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March 1, 2017

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Docket Control
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

Re: Notice of Filing – UNS Electric, Inc.’s Annual Demand-Side Management Progress (“DSM”) Report, Docket No. E-00000U-17-0057

The Electric Energy Efficiency Standards set forth in the Arizona Administrative Code, Section R14-2-2409.A, require UNS Electric, Inc. (“UNS Electric”) to submit an annual DSM progress report for each of its Commission-approved DSM programs by March 1st. UNS Electric hereby files its DSM Progress Report for 2016. The Measurement, Evaluation and Research Report listed in Appendix 2 of the DSM Progress Report contains confidential information and is being provided directly to Commission Staff.

If you have any questions, please contact me at (520) 884-3680.

Sincerely,

Melissa Morales
Regulatory Services

Arizona Corporation Commission

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cc: Barbara Keene, Utilities Division, ACC
Compliance Section, ACC



UNS Electric, Inc.

2016

Annual DSM

Progress Report

Docket No. E-00000U-17-0057

March 1, 2017

UNS Electric, Inc.
2016 ANNUAL DSM PROGRESS REPORT

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Definitions

“AAC” means the Arizona Administrative Code.

“ADOH” means the Arizona Department of Housing

“APS” means Arizona Public Service.

“ASHRAE/IESNA” means the American Society of Heating, Refrigerating and Air-Conditioning Engineers / the Illuminating Engineering Society of North America

“Baseline” means the level of electricity demand, electricity consumption, and associated expenses estimated to occur in the absence of a specific DSM program, determined as provided in R14-2-2413

“CFL” means Compact Fluorescent Light bulb.

“C&I” means Commercial and Industrial.

“Commission” means the Arizona Corporation Commission.

“Consumer Education and Outreach” means a program to provide general consumer education about energy-efficiency improvements.

“Cost-effective” means that total incremental benefits from a DSM measure or DSM program exceed total incremental costs over the life of the DSM measure, as determined under R14-2-2412.

“DOE” means the United States Department of Energy.

“Demand savings” means the load reduction, measured in kW, occurring during a relevant peak period or periods as a direct result of energy efficiency and demand response programs.

“DSM” means demand-side management, the implementation and maintenance of one or more DSM programs Energy Efficiency (“EE”).

“DSM measure” means any material, device, technology, educational program, pricing option, practice, or facility alteration designed to result in reduced peak demand, increased energy efficiency, or shifting of electricity consumption to off-peak periods and includes combined heat and power used to displace space heating, water heating, or another load.

“DSM program” means one or more DSM measures provided as part of a single offering to customers.

“EPA” means the United States Environmental Protection Agency.

“HVAC” means Heating, Ventilation and Air Conditioning.

“Incremental costs” means the additional expenses of DSM measures, relative to baseline.

“IC” means an implementation contractor, a contractor hired to implement a program.

“kW” means kilowatt.

“kWh” means kilowatt-hour.

“LED” means Light Emitting Diode light bulb.

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“Load management” means actions taken or sponsored by an affected utility to reduce peak demands or improve system operating efficiency, such as direct control of customer demands through affected-utility-initiated interruption or cycling, thermal storage, or educational campaigns to encourage customers to shift loads.

“Low-income customer” means a customer with a below average level of household income, as defined in an affected utility’s Commission-approved DSM program description.

“MER” means measurement, evaluation, and research. The process of identifying current baseline efficiency levels and the market potential of DSM measures; performing process and program evaluations including the verification of installed energy efficient measures and reported savings; and identifying additional energy efficiency research opportunities.

“MW” means a Megawatt, 1,000 kilowatts or 1,000,000 watts

“MWh” means a Megawatt Hour, 1,000 kilowatt hours

“NCI” means Navigant Consulting, Inc.

“Net benefits” means the incremental benefits resulting from DSM minus the incremental costs of DSM.

“Program costs” means the expenses incurred by an affected utility as a result of developing, marketing, implementing, administering, and evaluating Commission-approved DSM programs.

“Program Implementation” means the implementation of programs including administration, fiscal management of costs for labor, overhead, implementation contractors, or other direct program delivery.

“Program Marketing” means the marketing of programs and increasing DSM consumer awareness (direct program marketing as opposed to general consumer education).

“Planning and Administration” means planning, developing, and administering programs including management of program budgets, oversight of the RFP process, oversight of ICs, program development, program coordination, customer participation, and general overhead expenses.

“Program Development, Analysis, and Reporting” means the research and development of new DSM program opportunities, analysis of existing and proposed programs and measures, and the tracking and reporting of participation, savings, and benefits. Associated costs are essential to comply with the Commission reporting and rules requirements.

“Rebates & Incentives” means payments made to customers or contractors as rebates or incentives.

“RESNET” means the Residential Energy Services Network.

“RFP” means Request for Proposal, the process through which proposals are solicited from contractors or vendors.

the “Standard” means the reduction in retail energy sales, in percentage of kWh, required to be achieved through TEP’s approved DSM programs as prescribed in the State of Arizona Administrative Code Article 24, Section R14-2-2404.

“Therm” means 100,000 Btus (British thermal units)

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“Thermal envelope” means the collection of building surfaces, such as walls, windows, doors, floors, ceilings, and roofs, that separate interior conditioned (heated or cooled) spaces from the exterior environment.

“Training and Technical Assistance” means Energy-efficiency training and technical assistance for utility employees, contractors, or building officials.

“TEP” means Tucson Electric Power Company.

“UNS Electric” or “Company” means UNS Electric, Inc.

“UNS Gas” means UNS Gas, Inc.

All other terms and definitions associated with the Energy Efficiency Implementation Plan are contained in A.A.C. R14-2-2401.

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DSM PROGRESS REPORT

1. An analysis of the Company's progress toward meeting the annual energy efficiency standard

1.1 Progress Towards the Standard

In accordance with the Commission's Decision No. 71819 (August 10, 2010) and Arizona Administrative Code Section R14-2-2409 (effective January 1, 2011), UNS Electric, Inc. submits this annual DSM progress report for the calendar year 2016. This report includes information for all of UNS Electric's residential, non-residential, and low-income customer programs that were in place during this reporting period.

On June 1, 2015, UNS Electric filed for a request for the pending 2015 EE Plan to cover 2015 and 2016. UNS Electric's 2015-2016 EE Implementation Plan was approved in Decision No. 75297 (October 27, 2015) with new measures and programs. Due to the timing of the Commission approval the newly approved measures and programs were instituted for program year 2016 and RFPs were issued where required for new programs. In 2017 UNS Electric will implement the EE Programs the Commission approved for 2016, and will file its EE Plan for 2018 by June 1, 2017.

UNS Electric was 1/10th of 1% below meeting the cumulative annual energy savings standard listed in Table 1 of AAC R14-2-2404.B for 2016. UNS Electric's DSM savings, expenditures, societal benefits, incentives, and environmental savings are summarized in Table 1 through Table 5 as noted below.

A summary list of tables includes:

Table 1	Cumulative Energy Savings As Compared to The Standard
Table 2	Energy Savings By Program
Table 3	Expenses By Program
Table 4	Energy Savings And Societal Benefits
Table 5	Lifetime Environmental Savings By Program

UNS Electric's cumulative energy savings as compared to the Standard are reported in Table 1 below.

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Table 1 - Cumulative Energy Savings As Compared to The Standard

Year	Retail Energy Sales (MWh)	Incremental Annual Energy Savings (MWh)	Cumulative Annual Energy Savings (MWh)	Cumulative Annual Savings as a Percent of previous year Retail Sales	Cumulative EE Standard
2010	1,857,160				
2011	1,852,904	15,005	15,005	0.81%	1.25%
2012	1,755,541	35,032	50,037	2.70%	3.00%
2013	1,699,307	34,764	84,801	4.83%	5.00%
2014	1,677,445	38,829	123,630	7.28%	7.25%
2015	1,628,035	32,318	155,948	9.30%	9.50%
2016		37,924	193,872	11.91%	12.00%

Annual and Lifetime Savings

The DSM portfolio annual and lifetime energy savings are reported in Table 2. Savings are separated into the following categories:

- Capacity Savings (MW)
- Annual MWh Savings
- Annual Therm Savings
- Lifetime MWh Savings
- Lifetime Therm Savings

UNS Electric is including energy savings toward the Standard for changes in energy efficient building codes per AAC R14-2-2404(E). Energy savings from this program are reported in Table 2 below.

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Table 2 - Energy Savings By Program¹

Program	Planned Capacity Savings MW	Actual Capacity Savings MW	Planned Annual MW/h Savings	Actual Annual MW/h Savings	Planned Annual Therm Savings	Actual Annual Therm Savings	Planned Lifetime MW/h Savings	Actual Lifetime MW/h Savings	Planned Lifetime Therm Savings	Actual Lifetime Therm Savings
Residential Programs										
Appliance Recycling	0	0	587	0	NA	0	4,696	0	NA	0
Efficient Products	1.09	1.14	12,281	12,748	NA	0	119,175	123,708	NA	0
Existing Homes Retrofit and Audit Direct Install	1.63	1.24	2,178	1,655	NA	3,550	41,413	31,477	NA	70,665
Low-Income Weatherization	0.11	0.12	376	431	NA	4,329	8,333	9,552	NA	75,758
Multi-Family	0.08	0.44	161	888	NA	3,431	2,137	11,787	NA	68,621
Residential New Construction	0.21	0.07	287	94	NA	1,537	8,610	2,821	NA	46,097
Shade Tree Program	0.05	0.03	110	78	NA	0	4,400	3,106	NA	0
Total for Residential Programs	3.17	3.04	15,980	15,894	NA	12,847	188,764	182,451	NA	261,141
Commercial Programs²										
Bid For Efficiency	0.13	0.07	3,542	1,803	NA	0	48,586	24,738	NA	0
C&I Demand Response Control Program	8.34	8.34	3,601	3,601	NA	0	3,601	3,601	NA	0
C&I Facilities/Schools	0.6	0.95	5,222	8,234	NA	0	64,922	102,367	NA	0
Retro-Commissioning	0	0	1,550	0	NA	0	0	0	NA	0
Total for Commercial Programs	9.07	9.36	14,699	14,422	NA	0	117,109	131,490	NA	0
Behavioral Programs										
Behavioral Comprehensive	0.28	0.2	3,066	2,223	NA	28,859	23,487	17,027	NA	259,730
Home Energy Reports	0	0	0	NA	NA	0	NA	0	NA	0
Total for Behavioral Programs	0.28	0.2	3,066	2,223	NA	28,859	23,487	17,027	NA	259,730
Support Programs										
Consumer Education & Outreach Program	0	0	0	0	NA	0	0	0	NA	0
Energy Codes and Standards	0.98	0.98	3,964	3,964	NA	0	3,964	3,964	NA	0
Total for Support Programs	0.98	0.98	3,964	3,964	NA	0	3,964	3,964	NA	0
Credits		0								
Pre-Rule Credit for 2016	NA	NA	2,204	2,204	NA	NA	NA	NA	NA	NA
Portfolio Totals	13.58	13.58	39,129	37,924	NA	41,706	333,324	334,148	NA	520,871

¹ This table is provided to comply with AAC R-14-2-2409 and Commission Decision No. 74262. Planned savings for annual and lifetime are included in each program description. Capacity savings for C&I Demand Response reflect the capacity available for reduction events. Annual MWh savings for C&I Demand Response reflect the credit available toward the EE Standard per AAC R14-2-2404(C). UNS Electric does not conduct planning for therm savings but does show them when appropriate.

