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MEMORANDUM

Arizona Corporation Commission
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TO: Docket Control

FROM: Ernest G. Johnson
Director
Utilities Division

DATE: February 7, 2005

RE: STAFF REPORT ON DSM POLICY FOR THE GENERIC PROCEEDING CONCERNING ELECTRIC RESTRUCTURING ISSUES, ET AL (DOCKET NOS. E-00000A-02-0051, E-01345A-01-0822, E-00000A-01-0630, E-01933A-02-0069)

Attached is the final Staff Report including a proposed Demand Side Management Policy as required by Decision No. 65743 (Track B).

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Originator: Erin Casper and Barbara Keene

Attachment: Original and 14 Copies

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Docket No. E-00000A-02-0051, et al

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STAFF REPORT
UTILITIES DIVISION
ARIZONA CORPORATION COMMISSION

GENERIC PROCEEDING CONCERNING ELECTRIC RESTRUCTURING ISSUES, ET AL

DOCKET NO. E-00000A-02-0051, ET AL

STAFF REPORT ON DEMAND SIDE MANAGEMENT POLICY

FEBRUARY 7, 2005

STAFF ACKNOWLEDGMENT

The Staff Report on Demand Side Management Policy for the Generic Proceeding Concerning Electric Restructuring Issues, Docket Nos. E-00000A-02-0051, E-01345A-01-0822, E-00000A-01-0630, and E-01933A-02-0069, was the responsibility of the Staff members listed below.

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EXECUTIVE SUMMARY
STAFF REPORT ON DSM POLICY
DOCKET NOS. E-00000A-02-0051, E-01345A-01-0822, E-00000A-01-0630, AND E-01933A-02-0069

The Arizona Corporation Commission ("Commission") issued Decision No. 65743 ("Track B") on March 14, 2003. In that Decision, the Commission ordered Staff to facilitate a workshop process to explore the development of a demand-side management ("DSM") policy. The exploration was to include an examination of the possible costs and benefits of the policy. Staff was ordered to file a report within 12 months of Decision No. 65743 informing the Commission of the progress achieved in the workshops, including a recommendation on whether hearings should be held.

The first DSM Workshops were held from October 2003 through February 2004. Utilities provided information concerning the DSM programs they are currently pursuing and historical costs and savings. Workshop participants developed primary criteria for evaluating DSM opportunities and presented proposals for DSM programs.

Staff filed its DSM Workshop Progress Report on March 15, 2004. The Progress Report covered current utility DSM activities, historical utility DSM savings and costs, energy service company DSM activities, primary screening criteria for evaluating DSM opportunities, DSM opportunities for each market segment, and proposals for DSM programs and policies. In that report, Staff recommended that the DSM Workshops continue to occur on a monthly basis to address outstanding issues, including the development of a proposed DSM policy. Staff intended to file a final report and possibly recommendations after the Workshops had concluded. Staff further proposed that a recommendation on whether to hold a hearing be deferred until the final Staff Report.

Additional DSM Workshops were held from March through November 2004. Through a lot of hard work, the Workshop participants developed a DSM Policy for Arizona. There were some parts of the Policy in which the group could not achieve consensus. Staff has chosen positions for those issues and has rearranged sections or reworded sections of the policy for better organization and clarity. This Staff Report contains explanations for every section of the Policy as well as participant positions on the controversial issues. Staff recommends that a hearing on the DSM Policy not be held due to the wide range of participation in the Workshop process.

Staff intends to convert the DSM Policy into proposed rules for Commission consideration within 60 days of filing this report. Staff recommends that the Commission adopt this policy as part of the rulemaking process.

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Introduction

The Arizona Corporation Commission ("Commission") issued Decision No. 65743 ("Track B") on March 14, 2003. In that Decision, the Commission ordered Staff to facilitate a workshop process to explore the development of a demand-side management ("DSM") policy. The exploration was to include an examination of the possible costs and benefits of the policy. Staff was ordered to file a report within 12 months of Decision No. 65743 informing the Commission of the progress achieved in the workshops, including a recommendation on whether hearings should be held.

The first DSM Workshops were held on October 30, 2003; December 5, 2003; January 15, 2004; and February 13, 2004. Staff filed its DSM Workshop Progress Report on March 15, 2004.[1] The Progress Report covered current utility DSM activities, historical utility DSM savings and costs, energy service company DSM activities, primary screening criteria for evaluating DSM opportunities, DSM opportunities for each market segment, and proposals for DSM programs and policies. In that report, Staff recommended that the DSM Workshops continue to occur on a monthly basis to address outstanding issues, including the development of a proposed DSM policy. Staff intended to file a final report and possible recommendations after the Workshops had concluded. Staff further proposed that a recommendation on whether to hold a hearing be deferred until the final Staff Report.

Additional DSM Workshops were held on March 26, 2004; April 28, 2004; May 20, 2004; June 22, 2004; July 23, 2004; August 20, 2004; September 14, 2004; September 23, 2004; October 26, 2004; and November 22, 2004. Through a lot of hard work, the Workshop participants developed a DSM Policy for Arizona.

Staff's proposed version of the DSM Policy is presented in Schedule 3. There were some parts of the Policy in which the group could not achieve consensus. Staff has chosen positions for those issues and has rearranged sections or reworded sections for better organization and clarity. This Staff Report contains explanations for every section of the Policy as well as participant positions on the controversial issues. Each section of the Staff Report contains the applicable language from the Policy in bold italics.

Staff recommends that a hearing on the DSM Policy not be held due to the wide range of participation in the Workshops. Participants included representatives from utilities, state agencies, cities, counties, energy efficiency and environmental advocacy groups, utility investors, energy service companies, electrical districts, product distributors, and large industrial consumers. A list of participating organizations is in Schedule 1.

Staff intends to convert the DSM Policy into proposed rules for Commission consideration within 60 days of filing this report. Staff recommends that the Commission adopt this policy as part of the rulemaking process.

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[1] http://www.cc.state.az.us/utility/electric/DSM-03-15-04.pdf

Explanation of the DSM Policy

1. Policy Statement

The Arizona Corporation Commission ("Commission") recognizes that demand-side management ("DSM") can provide benefits to energy customers, utilities, and the environment. DSM shall be advanced and implemented in a cost-effective and prudent manner, while maintaining reasonable energy costs for consumers.

This section sets forth the Commission's statement of support for DSM. Cost-effective DSM provides benefits for energy customers, utilities, and the environment. At the same time, the Commission recognizes that energy costs must remain reasonable.

2. Applicability

This policy is applicable to all electric and natural gas utilities subject to the jurisdiction of the Commission that are classified as Class A according to A.A.C. R14-2-103(A)(3)(q), except for utilities that are electric transmission-only cooperatives. Smaller utilities may voluntarily participate either individually or in a group.

The proposed DSM Policy would be applicable to all electric and natural gas utilities classified as Class A according to A.A.C. R14-2-103(A)(3)(q). An exception is made for utilities that are electric transmission-only cooperatives (currently only Southwest Transmission Cooperative). Electric and natural gas utilities are classified as Class A if their annual operating revenues (gross utility operating revenues derived from jurisdictional operations) exceed $5,000,000. According to annual reports filed with the Commission in 2004, the following electric utilities would be classified as Class A and therefore subject to the DSM Policy:

Arizona Electric Power Cooperative
Arizona Public Service Company
Graham County Electric Cooperative
Mohave Electric Cooperative
Morenci Water and Electric Company
Navopache Electric Cooperative
Sulphur Springs Valley Electric Cooperative
Trico Electric Cooperative
Tucson Electric Power Company
UNS Electric

The following natural gas utilities would be classified as Class A:

Southwest Gas Corporation
UNS Gas

The above utilities would be subject to the requirements of the DSM Policy. However, other utilities could voluntarily participate. Electric distribution cooperatives subject to the DSM Policy could cooperate with their generation cooperative to develop DSM programs.

3. DSM Definition

DSM is the planning, implementation, and evaluation of programs to shift peak load to off-peak hours, to reduce peak demand ("kW"), and/or to reduce energy consumption ("kWh" or "therms") in a cost-effective manner. DSM may include energy efficiency, load management, and demand response.

Energy Efficiency is products, services, or practices aimed at saving energy in end-use applications generally by substituting technically more advanced (compared to what is presently used in a specific situation) equipment or practices to produce the same or an improved level of end-use service with less energy use. Examples include high-efficiency appliances; efficient lighting products and systems; high-efficiency heating, ventilating, and air conditioning ("HVAC") systems or control modifications; advanced electric motor drives; efficient building design; and efficient operation and maintenance practices.

Load Management consists of deliberate actions sponsored by a utility to reduce peak demands or improve system operating efficiency. Examples include direct control of customer demands through utility-initiated interruption or cycling, thermal storage, and education to encourage customers to shift loads.

