

APS
Demand Side Management
Program Portfolio Plan
2005-2007

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I. Introduction

On April 7, 2005, the Arizona Corporation Commission (“ACC”) approved the Arizona Public Service Company (“APS” or “Company”) rate settlement agreement in Decision No. 67744. As part of the settlement, APS is committed to significantly increase Demand Side Management (“DSM”) program activity and spend an average of \$16 million annually from 2005-2007 on approved DSM programs.

Decision No. 67744 further directs that APS will, with input and assistance from the DSM collaborative working group, submit a final plan for Commission approval that outlines proposed DSM programs that the Company intends to implement. This proposed DSM Program Portfolio Plan (“Portfolio Plan”) provides an overview of DSM programs that APS proposes to implement to meet the requirements of the settlement agreement while providing savings and net benefits for APS customers.

As part of its Decision No. 67744, the ACC required APS to implement and maintain a collaborative DSM working group to solicit and facilitate stakeholder input, advise APS on program implementation, develop future DSM programs, and review DSM program performance. The Portfolio Plan was developed in conjunction with this collaborative group of DSM experts and stakeholder representatives, including members of ACC staff, the Residential Utility Consumer’s Office (“RUCO”), the Southwest Energy Efficiency Project (“SWEEP”), Western Resource Advocates (“WRA”), the Department of Commerce Energy Office (“the Energy Office”), Arizonans for Electric Choice and Competition (“AECC”) and others. APS also sought public input; the Company held public meetings during the planning process to solicit public input and comment on the proposed plan.

II. DSM Portfolio Performance: Costs, Savings and Net Benefits

APS proposes to implement a portfolio of energy-efficiency DSM programs “that reduce the use of electricity by means of energy-efficiency products, services or practices” (Decision No. 67744, Attachment A, paragraph 40). Demand response may be considered for future DSM programs.

The proposed programs are designed to influence energy decisions by residential and non-residential customers and other market players through a combination of rebates and incentives, technical assistance and training, and consumer education.

The proposed DSM program portfolio is expected to produce long-term energy consumption and demand savings. The following table summarizes the expected energy and demand savings and total program net benefits as a result of program activities from 2005-2007.

Exhibit 1
DSM Portfolio Estimated Performance 2005-2007

Program Budget 2005-2007	Lifetime MWh Savings*	Peak Demand Savings (MW)	Total Net Benefits*
\$48 Million	3,435,000	51.7	\$68 Million

*Refers to savings and total net benefits over the expected lifetime of all program measures. Total Net Benefits are equal to Total Societal Benefits minus Total Societal Costs. Total Societal Costs include all program costs including the cost of Measurement, Evaluation & Research and the Performance Incentives.

The total societal cost per lifetime kWh estimated to be saved is approximately \$0.018. **In summary, for every one dollar invested in DSM within the APS territory, society will realize \$2.08 of total benefits.**

III. Description of Programs to be Undertaken

The program portfolio includes a balanced mix of programs to address a diversity of APS customer segments so that all customer classes and segments have an opportunity to benefit from at least one DSM program. Market opportunities include: residential existing homes, residential new construction, consumer products (appliances and lighting), non-residential existing buildings, non-residential new construction and renovation, and small business. In addition, the portfolio provides special programming and funding to help schools, Native Americans, and low-income residential customers save on energy costs.

The portfolio is consistent with the preliminary list of programs and strategies that was included in the Preliminary Energy-Efficiency DSM Plan (Decision No. 67744 Attachment A, Appendix B). Exhibit 2 on pages 10 and 11 shows the list of programs from Appendix B and makes a comparison to the APS proposed final Portfolio Plan, including a description of minor modifications that were made during the program development process in conjunction with the DSM collaborative group.

This section includes a brief description of each proposed DSM program. Detailed program descriptions are provided in the Attachments including information about program concepts, target markets, baseline conditions, customer eligibility, program rationales, program objectives, products and services provided, delivery strategy and administration, marketing and communications, implementation schedules, monitoring and evaluation plans, program costs, estimated energy savings, and program cost effectiveness. The DSM programs include:

Residential	Non-Residential
Consumer Products	Schools
Existing Home HVAC	Small Business
New Construction	Large Existing
Low Income	Large New Construction
	Building Operator Training
	Energy Information Services

Residential Programs

Residential New Construction

This proposed program promotes high-efficiency construction practices for new homes. It is an expansion and modification of the current APS Performance Built Homes program that has been in place since 2000. The program will promote homes that meet or exceed Environmental Protection Agency/Department of Energy ("EPA/DOE") Energy Star Home® performance requirements (the program will be based on the more stringent 2006 Energy Star® standard). To encourage participation, the program offers incentives for builders who meet program standards. The program also offers training and technical assistance for builders and subcontractors as well as education for realtors and potential homebuyers about the benefits and features of energy efficient homes. For a detailed program description, see Attachment 1.

Residential Existing Homes Air Conditioning Efficiency

This proposed program promotes a whole-system approach to improving the performance of residential heating and air-conditioning systems including high efficiency equipment, quality installation, and repair and maintenance by qualified technicians. The program includes incentives for high-efficiency EPA/DOE Energy Star® approved air conditioning equipment, quality installations, and system performance testing with energy-efficiency upgrades. This program will build on the current APS Qualified Contractor program (that has been in place since 1998), which provides referrals to contractors who meet rigorous program training requirements. The program will also support training courses for heating, ventilating and air conditioning ("HVAC") contractor technicians and provide consumer education on the benefits of high efficiency heating and air conditioning systems. For a detailed program description, see Attachment 2.