² In December 2016, DNV GL our Implementation Contractor for commercial EE programs, instituted upgraded reporting software. The data set provided to the Company from the upgraded software contained immaterial differences from the data DNV GL previously supplied on a monthly basis. This may have a minimal impact on the reported savings for commercial EE programs in 2016. UNSE has to date not discovered any material impact but will revise this filing if discovered.

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1.2 DSM Annual Expenses

The annualized expenses for each program are reported in [Table 3](#). Expenses are separated into the following categories:

- Rebates and Incentives
- Training and Technical Assistance
- Consumer Education
- Program Implementation
- Program Marketing
- Planning and Administration
- Measurement, Evaluation, and Research

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Table 3 – Expenses By Program

DSM Program	Rebates and Incentives	Training and Technical Assistance	Consumer Education	Program Implementation	Program Marketing	Planning and Admin	Measurement, Evaluation, and Research	Program Total Cost
Residential Programs								
Appliance Recycling	-\$1,643	0	0	-\$3,533	0	0	\$1,308	-\$3,869
Efficient Products	\$439,335	\$13,708	0	\$435,092	\$63,734	\$5,322	\$39,076	\$996,267
Existing Homes Retrofit and Audit Direct Install	\$395,470	\$90	\$10,750	\$277,507	\$6,934	0	\$4,834	\$695,585
Low-Income Weatherization	\$133,745	\$403	0	0	\$3,878	\$51	\$308	\$138,386
Multi-Family	\$106,857	0	0	\$143,719	0	\$1,903	\$1,920	\$254,398
Residential New Construction	\$52,000	\$6,506	\$100	-\$600	0	0	\$401	\$58,407
Shade Tree Program	\$17,104	0	\$1,855	\$230	\$5,581	0	\$1,461	\$26,231
Total for Residential Programs	\$1,142,867	\$20,707	\$12,705	\$852,415	\$80,127	\$7,276	\$49,308	\$2,165,405
Commercial Programs								
Bid For Efficiency	\$129,964	\$633	0	\$88,340	\$10,353	\$161	\$1,934	\$231,385
C&I Demand Response Control Program	0	\$2,926	0	\$178,158	0	\$22	0	\$181,106
C&I Facilities/Schools	\$634,918	\$1,871	0	\$234,611	\$15,819	\$144	\$24,954	\$912,318
Retro-Commissioning	0	\$593	0	\$22,031	\$266	0	0	\$22,890
Total for Commercial Programs	\$764,882	\$6,023	0	\$523,141	\$26,438	\$328	\$26,888	\$1,347,699
Behavioral Programs								
Behavioral Comprehensive	\$92,390	\$2,305	\$6,269	\$65,735	\$26,777	\$4,931	\$3,067	\$201,474
Home Energy Reports	0	0	0	0	0	0	\$794	\$794
Total for Behavioral Programs	\$92,390	\$2,305	\$6,269	\$65,735	\$26,777	\$4,931	\$3,067	\$202,268
Support Programs								
Consumer Education & Outreach Program	\$92,390	\$2,305	\$6,269	\$65,735	\$26,777	\$4,931	\$3,067	\$201,474
Energy Codes and Standards	0	0	0	0	0	0	\$794	\$794
Total for Support Programs	\$92,390	\$2,305	\$6,269	\$65,735	\$26,777	\$4,931	\$3,067	\$202,268
Portfolio Totals	\$2,000,139	\$31,003	\$121,644	\$1,444,711	\$133,342	\$12,534	\$79,263	\$3,823,430
							Program Costs	\$3,823,430
							Program Development, Analysis, & Reporting	\$112,498
							TOTAL	\$3,935,929

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1.3 Societal Benefits and Performance Incentives

The portfolio societal benefit calculation and performance incentive calculation are reported in Table 4 below. UNS Electric's portfolio Societal Cost Test ratio for 2016 is 2.19, including all program costs and labor.

UNS Electric's performance incentive was established in Commission Decision No. 72747 (January 20, 2012). Societal costs, societal benefits, and net benefits are not calculated on an annual basis for Demand Response Programs. Per Commission Decision No. 74235 (December 31, 2013), UNS Electric's performance incentive is calculated at 8 percent of DSM net economic benefits, capped at \$0.0125 per kWh, whichever is less. UNS Electric's 2016 performance incentive for calendar year 2016 caps at \$0.0125 per kWh and is \$446,497.

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Table 4 – Energy Savings And Societal Benefits

DSM Program	Program Cost	Planned Societal Benefit	Actual Societal Benefit	Planned Societal Costs	Actual Societal Costs	Planned Net Benefits	Actual Net Benefit
Residential Programs							
Appliance Recycling	-\$3,869	\$819	0	\$819	0	0	0
Efficient Products	\$996,267	\$2,728,613	\$2,832,405	\$1,218,629	\$1,264,984	\$1,509,984	\$1,567,422
Existing Homes Retrofit and Audit Direct Install	\$695,585	\$3,111,627	\$2,365,071	\$1,058,297	\$804,385	\$2,053,330	\$1,560,685
Low-Income Weatherization	\$138,386	\$299,571	\$343,402	\$99,611	\$114,185	\$199,960	\$229,216
Multi-Family	\$254,398	\$129,327	\$713,410	\$57,503	\$317,205	\$71,824	\$396,205
Residential New Construction	\$58,407	\$493,437	\$161,648	\$177,601	\$58,181	\$315,836	\$103,466
Shade Tree Program	\$26,231	\$148,244	\$104,642	\$85,677	\$60,477	\$62,568	\$44,165
Total for Residential Programs	\$2,165,405	\$6,911,638	\$6,520,577	\$2,698,137	\$2,619,418	\$4,213,502	\$3,901,159
Commercial Programs							
Bid For Efficiency	\$231,385	\$531,118	\$270,421	\$206,710	\$105,247	\$324,408	\$165,174
C&I Demand Response Control Program	\$181,106	NA	NA	\$181,106	\$181,106	NA	NA
C&I Facilities/Schools	\$912,318	\$1,728,099	\$2,724,834	\$909,100	\$1,433,451	\$818,999	\$1,291,382
Retro-Commissioning	\$22,890	\$2,162	0	\$2,162	0	0	0
Total for Commercial Programs	\$1,347,699	\$2,261,380	\$2,995,255	\$1,117,972	\$1,538,699	\$1,143,407	\$1,456,556
Behavioral Programs							
Behavioral Comprehensive	\$201,474	\$992,858	\$719,749	\$296,857	\$215,200	\$696,001	\$504,550
Home Energy Reports	\$794	0	0	0	0	0	0
Total for Behavioral Programs	\$202,268	\$992,858	\$719,749	\$296,857	\$215,200	\$696,001	\$504,550
Support Programs							
Consumer Education & Outreach Program	\$106,091	0	0	0	0	0	0
Energy Codes and Standards	\$1,968	0	0	0	0	0	0
Total for Support Programs	\$108,058	0	0	0	0	0	0
Portfolio Totals	\$3,823,430	\$10,165,876	\$10,235,581	\$4,112,966	\$4,373,316	\$6,052,909	\$5,862,265
Program Development, Analysis & Reporting	NA	NA	NA	NA	\$112,498	NA	NA
TOTAL	\$3,823,430	\$10,165,876	\$10,235,581	\$4,112,966	\$4,485,815	\$6,052,909	\$5,862,265
Performance Incentive Calculation:							
Total kWh Savings	35,719,755						
Total Net Benefits	\$10,235,581						
PI = 8% Net Benefits	\$818,846						
PI Cap = Total kWh savings * \$0.0125	\$446,497						
Performance Incentive for 2016	\$446,497						
Note: Performance Incentive does not include 2016 Pre-Rule Credit.							

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1.4 Lifetime Environmental Savings

The annualized environmental savings for each program are reported in Table 5. Savings are separated into the following categories:

- sulfur oxides (“SOX”),
- nitrogen oxides (“NOX”),
- carbon dioxide (“CO2”), and
- water consumption.

Table 5 – Lifetime Environmental Savings By Program

Program	Lifetime SOX Reduction (lbs)	Lifetime NOX Reduction (lbs)	Lifetime CO2 Reduction (lbs)	Lifetime Water Reduction (gallons)
Residential Programs				
Appliance Recycling	0	0	0	0
Efficient Products	680	14,721	147,212,220	32,040,307
Existing Homes Retrofit and Audit Direct Install	173	3,746	37,457,626	8,152,542
Low-Income Weatherization	53	1,137	11,367,357	2,474,072
Multi-Family	65	1,403	14,026,888	3,052,911
Residential New Construction	16	336	3,356,511	730,535
Shade Tree Program	17	370	3,695,961	804,415
Total for Residential Programs	1,003	21,712	217,116,562	47,254,781
Non-Residential Programs				
Bid For Efficiency	136	2,944	29,438,125	6,407,121
C&I Demand Response Control Program	0	0	0	0
C&I Facilities/Schools	563	12,182	121,816,853	26,513,080
Retro-Commissioning	0	0	0	0
Total for Commercial Programs	722	15,622	156,221,669	34,001,187
Behavioral Programs				
Behavioral Comprehensive	94	2,026	20,261,677	4,409,894
Home Energy Reports	0	0	0	0
Total for Behavioral Programs	94	2,026	20,261,677	4,409,894
Support Programs				
Consumer Education & Outreach Program	0	0	0	0
Energy Codes and Standards	22	472	4,717,582	1,026,768
Total for Support Programs	22	472	4,717,582	1,026,768
Credits				
Portfolio Totals	1,818	39,335	393,350,799	85,611,644

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2. A list of the 15 current Commission-approved DSM programs and DSM measures, organized by customer segment

Commission Approved DSM Programs	
Residential Programs	
4.1	Appliance Recycling Program
4.2	Efficient Products
4.3	Existing Homes and Audit Direct Install Program
4.4	Low-Income Weatherization Program
4.5	Multi-Family Housing Efficiency Program
4.6	Residential New Construction
4.7	Shade Tree Program
Non-Residential Programs	
4.8	Bid for Efficiency Program
4.9	C&I Demand Response Program
4.10	C&I Facilities/Schools Program
4.11	Retro-Commissioning Program
Behavioral Programs	
4.12	Behavioral Comprehensive Program
4.13	Home Energy Reports Program (Pending)
Support Programs	
4.14	Education and Outreach
4.15	Energy Codes & Standards Enhancement Program

Commission approved DSM programs and measures, including Commission Staff's benefit/cost calculation per measure, and the actual benefit/cost calculation per measure based upon 2016 results, are attached in **Appendix 1**.

3. A description of the findings from completed research projects completed during the previous year

UNS Electric's DSM and Customer Solutions staff review various EE technologies on an ongoing basis during:

- program administration,
- solicitation for bids for services,
- when conducting research on measures for inclusion in future DSM implementation plans,
- and when attending conferences and exchanging best practices with peer utilities.

Research projects UNS Electric, in conjunction with TEP, completed in 2016 and associated findings include:

- Behavioral Comprehensive K-12 EE Implementation: UNS Electric and TEP held a planning session with Navigant to hear national developments in various K-12 energy efficiency education programs and apply relevant outreach approaches to the respective markets. Both companies have been exploring methods to focus on behavior based programs that go beyond the traditional kit-based program and focus on changing energy usage patterns. Special attention is being paid to programs using technology in innovative ways by engaging students in hands-on science, technology, engineering, and math learning, fostering competition between schools, and providing mentorship by experts in the field.