Demand response includes all intentional modifications to electric and natural gas consumption patterns of customers affecting the timing or quantity of customer demand and usage. For the purposes of this policy, demand response programs are used to reduce customer energy usage in response to prices, market conditions, or threats to system reliability. Demand response programs may include dynamic pricing/tariffs, price-responsive demand bidding, contractually obligated curtailment, voluntary curtailment, and direct load control/cycling.

This section defines DSM. There are three categories of DSM: energy efficiency, load management, and demand response.

Historically, the Commission has considered DSM to be only energy efficiency. Load management and demand response programs had been approved by the Commission, but those

programs had not been considered to be DSM, and the costs of those programs were not eligible to be recovered through DSM funding mechanisms. Through the Workshop process it was determined that load management and demand response are also components of DSM, but funding those two types of programs should not reduce the funding for energy efficiency.

4. Key Terms

Adjustment mechanism: ***a provision of a rate schedule, authorized in advance by the Commission, which allows for increases and decreases in rates reflecting increases and decreases in specific costs incurred by a utility.***

Baseline: ***the level of electric and/or natural gas demand and/or consumption and associated costs that would have occurred in the absence of the DSM program.***

Combined heat and power ("CHP"): ***distributed generation using a primary energy source to simultaneously produce electrical energy and useful process heat.***

Distributed generation ("DG"): ***electric generation sited at a customer premises (customer side of the meter) providing electric energy to the customer load on that site.***

Incremental benefits: ***improvements in societal welfare, including but not limited to avoided environmental impacts and the avoided fuel cost, purchased power cost, new capacity cost, transmission cost, and/or distribution cost.***

Incremental costs: ***the additional cost of DSM programs and measures relative to baseline cost.***

Market transformation: ***strategic efforts to induce lasting structural or behavioral changes in the market that result in increased adoption of energy-efficient technologies, services, and practices.***

Net benefits: ***incremental benefits resulting from DSM minus the incremental costs of DSM.***

Societal Test: ***a cost-effectiveness test of the net benefits of DSM measures and programs that starts with the Total Resource Cost Test but includes non-market benefits to society, such as reduced environmental effects of energy production and delivery, due to DSM.***

Total Resource Cost Test: ***a cost-effectiveness test that measures the net benefits of a DSM program as a resource option, including both incremental measure and utility costs. The TRC test excludes incentives paid by utilities. The TRC test also excludes non-market benefits to society, such as reduced environmental effects of energy production and delivery.***

Utility Cost Test: ***a cost-effectiveness test that measures the net change in a utility's revenue requirement resulting from a DSM program. The test compares the reduction in marginal energy and demand costs with utility program costs, incentive payments, and increased supply costs for a period in which load is increased. This test does not include any net costs incurred by participants.***

This section defines various terms used throughout the Policy. It differs from the version developed by the Workshop participants in that Staff added a definition of "baseline", clarified that the "total resource cost test" excludes incentives paid by utilities, rearranged wording in the definition of "incremental benefits" for clarity, and moved the table on Comparison of Cost-Effectiveness Tests to the section on *Cost Effectiveness*.

In comments provided after the final workshop, an electric utility indicated concern that the definition of "distributed generation ("DG")" requires the generation to be sited on the customer side of the meter at a customer premises. The utility would like the definition to be "electric generation sited at or near a customer premises providing electric energy to the customer load on that site." The utility feels that the change would allow utility-sited projects used to serve certain load pockets to be considered DG.

Staff opposes this change in the definition of "distributed generation" because utility-sited generation would not fit under the definition of DSM. Although utility-sited generation may have merit as a supply resource, it is not DSM because it does not shift peak load to off-peak hours, reduce peak demand, or reduce energy consumption. Utility-sited generation is a utility supply source no matter where the generating unit is located. On the other hand, customer-sited generation can help to reduce the customer's demand for electricity from the utility. A utility would not be precluded from working with a customer on a project, but the project would have to be located at the customer's premises and meet the definition of DSM to qualify for DSM funding.

5. Goals and Objectives

Policy Objectives

1. ***Achieve cost-effective energy savings and peak demand reductions.***

2. ***Advance market transformation to achieve cost-effective DSM benefits through approaches that achieve sustainable savings and reduce the need for future market interventions.***

3. ***Ensure a level of program funding adequate to achieve the DSM targets.***

4. ***Implement DSM programs that provide an opportunity for all utility customer segments to participate.***

5. ***Allocate a portion of DSM resources to the low-income customer segment.***

<u>DSM Goals</u>

The Commission shall establish DSM goals for all applicable utilities that consider and are consistent with the characteristics of each specific utility's service territory and the approach to DSM in that service territory. Examples of DSM goals may include percentage reductions in load growth; benefits in dollars; net benefit goals; savings in kW, kWh, therms, gallons, or BTUs; savings as a percent of total resources to meet load; expenditures on DSM as a percent of retail revenue; or amount of spending on DSM programs.

<u>Program Goals</u>

Program goals shall be established by the Commission for DSM benefits, energy savings, and/or peak demand reductions for utilities subject to the DSM policy.

Goals for peak demand reductions in kW or therms may be met in part with demand response programs that are designed to reduce load during peak usage hours.

The *Goals and Objectives* section articulates both the general purpose and specific targets of DSM measures. The implementation of successful programs that meet DSM goals will help to accomplish the Policy objectives.

Portfolio and program-specific goals should be set by the Commission for each individual utility, taking into consideration the unique characteristics of each particular service territory and its DSM history. Workshop participants emphasized that goals should be flexible and should reflect updated market intelligence as it becomes available.

Staff clarified the titles of the "Policy Objectives" and "DSM Goals" subsections to convey that the objectives stated are the objectives of the *Policy* and the examples of goals are possible targets of *DSM measures*. This section was reorganized following the final DSM Workshop to state the "Policy Objectives" first, followed by "DSM Goals" and "Program Goals."

6. <u>Portfolio Plans</u>

Utilities shall submit to the Commission a DSM portfolio plan within six months of the adoption of this DSM policy through the rulemaking process (i.e., six months after the rules are adopted). The portfolio plan shall include:

1. ***An overall DSM portfolio goal;***
2. ***Descriptions of DSM programs to be undertaken in compliance with the Commission's DSM policy;***
3. ***Estimated levels of energy and capacity savings, utility costs, societal benefits and costs, and other benefits (quantified where reasonably possible) of the planned programs;***
4. ***Marketing and delivery plans, including an implementation schedule;***
5. ***Measurement and evaluation plans; and***
6. ***A description of the administration of the programs.***

Utilities shall file subsequent DSM portfolio plans biennially with the Commission for approval. Specific program plans can be filed for approval at any time. If programs are filed for approval contemporaneously with the DSM portfolio plan, the items of information listed in the Commission Review and Approval of DSM Programs section set forth below must be included in the filing.

Existing Commission-approved plans and programs will continue in effect until the Commission takes action on a new plan.

Staff may develop standard tables, outlines, and guidelines for the plans.

The *Portfolio Plans* section sets forth the guidelines utilities must follow in submitting their DSM portfolio plans to the Commission. This section provides a list of items to be included in the plans as well as a timeframe for filing the initial and subsequent plans.

Throughout the course of the Workshops, parties discussed the frequency for submission of portfolio plans. Some parties felt that portfolio plans should be submitted annually while others preferred to submit plans on a biennial basis. Staff considered the different viewpoints and recommends biennial portfolio plan submission with the option for the Commission to order a Company to file sooner than the biennial deadline. Staff also recognizes that a Company would have the option to file a revised DSM portfolio plan prior to the biennial deadline. Staff finds that this flexibility will minimize administrative burden while providing a means to address potential problems that might arise in interim years.

The title of this section was changed from *Planning* to *Portfolio Plans* to clarify that the planning requirements of the section refer to DSM *portfolios*.

7. ***<u>Commission Review and Approval of DSM Programs</u>***

Prior to implementing a new DSM program, utilities must obtain Commission approval. Utilities shall file a copy of the program proposal with Docket Control and notify interested

parties of the filing. Interested parties have 20 calendar days to file written comments about the proposed program.

Each program proposal shall include the following items:

1. ***Description of the program;***
2. ***Objectives and rationale for the program;***
3. ***Market segment at which the program is aimed;***
4. ***Estimated level of program participation;***
5. ***Estimate of baseline;***
6. ***Estimated societal benefits and savings from the program;***
7. ***Estimated societal costs of the programs;***
8. ***Marketing and delivery strategy;***
9. ***Utility costs and budget;***
10. ***Implementation schedule;***
11. ***Monitoring and evaluation plan; and***
12. ***Proposed performance incentives.***

Staff shall recommend approval of a DSM program if it is consistent with the Commission's DSM policy. Staff may request modifications of proposed or on-going programs to ensure consistency with the Commission's DSM policy. However, the Commission shall allow utilities adequate time to notify customers of program modifications.

