witness Sundin's testimony. It is also the  
22 type of incentive mechanism that Xcel Energy has proposed in conjunction with  
23 expanded electricity DSM programs in Colorado. It is a reasonable approach for  
24 providing a performance-based incentive to utilities when they implement effective

1 energy efficiency programs for their customers.

2 Q ■■

3 A First, the incentive mechanism proposed by SPS does not contain a cap on the amount  
4 of incentive. I suggest that such a cap be adopted by the PRC, in particular a cap  
5 equal to 30% of utility expenditures for DSM in the year for which any incentive is  
6 awarded. This will protect consumers from paying an excessive incentive relative to  
7 the amount spend on DSM programs. This is the same incentive cap that is in place  
8 for Xcel Energy's Minnesota subsidiary (see SPS response to staff data request SPS  
9 1-17).

10 Second, the incentive proposed by SPS gives the utility an incentive to  
11 maximize net economic benefits but not necessarily an incentive to maximize energy  
12 savings and peak demand reduction. I recommend a tiered incentive approach along  
13 the following lines to remedy this shortcoming:

14	Energy Savings Achieved	Incentive as a Fraction
15	<u>Relative to Annual Goal</u>	<u>of Net Economic Benefits</u>
16		
17	100 – 120	5
18	120.1 – 140	10
19	140.1 – 160	15
20	> 160.1	20
21		
22		

23 This tiered incentive proposal awards the utility a larger share of the net  
24 economic benefits if the utility is able to achieve energy savings greater than the  
25 annual goal, and no incentive if the annual goal is not met. There is an opportunity to  
26 earn an incentive, but not a guaranteed incentive. In addition, the cap on the incentive  
27 of no more than 30% of annual DSM program expenditures would apply in my  
28 proposal. The incentive would be determined by the PRC based on monitored and  
29 verified program results. This tiered incentives approach is similar to what Xcel

1 Energy has in place in Minnesota and has proposed for its DSM programs in  
2 Colorado.

3 This approach depends on defining an energy savings goal each year. The  
4 energy savings goal I am suggesting for SPS's energy efficiency programs in 2008 is  
5 first year savings of 17.79 GWh per year, measured at the generator, per my proposal  
6 for some additional and expended programs (see Attachment HG-3). SPS would only  
7 get an incentive if it achieved this amount of energy savings, or greater.

8 Third, the shared savings approach requires valuation of the net economic  
9 benefits resulting from DSM programs, which in turn requires assumptions about  
10 avoided costs. Estimation of avoided costs can be a contentious issue. In order to  
11 minimize the potential contentiousness surrounding this issue, I recommend that the  
12 PRC issue guidelines on avoided cost evaluation and then establish fixed values for  
13 avoided generation costs, avoided T&D costs, and avoided marginal energy costs for  
14 SPS to assume. These values could be determined as part of the next Integrated  
15 Resource Planning (IRP) docket, and then revised when future IRP dockets are  
16 completed. The same could be done for other utilities which propose the shared  
17 savings approach for overcoming disincentives to DSM programs.

18 **Q ■**

19 **A** Yes, I have an alternative incentive proposal for the PRC and other parties to  
20 consider. It relies upon explicit and known inputs, drawn from the Company's most  
21 recent rate case order, and may be appropriate if the Commission has concerns with  
22 the shared savings approach. The only findings that must be made for this alternative  
23 are SPS' measured and verified savings.

24 **Q ■**



1 **A** The alternative is performance-based, like the shared-savings approach, and would  
2 award SPS an annual incentive equal to its measured and verified demand and energy  
3 savings multiplied by the Company's latest approved equity return (ROE x Ratebase  
4 x equity capitalization %). I would weight energy and demand savings 75/25. Like  
5 the shared savings approach this approach is based on measured and verified demand  
6 and energy savings. But it is simpler in that it does not depend upon assumptions  
7 regarding avoided costs or estimation of net economic benefits. The incentive under  
8 this alternative is comparable in dollar value to that proposed by SPS, but is driven by  
9 the amount of demand and energy savings achieved, rather than by economic  
10 benefits.

11 This approach allows SPS an incentive that is intended to offset the utility's  
12 financial motivation to develop supply side resources over demand side resources. In  
13 order to achieve that, this alternative roughly mimics the return on equity the  
14 Company would receive if it built supply rather than reduced its load through DSM  
15 programs, and the build out was equal to the embedded cost of plant in service.

16 While I realize that the marginal cost of resources is often higher than embedded  
17 costs, and that this approach does not account for lost recovery of fixed costs,  
18 potentially leaving some utility disincentives in place, I believe it offers a reasonable  
19 performance-based incentive considering that SPS is also allowed contemporaneous,  
20 low risk, recovery of DSM expenditures through a tariff rider.

21 **Q** [REDACTED]

22 **A** Yes, here is how the numbers would look, given the assumptions in SPS' filing, and  
23 information from the Company's currently pending New Mexico rate case. In its  
24 filing SPS proposes that it receive an incentive payment of \$439,849 (presumably

1 after tax) (Sundin at p.40). This is for demand savings of 4.3 MWs and energy  
2 savings of 11.3 GWh per year of energy (at the generator) (Sundin at pp.37-9). The  
3 savings last for 13 years on average. (Sundin at p.39).