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- Lighting Workshop: In May, 2016, Navigant led a lighting workshop that covered i) changing lighting standards, ii) eliminating CFL incentives, and iii) expected market price point changes. As lighting standards continue to change i) UNS Electric and TEP will incentivize more lower-lifetime rated LED bulbs (Energy Star Specification 2.0 - 15,000 hour rated minimum as opposed to 25,000 hour minimum), ii) UNS Electric and TEP's elimination of CFL measures and focusing on LED equivalent measures, iii) as the newer specification LEDs enter the market UNS Electric and TEP expect the market to respond with a representative lower price point and the companies to provide a related lower incentive.
- Energy Load Management: Continuing research from previous years, UNS Electric and TEP are developing methods to launch connected products in existing homes and small businesses that will give customers an interface to managing their energy demand and consumption. Partnerships with residential new home developers and builders to introduce key, and connected, products at or near the point of purchase will contribute to lower consumer costs, reduced demand and consumption, and provide consumers with load management capability from their date of occupancy.
- LIW Design Review by Navigant: The purpose of Navigant's analysis was to assess whether estimation of actual savings values for program homes using REM/Design file information could provide superior estimates of savings to the deemed approach currently used. Previous energy savings were based on a deemed estimate provided annually by the Arizona Department of Housing ("ADOH"), whose inputs and assumptions are unknown. Analysis of actual REM/Design files yielded slightly higher electric savings and significantly higher gas savings values, compared with the ADOH deemed values.

4. Information on the DSM programs

Residential Sector

4.1 Appliance Recycling Program

a. Description

The Appliance Recycling Program is designed to remove and recycle inefficient refrigerators and freezers. As national studies indicate that approximately 20 percent of customers have at least one secondary inefficient refrigerator or freezer in their home there is a significant potential for energy savings for this Program. This Program permanently removes inefficient appliances that may otherwise remain in service either at the customer's home or be donated or re-sold. In addition to providing the customer with an incentive the Program removes the usual barriers of taking these appliances offline by eliminating the cost and/or inconvenience associated with disposing of the appliance.

b. Program Goals, Objectives, and Savings Targets

The objectives of the Program are to:

- Remove old and inefficient refrigerators and freezers from customer's homes;
- Permanently remove the inefficient refrigerators and freezers from the grid, and
- Recycle the refrigerators and freezers in an environmentally responsible way.

The 2016 energy savings goal was 587 MWhs.

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c. Levels of Participation

Due the unforeseen ceasing of operations by the implementation contractor, JACO Environmental, Inc. on November 20th, 2015, the Appliance Recycling Program was temporarily suspended. UNS Electric, in conjunction with TEP, released an RFP to restart the program but did not receive a proposal that met all requirements of the program. In 2017, UNS Electric, in conjunction with TEP, is planning to release an updated RFP and to restart the program.

d. Costs Incurred

Costs incurred for this Program during the reporting period are listed below:

DSM Program	Rebates and Incentives	Training and Technical Assistance	Consumer Education	Program Implementation	Program Marketing	Planning and Admin	Measurement, Evaluation, and Research	Program Total Cost
Appliance Recycling	-\$1,643	0	0	-\$3,533	0	0	\$1,308	-\$3,869

e. Evaluation and Monitoring Activities and Results

There was no MER activity during this reporting period.

f. kW, kWh, and Therm Savings

There were no savings during this reporting period.

g. Environmental Benefits realized

There were no environmental benefits realized during this reporting period.

h. Incremental benefits and net benefit

There were no incremental benefits and net benefits realized during this reporting period.

i. Performance-incentive calculations for the previous year

There is no performance incentive for this program for this reporting period.

j. Problems Encountered and Proposed Solutions

Due the unforeseen ceasing of operations by the implementation contractor, JACO Environmental, Inc. on November 20th, 2015, the Appliance Recycling Program was temporarily suspended. In 2016, UNS Electric, in conjunction with TEP, released an RFP to restart the program but did not receive a proposal that met all requirements of the program. In 2017, UNS Electric, in conjunction with TEP, is planning to release an updated RFP and to restart the program.

k. Program Modifications

No program modifications were made during this reporting period.

l. Programs or Measures Terminated

No measures were terminated during this reporting period. UNS Electric does not plan to terminate this Program or any program measures in 2017.

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4.2 Efficient Products Program

a. Description

The Efficient Products program promotes the purchase of energy efficient retail products through in-store buy-down promotions and the promotion of EE products in general. This program has been in existence since 2008, and was most recently approved by the Commission in Decision No. 75297.

b. Program Goals, Objectives, and Savings Targets

The objectives of this Program are to:

- Reduce peak demand and overall energy consumption in homes and small businesses;
- Increase the purchase of Energy Star Products;
- Increase the availability of Energy Star Efficient lighting products in the marketplace; and
- Increase the awareness and knowledge of retailers and UNS Electric customers on the benefits of Energy Star Efficient products.

The 2016 energy savings goal was 12,281 MWhs.

c. Levels of Participation

A total of 173,067 CFLs, 84,795 LEDs, 161 variable speed pumps and 218 appliances were sold during this reporting period. An “in storage adder” has also been included in the 2016 total to account for bulbs taken out of storage and installed since program inception in 2010. Additional detail is provided in Program Modifications section below.

d. Costs Incurred

Costs incurred for this Program during the reporting period are listed below.

DSM Program	Rebates and Incentives	Training and Technical Assistance	Consumer Education	Program Implementation	Program Marketing	Planning and Admin	Measurement, Evaluation, and Research	Program Total Cost
Efficient Products	\$439,335	\$13,708	0	\$435,092	\$63,734	\$5,322	\$39,076	\$996,267

e. Evaluation and Monitoring Activities and Results

NCI performed quarterly reconciliations for this program to verify coincident demand and energy savings. The MER report is attached in **Appendix 2**.

Many of the program bulbs are sold in multipacks. While some of these bulbs are installed immediately, some are placed into storage to be installed as needed. As bulbs come out of storage, the savings are realized, but they are delayed. The CFL bulbs placed into storage are accounted for with an 18% In-Storage Rate (ISR).³ According to the Uniform Methods Protocol, 97% of these in-storage bulbs are brought out of storage over a period of four years,

³ The ISR is the proportion of program bulbs each year assumed put into storage rather than installed immediately in sockets.

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while the remaining bulbs are never installed. Navigant follows current Uniform Methods Protocol in calculating the CFL and LED In-storage Adder shown in Table 13.⁴

LEDs were introduced as part of the UNSE Energy Star Lighting® program in PY2016. Because these bulbs have not yet had one year to come out of storage, no In-storage LED Adder is applied for 2016, but an LED In-Storage Adder will be applied beginning in 2017 for LEDs coming out of storage in 2017.⁵

f. kW, kWh, and Therm Savings

Measure	No. of Measures	kW Savings	kWh Savings
Appliances	218	5	34,560
Lighting	257,862	1,065	12,396,839
Pool Pumps	161	66	316,751
Totals	258,023	1,136	12,748,151

Savings are adjusted for line losses of 10.69 percent for both demand and energy (excluding therms).

g. Environmental Benefits realized

Realized environmental benefits are reflected in Table 5 above.

h. Incremental benefits and net benefit

Incremental benefits and net benefits are reflected in Table 4 above.

i. Performance-incentive calculations for the previous year

Performance-incentive calculations are reflected in Table 4 above.

j. Problems Encountered and Proposed Solutions

No problems were encountered during this reporting period.

k. Program Modifications

Due to the Energy Star 2.0 lighting specifications taking effect in January 2017 and UNS Electric's market conditions, the Energy Star Lighting Program transformed to a LED only program in late 4th quarter of 2016.

New measures approved by the Commission in October 2015 were implemented in 2016. The new measures include Energy Star central air conditioners/heat pumps, clothes washers, dishwashers, refrigerators, room air conditioners/heat pumps, and residential LED lighting.

l. Programs or Measures Terminated

UNS Electric does not plan to terminate this Program or any Program measures in 2017. Due to changes in the UNS Electric marketplace and in conjunction with Commission Decision No. 75450 (TEP), the Company has discontinued CFL measures and focused on equivalent LED measures.

⁴ <http://energy.gov/sites/prod/files/2015/02/f19/UMPChapter21-residential-lighting-evaluation-protocol.pdf> Page 21

⁵Reference Appendix 2 – Navigant Consulting, Inc. Measurement, Evaluation, and Research Report

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4.3 Existing Homes and Audit Direct Install Program

a. Description

The UNS Electric Existing Homes and Audit Direct Install Program is designed to encourage homeowners to increase the energy efficiency of their homes. The Program provides incentives for high-efficiency HVAC equipment and for home performance services such as sealing leaky duct work in existing homes. The Program provides direct incentives to participating contractors with the requirement that the incentives are passed on to utility customers as a line item credit toward approved Program measures.

The Existing Home and Audit Direct Install Program was most recently approved in Decision No. 75297 and is marketed as the “Efficient Home Program.”

b. Program Goals, Objectives and Savings Targets

The objectives of the Existing Homes Audit component of the Program are as follows:

- To properly size and provide quality installation of high efficiency HVAC equipment, seal leaky ductwork, and install smart thermostats;
- Cultivate customer demand for and a contractor base to deliver comprehensive energy efficiency retrofits in alignment with the Home Performance with Energy Star model.

The 2016 energy savings goal was 2,178 MWhs.

c. Levels of Participation

A total of 613 customers participated in the program during this reporting period.

d. Costs Incurred

Costs incurred for this Program during the reporting period are listed below.

DSM Program	Rebates and Incentives	Training and Technical Assistance	Consumer Education	Program Implementation	Program Marketing	Planning and Admin	Measurement, Evaluation, and Research	Program Total Cost
Existing Homes Retrofit and Audit Direct Install	\$395,470	\$90	\$10,750	\$277,507	\$6,934	0	\$4,834	\$695,585

e. Evaluation and Monitoring Activities and Results

NCI performed quarterly reconciliations for this program to verify coincident demand and energy savings. The MER report is attached in **Appendix 2**.

f. kW, kWh, and Therm Savings

Measure	No. of Measures	kW Savings	kWh Savings
HVAC	637	1,225	1,638,680
Tune Up	24	12	16,764
Totals	661	1,237	1,655,444

Savings are adjusted for line losses of 10.69 percent for both demand and energy (excluding therms).

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- g. Environmental Benefits realized**
Realized environmental benefits are reflected in Table 5 above.
- h. Incremental benefits and net benefit**
Incremental benefits and net benefits are reflected in Table 4 above.
- i. Performance-incentive calculations for the previous year**
Performance-incentive calculations are reflected in Table 4 above.
- j. Problems Encountered and Proposed Solutions**
Recruitment of new contractors for the Efficient Home Program has been challenging due to i) a limited number of large HVAC contractors in UNS Electric's service territories - the area is primarily served by smaller HVAC companies typical of a mom and pop operations; and ii) due to staffing changes within the Implementation Contractor's organization, the recruiting process was not initiated until the middle of summer when HVAC contractors are the busiest, resulting in very low interest due to the contractors' limited resources.
- In 2017, there will be an emphasis on recruitment during early spring to increase the contractor participation rate.
- k. Program Modifications**
Per Decision No. 75297 the ER HVAC with QI and savings tiers were instituted along with multiple tiers for DTR, ER HVAC with QI, and HVAC QI. Tune-Up-Advanced Tune-Up and Tune-Up Western Cooling Control were added for 2016 per Decision 75297.
- In August 2016, per Commission Decision No. 75297, UNS Electric filed to use the C&I Facilities "Programmable Thermostat" measure reciprocally in the Existing Homes program without increasing the overall DSM budget. UNS Electric implemented the Smart Thermostat measure in the LIW program after the 45-day waiting period after the filing passed without comment.
- l. Programs or Measures Terminated**
UNS Electric does not plan to terminate this Program or any measures in 2017.