The *Commission Review and Approval of DSM Programs* section sets forth the guidelines utilities must follow in submitting DSM programs to the Commission. This section provides a list of items to be included in program proposals as well as guidelines for the program approval process.

Parties discussed this process at several Workshops and emphasized that it is important for the Commission to allow utilities enough time to notify customers of any modifications to existing programs before implementing the changes.

The title of this section was changed from *Commission Review and Approval* to *Commission Review and Approval of DSM Programs* to indicate that the Commission review and approval process discussed in this section refers to DSM *programs*.

8. <u>Parity and Equity</u>

Each utility shall develop and propose DSM programs for residential, non-residential, and low income customers so that all customer segments have the opportunity to benefit from DSM.

DSM funds collected from residential and non-residential customer segments shall be allocated proportionately to those customer groups to the extent reasonable.

DSM funds collected from ratepayers of a given utility shall be allocated to DSM programs for customers in that utility's service territory to the extent reasonable.

The utility costs of DSM programs for low-income customers shall be borne by all customer classes.

All customers shall pay to support DSM through a non-bypassable mechanism.

Self-direction[2] may be reviewed by the Commission in utility rate cases or other forums.

This section explains that DSM programs shall be developed for, and funds collected proportionately from, both residential and non-residential customer segments. It also requires programs to be developed for low-income customers, but that the costs of those programs shall be paid by all customer classes. In addition, DSM costs would be non-bypassable so that customers who obtain generation or natural gas from a competitive supplier would continue to pay the DSM costs because DSM is a system benefit for all.

This section differs from the version developed by the Workshop participants in that Staff moved one sentence and replaced "commercial" and "industrial" with "non-residential." "Non-residential" includes customer sectors that might not be considered "commercial" or "industrial," such as schools and government facilities.

The concept of "self-direction" was a controversial issue in the Workshops. According to proponents of self-direction, the term is an option made available to qualifying customers of sufficient size in which the amount of money paid by the qualifying customer through a DSM adjustment mechanism is made directly available for use by that customer for DSM investments. The size threshold for qualification would be based on the dollar amount of expected contributions to the DSM adjustment mechanism made by the customer, considering all of the customer's accounts in a given utility territory. Commercial and industrial customer representatives recommend a threshold of $6,000 per year as qualification for self-direction. The Commission would have oversight over the self-direction program but not have to approve individual applications. DSM investments would include labor, engineering, construction, and materials. Reporting requirements should protect confidentiality and not unduly burden the customer.

Some utility representatives have unanswered questions concerning self-direction. Those questions are:

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[2] *Self-direction is an option made available to qualifying customers of sufficient size, in which the amount of money paid by each qualifying customer toward a DSM adjustor is tracked for an individual customer and is made available for use by the customer for DSM investments upon application by the customer.*

- What are the criteria to determine if a customer is eligible to self-direct?
- Is self-direction an option for large institutional customers?
- What happens if the customer's load fluctuates?
- Can customers aggregate their loads to meet any minimum load requirements?
- What are the reporting requirements for the utility and the customer when a customer is self-directing its DSM investments?
- What accounting and tax implications might arise from a self-directed DSM investment?
- If a utility is required to reduce energy by a certain amount, would the energy saved by the self-directed customer be applied toward the overall energy savings goal of the utility?
- Can DSM funds be used to fund a Self-Direction Administrator?
- What is considered an eligible project?
- Is there a cap on the amount of funds to be received each year?
- Can a self-directed customer "bank" its resources for two or more years?
- Will projects initiated prior to Commission approval of a policy be eligible for self-direction credit?
- Would a 50 percent credit be made available to customers as allowed by Utah Power & Light Company when an energy audit demonstrates that there are no remaining DSM projects with a payback period of eight years or less?

Staff neither endorses nor opposes self-direction. Staff believes the thirteen questions need to be addressed either in individual utility rate cases or other forums. This section of the policy contains the statement that self-direction may be reviewed by the Commission in rate cases or other forums.

The issue of exemption was also discussed in the Workshops but is not addressed in the DSM Policy. Consensus on the issue was not achieved in the Workshops. Representatives of large commercial and industrial customers describe the concept of exemption as follows: a customer whose single-site usage is at least 20 MW and can demonstrate an active DSM program could request an exemption from a DSM adjustment mechanism. Again, utility representatives have the following unanswered questions:

- What is the appropriate size threshold to qualify a customer for exemption?
- Would the threshold be the same in all service territories?
- What happens if that size threshold fluctuates?
- Who would be responsible for reporting and monitoring the customer's active DSM program?
- Would distributed generation be considered an active DSM program?
- Would exempt customers be responsible for contributing to programs for low-income customers?

- If a utility is required to reduce energy by a certain amount, would the energy saved by the exempted customer be applied toward the energy savings goal of the utility?
- Could customers aggregate their loads to meet any minimum load requirements?
- Would the customer be exempt only for the life-cycle of the project?

9. <u>Portfolio and Program Reporting Requirements</u>

Utilities shall report annually to the Commission on the progress of their DSM portfolios including each pre-approved DSM program. Annual reports shall be due on March 1 of each year. At a minimum, the reports shall include:

1. ***Predetermined overall DSM portfolio goals;***
2. ***A description of the progress towards meeting the portfolio goals;***
3. ***A list of the programs included in the DSM portfolio organized by customer segment;***
4. ***Findings from any research projects;***
5. ***Information on each program including:***
   a. ***A brief description of each program;***
   b. ***Predetermined program goals, objectives, and savings targets;***
   c. ***The level of customer participation for each program;***
   d. ***Costs incurred during the reporting period disaggregated by type of cost, such as administrative costs, rebates, and monitoring costs;***
   e. ***A description and results of evaluation and monitoring activities;***
   f. ***Savings in kW, kWh, therms, gallons, and BTUs;***
   g. ***Benefits and net benefits in dollars;***
   h. ***Program-specific performance incentive calculations;***
   i. ***Problems encountered and proposed solutions;***
   j. ***Proposed program modifications; and***
   k. ***Proposed program terminations.***

Utilities shall file quarterly status reports that shall consist of a tabular summary of expenditures compared to the budget. Quarterly reports shall be due 45 days after the end of a calendar quarter.

All reports shall be available to the public and filed in Docket Control. These reporting requirements shall supercede other DSM reporting requirements as determined by the Commission for each Utility.

Staff may develop standard tables, outlines, and guidelines for reports.

This section describes the timing and types of information that the utilities would have to provide to the Commission so that Staff and the Commission could monitor the utilities' progress

in achieving their DSM goals. Staff modified this section of the Policy by adding portfolio reporting requirements to the program reporting requirements. Staff also rearranged some of the sentences, shortened the sentence on the quarterly reports by removing the reference to goals, and added the phrase regarding Commission determination for each utility to the sentence on other DSM reporting requirements.

The Policy requires annual reports with considerable details and brief quarterly reports with information on expenditures compared to budget. Staff recommends that these reporting requirements supercede other DSM reporting requirements to eliminate redundancy and utility burden. The Commission would have to determine in a proceeding, such as the portfolio plan approval or a rate case, which current reporting requirements would be replaced. Currently, A.A.C. R14-2-213 requires Class A and B electric utilities to file energy conservation plans with annual updates when changes occur. In addition, various Commission decisions require some electric and natural gas utilities to file DSM reports, but the requirements vary by utility.

10. Cost Recovery

Utilities shall recover their net incremental costs to plan, design, implement, and evaluate DSM programs. In order to qualify for cost recovery, each program must be:

1. ***Approved prior to implementation;***
2. ***Implemented in accordance with the approved program plan; and***
3. ***Monitored and evaluated for cost-effectiveness.***

Utilities shall monitor and evaluate DSM programs to reliably ensure that they are cost-effective. Utilities shall propose modification or termination of programs that are failing to meet expected results.

To effectively implement programs, cost recovery shall be concurrent (on an annual basis) with DSM spending.

DSM funds may be used for market studies, consortium membership, labor costs for portfolio development, and other items for which the costs are difficult to allocate to individual DSM programs.

To the extent goods and services used for DSM have value for other utility functions, programs, or services, funding shall be divided and allocated proportionately.

Utilities shall allocate costs in accordance with Generally Accepted Accounting Principles.

The *Cost Recovery* section describes the types of costs that may be recovered by DSM funds.

During the Workshops, parties discussed the treatment of costs incurred prior to portfolio and/or program approval and costs that are not associated with any particular program. Examples of these types of expenses include costs for portfolio planning, program planning, market studies, consortium memberships, and other general costs that are not necessarily associated with a particular approved program. Utility participants expressed the desire for certainty about the recovery of these types of costs.