Residential Consumer Products

This proposed program promotes high-efficiency EPA/DOE Energy Star® approved lighting and appliances (clothes washers, refrigerators, freezers, and dishwashers). The program will solicit discount pricing from Compact Fluorescent Lamps ("CFL") manufacturers and retailers (up-stream buy-down) and distribution of CFL's through local retailers. Customers will be referred to participating retailers to purchase qualifying products. Discount pricing will be passed on to consumers through a negotiated agreement with lighting manufacturers and retailers. The program provides sales training for participating retailers and consumer education, including in-store point-of-sale displays. This program was filed with the ACC for approval on June 10, 2005, Docket No. E-01345A-05-0429. For a detailed program description, see Attachment 3.

Residential “Energy Wise” Low Income Weatherization

This proposed program is an expansion and modification of the current program which has been in place since 1996. The program provides qualifying low income residential customers with free measures to improve the energy-efficiency of their homes. The program includes funding for some energy related emergency repair and replacement and health/safety measures. The program also provides bill assistance to help pay electric bills for customers in crisis situations. Native American customers living on tribal lands have a specific budget for their weatherization and bill assistance needs. This program modification was filed with the ACC for approval on June 6, 2005, Docket No. E-01345A-05-0414. For a detailed program description, see Attachment 4.

Non-Residential Programs

Schools

This proposed program is designed to provide assistance in reducing the energy used in public school buildings, including charter schools. The program includes financial incentives that will be paid to help schools afford the cost of energy-efficiency upgrades. This program budget is reserved exclusively for school use. If schools fully subscribe this program budget, they can participate in other non-residential programs. All cost-effective energy-efficiency projects for schools will be considered with an initial emphasis on upgrading lighting plus providing design assistance, building operator training, and energy education. Lighting consumes 30% of the electricity used by schools. Installing energy efficient lights can reduce lighting costs by up to 30%, resulting in a reduction of up to 9% in the overall school electric bill when all lights are upgraded. For a detailed program description, see Attachment 5.

Non-Residential Existing Facilities

This proposed program provides prescriptive incentives to owners and operators of large non-residential facilities for energy-efficiency improvements in lighting, HVAC, motors, and refrigeration measures. The program will provide custom incentives for implementation of energy-efficiency measures not covered by the prescriptive list. In addition, the program will subsidize the cost of retro-commissioning projects to systematically optimize the operation of existing buildings. The program also provides training and technical assistance for commercial contractors and education for facility owners and operators. For a detailed program description, see Attachment 6.

Non-Residential New Construction and Major Renovation

This proposed program includes three components: design assistance, custom efficiency, and prescriptive measures. Design assistance involves efforts to integrate energy-efficiency into a customer’s design process to influence equipment/systems selection and specification as early in the design process as possible. Custom efficiency provides the opportunity to implement energy-efficiency measures not covered by prescriptive incentives for large non-residential customers and provides for feasibility studies to assess

the savings from complex applications. A list of prescriptive measures and incentives is provided for energy-efficiency improvements in lighting, HVAC, motor upgrades, and refrigeration measures. For a detailed program description, see Attachment 7.

Small Non-Residential

This proposed program provides prescriptive incentives to small non-residential customers for energy-efficiency improvements in lighting, HVAC, motors, and refrigeration applications through a simple and straightforward mechanism for program participation. The program also includes training for contractors and promotion of commercial qualified contractors. The program supports “one-source” energy audits and the installation of energy-efficiency equipment to make the process simple for small non-residential customers. The program also provides educational materials to assist building owners and operators in making decisions to improve the energy-efficiency of their facilities. For a detailed program description, see Attachment 8.

Building Operator Training

This proposed program provides subsidized training for building operators (managers) and facility maintenance technicians on energy-efficient building operating and maintenance practices. The program is designed to help building operators and facility maintenance personnel better understand how their facilities use energy and how to better manage energy costs. Participants learn the benefits of purchasing high-efficiency equipment, as well as equipment operation and maintenance practices to improve efficiency. For a detailed program description, see Attachment 9.

Energy Information Services

This proposed program provides a web-based energy information tool, which includes real time (or near real time) feedback on customer energy consumption and load profiles. Large facility energy managers will receive tools to graphically analyze consumption trends, compare multiple facilities, benchmark their performance, and track their energy-efficiency efforts. The program supports the cost of providing the energy information service and offers the service for a small price to large non-residential customers. For a detailed program description, see Attachment 10.

IV. Budget

Consistent with Decision No. 67744 (Attachment A, paragraph 40), APS is obligated to spend \$48 million dollars on energy-efficiency DSM programs from 2005-2007. The proposed division of funds between residential and non-residential customers is commensurate with the relative contribution to the DSM funds from these customer classes and is also consistent with the preliminary list of programs and funding allocation shown in the "Preliminary Energy-Efficiency DSM Plan" (Decision No. 67744 Attachment A, Appendix B). Exhibit 2 on pages 10 and 11 shows the list of programs from the Preliminary Energy Efficiency DSM Plan and makes a comparison to the APS Portfolio Plan, including a description of minor modifications that were made during the program development process in conjunction with the DSM collaborative group.