4.4 Low-Income Weatherization Program ("LIW")

- a. Description**
The UNS Electric LIW Program is designed to improve the energy efficiency of homes for customers whose income falls within the defined federal poverty guidelines. The steps taken in the LIW Program will reduce electric bills for eligible customers and improve their comfort and quality of life. Energy savings realized from the LIW Program will allow low-income customers to better utilize their limited income for other items such as rent, food, or medical expenses.
- b. Program Goals, Objectives, and Savings Targets**
The objectives of the Program are to:
- Increase the number of homes weatherized each year;
 - Reduce participating low income customer's average household utility bills by utilizing energy conservation measures as defined in the Weatherization Assistance Program Rules; and

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- Improve the quality of life for customers by providing them with a safer and healthier home.

The 2016 energy savings goal was 376 MWhs.

c. Levels of Participation

A total of 37 homes received weatherization assistance during this reporting period. 170 Smart Thermostats and 6,422 LED bulbs were installed in qualifying low-income residences.

d. Costs Incurred

Costs incurred during this reporting period are listed below:

DSM Program	Rebates and Incentives	Training and Technical Assistance	Consumer Education	Program Implementation	Program Marketing	Planning and Admin	Measurement, Evaluation, and Research	Program Total Cost
Low-Income Weatherization	\$133,745	\$403	0	0	\$3,878	\$51	\$308	\$138,386

Includes \$5,148.08 for health and safety related repairs and \$8,823.10 for Weatherization Agencies' administrative expenses.

e. Evaluation and Monitoring Activities and Results

Navigant, with billing data from TEP, UNS Electric, and UNS Gas, analyzed and tracked energy use in weatherized homes for UNS Electric, TEP, and UNS Gas. The average savings per home reviewed was 2,304 kWh and 117 therms of natural gas

f. kW, kWh, and Therm Savings⁶

No. of Participants	kW savings	kWh savings	Therm savings
37	122	431,013	4,329

Savings are adjusted for line losses of 10.69 percent for both demand and energy (excluding therms). Therms are not included in the portfolio total savings.

g. Environmental Benefits realized

Realized environmental benefits are reflected in Table 5 above.

h. Incremental benefits and net benefit

Incremental benefits and net benefits are reflected in Table 4 above.

i. Performance-incentive calculations for the previous year

Performance-incentive calculations are reflected in Table 4 above.

j. Problems Encountered and Proposed Solutions

UNS Electric, along with other major utilities in Arizona, continues to experience low participation from some low income agencies. Several meetings held in 2015 with all of the state's Weatherization agencies, Arizona Community Action Association ("ACAA") and the ADOH have included discussions on this issue. Some agencies are having difficulty adjusting to the loss of ARRA funding, requiring them to operate on reduced budgets and less staff. The

⁶ No. of Participants only includes the number of homes weatherized. Savings include weatherization, smart thermostats, and LED bulbs.

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ADOH continues to advise the agencies on best practices to maximize funds. One of the challenges faced by TEP, UNS Electric, and UNS Gas, is the funding limit per LIW household is relatively low compared to other utilities. In UNS Electric's 2018 Implementation Plan, to foster participation, the Company will request an increase in LIW funding.

k. Program Modifications

In 2017, UNS Electric intends to market the as the "Energy Ease program." The Energy Ease program would encompass LIW measures that include LIW, Smart Thermostats, Low Income Multifamily, and Low Income Outreach.

UNS Electric included outreach LED bulbs in 2016. Through a partnership with the Community Food Bank, UNS Electric was able to distribute 6,422 LED bulbs directly to Low Income customers. In addition, UNS Electric included weatherization and Low Income program information with the complimentary bulbs. The bulbs were expensed through the LIW Program, thus allowing UNS Electric to record additional savings for the bulbs within the LIW Program.

In August 2016, per Commission Decision No. 75297, UNS Electric filed to use the C&I Facilities "Programmable Thermostat" measure reciprocally in the Low-Income Weatherization program without increasing the overall DSM budget. UNS Electric implemented the measure in the LIW program after the 45-day waiting period after the filing passed without comment.

l. Programs or Measures Terminated

UNS Electric does not plan to terminate this Program or any measures in 2017. No measures were terminated during this reporting period.

4.5 Multi-Family Housing Efficiency Program

a. Description

The UNS Electric Multi-Family Housing Efficiency Program is designed to promote energy efficiency in the residential multi-family sector. The program targets multi-family properties with 5 dwelling units or more to install efficient lighting (CFLs or LEDs) and low-flow water devices. Additionally, multi-family facility managers are encouraged to participate in the C&I Facilities program, which promotes measure installation for the common areas.

b. Program Goals, Objectives, and Savings Targets

The EE potential in the multi-family housing market remains largely underutilized and has a significant potential to increase participation in the Company's program portfolio. Various market barriers, such as split incentives, capital constraints, and lack of awareness, create a gap in addressing EE improvements as such improvements typically place low on a multi-family housing unit's priority list. Through the direct installation and renovation/rehabilitation implementation framework, this program fills the gap and provides substantial energy savings.

The objectives of the Program are to:

- Reduce peak demand and overall energy consumption in the multi-family housing market;
- Promote EE retrofits of both dwelling units and common areas; and
- Increase overall awareness about the importance and benefits of EE improvements to the landlord and property ownership community;

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The 2016 energy savings goal was 161 MWhs.

c. Levels of Participation

Direct Install:

In 2016, measures were installed in 397 multi-family homes located in 13 multi-family complexes. Measures installed and inspected in 2016 were 5,450 CFLs, 234 kitchen faucet aerators, 394 bathroom faucet aerators and 394 Low-Flow showerheads. The participating units in 2016 consisted of lower-income subsidized housing or senior living complexes. Two of the major apartment complexes are located in our Santa Cruz service territory, in which has seen an increase in multi-family facilities being constructed and foresee future participants in the program

HVAC/Tune-Up

Through year end 2016, measures were installed in 397 apartment homes located in thirteen major apartment complexes. All of the participating units in 2016 consisted of lower-income subsidized housing or senior living complexes.

A total of 397 customers participated in the program during this reporting period.

d. Costs Incurred

Costs incurred for this Program during the reporting period are listed below:

DSM Program	Rebates and Incentives	Training and Technical Assistance	Consumer Education	Program Implementation	Program Marketing	Planning and Admin	Measurement, Evaluation, and Research	Program Total Cost
Multi-Family	\$106,857	0	0	\$143,719	0	\$1,903	\$1,920	\$254,398

e. Evaluation and Monitoring Activities and Results

NCI performed quarterly reconciliations for this program to verify coincident demand and energy savings. The MER report is attached in **Appendix 2**.

f. kW, kWh, and Therm Savings

Measure	No. of Measures	kW Savings	kWh Savings
0.5 GPM Bathroom Faucet Aerator	394	2	21,939
1.5 GPM Kitchen Faucet Aerator	234	1	19,928
1.5 GPM Showerhead	394	7	98,981
Screw in ES Integral CFL 13W	5,450	16	165,844
HVAC	307	272	402,200
Tune-Up	498	145	179,235
Totals	7,277	442	888,127

Savings are adjusted for line losses of 10.69 percent for both demand and energy (excluding therms).

g. Environmental Benefits realized

Realized environmental benefits are reflected in Table 5 above.

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h. Incremental benefits and net benefit

Incremental benefits and net benefits are reflected in Table 4 above.

i. Performance-incentive calculations for the previous year

Performance-incentive calculations are reflected in Table 4 above.

j. Problems Encountered and Proposed Solutions

Recruitment of new contractors for the Multi-Family Program has been challenging due to i) a limited number of large HVAC contractors in UNS Electric's service territories - the area is primarily served by smaller HVAC companies typical of a mom and pop operations; and ii) due to staffing changes within the Implementation Contractor's organization, the recruiting process was not initiated until the middle of summer when HVAC contractors are the busiest, resulting in very low interest due to the contractors' limited resources.

In 2017, there will be an emphasis on recruitment during early spring to increase the contractor participation rate.

Additionally, the multi-family component was challenged by the fact that most apartment complexes have out of town property management, which hinders the authorization process. In 2017, the process will start in early spring to allow time for the property managers to obtain approval in a timely manner.

k. Program Modifications

In August 2016, per Commission Decision No. 75297, UNS Electric filed to use the C&I Facilities "Programmable Thermostat" measure and the Efficient Products "Residential LED Home Lighting" measures reciprocally in the Multi-Family program without increasing the overall DSM budget. UNS Electric implemented these measures after the 45-day waiting period after the filing passed without comment.

l. Programs or Measures Terminated

UNS Electric does not plan to terminate this Program or any measures in 2017. Due to changes in the UNS Electric marketplace and in conjunction with Commission Decision No. 75450 (TEP), the Company has discontinued CFL measures and focused on equivalent LED measures.

4.6 Residential New Construction Program

a. Description

The Residential New Construction Program for UNS Electric is marketed as the Energy Smart Homes ("ESH") Program. The ESH Program emphasizes the whole-house approach to improving health, safety, comfort, durability, and energy efficiency. The Program promotes homes that meet the Environmental Protection Agency ("EPA")/Department Of Energy ("DOE") Energy Star® Home performance requirements. To encourage participation, the Program provides incentives to homebuilders for each qualifying home. On-site inspections and field testing of a random sample of homes is required to ensure that homes meet the Energy Star® Home performance requirements; on-site inspections are conducted by third-party Residential Energy Services Network ("RESNET") certified energy raters selected by each builder. Components of the ESH Program include development of branding, builder training curriculum, and marketing material.

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b. Program Goals, Objectives, and Savings Targets

The objectives of the Program are to:

- Educate consumers on the benefits of Energy Star® Homes;
- Reduce peak demand and overall energy consumption in new homes;
- Stimulate construction of new homes that are inspected and tested to assure energy performance;
- Stimulate energy efficiency standards that are higher than EPA/DOE, Energy Star® performance standards;
- Stimulate the installation of high-efficiency heating and cooling systems, envelope, lighting, and fixed appliances (Energy Star® products);
- Cultivate customer demand for, and a contractor base to deliver, comprehensive energy efficiency installations in alignment with the “Home Performance with Energy Star Program.” http://www.energystar.gov/index.cfm?fuseaction=hpwes_profiles.showsplash
- Work with local builders to construct energy-efficient homes;
- Train builder construction staff and subcontractors in advanced building science concepts to increase energy efficiency through improved design and installation practices;
- Transform the market by improving construction practices in the UNS Electric service territory;
- Encourage participation in the ESH Program by providing incentives to homebuilders for each qualifying home;
- Assist sales agents with promoting and selling energy-efficient homes;
- Train builder construction staff and sub-contractors in advanced building-science concepts to reach energy efficiency goals through improved design and installation practices;
- Increase homebuyer awareness and understanding of energy-efficient building practices and the benefits of purchasing an energy-efficient home.

The 2016 energy savings goal was 287 MWhs.

c. Actual Levels of Participation

A total of 56 customers participated in the program during this reporting period.

d. Costs Incurred

Costs incurred during the reporting period are listed below.