The Policy allows utilities to recover program implementation and evaluation costs, costs incurred prior to portfolio and/or program approval, and costs that are not associated with any particular program. However, a program must be approved prior to implementation in order for a utility to recover program implementation costs.

Utilities should allocate costs that are not associated with any particular program in accordance with Generally Accepted Accounting Principles. Because DSM accounting principles relate to cost recovery, Staff eliminated the separate *DSM Accounting Principles* section and added that language to the *Cost Recovery* section.

11. Performance Incentives and Lost Revenue

Performance incentives for achieving or exceeding Commission-designated goals may be appropriate as determined by the Commission.

The Commission shall determine whether a utility may be allowed to recover lost net revenue.

This section states that the Commission may set performance incentives for achieving or exceeding DSM goals. Also, the Commission would determine whether a utility would be allowed to recover lost net revenue.

The Workshop participants did not reach consensus on the issue of lost net revenue. The utilities are in favor of recovering lost net revenues, while energy efficiency advocates and others are against it. One electric utility mentioned that the ability of a utility to cover fixed costs is linked to customer energy usage. Thus, DSM results in a utility being less able to recover fixed costs. Recovery of lost net revenues helps utilities to be indifferent with respect to making investments in supply-side or demand-side resources. In addition, the Energy Policy Act of 1992 required state utility commissions to consider the impact of net lost revenue in ratemaking treatment of DSM. The Commission considered the issue in Resource Planning Decision No. 58643. In Decision No. 58643, the Commission stated "Based upon evidence presented in this proceeding, recovery of program costs and lost net revenues and possibly a reward or profit for DSM, should be considered, recognizing that preferences for a particular recovery mechanism vary among the parties."

Opponents of lost net revenue recovery argue that the utility should not need incentives to implement DSM because DSM should be treated like any supply or demand resource. If a utility does not have a fuel or purchased power adjustment mechanism, the utility assumes the risk and reward for procuring resources. The utility has an incentive to reduce peak load and thereby reduce costs. DSM reduces procurement expense and generation expense because it is the marginal supply source that is being reduced by DSM savings.

Also, when a utility experiences customer growth, revenue might not actually be lost. Revenue grows with customer growth. DSM can help mitigate the capacity constraints that may accompany customer growth.

In addition, recovery of lost net revenue can eat up a DSM budget and lead to less benefit per dollar spent. The utility benefits from DSM energy savings because of reduced operating costs. Allowing recovery of lost revenues could mean double recovery. Essentially, ratepayers would be charged for energy they did not consume.

In this report, Staff is not taking a position either in favor of or opposed to the concept of lost net revenue recovery for utilities that implement DSM programs and recognizes that the Commission shall make this determination on a case by case basis.

During the Workshops, participants also discussed the concept of penalties or sanctions for companies that either fail to meet stated goals or fail to comply with the DSM Policy or potential rules. Both Staff and Workshop participants recognize that the Commission always has the ability to take action against companies that fail to comply with orders or rules. In general, parties expressed concern that penalties tied to performance create a strong disincentive for utilities to expand their DSM efforts. Moreover, the possibility of facing penalties for failing to meet DSM program goals certainly discourages companies from exploring creative program offerings or cutting edge technologies that may not be fully developed. To the extent that penalties discourage or limit utilities' participation in DSM, Staff is not in favor of incorporating penalties tied to performance into DSM portfolios or programs. At a minimum, Commission procedures to possibly assess penalties and/or other remedies for lack of performance must be consistent with the rules and procedures codified in A.A.C. R14-3-101 through R14-3-113.

12. Funding Mechanisms

Funding shall be provided either through base rates, a surcharge mechanism, and/or an adjustment mechanism. Until such funding can be established for a utility in a rate case, the utility may request that the Commission grant the authority to establish a deferral account.

This section lists various funding mechanisms available for DSM cost recovery. Workshop participants prefer the use of an adjustment mechanism because it can provide flexibility and allow for funding changes outside of a rate case. A sentence to that effect was in

the Policy, but Staff felt it was more appropriate for it to be addressed in the report instead of in the Policy.

In general, Staff does not favor the use of deferral accounts because they shift cost recovery from current ratepayers that are benefiting from the costs incurred to future ratepayers. However, Staff recognizes that deferral accounts can be useful in certain situations. For example, a utility that is under a rate moratorium may wish to implement DSM programs but would not necessarily be allowed to increase its rates to recover the costs. A deferral account would allow that utility to participate in DSM during its rate moratorium by deferring cost recovery. Staff recognizes that the Commission shall determine whether to approve a deferral account for DSM cost recovery on a case by case basis.

13. Applications Eligible for Funding

DSM programs promoting energy efficiency, demand response, load management, or combined heat and power on the customer side of the meter that reduce peak demand or conserve energy may be approved by the Commission.

DSM funds may be used for research and development such as applied technology assessment.

CHP projects may be eligible for funding if they include heat or energy recovery which is used to displace space heating, water heating, or other loads.

Non-CHP Distributed Generation (DG) may be used by customers as a means to help them participate in a demand response program.

This section describes the types of applications that would be eligible for DSM funding. Staff merged the Research and Development section into this section because it related to one type of application. Staff also reworded the sentence on combined heat and power (CHP) for clarity.

One distributed generation representative was concerned about references to distributed generation (DG) being in the DSM Policy when DG proceedings are being considered in the Arizona Public Service Company ("APS") rate case. However, potential DG proceedings resulting from the APS rate case would not be dealing with the DSM aspects of DG but rather with issues such as interconnection requirements and backup power needs.

An electric utility has concerns with two elements of this section related to DG. One issue is the reference to "the customer side of the meter." The other issue is that DG projects that are not CHP may be approved by the Commission. The utility feels that a stand-alone DG project should not be eligible for DSM funding because it is simply a generation (supply-side)

alternative rather than a demand-side option and may not be more efficient than large scale conventional generation sources.

In response to the first issue, Staff supports requiring DG to be on the customer side of the meter for DSM funding. Utility-sited DG would not fit under the definition of DSM as explained in this report under *Key Terms*. In response to the second issue, the intent of the DSM Policy is to allow non-CHP DG to be used by a customer to participate in a demand response program. Without the demand response program, the non-CHP DG would not be considered to be DSM. To clarify the situation, Staff has removed the words "distributed generation" from the first sentence in the section. Staff has also added "non-CHP" to the sentence about DG and moved that sentence to the end of the section.

Workshop participants agreed not to include renewable resources as DG for purposes of this DSM Policy. Renewable resources are included in the Environmental Portfolio Standard rules, and the Workshop participants did not want to double count any resource.

14. Cost Effectiveness

The incremental benefits to society of the overall DSM portfolio shall exceed the incremental costs to society of the overall DSM portfolio. The incremental benefits to society of the individual DSM programs shall exceed the incremental costs to society of the individual DSM programs.

Cost-effectiveness shall be determined by the Societal Test. Costs to society equal the total incremental costs of the DSM program (including incremental utility costs and incremental customer/vendor costs). The benefits to society include avoided environmental impacts and the avoided fuel cost, purchased power cost, new capacity cost, transmission cost, and distribution cost.

Other economic factors such as the costs and benefits associated with reliability may be included in the analysis. Electric utilities may consider savings of natural gas; natural gas utilities may consider savings of electricity. The analysis shall reflect the expected life of the savings resulting from DSM measures. Uncertainty about future streams of costs or benefits should be reflected in cost/benefit or other analyses where practicable and appropriate. In addition to the cost-effectiveness test, a utility or program administrator should consider the impact on rates, economic development, customer costs, and other economic impacts.

Environmental costs or the value of environmental improvements shall be quantified when possible, reasonable, and cost-efficient. At a minimum, utilities shall make a good faith effort to quantify water consumption savings and air emission reductions until such time that an environmental externalities quantification procedure is adopted by the Commission. Upon adoption of a policy, utilities shall implement the policy adopted by the Commission. Other environmental impacts may be considered qualitatively.

The standard cost effectiveness analysis may not be appropriate for certain types of DSM programs.

1. ***Market Transformation Programs: Cost effectiveness shall be measured by the success of a program in achieving results, such as market effects compared to its costs.***

2. ***Educational Programs: Utilities shall attempt to estimate the energy and peak demand savings that result from educational efforts that raise awareness about energy use and opportunities for saving energy.***

3. ***R&D and Pilot Programs: Individual research and development and pilot programs do not have to demonstrate cost-effectiveness.***

4. ***Low Income Programs: Measures included in low-income programs shall be generally cost-effective.***

The following table illustrates the differences between the various cost-effectiveness tests.