The proposed budget maximizes the amount of program funds that go directly to customers through rebates and incentives, training and technical assistance, and consumer education. This plan also takes into account the realities of DSM program start-up costs and funds needed to adequately plan, develop and deliver and evaluate quality programs. It typically takes two years or more to ramp up programs and achieve significant customer participation levels and program savings. This Portfolio Plan recognizes program ramp-up costs over the 2005-2007 program planning period. Incentive levels and other program elements will be reviewed and modified as needed during the first year from the approval date of this program, and periodically thereafter. Such modifications will be reported in the mid-year and year-end reports submitted to Staff.

Exhibit 2
Comparison of Portfolio Plan Budget
To the Preliminary Energy-Efficiency DSM Plan

Preliminary Energy-Efficiency DSM Plan ¹		Proposed Portfolio Plan Budget		Variance Description
Programs Organized by Market or Customer Segment	Annual Budget (millions)	Proposed Average Annual Budget	Programs Organized by Market /Cust. Segment	
C&I New Construction	\$2,700,000	\$2,453,358	Large Non-Residential New Construction	The Non-Residential new construction budget was reduced to partially fund Schools, Building Operator Training and Energy Information Services in the Non-Residential existing facilities budget.
C&I Retrofit of Existing Facilities	\$2,500,000	\$560,000	Schools	The Settlement did not have a budget specifically for schools. This budget is funded from each of the three main Non-Residential budgets.
		\$2,253,358	Large Non-Residential Existing	The "Non-Residential Retrofit of Existing Facilities" budget is redistributed within the same budget category to partially fund Schools, Building Operator Training and Energy Information Services.
		\$80,000	Building Operator Training	The Settlement did not have a budget specifically for building operator training. This budget is funded from each of the three main Non-Residential budgets.
		\$100,000	Energy Information Services	The Settlement did not have a budget specifically for Energy Information Services. This budget is funded from the Large New Construction and Large Existing Programs.
		\$2,993,358	Total Non-Residential Existing	This is the sum of the C&I Retrofit of Existing Facilities. The total budget is increased to fund Schools, Building Operator Training and Energy Information Services.

¹ Appendix B to the APS Settlement Agreement, included in Decision 67744.

Small Business	\$1,700,000	\$1,453,284	Small Non-Residential Program	The small business budget was reduced to partially fund the Schools and Building Operator Training programs.
C&I Subtotal	\$6,900,000	\$6,900,000		

Comparison of Portfolio Plan Budget to Preliminary Energy-Efficiency DSM Plan Exhibit 2 Continued

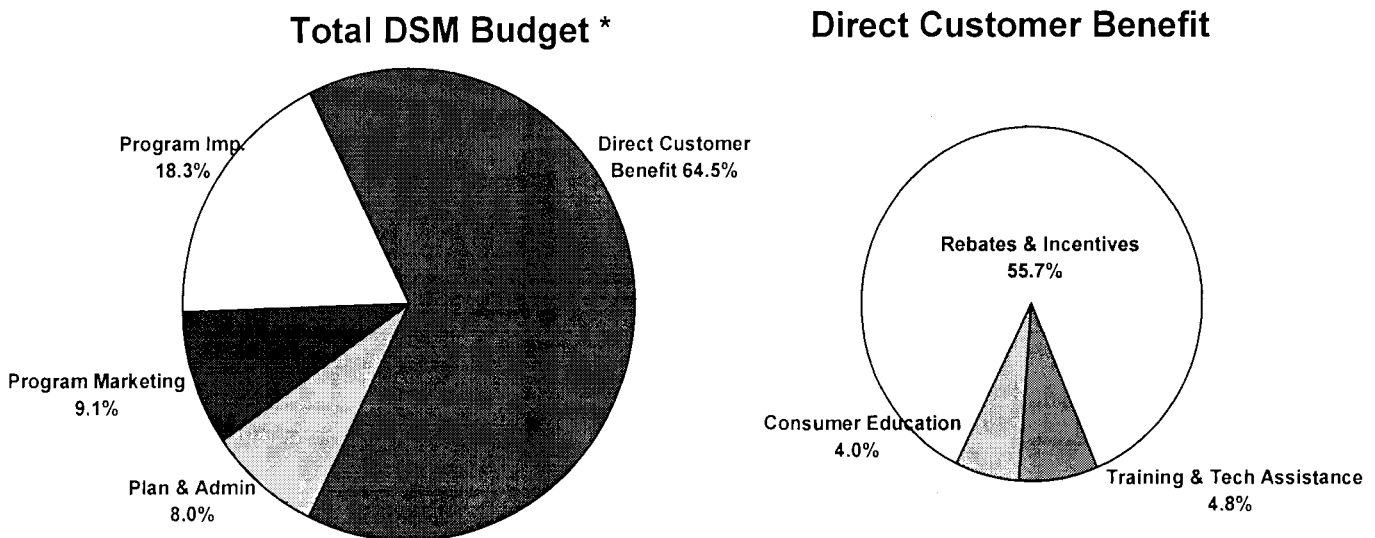
Preliminary Energy-Efficiency DSM Plan		Portfolio Plan Budget		Variance Description
Programs Organized by Market or Customer Segment	Annual Budget (millions)	Proposed Average Annual Budget	Programs Organized by Market or Customer Segment	
Residential New Construction	\$2,400,000	\$2,063,088	Residential New Construction	This budget was reduced commensurate with increased funding provided to the Consumer Products and Residential Low Income programs.
Residential Existing Homes and HVAC	\$1,400,000	\$1,195,245	Residential Existing Home HVAC	This budget was reduced commensurate with increased funding provided to the Consumer Products and Residential Low Income programs.
Residential Consumer Products	\$1,400,000	\$1,841,667	Residential Consumer Products	As a result of discussions with the DSM collaborative group, funding was increased for the Consumer Products program. This program has significant energy savings potential, is highly cost effective, and is available to virtually every residential customer.
Residential Low Income	\$1,000,000	\$1,100,000	Residential Low Income	\$100,000 has been added to the budget to serve the Native Americans.
Residential Subtotal	\$6,200,000	\$6,200,000		
Residential and C&I Programs Subtotal	\$13,100,000	\$13,100,000		
Measurement, Evaluation and Research ²	\$1,300,000	\$1,300,000	Measurement, Evaluation and Research	NA
Performance Incentive	\$1,600,000	\$1,600,000	Performance Incentive	NA
Total	\$16,000,000	\$16,000,000		