DSM Program	Rebates and Incentives	Training and Technical Assistance	Consumer Education	Program Implementation	Program Marketing	Planning and Admin	Measurement, Evaluation, and Research	Program Total Cost
Residential New Construction	\$52,000	\$6,506	\$100	-\$600	0	0	\$401	\$58,407

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- e. **Evaluation and Monitoring Activities and Results**
NCI performed quarterly reconciliations for this program to verify coincident demand and energy savings. The MER report is attached in **Appendix 2**.

- f. **kW, kWh, and Therm Savings**

No. of Homes	kW savings	kWh savings	Therm savings
56	69	94,020	1,536,571

Savings are adjusted for line losses of 10.69 percent for both demand and energy (excluding therms).

- g. **Environmental Benefits realized**
Realized environmental benefits are reflected in Table 5 above.
- h. **Incremental benefits and net benefit**
Incremental benefits and net benefits are reflected in Table 4 above.
- i. **Performance-incentive calculations for the previous year**
Performance-incentive calculations are reflected in Table 4 above.
- j. **Problems Encountered and Proposed Solutions**
Reflecting economic barriers, participating builders indicate concerns on the higher first costs of building to meet higher energy efficiency standards. This is due in part to the fact that the various jurisdictions in the UNS Electric service territory have not adopted consistent building codes. The building codes being used vary from the 2003-2012 code cycles. UNS Electric has been actively working with building and elected officials to educate them on the need for adoption of current building codes, consistent across geographic areas.
- k. **Program Modifications**
There were no program design changes during this reporting period.
- l. **Programs or Measures Terminated**
UNS Electric does not plan to terminate this Program or any Program measures in 2017. No measures were terminated during this reporting period.

4.7 Shade Tree Program

- a. **Description**
The UNS Electric Shade Tree Program is marketed under the name of "Trees for You" ("TFY") and is primarily targeted to residential customers. Community organizations, commercial customers, and schools can participate if they meet the Program requirements. UNS Electric customers are allowed to purchase two desert adapted, five-gallon trees per year (four trees are allotted for homes built before 1980) which must be planted on the south, west, or east side of the home. Though customers purchase the tree(s) from the nursery of their choice they must complete an application provided by UNS Electric, provide a copy of their paid invoice, and submit all information to the Company to receive a \$15.00 (per tree) credit on their electric bill.
- b. **Program Goals, Objectives, and Savings Targets**
The objective of the Program is to promote energy conservation and the environmental benefits associated with planting low water usage trees. Along with the energy savings trees provide to the homes, trees also provide habitat for wildlife, absorb air and water pollutants, control storm

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water runoff and soil erosion, and provide an aesthetic beauty to neighborhoods and the community.

The 2016 energy savings goal was 110 MWhs.

c. Levels of Participation

UNS Electric partnered with local Home Depots and other retailers to cross-promote the Program through their outreach events. The program is highly promoted during the spring and fall home shows when planting is more prevalent. Consumers are exposed to the different varieties of trees the program has to offer and employees educate consumers on each species benefits. Program information is included in materials distributed through the Direct Canvassing Program, a subprogram of the Behavioral Comprehensive Program.

A total of 875 customers participated in the program during this reporting period.

d. Costs Incurred

Costs incurred for this Program during the reporting period are listed below:

DSM Program	Rebates and Incentives	Training and Technical Assistance	Consumer Education	Program Implementation	Program Marketing	Planning and Admin	Measurement, Evaluation, and Research	Program Total Cost
Shade Tree Program	\$17,104	0	\$1,855	\$230	\$5,581	0	\$1,461	\$26,231

e. Evaluation and Monitoring Activities and Results

NCI performed quarterly reconciliations for this program to verify coincident demand and energy savings. The MER report is attached in **Appendix 2**.

f. kW, kWh, and Therm Savings

No. of Trees	kW savings	kWh savings	Therm savings
1,202	32.37	77,646	0

Savings are adjusted for line losses of 10.69 percent for both demand and energy (excluding therms).

g. Environmental Benefits realized

Realized environmental benefits are reflected in Table 5 above.

h. Incremental benefits and net benefit

Incremental benefits and net benefits are reflected in Table 4 above.

i. Performance-incentive calculations for the previous year

Performance-incentive calculations are reflected in Table 4 above.

j. Problems Encountered and Proposed Solutions

No problems were encountered during this reporting period.

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- k. Program Modifications**
Though no program modifications were made during this reporting period, UNS Electric is looking into partnering with local nurseries to expand the varieties of desert adaptive trees available for our diverse service territory's differing climate zones.
- l. Programs or Measures Terminated**
UNS Electric does not plan to terminate this Program or any Program measures in 2017. No measures were terminated during this reporting period.

Non-Residential Sector

4.8 Bid for Efficiency Program

- a. Description**
UNS Electric's BFE program is an existing program most recently approved by the Commission in Decision No. 75297. The Bid for Efficiency Program is designed so customers or project sponsors can propose their own energy efficiency projects and then bid competitively for incentives within Program guidelines. UNS Electric selects winning bids based upon specified criteria. Program participants and project sponsors may include commercial or industrial customers, Energy Service Companies, or other aggregators who submit proposals for multiple sites.
- b. Program Goals, Objectives, and Savings Targets**
The Program encourages customers and project sponsors to think creatively and to develop projects designed to optimize system energy use as a whole, rather than considering the energy usage of each individual piece of equipment. The program fosters customer-driven project activity (e.g., customers select appropriate measures and professionals to implement measures), and encourages the implementation of comprehensive, multi-measure projects. Program goals include:
- Ensure projects are submitted, approved, implemented, and verified in a timely manner;
 - Allow projects to be customer-driven; the customer or project sponsor will select appropriate trade and professional allies to design and implement projects;
 - Encourage implementation of multiple measures; and
 - Encourage applications that aggregate measures at multiple sites.
- The 2016 energy savings goal was 3,542 MWWhs.
- c. Levels of Participation**
A total of 5 customers participated in the program during this reporting period.

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d. Costs Incurred

Costs incurred for this Program during the reporting period are listed below.

DSM Program	Rebates and Incentives	Training and Technical Assistance	Consumer Education	Program Implementation	Program Marketing	Planning and Admin	Measurement, Evaluation, and Research	Program Total Cost
Bid For Efficiency	\$129,964	\$633	0	\$88,340	\$10,353	\$161	\$1,934	\$231,385

e. Evaluation and Monitoring Activities and Results

NCI performed quarterly reconciliations for this program to verify coincident demand and energy savings. The NCI MER report is attached in **Appendix 2**.

f. kW, kWh, and Therm Savings

Measure	Measures Installed	kW savings	kWh savings
HVAC	5	0	1,283,416
Lighting	30	66	520,006
Totals	35	66	1,803,422

Savings are adjusted for line losses of 10.69 percent for both demand and energy (excluding therms).

g. Environmental Benefits realized

Realized environmental benefits are reflected in Table 5 above.

h. Incremental benefits and net benefit

Incremental benefits and net benefits are reflected in Table 4 above.

i. Performance-incentive calculations for the previous year

Performance-incentive calculations are reflected in Table 4 above.

j. Problems Encountered and Proposed Solutions

No problems were encountered during this reporting period.

k. Program Modifications

No program modifications were made during this reporting period.

l. Programs or Measures Terminated

UNS Electric does not plan to terminate this Program or any Program measures in 2017. No measures were terminated during this reporting period.

4.9 Commercial & Industrial ("C&I") Demand Response Program

a. Description

The UNS Electric C&I Demand Response Program is designed to manage peak demand and mitigate system emergencies through a commercial and industrial load curtailment program. The Program is delivered in-house by engaging with commercial and industrial customers, and encouraging those customers to participate in a proactive demand response program. For those customers who choose to participate, UNS Electric will install equipment that provides the Company control of either selected loads or the entire electric load in a facility.

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UNS Electric installs metering equipment for all participants to enable proper tracking of interval load data to ensure customer participation in any control event and also to provide data for post event analysis. In addition, participants must agree to be placed on UNS Electric's Interruptible Power Service tariff in lieu of any cash incentive for participation.

b. Program Goals, Objectives, and Savings Targets

The primary goal of the Program is to provide up to 10 MW of summer peak demand reduction, available for up to 80 hours per year, in order to mitigate system emergencies.

The 2016 energy savings goal was 3,601 equivalent MWhs of load reduction.

c. Levels of Participation

A total of 53 participants were enrolled in 2016 with an estimated reduction potential of 8.34 MW.

d. Costs Incurred

Costs incurred during this reporting period are listed below:

DSM Program	Rebates and Incentives	Training and Technical Assistance	Consumer Education	Program Implementation	Program Marketing	Planning and Admin	Measurement, Evaluation, and Research	Program Total Cost
C&I Demand Response Control Program	0	\$2,926	0	\$178,158	0	\$22	0	\$181,106

e. Evaluation and Monitoring Activities and Results

NCI performed quarterly reconciliations for this program to verify coincident demand and energy savings. The MER report is attached in **Appendix 2**.

f. kW, kWh, and Therm Savings

The Standard allows a credit for demand response and load management programs per AAC. R14-2-2404 (C). Peak reduction capability may be converted to an annual energy savings equivalent based on an assumed 50 percent load factor. The credit shall not exceed 10 percent of the annual standard. The following table shows the allowable credit for this Program based on the available capacity reduction and the 10 percent cap. See the Program Modifications section below for more information.

Participants	Number of Events	Maximum MW Commitment	MWh savings credit
53	0	8.34	3,601

Savings are adjusted for line losses of 10.69 percent for both demand and energy (excluding therms).

g. Environmental Benefits realized

Realized environmental benefits are reflected in Table 5 above.

h. Incremental benefits and net benefit

Incremental benefits and net benefits are reflected in Table 4 above.

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- i. Performance-incentive calculations for the previous year**
Performance-incentive calculations are reflected in Table 4 above.
- j. Problems Encountered and Proposed Solutions**
As in 2015, program growth continued to be a challenge as the UNS Electric territory does not have a sufficiently large base of industrial customers to participate in the program. UNS Electric provided equipment for customer integration provides the most cost-effective method to deliver this program.
- Many municipal water pumping customers have existing switching equipment and back-up generation. For these customers the Company continues to leverage a delivery method that uses Company owned communications equipment to control the customer's switching equipment. This further lowers cost and increases the cost-effectiveness of the program.
- k. Program Modifications**
No program modifications were made during this reporting period.
- l. Programs or Measures Terminated**
UNS Electric does not plan to terminate this Program or any measures in 2017.

4.10 Commercial & Industrial ("C&I") Facilities/Schools Program

- a. Description**
The UNS Electric C&I Facilities/Schools Program is designed to minimize barriers to implementing energy-efficiency improvements in the non-residential market. These barriers typically consist of a lack of capital, information search costs, transaction costs, performance uncertainty, and the so-called "hassle factor." The purpose of the program is to assist non-residential customers and K-12 educational facilities with analyzing their energy use and improving their building/system energy efficiencies.
- The Program provides incentives directly to contractors for the installation of selected high-efficiency lighting; HVAC systems; motors; and refrigeration measures. The incentives are set at a higher level for this market in order to encourage contractors to market and deliver the program, thereby offsetting the need for UNS Electric marketing and overhead expenses. The Program also employs an internet-based measure analysis and customer project processing system which makes the process easier for both contractors and customers. The Program provides contractors and customers with the opportunity to propose innovative energy-efficiency solutions through custom energy-efficient measures.
- b. Program Goals, Objectives, and Savings Targets**
The objectives of the Program are to:
- Encourage non-residential customers to install high-efficiency lighting equipment and controls, HVAC equipment, and energy-efficient refrigeration systems in their facilities;
 - Encourage contractors to promote the Program and provide turn-key installation services to non-residential customers;
 - Overcome the unique market barriers of the small business market including:
 - o First costs and lack of access to capital for energy efficiency improvements;
 - o Lack of awareness and knowledge about the benefits and cost of energy efficiency improvements;

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- Hassle and transactions costs; and
- Performance uncertainty associated with energy efficiency projects;
- Assure that the participation process is clear, easy to understand and simple; and
- Increase the awareness and knowledge of business owners, building owners and managers, and other decision-makers on the benefits of high-efficiency equipment and systems.