4 Using the Ratebase/ROE proposal that I have described instead of SPS's  
5 shared savings approach, yields the following incentive payments (with numbers  
6 from SPS's current rate case):

7 SPS NM ratebase equals \$307,254,366 (Sch.A-1, A-4)

8 SPS has proposed an 11.0 ROE (Sch. A-5 p.1)

9 Equity capitalization = 50.78% (Sch. A-5 p.1)

10 SPS current NM energy consumption = 4,232 GWhs (Attch. JCJ-1, p. 1 of 1)

11 SPS current NM demand = 628 MWs (Attch. JCJ-1, p.1 of 1)

12 So, energy savings =  $11.3/4232 = 0.27\%$  and demand savings =  $4.3/628 = 0.68\%$ ,  
13 and the 75/25 blended savings =  $0.3725\%$

14 Incentive =  $0.003725 \times (0.5078 \times 0.11 \times \$307,254,366) = \$63,930/\text{yr}$

15 The present value of this incentive, with an 8.5% discount rate for 13 years is  
16 \$491,682 - a little higher, but very similar to, what SPS has proposed for its incentive.  
17 Of course, the actual incentive value would vary depending upon the discount rate  
18 used and the final ROE allowed in SPS' pending rate case. In this approach, the  
19 incentives are provided each year over the assumed lifetime of the efficiency  
20 measures, rather than as a one-time incentive payment after the programs are  
21 implemented and evaluated.

22 **Q** ■■■

23 **A** No, both the shared savings approach and the alternative incentive mechanism  
24 proposed above attempt to overcome the disincentive by providing a performance-

1 based bonus to the utility for implementing effective DSM programs. The energy  
2 savings resulting from DSM programs still reduces the kWh sales and thus threatens  
3 the utility's fixed cost recovery, and hurts the utility financially, at least in between  
4 rate cases. Therefore, I recommend that the PRC still consider ways for addressing  
5 this disincentive, in addition to providing a positive incentive along the lines  
6 suggested above (either the shared savings approach or my suggested alternative).

7 **Q** ■

8 A. Yes.

9

1

## **Exhibit HG-1**

### **Members of the Coalition for Clean Affordable Energy (CCAEE)**

Center for Advancing Sustainable Architecture  
Community Action New Mexico  
Environment New Mexico  
Natural Resources Defense Council  
New Mexico Citizens for Clean Air and Water  
New Mexico Council of Churches  
New Mexico Public Interest Research Group  
New Mexico Solar Energy Association  
Physicians for Social Responsibility  
Rio Grande Chapter of the Sierra Club  
Southwest Energy Alliance  
Southwest Energy Efficiency Project  
Southwest Research and Information Center  
Western Resource Advocates

## Exhibit HG-2

### Statement of Qualifications

#### Howard Geller

Dr. Howard S. Geller is the Executive Director of the Southwest Energy Efficiency Project (SWEEP), a public interest venture he founded in 2001. Based in Boulder, Colorado, SWEEP promotes policies and programs to advance energy efficiency in Arizona, Colorado, Nevada, New Mexico, Utah, and Wyoming.

Dr. Geller is the former Executive Director of the American Council for an Energy-Efficient Economy (ACEEE). He established ACEEE's Washington, D.C. office in 1981, stepping down as Executive Director in February 2001. He built ACEEE's reputation and influence through technical and policy assessments, advice to policy makers, development of energy efficiency programs, consumer guides, and conferences.

Dr. Geller has advised and conducted energy efficiency studies for utilities, governmental organizations, and international agencies. He has testified before the U.S. Congress on energy issues many times and has influenced energy legislation including the National Appliance Energy Conservation Act of 1987 and the Energy Policy Act of 1992. He has served as an expert witness on energy efficiency and resource planning issues before the utility commissions of Colorado, Illinois, Maryland, and the District of Columbia.

Dr. Geller is author or co-author of four books. His most recent book, *Energy Revolution: Policies for a Sustainable Future*, was published in 2003 by Island Press. In addition to his work in the United States, Dr. Geller has spent over three years working on energy efficiency issues in Brazil. He helped to start and frequently advises Brazil's National Electricity Conservation Program (PROCEL).

Dr. Geller was awarded the 1998 Leo Szilard Award for Physics in the Public Interest by the American Physical Society in recognition of his contributions to national appliance efficiency standards and more efficient energy use in general. In 2007, Dr. Geller received the Mary Kilmarx award from the National Association of Regulatory Commissioners (NARUC). Dr. Geller is a member of the editorial advisory board for the journal *Energy Policy*.

Dr. Geller received his PhD in Energy Policy from the University of Sao Paulo in Brazil in 2002. He holds a Masters degree in Mechanical and Aerospace Engineering from Princeton University (1979) and he received a Bachelors degree from Clark University (1977) where he majored in Physics and Science, Technology, and Society.

**Exhibit HG-3**

**Comparison of DSM Programs Proposed by SPS and CCAE**

Program	SPS		CCAЕ	
	Budget (1000\$)	Electricity Savings(1) (GWh/yr)	Budget (1000 \$)	Electricity Savings(1) (GWh/yr)
Home Lighting	284.6	1.510	404.6	3.770
Air-source Heat Pumps	130.9	0.293	130.9	0.293
Residential Living Wise	134.3	1.056	134.3	1.056
Refrigerator Recycling	--	--	300.0	1.200
Evaporative Cooling	--	--	200.0	0.750
Residential Subtotal	(549.8)	(2.854)	(1,169.5)	(7.069)
Low Income	197.1	1.556	247.1	2.756
Business Cooling Eff.	130.3	0.249	130.3	0.249
Business Custom Eff.	263.5	4.609	378.5	4.609
Business Lighting Eff.	319.1	1.984	319.1	1.984
Business Direct Install	--	--	175.0	1.120
Business Subtotal	(712.9)	(6.843)	(1,002.9)	(7.962)
Other (2)	359.9	--	419.9	--
Overall Total	1,819.7	11.257	2,839.7	17.787

(1) First year electricity savings at the generator.

(2) Other includes planning and product development in 2007 as well as planning and research costs in 2008.