² Inclusive of pre-approval expenditures of up to \$500,000 for the baseline market assessment approved in Decision No. 67816.

Exhibit 3 (below) provides a pie chart that depicts the percentage of DSM Energy Efficiency funds that will go directly to customers and the overall portfolio budget allocation for all program costs. It does not include Measurement, Evaluation & Research, or Performance Evaluation.

A total of 64.5% of the program costs benefit customers directly in the form of incentives, training or education. Other costs such as program implementation and marketing expenses are necessary to deliver programs to customers.

Exhibit 3 2005-2007 DSM Program Budget



Definitions

Rebates & Incentives - Includes dollars that go toward customer rebates and incentives, installation of low income weatherization, and low income bill assistance.

Training & Technical Assistance - Includes all dollars that are used for energy-efficiency training and technical assistance.

Consumer Education - Includes dollars that are used to support general consumer education about energy-efficient improvements.

Program Implementation - Program delivery costs associated with implementing the program -- includes implementation contractor labor and overhead costs as well as other direct program delivery costs.

Program Marketing - Includes all expenses related to marketing the program and increasing DSM consumer awareness (direct program marketing costs as opposed to general consumer education).

Planning and Administration - APS costs to plan, develop and administer programs - includes management of program budgets, oversight of the RFP process and implementation contractor, program development, program coordination and general overhead expenses.

* Excludes Measurement, Evaluation, and Research

Exhibit 4 below shows a summary roll-up of the anticipated cumulative spending for each program from 2005-2007. Exhibits 5, 6 and 7 (pages 14 – 16) display the estimated budget allocation between the years 2005, 2006, 2007 respectively for each proposed energy-efficiency program. These budgets represent the most accurate estimate of future spending; however, to the extent that certain programs achieve greater success and market penetration than others, it is important to be able to adjust budgets accordingly within the class to maximize the effectiveness of the overall portfolio.

Exhibit 4 2005-2007 DSM Portfolio Estimated Budget

Program	Rebates & Incentives	Training & Technical Assistance	Consumer Education	Program Implement	Program Marketing	Planning & Admin	Program Total Cost
Residential							
Consumer Products	3,300,000	240,000	300,000	795,000	570,000	320,000	5,525,000
Res Existing Home HVAC	1,620,000	293,000	540,000	518,498	394,238	220,000	3,585,736
Res New Construction	3,400,000	306,000	300,000	997,000	873,750	312,513	6,189,263
Low Income	2,865,000	30,000	15,000	150,000	15,000	225,000	3,300,000
Totals for Residential	\$11,185,000	\$869,000	\$1,155,000	\$2,460,498	\$1,852,988	\$1,077,513	\$18,599,999
Non-Residential							
Schools	1,113,000	183,000	25,000	125,000	25,000	209,000	1,680,000
Small Business	2,207,175	152,596	87,196	1,079,972	396,928	435,984	4,359,851
Lrg Non-Res Existing	3,422,287	236,603	135,203	1,674,527	615,448	676,007	6,760,075
Lrg Non-Res New Const	3,726,037	257,603	147,202	1,823,152	670,074	736,007	7,360,075
Bldg Operator Training	0	192,000	6,000	21,000	9,000	12,000	240,000
Energy Information Srvc	240,000	10,500	6,000	24,000	7,500	12,000	300,000
Totals for Non-Residential	\$10,708,499	\$1,032,302	\$406,601	\$4,747,651	\$1,723,950	\$2,080,998	\$ 20,700,001
Segment Totals	\$21,893,499	\$1,901,302	\$1,561,601	\$7,208,149	\$3,576,938	\$3,158,511	\$ 39,300,000
% of Cost By Category	55.7%	4.8%	4.0%	18.3%	9.1%	8.0%	