The 2016 energy savings goal was 5,222 MWhs.

c. Levels of Participation

A total of 115 customers participated in the program during this reporting period.

d. Costs Incurred

Costs incurred for this Program during the reporting period are listed below.

DSM Program	Rebates and Incentives	Training and Technical Assistance	Consumer Education	Program Implementation	Program Marketing	Planning and Admin	Measurement, Evaluation, and Research	Program Total Cost
C&I Facilities/Schools	\$634,918	\$1,871	0	\$234,611	\$15,819	\$144	\$24,954	\$912,318

e. Evaluation and Monitoring Activities and Results

NCI performed quarterly reconciliations for this program to verify coincident demand and energy savings. The MER report is attached in **Appendix 2**.

f. kW, kWh, and Therm Savings

Measure	No. of Measures	kW savings	kWh savings
HVAC	16	7	1,222,471
Lighting	5,217	194	2,325,353
Custom	291	752	4,686,129
Totals	5,524	953	8,233,952

Savings are adjusted for line losses of 10.69 percent for both demand and energy (excluding therms).

g. Environmental Benefits realized

Realized environmental benefits are reflected in Table 5 above.

h. Incremental benefits and net benefit

Incremental benefits and net benefits are reflected in Table 4 above.

i. Performance-incentive calculations for the previous year

Performance-incentive calculations are reflected in Table 4 above.

j. Problems Encountered and Proposed Solutions

No problems were encountered during this reporting period.

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- k. Program Modifications**
New measures approved by the Commission in October 2015 were implemented in 2016. The new measures include LED lighting, HVAC equipment, and refrigeration technologies.
- l. Programs or Measures Terminated**
UNS Electric does not plan to terminate this Program or any Program measures in 2017. In conjunction with Commission Decision No. 75450 (TEP), the Company has discontinued CFL measures and focused on equivalent LED measures.

4.11 Retro-Commissioning Program (“RCx”)

a. Description
UNS Electric’s RCx Program is designed to assist owners of larger existing non-residential facilities in identifying methods and processes to improve energy performance by making necessary adjustments to equipment and programming in order to produce energy savings, restore equipment to its original efficiency, and improve occupant comfort. Targeted improvements are relatively inexpensive to implement and may offer simple paybacks in less than two years.

b. Program Goals, Objectives, and Savings Targets
The primary goal of the RCx program is to generate significant energy savings by retro-commissioning existing C&I facilities. The program delivers customer benefits by lowering energy bills and energy usage, and improving building performance and occupant comfort while reducing maintenance calls. The program develops an RCx contractor pool, and enables UNS Electric to build relationships with C&I customers, thus leading to other areas of participation in the Company’s portfolio of EE programs. RCx programs in other utility service territories have delivered average energy savings in the range of 5 percent to 15 percent per facility, and measures implemented as a result of the program’s activity typically pay for themselves in less than two years.

The 2016 energy savings goal was 1,550 MWhs.

c. Levels of Participation
There was no customer participation in the program during this reporting period.

d. Costs Incurred
Costs incurred for this Program during the reporting period are listed below.

DSM Program	Rebates and Incentives	Training and Technical Assistance	Consumer Education	Program Implementation	Program Marketing	Planning and Admin	Measurement, Evaluation, and Research	Program Total Cost
Retro-Commissioning	0	\$593	0	\$22,031	\$266	0	0	\$22,890

e. Evaluation and Monitoring Activities and Results
Because there was no participation in the program NCI did not perform an evaluation of this Program for 2016.

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- f. kW, kWh, and Therm Savings**
There were no claimed energy savings during this reporting period.
- g. Environmental Benefits realized**
Realized environmental benefits are reflected in Table 5 above.
- h. Incremental benefits and net benefit**
Incremental benefits and net benefits are reflected in Table 4 above.
- i. Performance-incentive calculations for the previous year**
Performance-incentive calculations are reflected in Table 4 above.
- j. Problems Encountered and Proposed Solutions**
Though there has been limited customer interest in the program, no customers participated in the program in 2016. UNS Electric has been working with RCx contractors from the Phoenix and Tucson areas to encourage delivery of RCx services in the Company's northern and southern Arizona service territories. UNS Electric is also leveraging contractor interest in the TEP RCx program to increase interest in the UNS Electric program.
- k. Program Modifications**
No program modifications were made during this reporting period.
- l. Programs or Measures Terminated**
UNS Electric does not plan to terminate this Program or any Program measures in 2017. No measures were terminated during this reporting period.

Behavioral Sector

4.12 Behavioral Comprehensive Program

a. Description

The Behavioral Comprehensive Program consists of four subprograms. The focus of the Program is to educate residential customer on how changes in behavior, including purchasing decisions, can improve energy efficiency. The subprograms include low-cost measures such as replacing older technology with energy efficient CFLs, faucet aerators, LED nightlights, setting refrigerator thermometers, and educational opportunities.

The four subprograms consist of:

- Direct Canvassing
 - o The Direct Canvassing initiative is a grass-root, door to door, approach to promote energy efficiency and is designed to reach neighborhoods difficult to reach through traditional messaging. Each customer receives four CFLs along with program materials for appropriate UNS Electric DSM programs.
- K-12 Education
 - o The K-12 education program is a three part energy education program for middle school students that include a pre-visit lesson, an on-site classroom presentation, and a post visit activity; all aligned with the Arizona Department of Education middle school science standards. Students are instructed on how to save energy in their homes and are provided with a take home energy efficiency kit which includes items such as CFLs or LEDs, LED nightlights, bathroom faucet aerators, low flow showerhead, and

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thermometers for both refrigerators & freezers. The kit allows the students to gain practical experience, by installing the items with their parents, which correlates with the curriculum presented at school.

- Community Education
 - o The community education program is designed to engage with community groups and work with public entities to offer energy efficiency workshops. Customers who attend the workshop are educated on the benefits of energy efficiency emphasizing on behavioral changes that lead to energy savings. Participants are provided with an energy savings kit with a wide variety of sample of materials such as weather-stripping, low flow showerheads, caulk, and CFLs or LEDs to direct install in their homes.
- CFL Community Outreach
 - o The CFL Community Outreach provides complimentary CFLs through the participation of community events and through collaborations with community organizations. The program complements the presence of UNS Electric at community events and its overall education and outreach efforts and energy efficiency messaging..

b. Program Goals, Objectives, and Savings Targets

The Program objectives are to influence energy related behaviors including the following:

- Habitual behaviors
 - o Adjust thermostat setting
 - o Turn off unnecessary lights
- Small purchasing and maintenance behaviors
 - o Purchase and install low flow faucet aerators and low flow shower heads
 - o Purchase and install CFL bulbs
 - o Perform regular HVAC maintenance
- Larger purchasing decisions
 - o Purchase an ENERGY STAR® appliance
 - o Purchase higher energy efficient heating and cooling equipment

The 2016 energy savings goal was 3,066 MWhs.

c. Levels of Participation

- Direct Canvassing distributed 4,573 kits. Each kit consists of four CFLs.
- The K-12 Education Program conducted classroom presentations and distributed 2,862 Energy Saving Kits.
- In 2016, 271 Community Education Energy Saving Kits were distributed.
- 35,432 CFLs were distributed to UNS Electric customers in all three service areas. Methods of delivery included Home Shows, County Fairs, service organizations, food banks, low-income agencies, and builder associations.

d. Costs Incurred

Costs incurred for this Program during the reporting period are listed below.

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DSM Program	Rebates and Incentives	Training and Technical Assistance	Consumer Education	Program Implementation	Program Marketing	Planning and Admin	Measurement, Evaluation, and Research	Program Total Cost
Behavioral Comprehensive	\$92,390	\$2,305	\$6,269	\$65,735	\$26,777	\$4,931	\$3,067	\$201,474

e. Evaluation and Monitoring Activities and Results

NCI performed quarterly reconciliations for this program to verify coincident demand and energy savings. The MER report is attached in **Appendix 2**.

f. kW, kWh, and Therm Savings

Measure	No. of Measures	kW savings	kWh savings
Lighting	35,432	96	981,697
Academic Education	2,862	53	670,620
Community Education	271	5	63,500
Direct Canvassing	4,573	49	506,809
Totals	43,138	203	2,222,626

Savings are adjusted for line losses of 10.69 percent for both demand and energy (excluding therms).

g. Environmental Benefits realized

Realized environmental benefits are reflected in Table 5 above.

h. Incremental benefits and net benefit

Incremental benefits and net benefits are reflected in Table 4 above.

i. Performance-incentive calculations for the previous year

Performance-incentive calculations are reflected in Table 4 above.

j. Problems Encountered and Proposed Solutions

No additional problems were encountered during this reporting period.

k. Program Modifications

No program modifications were made during this reporting period

l. Programs or Measures Terminated

UNS Electric does not plan to terminate this Program or any Program measures in 2017. In conjunction with Commission Decision No. 75450 (TEP), the Company has discontinued CFL measures and focused on equivalent LED measures.

4.13 Home Energy Reports Program

a. Description

The Home Energy Reports Program, approved by the Commission in Decision No. 75297, is designed to promote behavioral changes that conserve energy, such as turning off lights or appliances, adjusting thermostat setpoints, and performing regular equipment maintenance. The program encourages behavioral changes through targeted and comparative education and awareness of customer's energy consumption through regular energy consumption and tips on how a customer's behavior and light or appliance use modifies the customer's energy consumption.

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b. Program Goals, Objectives, and Savings Targets

The Program objectives are to influence energy related behaviors by providing customers by i) providing regular energy consumption reports and tips on how to conserve energy, ii) engaging customers about their behavior and their installed products to enhance the accuracy of the energy reports, and iii) participants will receive an HER starter kit that includes behavior based energy conservation tips and four LED light bulbs. Additionally, the program will encourage customers to take advantage of other DSM related programs, promote efficient home operations, and lower customer's energy bills.

c. Levels of Participation

UNS Electric's HER program was approved by the Commission in Decision 75297, contingent upon approval of the TEP HER program (Decision No. 75450) and demonstrated cost-effectiveness. In 2016 TEP released an RFP to select an implementation contractor to administer both the TEP & UNS Electric programs. Due to a lengthy RFP process, an implementation contractor was not selected until late in 2016 with program implementation set for January 2017

d. Costs Incurred

Costs incurred for this Program during the reporting period are listed below.