Comparison of Cost-Effectiveness Tests

	Participant Test	*Utility Cost Test*	*Total Resource Cost Test*	*Societal Test*
Benefits	• *incentives received* • *bill reductions*	• *avoided utility costs*	• *avoided utility costs*	• *avoided utility costs* • *avoided environmental impacts*
Costs	• *bill increases* • *incremental participant costs*	• *incremental utility costs, including incentives paid by utility*	• *incremental utility costs, excluding incentives paid by utility* • *incremental participant costs*	• *incremental utility costs, excluding incentives paid by utility* • *incremental participant costs*

The *Cost-Effectiveness* section describes the process by which the cost-effectiveness of the overall DSM portfolio and each individual DSM program will be evaluated. Both the overall DSM portfolio and each individual DSM program must be cost-effective.

There are several recognized methods to test for cost-effectiveness including the Participant Test, Utility Cost Test, Total Resource Cost Test, Ratepayer Impact Measure, and the Societal Test. Each method varies in the types of costs and/or benefits that are considered. The

Commission's 1991 Resource Planning Decision[3] established that the Societal Test should be used for the purpose of evaluating cost-effectiveness. The Societal Test evaluates whether the incremental benefits to society exceed the incremental costs to society. As opposed to several of the other methods of measuring cost-effectiveness, the Societal Test does account for the environmental impacts of DSM measures.

Workshop participants discussed the notion of environmental externalities at length. The group generally agreed that there are environmental impacts of DSM measures. Some participants were adamantly in favor of quantifying environmental impacts of DSM measures both in physical units and in dollars. However, several utility representatives observed that currently there is no guidance or policy from the Arizona Corporation Commission that addresses the appropriate methodology to measure the values of environmental externalities. Until such time that an environmental impact quantification procedure is adopted by the Commission, utilities should make a good faith effort to quantify externalities such as water consumption savings and air emission reductions. Workshop participants requested that the Staff Report note their desire to work with any group established to quantify environmental externalities.

There are certain types of DSM programs for which the Societal Test is not an appropriate method to evaluate cost-effectiveness. Research and Development, Pilot Programs, Educational Efforts, Market Transformation Programs, and Low Income Programs do not have easily quantifiable benefits. Some of these programs also have disproportionately large administrative costs. The Policy addresses the unique aspects of these types of programs.

Following the final DSM Workshop, this section was reorganized to better explain that DSM portfolios and programs must be cost-effective as measured by the Societal Test which includes the incremental costs to the utility and to the participant, the avoided utility costs, and avoided environmental impacts. In addition, the table showing the comparison of cost-effectiveness tests was moved from the *Key Terms* section to the *Cost-Effectiveness* section to illustrate the differences in costs and benefits included in each test.

15. Baseline Estimation

The baseline for determining the incremental costs and benefits of a DSM program shall be a reasonable estimate of the level of electric and/or natural gas demand and/or consumption and associated costs that would have occurred in the absence of the DSM program.

For demand response programs, customer load profile information may be used to verify baseline consumption patterns and the peak demand savings resulting from demand response actions.

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[3] Decision No. 57589

The *Baseline Estimation* section defines the term and establishes the context in which it is used.

DSM portfolios and individual programs must be cost-effective. In the course of the cost-effectiveness evaluation, incremental costs will be compared to incremental benefits of a DSM measure. In order to calculate incremental costs and benefits of any activity, the evaluator must identify a baseline state which would have occurred in the absence of the activity. For the purpose of this Policy, the baseline state for determining the incremental costs and benefits of a DSM measure is the level of electricity and/or natural gas consumption and/or demand and the associated costs that would have occurred in the absence of the DSM measure. In the case of a Demand Response measure, it may be necessary to examine a customer's load profile in order to establish a baseline.

Staff reworded one sentence in the *Baseline Estimation* section slightly to clarify that the baseline state is a level of electric and/or natural gas demand and/or consumption plus associated costs.

16. Fuel Neutrality

Ratepayer-funded DSM shall be developed and implemented in a fuel-neutral manner. For those installations/applications that have multiple fuel choices, the baseline used in the cost effectiveness analysis shall utilize the same fuel source as the installation/application.

Electric utility program funds shall be used for electric measures. Natural gas utility program funds shall be used for natural gas measures. However, either natural gas utilities or electric utilities may fund thermal envelope improvements.

It has been the Commission's practice that rate-payer funded initiatives be "fuel neutral." (The fuel referred to here is the customer's fuel, i.e., natural gas or electricity.) The *Fuel Neutrality* section maintains this requirement in the DSM Policy and describes what fuel neutrality means in the context of DSM.

This issue received a great deal of attention throughout the Workshop process. Participants addressed the subject of fuel neutrality from many different perspectives because topics such as cost-effectiveness and baseline estimation are strongly linked to fuel neutrality. The main idea, with which most participants agreed, is that rate-payer funds should not be used to influence customers to change fuels for a particular end-use. Participants did not necessarily agree on what constitutes "influencing customers" to switch fuels. Moreover, it is very difficult to determine whether certain programs are fuel neutral or not.

An example of a complicated situation is the case of a customer living in a house with both electric and natural gas infrastructure. Currently, the customer (Al) has natural gas-fired heating. The rest of Al's appliances are powered by electricity. Al knows that his electric

cooking range is very old, not particularly energy efficient, and probably should be replaced soon. In addition, Al prefers cooking with gas and has wanted to switch to a gas range since he bought his house. Al is aware that both the local natural gas and electric utility companies are planning to offer DSM programs that will give rebates on high-efficiency natural gas and electric ranges, respectively. In accordance with the *Fuel Neutrality* section of the DSM Policy, neither utility will promote fuel switching in advertising its DSM program. For example, the gas company will *not* say, "You can receive a rebate if you replace your electric range with a brand-new high efficiency natural gas range."

The concepts of cost-effectiveness and baseline estimation, described in Sections 14 and 15 respectively, are linked with the precept of fuel neutrality. As the natural gas and electric utilities prepare to file their DSM program plans for approval, they each must demonstrate that their program is cost-effective. Both electric and natural gas utilities will need to present the baseline level of energy efficiency for cooking ranges in the local market. However, in order to remain fuel neutral, the gas company will have to present a baseline level of energy efficiency for natural gas ranges while the electric company will need to provide information on the baseline level of energy efficiency for electric ranges in that market. Regardless of whether some potential participants like Al currently have electric-powered ranges, the fuel neutrality condition requires the gas company to use a natural gas-fired appliance as the baseline to calculate the cost-effectiveness of its rate-payer funded rebate program. Likewise, the electric company must use an electric range as its baseline level of energy efficiency.

Whether Al has switched to a gas-fired range due to the gas utility's rebate opportunity, or simply because he prefers cooking with gas, the gas and electric companies have designed and promoted their respective programs in a fuel-neutral manner. If Al participates in the natural gas company's DSM program and purchases a high-efficiency natural gas-fired range to replace his old, inefficient electric range, Staff would not consider the situation to violate the fuel neutrality requirement.

Fuel Neutrality remained one of the few divisive topics covered at the DSM Workshops. There were many discussions regarding the appropriateness of a Policy that strictly prohibits fuel switching and what types of programs constitute fuel switching. The following controversial Policy language, highlighted in italics, was discussed at length: Electric/Natural gas utility program funds shall be used for electric/natural gas measures *that reduce electricity/natural gas use*. Representatives from the electric utilities viewed this statement without the italicized language as tolerant towards programs that could lead to fuel switching. Others viewed this language (excluding the italicized phrase) as maintaining the Policy of fuel neutrality while allowing for flexibility in evaluating a program when the baseline state is uncertain. Staff finds the italicized language to be in conflict with the fuel-neutral cooking range example described above. In that example, DSM funds are used in a fuel-neutral manner in part to provide a rebate for a high-efficiency gas range which will not technically reduce the customer's natural gas usage. For this reason, Staff has eliminated the language in italics.

During the course of the DSM Workshops, participants also discussed the concept of using source energy in the cost-effectiveness analysis. This controversial concept was included in the *Fuel Neutrality* section of the draft Policy. However, after significant consideration, Staff removed language that referred to both site and source energy.

First, there are different interpretations of the terms "source energy" and "site energy." Site energy refers to the amount of electric and/or natural gas demand and/or consumption used at the end use site. For example, the consumption of a light bulb that consumes 100 watts for 10 hours would be considered 1 kWh of "site energy." However, the "source energy" used by that light bulb is the total amount of kWh that must be produced by a power plant to generate, transmit, and distribute the 1 kWh of "site energy." Due to transmission and distribution losses and required reserves, the "source energy" will be greater than the 1 kWh of "site energy." Traditionally, Staff has interpreted "source energy" as end-use consumption (site energy) plus losses and required reserves. Instead of simply accounting for savings at the customer site, Staff has used source energy to calculate electric and/or natural gas demand and/or consumption savings from DSM measures.