Annual Portfolio Budgets	
2005	\$13,000,000
2006	\$16,000,000
2007	\$19,000,000

Program Costs	\$39,300,000
Measurement, Evaluation & Research	\$3,900,000
Performance Incentive	\$4,800,000
TOTAL	\$48,000,000

Exhibit 5 2005 DSM Portfolio Estimated Budget

Program	Rebates & Incentives	Training & Technical Assistance	Consumer Education	Program Implement	Program Marketing	Planning & Admin	Program Total Cost
Residential							
Consumer Products	1,100,000	80,000	110,000	280,000	200,000	130,000	1,900,000
Res Existing Home HVAC	400,000	53,000	120,000	135,000	100,000	60,000	868,000
Res New Construction	600,000	65,000	60,000	202,000	183,750	62,000	1,172,750
Low Income	955,000	10,000	5,000	50,000	5,000	75,000	1,100,000
Totals for Residential	\$3,055,000	\$208,000	\$295,000	\$667,000	\$488,750	\$327,000	\$5,040,750
Non-Residential							
Schools	331,000	50,000	7,000	13,000	7,000	47,000	455,000
Small Business	531,357	41,328	23,615	354,238	112,175	118,079	1,180,792
Lrg Non-Res Existing	823,884	64,080	36,618	549,256	173,931	183,085	1,830,854
Lrg Non-Res New Const	897,009	69,767	39,868	598,006	189,369	199,335	1,993,354
Bldg Operator Training	0	52,000	1,625	5,688	2,437	3,250	65,000
Energy Information Srvc	65,000	2,844	1,625	6,500	2,031	3,250	81,250
Totals for Non-Residential	\$2,648,250	\$280,019	\$110,351	\$1,526,688	\$486,943	\$553,999	\$5,606,250
Segment Totals	\$5,703,250	\$488,019	\$405,351	\$2,193,688	\$975,693	\$880,999	\$10,647,000
% of Cost By Category	53.6%	4.6%	3.8%	20.6%	9.2	8.3%	

Program Costs	\$10,647,000
Measurement, Evaluation & Research	\$1,053,000
Performance Incentive	\$1,300,000
TOTAL	\$13,000,000

Exhibit 6

2006 DSM Portfolio Estimated Budget

Program	Rebates & Incentives	Training & Technical Assistance	Consumer Education	Program Implement	Program Marketing	Planning & Admin	Program Total Cost
Residential							
Consumer Products	1,100,000	85,000	100,000	250,000	190,000	100,000	1,825,000
Res Existing Home HVAC	520,000	85,000	170,000	158,498	140,000	65,000	1,138,498
Res New Construction	1,100,000	121,000	120,000	365,000	320,000	110,500	2,136,500
Low Income	955,000	10,000	5,000	50,000	5,000	75,000	1,100,000
Total for Residential	\$3,675,000	\$301,000	\$395,000	\$823,498	\$655,000	\$350,500	\$6,199,998
Non-Residential							
Schools	346,000	61,000	8,000	56,000	8,000	81,000	560,000
Small Business	726,642	50,865	29,066	363,321	138,062	145,328	1,453,284
Lrg Non-Res Existing	1,126,679	78,868	45,067	563,340	214,069	225,336	2,253,359
Lrg Non-Res New Const	1,226,679	85,868	49,067	613,340	233,069	245,336	2,453,359
Bldg Operator Training	0	64,000	2,000	7,000	3,000	4,000	80,000
Energy Information Srvc	80,000	3,500	2,000	8,000	2,500	4,000	100,000
Total for Non-Residential	\$3,506,000	\$344,101	\$135,200	\$1,611,001	\$598,700	\$705,000	\$6,900,002
Segment Totals	\$7,181,000	\$645,101	\$530,200	\$2,434,499	\$1,253,700	\$1,055,500	\$13,100,000
% of Cost By Category	54.8%	4.9%	4.0%	18.6%	9.6%	8.1%	

Program Costs	\$13,100,000
Measurement, Evaluation & Research	\$1,300,000
Performance Incentive	\$1,600,000
TOTAL	\$16,000,000

Exhibit 7

2007 DSM Portfolio Estimated Budget

Program	Rebates & Incentives	Training & Technical Assistance	Consumer Education	Program Implement	Program Marketing	Planning & Admin	Program Total Cost
Residential							
Consumer Products	1,100,000	75,000	90,000	265,000	180,000	90,000	1,800,000
Res Existing Home HVAC	700,000	155,000	250,000	225,000	154,238	95,000	1,579,238
Res New Construction	1,700,000	120,000	120,000	430,000	370,000	140,013	2,880,013
Low Income	955,000	10,000	5,000	50,000	5,000	75,000	1,100,000
Total for Residential	\$4,455,000	\$360,000	\$465,000	\$970,000	\$709,238	\$400,013	\$7,359,251
Non-Residential							
Schools	436,000	72,000	10,000	56,000	10,000	81,000	665,000
Small Business	949,176	60,403	34,515	362,413	146,691	172,577	1,725,775
Lrg Non-Res Existing	1,471,724	93,655	53,518	561,931	227,448	267,586	2,675,862
Lrg Non-Res New Const	1,602,349	101,968	58,267	611,806	247,636	291,336	2,913,362
Bldg Operator Training	0	76,000	2,375	8,312	3,563	4,750	95,000
Energy Information Srvc	95,000	4,156	2,375	9,500	2,969	4,750	118,750
Total for Non-Residential	\$4,554,249	\$408,182	\$161,050	1,609,962	\$638,307	\$821,999	\$8,193,749
Segment Totals	\$9,009,249	\$768,182	\$626,050	\$2,579,962	\$1,347,545	\$1,222,012	\$15,553,000
% of Cost By Category	57.9%	4.9%	4.0%	16.6%	8.7%	7.9%	