DSM Program	Rebates and Incentives	Training and Technical Assistance	Consumer Education	Program Implementation	Program Marketing	Planning and Admin	Measurement, Evaluation, and Research	Program Total Cost
Home Energy Reports	0	0	0	0	0	0	\$794	\$794

e. Evaluation and Monitoring Activities and Results

There was no evaluation activity during this reporting period but some minor preliminary research was performed.

f. kW, kWh, and Therm Savings

There were no savings realized during this reporting period.

g. Environmental Benefits realized

There were no environmental benefits realized during this reporting period.

h. Incremental benefits and net benefit

There were no incremental benefits and net benefits realized during this reporting period.

i. Performance-incentive calculations for the previous year

There is no performance incentive for this program for this reporting period.

j. Problems Encountered and Proposed Solutions

No problems were encountered during this reporting period.

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- k. Program Modifications**
After a lengthy RFP review process an implementation contractor was selected to implement the program for both TEP and UNS Electric in 2017.

- l. Programs or Measures Terminated**
UNS Electric does not plan to terminate this Program or any measures in 2017.

Support Sector

4.14 Education and Outreach Program

a. Description

The Consumer Education and Outreach Program is responsible for the marketing of the UNS Electric portfolio as a whole, as well as general consumer education. The focuses of activities are as follows:

- Develop brochures and communications materials that showcase all available EE programs;
- Develop and maintain communication material related to general energy savings information;
- Provide labor and materials to staff trade shows and community events;
- Develop and maintain web content to educate consumers on energy use and TOU rate choices; and
- Provide cross communication of EE Programs and general energy savings information.

The Company continues to educate its employees about the Company's DSM programs and emphasizes the importance of UNS Electric employees helping to ensure the success of the programs.

b. Program Goals, Objectives, and Savings Targets

The Program is designed to educate commercial and residential customers on ways to save energy through conservation measures, energy efficiency measures, or utilizing Time-of-Use ("TOU") rates.

c. Levels of Participation

TOU Customer Participation

During this reporting period 348 customers were enrolled in the PowerShift™ TOU Program.

Community Events

UNS Electric representatives spoke at many civic and other organizational meetings promoting DSM Programs and energy education. These organizations and civic bodies include:

- *Kingman Home and Garden Expo, Kingman*
- *Lake Havasu City Homebuilders Show, Lake Havasu*
- *Kingman Regional Medical Center, Kingman;*
- *Mohave County Fair, Kingman*
- *Rotary Club, Kingman*
- *Boys & Girls Club, Kingman*
- *Lee Williams High School, Kingman*
- *Colorado River Builder's Association, Lake Havasu City*
- *Kingman Cancer Care Unit, Kingman*
- *Mohave County Community Services Department, Kingman*
- *Northwest Arizona Builder's Association, Kingman*
- *North Country HealthCare, Inc., Kingman*
- *Kingman High School, Kingman*
- *Kingman Middle School, Kingman*

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- *Kingman Master Gardeners, Kingman*
- *Lake Havasu Master Gardeners, Lake Havasu*
- *Kingman Academy of Learning High School, Kingman*
- *Chicanos Por La Causa, Inc, Nogales*
- *Kingman Aid to Abused People, Kingman*
- *Kingman Motor Cross, Kingman*
- *London Bridge Yacht Club, Lake Havasu City*
- *Emmanuel Christian Academy, Kingman*
- *Venture Club of Kingman, Kingman*
- *Lake Havasu Chamber of Commerce, Lake Havasu*
- *Western Arizona Council of Governments, Mohave County*
- *Department of Economic Security, Kingman*

d. Costs Incurred

Costs incurred for this Program during the reporting period are listed below:

DSM Program	Rebates and Incentives	Training and Technical Assistance	Consumer Education	Program Implementation	Program Marketing	Planning and Admin	Measurement, Evaluation, and Research	Program Total Cost
Consumer Education & Outreach Program	0	0	\$102,670	\$3,421	0	0	0	\$106,091

e. Evaluation and Monitoring Activities and Results

There were no claimed savings during this reporting period to evaluate and there is no third-party evaluation for this program.

f. kW, kWh, and Therm Savings

There are no claimed energy savings to report for this program.

g. Environmental Benefits realized

There are no realized environmental benefits for this program.

h. Incremental benefits and net benefit

There are no incremental benefits and net benefits for this program.

i. Performance-incentive calculations for the previous year

There are no performance-incentive calculations for this program.

j. Problems Encountered and Proposed Solutions

No problems were encountered during this reporting period.

k. Program Modifications

No program modifications were made during this reporting period.

l. Programs or Measures Terminated

UNS Electric does not plan to terminate this Program or any Program measures in 2017. No measures were terminated during this reporting period.

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4.15 Energy Codes & Standards Enhancement Program

a. Description

The Energy Codes and Standards Enhancement Program is an existing program approved by the Commission in Decision No. 75297. The Program maximizes energy savings through promoting adherence to local building energy codes, the adoption of current nationally or internationally recognized building codes, and through enhanced energy efficient appliance standards. The program uses a variety of methods to i) improve levels of compliance with existing building energy codes and appliance standards; and ii) support adoption of newer energy codes and appliance standards as warranted by market conditions. Specific program activities target needs of local building officials.

- Educating local code officials and building professionals on current standards and development;
- Providing documentation of the specific local benefits of code enforcement and the promotion of newer energy code adoptions over time;
- Ensuring utility incentive programs align with local energy codes and appliance standards; and
- Collaborating with relevant stakeholders to build a more robust community while advancing the adoption and implementation of strong, effective building energy codes and appliance standards across the local jurisdictions within UNS Electric's service territory.

b. Program Goals, Objectives, and Savings Targets

The program is designed to increase energy savings in the residential and commercial sectors by improving levels of building code compliance, supporting periodic energy code updates/adoptions as warranted by market conditions, and advocating for higher efficiency electric appliances.

The 2016 energy savings goal was 3,964 MWhs.

c. Levels of Participation

In 2016, UNS Electric Program staff met with building officials from Kingman, Lake Havasu City, Mohave County, and Santa Cruz County to discuss educational opportunities and to encourage them to consider adopting building energy codes where such building codes have not been adopted or to update any remaining older building codes within their jurisdiction. UNS Electric staff also met with a variety of building partners educating and discussing the benefits of energy conservation codes and the process to adopt newer codes in UNS Electric's service territories.

d. Costs Incurred

Costs incurred for this Program during the reporting period are listed below:

DSM Program	Rebates and Incentives	Training and Technical Assistance	Consumer Education	Program Implementation	Program Marketing	Planning and Admin	Measurement, Evaluation, and Research	Program Total Cost
Energy Codes and Standards	0	\$1,968	0	0	0	0	0	\$1,968

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e. Evaluation and Monitoring Activities and Results

UNS Electric staff attend, support and participate in meetings and organizations that encourage the understanding, adoption and enforcement of building codes, receive feedback from participants on staff interaction with the meeting attendees, and then review and evaluate the feedback.

f. kW, kWh, and Therm Savings

An analysis performed by UNS Electric identified energy savings through improved appliance standards. The following table shows the incremental energy savings credit allowed by Commission Decision No. 72747 for 2016.⁷

Program	kW savings	kWh savings	Therm savings
Energy Codes and Standards	0.98	3,964,355	NA

g. Environmental Benefits realized

Realized environmental benefits are reflected in Table 5 above.

h. Incremental benefits and net benefit

Incremental benefits and net benefits are reflected in Table 4 above.

i. Performance-incentive calculations for the previous year

Performance-incentive calculations are reflected in Table 4 above.

j. Problems Encountered and Proposed Solutions

Arizona is one of nine states in the country that allow “home rule” adoption of residential building codes. Counties and municipalities may adopt some or all of the residential building codes available (some minimum code standards are enforced for nonresidential structures such as municipal buildings, schools, and health care facilities). Historically, the jurisdictions within UNS Electric’s service territory have not adopted energy conservation building codes. UNS Electric has been actively educating code officials and contractors on the advantages of energy conservation codes, and will continue its efforts to overcome some of the barriers and misconceptions of Code adoption.

k. Program Modifications

No program modifications were made during this reporting period.

l. Programs or Measures Terminated

UNS Electric does not plan to terminate this Program or any measures in 2017. No measures were terminated during this reporting period.

⁷ Decision No. 72747, p. 56, lines 17-19 states “...allow the Company to also count toward meeting the Energy Efficiency Standard in A.A.C. R14-2-2404, for 2012 – 2020, up to one third of the energy savings resulting from energy efficiency appliance standards...”

Appendix 1 – Commission Approved DSM Programs & Measures for 2016

Commission Approved DSM Programs & Measures for 2016

DSM Program	Commission Approved 2016 Program Budget	Actual 2016 Program Expenditures	Actual 2016 Program Societal Benefits	2016 Program Societal Costs or Staff Analysis Benefit/Cost Ratio (Decision No. 75297)	Actual 2016 Benefit/Cost Ratio
Residential Programs					
Appliance Recycling	\$89,765	\$-3,869	\$0	\$46,339	N/A ^b
<i>Measures</i>	Freezer Recycling			1.66	N/A ^b
	Refrigerator Recycling			1.66	N/A ^b
Efficient Products	\$888,532	\$996,267	\$2,832,405	\$686,701	2.24
<i>Measures</i>	Energy Star Central Air Conditioner			2.17	N/A ^b
	Energy Star Clothes Washer			1.95	12.49
	Energy Star Dishwasher			1.56	N/A ^b
	Energy Star Refrigerator			1.16	4.44
	Energy Star Room Air Conditioner			1.02	3.55
	Integral CFL			2.23	0.65
	LED Home Lighting			1.25	5.81
	Pool Pump Timers ^b			1.95	N/A ^b
	Variable Speed Pool Pump ^b			1.0	4.28
Existing Home Program	\$2,119,484	\$695,585	\$2,365,071	\$1,337,417	2.94
<i>Measures</i>	DTR Tier 1			1.18	2.92
	DTR Tier 2			2.25	4.67
	ER HVAC with QI			1.20	2.06
	ER HVAC QI Tier 1 DTR			1.24	2.43
	ER HVAC QI Tier 2 DTR			1.88	5.89
	HVAC QI			1.01	3.85
	HVAC QI Tier 1 DTR			0.98	2.56
	HVAC QI Tier 2 DTR			1.77	5.88
	Programmable Thermostats			N/A	N/A ^b
	Tune Up-Advanced Tune Up			1.27	1.01
	Tune Up-WCC			1.83	1.43
Low-Income Weatherization	\$351,817	\$138,386	\$343,402	\$95,881	3.01
<i>Measures</i>	Whole House Low Income Weatherization			1.02	3.01
Multi-Family Housing	\$266,930	\$254,398	\$713,410	\$27,701	2.25
<i>Measures</i>	Integral CFL			1.80	0.52
	Faucet Aeratosr			2.04	0.90
	1.5 GPM Low Flow Showerheads			1.86	0.92
	DTR Tier 1			2.01	3.88
	DTR Tier 2			2.01	3.65
	LED Home Lighting			N/A	N/A ^b