Alternatively, some Workshop participants proposed to use a methodology used in California that tracks source energy in terms of the total amount of energy input required by a given level of end use consumption. For example, the California methodology considers the type and amount of fuel used to generate the electricity consumed by the 100 watt bulb compared to the total energy input used to generate the electricity consumed by the high efficiency 50 watt bulb. For electricity, the source energy is measured in British Thermal Units ("Btu") per kWh generated. In order to effectively use this analysis, the multiplier used to convert kWh to Btu per kWh must be based on the electric generation portfolio for a specific end use location. For example, central Arizona is served by a generation portfolio consisting of mainly nuclear, coal, and natural-gas fired generation. To obtain a reasonable estimate of the proper multiplier for central Arizona, one must calculate the weighted average of the heat rates (Btu required to produce one kWh) for each generator within the portfolio serving central Arizona. To apply the proper weighting to the heat rates, one must determine the generation resources that will be used to meet the forecasted load profile in that area. Once the Btu /kWh multiplier is determined, one can convert the end use kWh consumption of the light bulbs into Btu consumption. Those parties in favor of this methodology maintain that this type of analysis is required to accurately compare the energy efficiency and/or potential savings of end uses that can use more than one fuel source such as the cooking range example above. In the absence of Arizona-specific multipliers, proponents of this methodology propose to use fixed source energy multipliers[4] that equate to around 13,754 Btu/kWh to convert electricity and around 105,060 Btu/therm to convert natural gas.

See Schedule 2 for a comparison of Staff's interpretation of "source energy" to an alternative analysis used by the State of California.

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[4] Fixed multipliers are also referred to as "Time Dependent Valuation of Energy" (TDV). For electricity, a TDV of 1 equals 3,413 Btu/kWh. For natural gas, a TDV of 1 equals 100,000 Btu/therm. The TDV values proposed by proponents of this methodology are 4.03 for electricity and 1.0506 for natural gas.

Staff finds that the California methodology (converting all types of end use consumption to source energy measured in Btu) has the potential to accurately compare the energy consumption of an electric range to that of a gas-fired range. However, this requires a thorough analysis of the specific generation portfolio and demand characteristics of the geographic area in question. To date, such a study has not been conducted for any of the markets in Arizona. Absent an Arizona-specific study, Staff cannot validate any Btu/kWh multiplier that might be used to convert electric consumption to Btu consumption. Moreover, Staff finds that this sort of conversion is not required for the cost-effectiveness analysis of DSM programs because the cost-effectiveness of an electric DSM measure must be based on an electric baseline while the cost-effectiveness of a gas DSM measure must be based on a natural gas baseline. For these reasons, Staff removed language that referred to site and source energy from the *Fuel Neutrality* section.

Staff notes that in the case of DSM programs that reduce the demand and/or consumption of both electricity and natural gas, the avoided costs of saving both resources are included in the cost-effectiveness analysis. For example, an electric utility may include both the avoided cost of electricity and the avoided cost of natural gas that will result from the energy efficiency measures included in a Thermal Envelope program such as new home construction. Traditionally, Staff would use its production costing model to calculate the avoided cost of electricity, and Staff would obtain utility information on the avoided cost of natural gas. Staff would base electric savings on a baseline level of electricity demand and/or consumption and natural gas savings on a baseline level of natural gas consumption. In this case, Staff would not convert the electricity or natural gas savings into common units (Btu) but would calculate the avoided cost of each.

*17. **Monitoring, Evaluation, and Research***

Utilities shall monitor and evaluate all DSM programs to reliably ensure that they are cost-effective. Monitoring and evaluation should:

1. ***Determine participation rates, energy savings, and demand reductions;***
2. ***Assess the utility's program implementation process;***
3. ***Provide information on whether to continue, modify, or terminate a program; and***
4. ***Determine the persistence and reliability of DSM.***

Evaluation and research may also be conducted for program planning, product development, and program improvement. Evaluation and research includes market studies, market research, and other technical research for planning purposes.

The purpose of monitoring, evaluation, and research is to identify any problems associated with DSM programs, evaluate whether DSM programs are cost-effective, and ensure that they are being implemented as planned. The *Monitoring, Evaluation, and Research* section

of the Policy directs utilities to undertake these efforts to gather information and assess the success of DSM programs.

Evaluation and research may also prove helpful in program planning or product development efforts.

18. Program Administration and Implementation

Utilities may use energy service companies and/or other external resources to implement DSM programs.

The Commission may establish independent program administrators who would be subject to the relevant requirements of this policy.

There is a wide range of potential program administration options. The *Program Administration and Implementation* section of the Policy brings attention to the administration options that involve a party other than the utility and the program participant.

The familiar end of the administrative spectrum allows the utility to administer and implement the DSM program. For example, the utility would handle the tasks associated with recruiting and enrolling program participants, funding and implementing the DSM measure, and following up with the participants to monitor and evaluate the DSM program. Currently, this is the way in which most Arizona DSM programs are handled.

The opposite end of the continuum is an independent state-wide or regional DSM program administrator. In this scenario, the Commission would establish an independent third party to collect DSM funds from the utility companies and allocate those funds through DSM programs across utility jurisdictions. The independent administrator would handle the funding and implementation of all DSM programs, and all DSM funds would flow through that entity.

Within the range of administrative options there are many alternatives that involve both the utility and an outside party. One option is that the utility may handle the recruitment and enrollment of participants but contract with another entity to implement the program. For example, the utility company may recruit and enroll heating, ventilation, and air conditioning ("HVAC") contractors for a program that focuses on training and certification but hire independent trainers to perform the training and certify the participants.

Workshop participants and Staff generally agreed that the DSM Policy should allow for the full range of administration and implementation options.

19. Leveraging and Cooperation

Utilities shall make reasonable use of cost sharing, leveraging, or other opportunities available from customers, vendors, manufacturers, government agencies, other utilities, and others that increase the effectiveness of the DSM program and/or lower its costs.
Workshops to discuss DSM activities may be held periodically to provide interested parties the opportunity for input.

The *Leveraging and Cooperation* section of the Policy is intended to encourage utilities to work together on DSM programs whenever it is cost-effective and beneficial to both the utilities and the program participants.

For example, cost sharing and standardization between utilities offering a DSM program directed towards residential new construction could reduce vender and participant confusion, reduce administrative expenses, and reach more of the market. If two contiguous utilities are administering a thermal envelope program with different parameters and requirements, contractors working in both markets will have to comply with two sets of rules in order to participate. In addition, the utilities would need to promote their programs separately, requiring two full administrative cost burdens. Some of these barriers and costs could be avoided through utility cooperation.

Another example of utility cooperation could entail contractor training. According to many Workshop participants, a major factor in achieving energy efficiency in HVAC is proper installation of the equipment. Utilities could potentially work together to offer joint installation training programs for HVAC contractors.

In October of 2004, the Southwest Energy Efficiency Project in conjunction with Nevada Power Company sponsored a conference on Regional Cooperation in Energy Efficiency Program Implementation in the Southwest. Attendees from Arizona included Staff, Arizona Public Service, Tucson Electric Power, and Southwest Gas. Participants discussed the current state of energy efficiency programs and policies in the Southwest, models of regional collaboration such as the Northwest Energy Efficiency Alliance, barriers to cooperation between utilities, and opportunities for collaboration. Workshop participants formed several working groups to address specific opportunities such as residential new construction, HVAC, commercial kitchens, and commercial building design. The topics discussed at the conference were consistent with this section of the DSM Policy.

The DSM Policy also encourages periodic Workshops to facilitate utility cooperation in DSM activities.

20. <u>Other Approaches to DSM</u>

In general, the Commission supports other approaches to DSM, including building codes, appliance efficiency standards, shared savings legislation, and actions in other forums that would complement the DSM policy herein.

Staff and Workshop participants recognize that demand-side management can provide benefits to energy customers, utilities, and the environment. This Policy deals with DSM measures sponsored by utility companies to reduce the demand and/or consumption of electricity and/or natural gas. However, Staff recommends that the Commission consider supporting other strategies to reduce the demand and/or consumption of electricity and/or natural gas that may reach beyond its jurisdiction to the extent that such tactics complement the DSM Policy herein (such as, supporting legislation for appliance sufficiency standards).

Conclusion

Staff concludes that a hearing on the DSM Policy is not necessary. The Workshop process facilitated extensive discussion among a wide range of participants. Although a few issues remained unresolved by the final Workshop, the participants agreed on much of the DSM Policy herein.

Staff intends to convert the DSM Policy into proposed rules for Commission consideration within 60 days of filing this report. Staff recommends that the Commission adopt this policy as part of the rulemaking process.