Program Costs	\$15,553,000
Measurement, Evaluation & Research	\$1,547,000
Performance Incentive	\$1,900,000
TOTAL	\$19,000,000

V. Program Energy Savings and Benefits

The Company has projected the energy savings, costs and net benefits associated with each of the programs in the proposed DSM Portfolio. For the analysis of net program benefits, the company uses the utility system avoided cost savings (including capacity value, fuel and operations/maintenance savings, and transmission and distribution savings) that will result from the expected lifetime energy savings and peak demand reductions generated by each DSM program in the proposed Portfolio for measures implemented from 2005-2007.

Exhibit 8 on page 18 provides a table that details the expected lifetime energy savings and peak demand savings from each proposed DSM program and a summary of the net benefits generated. The lifetime energy savings are the estimated savings that will result over the expected lifetime of all program measures. The net societal benefits are the total societal benefits less the total societal costs:

	Total Societal Benefits	\$131 Million
Less	<u>Total Societal Costs</u>	<u>\$ 63 Million</u>
	Net Societal Benefits	\$ 68 Million

It is anticipated that over the expected lifetime of all measures the Portfolio will produce net benefits of approximately \$68 million from measures implemented in 2005-2007 timeframe, with a total societal cost test benefit/cost ratio of 2.08 (societal benefits / societal costs = \$131 million / \$63 million).

In addition to the estimated savings and benefits shown in Exhibit 8, the Portfolio is anticipated to produce other societal benefits. Exhibit 9 on page 20 shows an estimate of the water savings (both utility system water savings and direct customer water savings) and air emissions reductions that are expected as a result of the energy saved by program measures. Significant additional benefits which are difficult to quantify at this point include the benefits of higher consumer awareness about energy-efficiency which are hoped to create permanent market transformation effects by influencing future energy-efficiency purchasing decisions and energy use habits. The program also produces other societal benefits including support for low-income households including tribal households.

See the program descriptions in the Attachments for more information about the estimated savings and net benefits from each proposed DSM program.

Exhibit 8 DSM Electric Savings Estimated Benefits 2005 – 2007 Programs

	Capacity Savings MW	Lifetime* MWh Savings	Program Budget	Societal Benefits	Societal Costs	Net Benefits
Residential						
Consumer Products	13.7	499,000	\$5,525,000	\$23,120,000	\$8,980,000	\$14,140,000
Existing Home HVAC	3.2	133,000	\$3,585,000	\$7,960,000	\$5,820,000	\$2,140,000
New Construction	9.1	432,000	\$6,190,000	\$22,200,000	\$7,890,000	\$14,310,000
Low Income	0.5	51,000	\$3,300,000	\$1,810,000	\$2,510,000	\$ (700,000)
Totals for Residential	26.5	1,115,000	\$ 18,600,000	\$55,090,000	\$25,200,000	\$29,890,000
Non-Residential						
Existing Facilities Large	8.4	768,000	\$6,760,000	\$24,400,000	\$8,450,000	\$15,950,000
Small Non-Residential	6.3	540,000	\$4,360,000	\$15,900,000	\$5,160,000	\$10,740,000
New Construction	6.8	735,000	\$7,360,000	\$26,730,000	\$10,510,000	\$16,220,000
Building Operator Training	0.6	74,000	\$240,000	\$2,760,000	\$860,000	\$1,900,000
Energy Information System	0.3	41,000	\$300,000	\$1,510,000	\$350,000	\$1,160,000
Schools	2.8	162,000	\$1,680,000	\$4,540,000	\$3,740,000	\$800,000
Totals for Non-Residential	25.2	2,320,000	\$20,700,000	\$75,840,000	\$29,070,000	\$46,770,000
Subtotal	51.7	3,435,000	\$39,300,000	\$130,930,000	\$54,270,000	\$76,660,000
Measurement, Evaluation & Research			\$3,900,000		\$3,900,000	
Performance Incentive			\$4,800,000		\$4,800,000	
Total	51.7	3,435,000	\$48,000,000	\$130,930,000	\$62,970,000	\$67,960,000
<p><i>* Refers to savings over the expected lifetime of all program measures. All MWh values are rounded to the nearest 1,000 and monetary values are rounded to the nearest \$10,000.</i></p>						

Environmental Benefits

Exhibit 9 on page 20 shows the expected savings in water consumption and air emissions that will result from energy saved over the expected lifetime of all program measures of the proposed DSM portfolio.

Consistent with the ACC Staff’s proposed draft DSM Rule R14-2-1704, the Company has made a “good faith effort” to quantify the physical units of air emissions and water savings that occur as a result of DSM energy-efficiency.

In calculating these environmental benefits, APS believes that the most appropriate values to associate with DSM measures are those from the newest combined cycle plants. These natural gas fired plants represent APS’ last significant dispatch group and a large portion of the market for power purchased by APS. Any load reduction due to DSM measures will most likely displace generation from this type of plant.