DSM Program	Commission Approved 2016 Program Budget	Actual 2016 Program Expenditures	Actual 2016 Program Societal Benefits	2016 Program Societal Costs or Staff Analysis Benefit/Cost Ratio (Decision No. 75297)	Actual 2016 Benefit/Cost Ratio
	Tune Up-Advanced Tune Up			1.31	1.38
	Tune Up-WCC			1.99	2.19
Residential New Construction	\$282,618	\$58,407	\$161,648	\$90,234	2.78
<i>Measures</i>	Energy Star ≤ 73 HERS Electric			1.70	2.78
	Energy Star ≤ 73 HERS Gas			1.70	2.78
Shade Tree Program	\$35,343	\$26,231	\$104,642	\$54,723	1.73
<i>Measures</i>	Shade Tree			1.05	1.73
Non-Residential					
Bid for Efficiency	\$292,005	\$231,385	\$270,421	\$786,176	2.57
<i>Measures</i>	Bid for Efficiency Project			1.79	2.57
C&I Demand Response ^a	\$374,850	\$181,106	N/A	\$4,357	N/A ^a
<i>Measures</i>	Demand Response / Direct Load Control			2.66	N/A ^a
C&I Facilities/Schools	\$911,204	\$912,318	\$2,724,834	\$1,075,284	1.90
	Advanced Power Strips - Load Sensor			1.22	N/A ^b
	Advanced Power Strips - Timer Plug Strip			2.78	N/A ^b
	Anti sweat heater controls			1.96	N/A ^b
	Canopy LED			1.32	N/A ^b
	Cold cathode CFL			2.31	N/A ^b
	Computer Power Monitoring System			1.72	N/A ^b
	Custom Measures			1.91	2.25
	Daylighting controls			1.00	N/A ^b
	Delamping			6.91	2.69
	Energy efficient exit signs			1.26	2.99
	Evaporator Fan Controls			1.35	N/A ^b
	Exterior HID to LED			1.49	N/A ^b
	Exterior HIDs to T8/T5			2.63	N/A ^b
	Hard Wire CFL			1.15	N/A ^b
	High Efficiency Evaporator Fan Motors (ECM)			1.69	N/A ^b
	High Efficiency Evaporator Fan Motors (PSC)			2.06	N/A ^b
	High Efficiency SEER Packaged and Split AC's			1.14	4.76
	High Efficiency SEER Packaged and Split HP's			1.88	3.53
	HVAC EMS Delivery			1.02	1.97
	HVAC System Test and Repair			1.60	N/A ^b
	Induction Lighting			1.02	N/A ^b
	Integral Screw In CFL			1.38	1.18
	Interior HIDs to T8/T5			3.45	N/A ^b
	Interior High-Bay LED			0.97	N/A ^b

DSM Program	Commission Approved 2016 Program Budget	Actual 2016 Program Expenditures	Actual 2016 Program Societal Benefits	2016 Program Societal Costs or Staff Analysis Benefit/Cost Ratio (Decision No. 75297)	Actual 2016 Benefit/Cost Ratio
	LED Indoor Lighting			1.19	1.77
	LED Outdoor Lighting			0.97	1.23
	Occupancy sensors			1.33	1.78
	Outdoor CFL			3.58	N/A ^b
	Premium T8 Lighting			1.49	2.62
	Programmable Thermostats			1.64	N/A ^b
	Reduced LPD			1.34	N/A ^b
	Refrigerated Case LED			1.52	N/A ^b
	Refrigerated Display Automatic Door Closers			2.76	N/A ^b
	Shade Screens			1.00	3.10
	Standard T8 Lighting			1.04	2.69
	Strip Curtains			2.65	N/A ^b
	T-8 or T-12 to LED Tubes			1.01	2.10
	Variable Speed Drives			2.70	N/A ^b
	Vending Miser - Beverage Case Controls			2.19	N/A ^b
	Vending Miser - Reach-in Cooler Controls			2.41	N/A ^b
	Vending Miser - Snack Machine Controls			1.41	N/A ^b
	Window Films			1.43	N/A ^b
Retro-Commissioning ^b	\$205,815	\$22,890	\$0	\$22,141	N/A ^b
<i>Measures</i>	Retro-Commissioning Project			1.37	N/A ^b
Behavioral Programs					
Behavioral Comprehensive	\$261,538	\$201,474	\$719,749	\$190,911	3.34
<i>Measures</i>	K-12 Education Kit			3.65	6.27
	Community Education Kit			1.86	6.32
	Direct Canvassing			1.78	N/A ^b
	CFL Outreach Promotion			1.70	1.9
Home Energy Reports ^c	\$250,000	\$794	N/A	N/A	N/A ^b
<i>Measures</i>	Home Energy Reports			N/A	N/A ^b
Support Programs					
Consumer Education & Outreach ^a	\$106,050	\$108,058	N/A	\$128,847	N/A ^a
<i>Measures</i>	General Consumer Education			N/A	N/A ^a
Energy Codes & Standards Enhancement ^a	\$34,020	\$1,968	N/A	N/A	N/A ^a
<i>Measures</i>	Credit for increased energy codes and appliance standards			N/A	N/A ^a
Program Totals					
Program Totals	\$6,469,971	\$3,823,430	\$10,235,581	\$128,847	2.25

DSM Program	Commission Approved 2016 Program Budget	Actual 2016 Program Expenditures	Actual 2016 Program Societal Benefits	2016 Program Societal Costs or Staff Analysis Benefit/Cost Ratio (Decision No. 75297)	Actual 2016 Benefit/Cost Ratio
Program Development, Analysis & Reporting		\$112,498	N/A	N/A	N/A

^aThese programs do not provide direct energy savings, but promote participation in other energy efficiency programs, and do not require a stand-alone benefit/cost analysis.

^bThis program or measure did not have participation in this during this reporting period.

^cThis program was approved in 2016 but will not be fully implemented until 2017.

Appendix 2 – Navigant Consulting, Inc. Measurement, Evaluation, and Research Report

The Navigant Consulting, Inc. report is provided directly to Commission Staff.

Appendix 3 - C&I Schools/Facilities Customer Participation

The C&I Schools/Facilities Customer Participation data is provided directly to Commission Staff.

Appendix 3 – C&I Schools/Facilities Customer Participation

Program & Customer	Customer Incentives	Customer Percent of Program Rebates/Incentives
C&I Facilities		
ADOT	\$250.00	0.06%
Agri Pack	\$25,300.60	5.70%
AJ Mitchell Elementary School	\$6,791.64	1.53%
Alamo Plaza	\$440.00	0.10%
Alex's Tires	\$8,460.37	1.91%
ALLIANCE AND AUTOMOTIVE INDUSTRY RECYCLE LLC	\$351.43	0.08%
Anda Laundry, LLC	\$120.00	0.03%
Arizona Department of Agriculture	\$4,627.58	1.04%
AutoZone	\$17,698.71	3.99%
Big Lots Stores, Inc	\$13,820.00	3.12%
Border Pro, LLC	\$2,380.00	0.54%
Buffalo Exchange	\$1,340.00	0.30%
Carioca - Grand Ave Nogales	\$5,003.43	1.13%
Century 21- Gabriel Gastelum	\$1,100.00	0.25%
Chuyitos Hot Dogs and Tacos	\$1,315.00	0.30%
Correo Federal	\$140.00	0.03%
Cracker Barrel Old Country Store, Inc	\$420.00	0.09%
David's Western Wear	\$2,920.00	0.66%
Delta Properties, LLP	\$10,966.71	2.47%
Donde, Inc	\$2,036.82	0.46%
E & M Product and Janitorial Supplies	\$600.00	0.14%
Eagle Eye Produce	\$371.51	0.08%
Evy's	\$1,210.00	0.27%
Felix Corporation	\$290.00	0.07%
Gariola Coffee and Deli	\$711.53	0.16%
Good 2 Go	\$6,545.45	1.48%
Goodyear Tire and Rubber	\$3,225.92	0.73%
GOTN	\$37,644.71	8.49%
Gurudev King, LLC	\$8,829.60	1.99%
H M Distributor	\$2,730.00	0.62%
Hanessian Properties	\$5,445.78	1.23%
High Noon Construction LLC	\$340.00	0.08%
Holy Nativity Catholic	\$1,735.54	0.39%
Ileanas Body	\$80.00	0.02%
Inland Answering Service, Inc	\$2,770.09	0.62%
Insteel Wire Products Co	\$9,866.05	2.22%
Islander RV Resort, LLC	\$315.00	0.07%
Italian Peasant	\$470.00	0.11%

Program & Customer	Customer Incentives	Customer Percent of Program Rebates/Incentives
J M Eagle	\$44,222.25	9.97%
Jada Fashion Plus	\$460.00	0.10%
Kids and Modas	\$160.00	0.04%
Kingman Chevron	\$1,671.85	0.38%
Kino Academy	\$6,320.91	1.43%
Kory's Bridal Shop	\$11,545.00	2.60%
La Cinderella	\$3,540.00	0.80%
La Entrada De Tubac	\$1,800.00	0.41%
La Esplendida	\$1,403.38	0.32%
La Reyna Por Su Sabor	\$380.00	0.09%
Lilly's Home and Garden Boutique	\$668.53	0.15%
Lincoln Elementary School	\$10,000.00	2.25%
Lok Nogales Hotel Company, LLC DBA Quality Hotel	\$14,500.00	3.27%
Love's Travel Stops & Country Stores	\$15,585.00	3.51%
Malena Produce	\$10,936.00	2.47%
Manuel Huerta Trucking Co	\$700.00	0.16%
Mariposa Community Health Center	\$760.00	0.17%
MARIPOSA HOTEL	\$7,062.38	1.59%
MC2	\$18,160.00	4.09%
Mohave County Senior Center	\$1,000.40	0.23%
Montessori De Santa Cruz	\$2,254.89	0.51%
NASPP Inc	\$380.00	0.09%
Nogales Property Management	\$10,850.00	2.45%
Nogales Unified School District	\$101,900.59	22.98%
NPM- Centro Familiar Cristiano	\$4,100.00	0.92%
Old Presidio Traders/G Hembree	\$2,675.66	0.60%
Paco and Sons Inc	\$2,100.00	0.47%
Paradise Auto and Truck Center	\$3,800.00	0.86%
PDG #1 & #2	\$12,774.22	2.88%
Pepsi Warehouse	\$7,021.98	1.58%
Rancho Grande	\$680.00	0.15%
Rio Rico Community Center	\$840.00	0.19%
Rio Rico Fitness Center	\$875.00	0.20%
Ross Dress For Less	\$45,000.00	10.15%
Royal Road Market	\$3,516.24	0.79%
Santa Cruz County	\$3,390.00	0.76%
Selagon Investments, LLC	\$3,571.49	0.81%
Sole Shoes	\$961.62	0.22%
SPCI-V, LLC	\$405.08	0.09%
SUNDANCE COUNTRY MOBIL	\$13,132.29	2.96%
Tarasco Banner and Signs	\$280.00	0.06%
Tepeyac Produce, Inc	\$2,742.87	0.62%

Program & Customer	Customer Incentives	Customer Percent of Program Rebates/Incentives
Texaco Mini Mart	\$1,845.48	0.42%
THE HARRISON GROUP	\$1,703.82	0.38%
THE NATURE CONSERVANCY	\$307.28	0.07%
Tradewinds DES, LLC	\$2,380.00	0.54%
Travel Centers of America	\$6,641.09	1.50%
TRICAR	\$476.18	0.11%
Tricar Sales	\$11,555.20	2.61%
Tubac Golf Resort and Spa	\$15,865.00	3.58%
Tubac Presidio State Historic Park	\$349.68	0.08%
Verizon Wireless	\$2,857.58	0.64%
Woody's Chevron	\$3,232.32	0.73%
World Radio Network Inc DBA KNOG-FM 91.1	\$1,010.00	0.23%
Yard Women	\$412.11	0.09%
Zarro Nogales	\$15,779.56	3.56%
Zips/Havasus Super Fuels	\$7,711.70	1.74%
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2016 Incentive Budget		
(per Decision 75297, October 27, 2015, page 15, line 12)	\$443,511.00	100.00%