Schedule 1
List of Participating Organizations

AHS
ANL Distributors/Volttech, Inc.
APS Energy Services
Arizona Clean Energy Industries Alliance
Arizona Competitive Power Alliance
Arizona Corporation Commission Staff
Arizona Electric Power Cooperative
Arizona Energy Office
Arizona Public Service
Arizona Solar Energy Association
Arizona Utility Investors Association
Brayden Automation Corp.
Buck-Taylor Consulting
City of Scottsdale
Demand Response and Advanced Metering Coalition
Department of Emergency and Military Affairs
Desert Energy
DCSI
Ecos Consulting
El Paso Corp.
Energy Strategies
Grand Canyon State Electric Cooperative Association
ICF Consulting
Johnson Controls, Inc.
Law Office of Bob Lynch
LightLogix Inc.
Maricopa County
Martinez & Curtis
Mohave Electric Coop
Morenci Water and Electric
Moyes Storey
Murphy Consulting
Natural Lighting
Navopache Electric Cooperative
ON Semiconductor
Ormond Group
Phelps Dodge
Pinnacle West Capital Corporation
Renewable Energy Leadership Group
Residential Utility Consumer Office
RHA
Salt River Project

So Cool Energy
Southwest Energy Efficiency Project
Southwest Gas
Sulphur Springs Valley Electric Cooperative
Transcon
Tucson Electric Power
UNS Electric
UNS Gas
Western Resource Advocates

Schedule 2
Source Energy Analysis

Source Energy - Traditional Staff Interpretation

	Staff Interpretation Source Energy[1] kWh	Loss Factor[2] % of Source	Losses[3] kWh	Site Energy[4] kWh
Standard 100 watt bulb for 10 hours	1.0309	3.0%	0.0309	1.00
High-Efficiency 50 watt bulb for 10 hours	0.5155	3.0%	0.0155	0.50
Energy Savings in kWh from DSM measure	0.5155			0.50

[1] Energy produced at the power plant level

[2] Loss Factors typically refer to a percentage of production site (source energy) energy lost in the transmission and distribution of the energy

[3] Source Energy x Loss Factor

[4] Source Energy - Losses

Source Energy - California Method

	Site Energy[1] kWh	Conversion Factor[2] Btu / kWh	Source Energy[3] Btu
Standard 100 watt bulb for 10 hours	1.00	10,329	10,329
High-Efficiency 50 watt bulb for 10 hours	0.50	10,329	5,165
Energy Savings from DSM measure	0.50 kWh		5,165 Btu

[1] Energy consumed by the bulb

[2] Example of a Conversion Factor that is based on a Time Dependent Valuation of Electricity (TDV Electricity) value of 3

[3] Source Energy in kWh x Conversion Factor = Energy input (measured in Btu) required to produce the electricity (measured in kWh) consumed by the light bulb

Schedule 3
Proposed
Arizona Corporation Commission
Demand-Side Management Policy

Policy Statement

The Arizona Corporation Commission ("Commission") recognizes that demand-side management ("DSM") can provide benefits to energy customers, utilities, and the environment. DSM shall be advanced and implemented in a cost-effective and prudent manner, while maintaining reasonable energy costs for consumers.

Applicability

This policy is applicable to all electric and natural gas utilities subject to the jurisdiction of the Commission that are classified as Class A according to A.A.C. R14-2-103(A)(3)(q), except for utilities that are electric transmission-only cooperatives. Smaller utilities may voluntarily participate either individually or in a group.

DSM Definition

DSM is the planning, implementation, and evaluation of programs to shift peak load to off-peak hours, to reduce peak demand ("kW"), and/or to reduce energy consumption ("kWh" or "therms") in a cost-effective manner. DSM may include energy efficiency, load management, and demand response.

Energy Efficiency is products, services, or practices aimed at saving energy in end-use applications generally by substituting technically more advanced (compared to what is presently used in a specific situation) equipment or practices to produce the same or an improved level of end-use service with less energy use. Examples include high-efficiency appliances; efficient lighting products and systems; high-efficiency heating, ventilating, and air conditioning ("HVAC") systems or control modifications; advanced electric motor drives; efficient building design; and efficient operation and maintenance practices.

Load Management consists of deliberate actions sponsored by a utility to reduce peak demands or improve system operating efficiency. Examples include direct control of customer demands through utility-initiated interruption or cycling, thermal storage, and education to encourage customers to shift loads.

Demand response includes all intentional modifications to electric and natural gas consumption patterns of customers affecting the timing or quantity of customer demand and usage. For the purposes of this policy, demand response programs are used to reduce customer energy usage in

response to prices, market conditions, or threats to system reliability. Demand response programs may include dynamic pricing/tariffs, price-responsive demand bidding, contractually obligated curtailment, voluntary curtailment, and direct load control/cycling.

Key Terms

Adjustment mechanism: a provision of a rate schedule, authorized in advance by the Commission, which allows for increases and decreases in rates reflecting increases and decreases in specific costs incurred by a utility.

Baseline: the level of electric and/or natural gas demand and/or consumption and associated costs that would have occurred in the absence of the DSM program.

Combined heat and power ("CHP"): distributed generation using a primary energy source to simultaneously produce electrical energy and useful process heat.

Distributed generation ("DG"): electric generation sited at a customer premises (customer side of the meter) providing electric energy to the customer load on that site.

Incremental benefits: improvements in societal welfare, including but not limited to avoided environmental impacts and the avoided fuel cost, purchased power cost, new capacity cost, transmission cost, and/or distribution cost.

Incremental costs: the additional cost of DSM programs and measures relative to baseline cost.

Market transformation: strategic efforts to induce lasting structural or behavioral changes in the market that result in increased adoption of energy-efficient technologies, services, and practices.

Net benefits: incremental benefits resulting from DSM minus the incremental costs of DSM.

Societal Test: a cost-effectiveness test of the net benefits of DSM measures and programs that starts with the Total Resource Cost Test but includes non-market benefits to society, such as reduced environmental effects of energy production and delivery, due to DSM.

Total Resource Cost Test: a cost-effectiveness test that measures the net benefits of a DSM program as a resource option, including both incremental measure and utility costs. The TRC test excludes incentives paid by utilities. The TRC test also excludes non-market benefits to society, such as reduced environmental effects of energy production and delivery.

Utility Cost Test: a cost-effectiveness test that measures the net change in a utility's revenue requirement resulting from a DSM program. The test compares the reduction in marginal energy and demand costs with utility program costs, incentive payments, and increased supply costs for a period in which load is increased. This test does not include any net costs incurred by participants.

Goals and Objectives

Policy Objectives

1. Achieve cost-effective energy savings and peak demand reductions.

2. Advance market transformation to achieve cost-effective DSM benefits through approaches that achieve sustainable savings and reduce the need for future market interventions.

3. Ensure a level of program funding adequate to achieve the DSM targets.

4. Implement DSM programs that provide an opportunity for all utility customer segments to participate.

5. Allocate a portion of DSM resources to the low-income customer segment.

DSM Goals

The Commission shall establish DSM goals for all applicable utilities that consider and are consistent with the characteristics of each specific utility's service territory and the approach to DSM in that service territory. Examples of DSM goals may include percentage reductions in load growth; benefits in dollars; net benefit goals; savings in kW, kWh, therms, gallons, or BTUs; savings as a percent of total resources to meet load; expenditures on DSM as a percent of retail revenue; or amount of spending on DSM programs.

Program Goals

Program goals shall be established by the Commission for DSM benefits, energy savings, and/or peak demand reductions for utilities subject to the DSM policy.

Goals for peak demand reductions in kW or therms may be met in part with demand response programs that are designed to reduce load during peak usage hours.

Portfolio Plans

Utilities shall submit to the Commission a DSM portfolio plan within six months of the adoption of this DSM policy through the rulemaking process (i.e., six months after the rules are adopted). The portfolio plan shall include:

1. An overall DSM portfolio goal;
2. Descriptions of DSM programs to be undertaken in compliance with the Commission's DSM policy;
3. Estimated levels of energy and capacity savings, utility costs, societal benefits and costs, and other benefits (quantified where reasonably possible) of the planned programs;

4. Marketing and delivery plans, including an implementation schedule;
5. Measurement and evaluation plans; and
6. A description of the administration of the programs.

Utilities shall file subsequent DSM portfolio plans biennially with the Commission for approval. Specific program plans can be filed for approval at any time. If programs are filed for approval contemporaneously with the DSM portfolio plan, the items of information listed in the *Commission Review and Approval of DSM Programs* section set forth below must be included in the filing.

Existing Commission-approved plans and programs will continue in effect until the Commission takes action on a new plan.

Staff may develop standard tables, outlines, and guidelines for the plans.

Commission Review and Approval of DSM Programs

Prior to implementing a new DSM program, utilities must obtain Commission approval. Utilities shall file a copy of the program proposal with Docket Control and notify interested parties of the filing. Interested parties have 20 calendar days to file written comments about the proposed program.

Each program proposal shall include the following items:

1. Description of the program;
2. Objectives and rationale for the program;
3. Market segment at which the program is aimed;
4. Estimated level of program participation;
5. Estimate of baseline;
6. Estimated societal benefits and savings from the program;
7. Estimated societal costs of the programs;
8. Marketing and delivery strategy;
9. Utility costs and budget;
10. Implementation schedule;
11. Monitoring and evaluation plan; and
12. Proposed performance incentives.