The values proposed represent average emissions from Pinnacle West/APS’ newer combined cycle generating units. These values are meant to reasonably approximate newer combined cycle plants and the air emissions and water consumption savings that may be avoided through DSM measures. APS did not conduct a detailed study of DSM measures, power supply or regional emissions for purposes of developing these emissions values. APS’ approach is based on general experience related to power dispatch, reported emissions, the current electricity market, and energy-efficiency measures. APS believes this approach is a reasonable and cost-effective method of addressing environmental externalities associated with DSM.

The values that are used to calculate the DSM Environmental Benefits shown in Exhibit 9 on page 20 are as follows:

- SOx .0043 lbs/MWh
- NOx .172 lbs/MWh
- CO2 917 lbs/MWh
- PM10 .0237 lbs/MWh
- Water 233 gallons/MWh (utility water savings only)

For all measures that result in customer water savings, the calculation of water savings shown in Exhibit 9 includes both customer and utility water savings.

Exhibit 9 DSM Estimated Environmental Benefits 2005 - 2007 Programs

	Water** Mil Gal	SOx Lbs	NOx Lbs	CO2 Mil Lbs	PM10 Lbs
Residential					
Consumer Products *	769.3	2,146	85,854	457.7	11,830
Existing Home HVAC	31.1	574	22,958	122.4	3,163
New Construction	100.7	1,858	74,340	396.3	10,243
Low Income	11.8	217	8,687	46.3	1,197
Totals for Residential	912.9	4,795	191,839	1,022.7	26,433
Non-Residential					
Existing Facilities Large	179.7	3,161	126,432	674.1	17,421
Small Non-Residential	132.4	2,320	92,785	494.7	12,785
New Construction	179.7	3,161	126,432	674.1	17,421
Building Operator Training	17.2	317	12,677	67.6	1,747
Energy Information System	9.5	174	6,977	37.2	961
Schools	36.4	697	27,876	148.6	3,841
Totals for Non-Residential	554.9	9,830	393,179	2,096.3	54,176
Total	1,467.8	14,625	585,018	3,119.0	80,609

The environmental reductions are based on the kWh savings of all program measures over their expected lifetimes.

** High efficiency dishwashers and clothes dryers use less hot water compared to standard-efficiency models. For those homes that are dual fuel, customers will realize additional natural gas savings. The estimated total natural gas savings is 830,832 therms for 2005-2007.*

*** For all measures that result in customer water savings, this calculation includes both customer and utility water savings.*

VI. Program Marketing and Delivery

To maximize program cost effectiveness and customer acceptance, the overall concept for program delivery involves working within existing markets whenever possible to take advantage of natural opportunities to promote efficiency at the time that customers are making energy-related purchasing decisions. This involves working closely with key market players and contractors involved in new construction, renovations, and equipment replacement and repair opportunities. This Plan will also include targeted communication to encourage participation among Native Americans. This approach is key for delivering information and incentives about efficiency at the time that these decisions are being made by customers. The objective is to capitalize on these DSM opportunities, while targeting messages to help customers understand their options for improving energy-efficiency and saving energy costs.

APS proposes that programs be implemented using a mix of both in-house and outsourced resources. This enables the Company to take advantage of outsourced experts who have implemented similar programs in other areas, while also using in-house resources where appropriate to integrate the DSM programs into a wide range of customer communications and outreach efforts. For all programs, APS will retain responsibility for program administration and reporting activities. APS intends to issue Requests for Proposal (“RFPs”) to qualified firms for all significant activities that will be outsourced.

Exhibit 10 on page 22 provides a timeline that shows key dates and program implementation activities. For a detailed description of the proposed implementation schedule and plans for in-house versus outsourced implementation models for each individual program, see the program descriptions included in the Attachments.

Exhibit 10 TASK TIMELINE (4th Qtr. 2004 – 4th Qtr. 2007)

Tasks	2004	2005				2006				2007			
	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4
Informal Meetings with Pre-Collaborative Group	■	■											
Public Input Meetings			■										
Settlement of Rate Case			■										
Program Planning & Development with Collaborative			■										
Submitted Low Income & Weatherization Program			■										
Submitted Consumer Products Program			■										
Submit Portfolio Plan - All Programs Plans			■										
Contractor RFP Process			■	■									
ACC Review & Approval			■	■									
Program Marketing & Communication Planning			■	■									
Mid-Year Reports			■	■				■				■	
Consumer Products Kick-Off*			■	■									
Self-Direction Study			■	■	■								
Review & Select IC Contractor*			■	■	■								
Baseline Study Results			■	■	■								
Upcoming Year Planning Including Review of Incentive Levels			■	■	■				■			■	
Program Kick-Off*			■	■	■	■				■			
Program Implementation*			■	■	■	■	■	■	■	■	■	■	■
Year-End Report			■	■	■	■				■			
Program Process Evaluation Including Contractor Review / Assessment*			■	■	■	■	■						
Submit Updated Portfolio Plan (Biennial Submittal)			■	■	■	■						■	
Program Impact Evaluation			■	■	■	■							■

*These tasks will be completed after ACC approval of the program, and the timeline will be adjusted accordingly.