Staff shall recommend approval of a DSM program if it is consistent with the Commission's DSM policy. Staff may request modifications of proposed or on-going programs to ensure consistency with the Commission's DSM policy. However, the Commission shall allow utilities adequate time to notify customers of program modifications.

Parity and Equity

Each utility shall develop and propose DSM programs for residential, non-residential, and low income customers so that all customer segments have the opportunity to benefit from DSM.

DSM funds collected from residential and non-residential customer segments shall be allocated proportionately to those customer groups to the extent reasonable.

DSM funds collected from ratepayers of a given utility shall be allocated to DSM programs for customers in that utility's service territory to the extent reasonable.

The utility costs of DSM programs for low-income customers shall be borne by all customer classes.

All customers shall pay to support DSM through a non-bypassable mechanism.

Self-direction[5] may be reviewed by the Commission in utility rate cases or other forums.

Portfolio and Program Reporting Requirements

Utilities shall report annually to the Commission on the progress of their DSM portfolios including each pre-approved DSM program. Annual reports shall be due on March 1 of each year. At a minimum, the reports shall include:

1. Predetermined overall DSM portfolio goals;
2. A description of the progress towards meeting the portfolio goals;
3. A list of the programs included in the DSM portfolio organized by customer segment;
4. Findings from any research projects;
5. Information on each program including:
   a. A brief description of each program;
   b. Predetermined program goals, objectives, and savings targets;
   c. The level of customer participation for each program;
   d. Costs incurred during the reporting period disaggregated by type of cost, such as administrative costs, rebates, and monitoring costs;
   e. A description and results of evaluation and monitoring activities;
   f. Savings in kW, kWh, therms, gallons, and BTUs;
   g. Benefits and net benefits in dollars;
   h. Program-specific performance incentive calculations;
   i. Problems encountered and proposed solutions;
   j. Proposed program modifications; and
   k. Proposed program terminations.

[5] Self-direction is an option made available to qualifying customers of sufficient size, in which the amount of money paid by each qualifying customer toward a DSM adjustor is tracked for an individual customer and is made available for use by the customer for DSM investments upon application by the customer.

Utilities shall file quarterly status reports that shall consist of a tabular summary of expenditures compared to the budget. Quarterly reports shall be due 45 days after the end of a calendar quarter.

All reports shall be available to the public and filed in Docket Control. These reporting requirements shall supercede other DSM reporting requirements as determined by the Commission for each Utility.

Staff may develop standard tables, outlines, and guidelines for reports.

Cost Recovery

Utilities shall recover their net incremental costs to plan, design, implement, and evaluate DSM programs. In order to qualify for cost recovery, each program must be:

1. Approved prior to implementation;
2. Implemented in accordance with the approved program plan; and
3. Monitored and evaluated for cost-effectiveness.

Utilities shall monitor and evaluate DSM programs to reliably ensure that they are cost-effective. Utilities shall propose modification or termination of programs that are failing to meet expected results.

To effectively implement programs, cost recovery shall be concurrent (on an annual basis) with DSM spending.

DSM funds may be used for market studies, consortium membership, labor costs for portfolio development, and other items for which the costs are difficult to allocate to individual DSM programs.

To the extent goods and services used for DSM have value for other utility functions, programs, or services, funding shall be divided and allocated proportionately.

Utilities shall allocate costs in accordance with Generally Accepted Accounting Principles.

Performance Incentives and Lost Revenue

Performance incentives for achieving or exceeding Commission-designated goals may be appropriate as determined by the Commission.

The Commission shall determine whether a utility may be allowed to recover lost net revenue.

Funding Mechanisms

Funding shall be provided either through base rates, a surcharge mechanism, and/or an adjustment mechanism. Until such funding can be established for a utility in a rate case, the utility may request that the Commission grant the authority to establish a deferral account.

Applications Eligible for Funding

DSM programs promoting energy efficiency, demand response, load management, or combined heat and power on the customer side of the meter that reduce peak demand or conserve energy may be approved by the Commission.

DSM funds may be used for research and development such as applied technology assessment.

CHP projects may be eligible for funding if they include heat or energy recovery which is used to displace space heating, water heating, or other loads.

Non-CHP Distributed Generation (DG) may be used by customers as a means to help them participate in a demand response program.

Cost Effectiveness

The incremental benefits to society of the overall DSM portfolio shall exceed the incremental costs to society of the overall DSM portfolio. The incremental benefits to society of the individual DSM programs shall exceed the incremental costs to society of the individual DSM programs.

Cost-effectiveness shall be determined by the Societal Test. Costs to society equal the total incremental costs of the DSM program (including incremental utility costs and incremental customer/vendor costs). The benefits to society include avoided environmental impacts and the avoided fuel cost, purchased power cost, new capacity cost, transmission cost, and distribution cost.

Other economic factors such as the costs and benefits associated with reliability may be included in the analysis. Electric utilities may consider savings of natural gas; natural gas utilities may consider savings of electricity. The analysis shall reflect the expected life of the savings resulting from DSM measures. Uncertainty about future streams of costs or benefits should be reflected in cost/benefit or other analyses where practicable and appropriate. In addition to the cost-effectiveness test, a utility or program administrator should consider the impact on rates, economic development, customer costs, and other economic impacts.

Environmental costs or the value of environmental improvements shall be quantified when possible, reasonable, and cost-efficient. At a minimum, utilities shall make a good faith effort to quantify water consumption savings and air emission reductions until such time that an

environmental externalities quantification procedure is adopted by the Commission. Upon adoption of a policy, utilities shall implement the policy adopted by the Commission. Other environmental impacts may be considered qualitatively.

The standard cost effectiveness analysis may not be appropriate for certain types of DSM programs.

1. Market Transformation Programs: Cost effectiveness shall be measured by the success of a program in achieving results, such as market effects compared to its costs.

2. Educational Programs: Utilities shall attempt to estimate the energy and peak demand savings that result from educational efforts that raise awareness about energy use and opportunities for saving energy.

3. R&D and Pilot Programs: Individual research and development and pilot programs do not have to demonstrate cost-effectiveness.

4. Low Income Programs: Measures included in low-income programs shall be generally cost-effective.

The following table illustrates the differences between the various cost-effectiveness tests.

Comparison of Cost-Effectiveness Tests

	Participant Test	Utility Cost Test	Total Resource Cost Test	Societal Test
Benefits	• incentives received • bill reductions	• avoided utility costs	• avoided utility costs	• avoided utility costs • avoided environmental impacts
Costs	• bill increases • incremental participant costs	• incremental utility costs, including incentives paid by utility	• incremental utility costs, excluding incentives paid by utility • incremental participant costs	• incremental utility costs, excluding incentives paid by utility • incremental participant costs

Baseline Estimation

The baseline for determining the incremental costs and benefits of a DSM program shall be a reasonable estimate of the level of electric and/or natural gas demand and/or consumption and associated costs that would have occurred in the absence of the DSM program.

For demand response programs, customer load profile information may be used to verify baseline consumption patterns and the peak demand savings resulting from demand response actions.

Fuel Neutrality

Ratepayer-funded DSM shall be developed and implemented in a fuel-neutral manner. For those installations/applications that have multiple fuel choices, the baseline used in the cost effectiveness analysis shall utilize the same fuel source as the installation/application.

Electric utility program funds shall be used for electric measures. Natural gas utility program funds shall be used for natural gas measures. However, either natural gas utilities or electric utilities may fund thermal envelope improvements.

Monitoring, Evaluation, and Research

Utilities shall monitor and evaluate all DSM programs to reliably ensure that they are cost-effective. Monitoring and evaluation should:

1. Determine participation rates, energy savings, and demand reductions;
2. Assess the utility's program implementation process;
3. Provide information on whether to continue, modify, or terminate a program; and
4. Determine the persistence and reliability of DSM.

Evaluation and research may also be conducted for program planning, product development, and program improvement. Evaluation and research includes market studies, market research, and other technical research for planning purposes.

Program Administration and Implementation

Utilities may use energy service companies and/or other external resources to implement DSM programs.

The Commission may establish independent program administrators who would be subject to the relevant requirements of this policy.

Leveraging and Cooperation

Utilities shall make reasonable use of cost sharing, leveraging, or other opportunities available from customers, vendors, manufacturers, government agencies, other utilities, and others that increase the effectiveness of the DSM program and/or lower its costs.

Workshops to discuss DSM activities may be held periodically to provide interested parties the opportunity for input.

Other Approaches to DSM

In general, the Commission supports other approaches to DSM, including building codes, appliance efficiency standards, shared savings legislation, and actions in other forums that would complement the DSM policy herein.