VII. Program Measurement, Evaluation and Research

Measurement, evaluation and research (“MER”) is an essential part of the proposed DSM Portfolio Plan. The Preliminary Energy-Efficiency DSM Plan (Decision No. 67744 Attachment A, Appendix B) of the APS Settlement Agreement specifies that \$3.9 million of the \$48 million budget from 2005-2007 should be devoted to measurement, evaluation and research activities.

There are several distinct deliverables that are anticipated from MER activities, including: identification of current baseline efficiency levels and the market potential of DSM measures, process evaluation to indicate how well programs are working to achieve objectives, verification that energy-efficiency measures are installed as expected, savings measurement to track the actual program savings that are achieved, and research activities to identify additional opportunities for energy-efficiency.

In Decision No.67816, the ACC pre-approved the expenditure of up to \$500,000 of DSM funds for a market assessment study, which will provide reliable information on the market potential, kW and kWh savings potential and costs associated with energy-efficiency technologies. Specifically, the DSM study will assess the potential for improving the market penetration of energy-efficient technologies and practices in residential and non-residential customer segments. The study information, expected before the end of 2005, will be used to confirm program design assumptions and to target programs to maximize cost effectiveness.

In general, the approach for measurement and evaluation will be to integrate data collection and tracking activities directly into the program implementation process. This saves program costs and produces better results by collecting data directly at the time that measures are installed. In order to do this, it is necessary to employ MER experts early in the program development process to help design forms and data collection and tracking tools to be used during program implementation.

APS intends to use an independent third party evaluation contractor to conduct evaluations. Prior to program implementation, APS will issue an RFP to retain an evaluation contractor. The evaluation contractor will then work directly with APS and any implementation contractors to ensure that program design and implementation activities will collect the necessary data for monitoring and evaluation.

APS anticipates that evaluation activities for each year of the portfolio planning period will follow the general outline shown below:

2005 Baseline and market potential study
 Program tracking database development
 MER planning and development

2006 Program process evaluation
Identifying opportunities to improve implementation
Installation verifications

2007 Program impact evaluation

For more information about the MER plan for each proposed DSM program, see the program descriptions in the Attachments.

VIII. DSM Performance Incentive

The ACC approved a performance incentive based on the net economic benefits of energy-efficiency DSM in Decision No. 67744. *See*, Attachment A, paragraph 45, which states in part:

APS will be permitted to earn and recover a performance incentive based on a share of the net economic benefits (benefits minus costs) from the energy-efficiency DSM programs approved in accordance with paragraph 41. Such performance incentive will be capped at 10% of the total amount of DSM spending, inclusive of the program incentive, provided for in this Agreement (e.g. \$1.6 million out of the \$16 million average annual spending referenced in paragraphs 40 and 44 or \$4.8 million over the initial three-year period).

Exhibit 11, page 26, shows the estimated portfolio total net benefits from 2005-2007 and proposes a 90%/10% split, between customers and the company respectively, of the total net benefits to determine the incentive that APS would receive for delivering approved DSM programs. As stipulated in the Preliminary Energy-Efficiency DSM Plan (Decision No. 67744 Attachment A, Appendix B), the performance incentive is inclusive in the annual \$16 million commitment and capped at 10% for a maximum potential incentive of \$4.8 million during 2005-2007 timeframe. The actual performance incentive will vary based on the actual net benefits achieved.

The incentive earned will be reported in the semi-annual reports filed with the ACC pursuant to Decision No. 67744, Attachment A, paragraph 52. The incentive will be determined for each reporting period based on the savings and net benefits reported for that period.

Exhibit 11 Estimated Performance Incentive Calculation 2005 - 2007 Program Budget

	Total Benefits	Total Costs	Net Benefit	APS Share 10%
Residential				
Consumer Products	\$23,120,000	\$8,980,000	\$14,140,000	\$1,414,000
Existing Home HVAC	\$7,960,000	\$5,820,000	\$2,140,000	\$214,000
New Construction	\$22,200,000	\$7,890,000	\$14,310,000	\$1,431,000
Non-Residential				
Existing Large	\$24,400,000	\$8,450,000	\$15,950,000	\$1,595,000
Existing Small	\$15,900,000	\$5,160,000	\$10,740,000	\$1,074,000
New Construction	\$26,730,000	\$10,510,000	\$16,220,000	\$1,622,000
Building Operator Training	\$2,760,000	\$860,000	\$1,900,000	\$190,000
Energy Information System	\$1510,000	\$350,000	\$1,160,000	\$116,000
Schools				
	\$4,540,000	\$3,740,000	\$800,000	\$80,000
Subtotal				
	\$129,120,000	\$51,760,000	\$77,360,000	\$7,736,000
Measurement, Evaluation & Research	\$0	\$3,900,000	\$ (3,900,000)	\$ (390,000)
Total	\$129,120,000	\$55,660,000	\$73,460,000	\$7,346,000
Maximum Performance Incentive				\$4,800,000
Difference				\$2,546,200
<p>This calculation does not include the Low Income Program. This program has a negative net benefit and APS should not be penalized for performing well on this program. A summary of this program is:</p>				
Low Income	Total	Total	Net	
	Benefits	Costs	Benefit	
	\$1,810,000	\$2,510,000	\$ (700,000)	