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BEFORE THE ARIZONA CORPORATION COMMISSION

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ARIZONA CORPORATION COMMISSION
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IN THE MATTER OF THE APPLICATION OF)
UNS ELECTRIC, INC. FOR APPROVAL OF ITS)
DEMAND-SIDE MANAGEMENT PROGRAM)
PORTFOLIO.)
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DOCKET NO. E-04204A-07-0365
**APPLICATION FOR APPROVAL
OF PROPOSED RESIDENTIAL
ENERGY ASSESSMENT
PROGRAM**
**(EXPEDITED TREATMENT
REQUESTED)**

12 UNS Electric, Inc. ("UNS Electric" or "Company"), through undersigned counsel, hereby
13 requests that the Arizona Corporation Commission ("Commission") approve the proposed
14 Residential Energy Assessment Program ("REAP" or "Program"), attached as Exhibit 1. The
15 Company requests that review and approval of this Program coincide with Commission Staff's
16 review of the Company's previously filed Existing Homes Program. The Company further
17 requests expedited review so that the REAP can be implemented in January 2011.

18 The REAP is designed to help homeowners improve the efficiency of their homes. The
19 Program includes: (1) residential energy audits to determine inefficiencies; (2) reporting and
20 explanation of the audit to the homeowner; (3) recommended energy efficiency upgrades
21 prioritized by cost effectiveness; and (4) a list of available UNS Electric programs that may offset
22 the cost of the recommended improvements. As additional incentive for participating in the audit,
23 each home will receive up to ten compact fluorescent bulbs and one Advanced Power Strip, in
24 addition to efficiency tips and education.

25 The REAP will be used in conjunction with UNS Electric's Existing Homes Program. As
26 part of the energy audit, customers will be provided information on rebates and Building
27 Performance Institute - qualified contractors certified to make efficiency upgrades. The REAP

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1 Original and 13 copies of the foregoing
filed this 8th day of September 2010 with:

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3 Docket Control
4 Arizona Corporation Commission
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5 Copy of the foregoing hand-delivered/mailed
this 8th day of September 2010 to:

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UNS Electric, Inc. Energy Assessment Program

Exhibit 1

UNS Electric, Inc. Residential Energy Assessment Program

UNS Electric, Inc. Energy Assessment Program

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Program Concept and Description

The Residential Energy Assessment Program (“REAP” or “Program”) is an energy efficiency program designed to help homeowners improve the efficiency of their homes. The Program includes: (1) residential energy audits to determine inefficiencies; (2) reporting and explanation of the audit to the homeowner; (3) recommended energy efficiency upgrades prioritized by cost effectiveness; and (4) a list of available UNS Electric, Inc. (“UNS Electric”) programs that may offset the cost of the recommended improvements.

The energy audit will be conducted and explained by an efficiency expert¹. The holistic energy analysis approach that will be used will identify UNS Electric inefficiencies as well as issues related to comfort, health and safety. At the conclusion of the home assessment, the contractor will provide a detailed report of efficiency measures prioritized by cost effectiveness.² The report will also contain an estimate of the actual energy and dollar savings possible through the recommended upgrades. At this time, the recommended measures will be limited to duct sealing, air sealing, ceiling insulation, shade screens, and HVAC equipment replacement.³

In addition to providing and explaining the assessment report, the contractor will install up to ten compact fluorescent lamps (“CFLs”) and one Advanced Power Strip per home. The contractor will educate the homeowner about applicable UNS Electric rebates and simple behavioral modifications to increase efficiency. Educational materials will be provided to the homeowner, including information about available rate plans that promote conservation.

The REAP is designed to be utilized with UNS Electric’s Existing Homes Program. Thus, as part of the energy audit, customers will be provided with rebate information and Building Performance Institute (“BPI”) qualified contractors who are certified to make efficiency upgrades. Once a customer contacts an approved contractor, a firm cost for recommended repairs will be given to the customer. The contractor will then be able to access a secure website containing the details of the customer’s energy assessment. Upon completion of all work, the actual savings provided by each measure will be known.

Target Market

The target market for this Program is single family homeowners. Detached homes, townhomes, and other residential buildings of up to four units also will be invited to participate in the Program. Residential customers considering installation of renewable resources will be informed of the Program to encourage maximizing efficiency prior to installing other resources.

¹ UNS Electric issued a request for proposals (“RFP”) on August 5, 2010, to select an implementation contractor capable of supplying trained energy auditors to conduct the on-site energy assessments. UNS Electric expects the contractor will use the Real Home Analyzer or second version E-net Green software to conduct the audits. UNS Electric will implement the energy assessments in-house, or through the Existing Homes Program Implementation Contractor if an acceptable bid is not received.

² The assessment report will only recommend improvements that are cost effective using the Societal Cost Test methodology required by the Arizona Corporation Commission.

³ Additional measures may be included in the future if the incremental cost of additional measures is reduced to allow new measures to screen the cost-effectiveness test.

Current Baseline Conditions

There are currently no structured on-site residential energy assessment programs offered to customers in the UNS Electric service territory. Customers currently have access to an on-line self-assessment, but it does not provide detailed energy savings by measure.

Program Eligibility

Program eligibility is limited to residential customers residing in existing 1-4 family owner-occupied homes currently serviced by UNS Electric.

Program Objective and Rationale

The REAP’s objective is to facilitate consumers understanding of the value and advantages of an energy efficient home. UNS Electric’s first year goal (for 2011) is 400 energy audits completed. Through the REAP, UNS Electric also seeks to overcome the current market barriers to increasing energy efficiency, as shown in Table 1.

Table 1. Market Barriers and Program Elements

Market Barrier	Program Element
<ul style="list-style-type: none"> • Lack of information about home energy use, appropriate efficiency upgrades, and cost effectiveness 	<ul style="list-style-type: none"> • Comprehensive energy assessment and explanation of results to customer • Real Home Analyzer or second version E-net Green software generated energy savings and prioritized recommendations
<ul style="list-style-type: none"> • Lack of knowledge regarding costs • Inability to overcome upfront costs of upgrades 	<ul style="list-style-type: none"> • Explanation of lifecycle cost vs. first cost • Explanation of incentives available through the Existing Homes Program • Explanation of available financing options
<ul style="list-style-type: none"> • Shortage of qualified contractors capable of performing efficiency upgrades • Customer difficulty locating qualified contractors 	<ul style="list-style-type: none"> • Training, mentoring ,and certification for auditors and contractors⁴ • List of qualified contractors that meet program standards

Administration and Delivery Strategy

UNS Electric will serve as the program administrator for the REAP, providing marketing, planning, technical support, and evaluation. UNS Electric expects to use an implementation contractor to conduct the energy assessments, to deliver and explain the resulting reports to the

⁴ This market barrier is specifically being addressed in UNS Electric’s Existing Homes Program.

UNS Electric, Inc. Energy Assessment Program

homeowner, and to complete all remaining customer education/assistance.⁵ UNS Electric may take on the proposed duties of the implementation contractor in the event that no acceptable bids are received as part of the RFP issued on August 5, 2010.

Inquiring consumers will receive Program and contact information to schedule an energy assessment. The implementation contractor will be responsible for determining eligibility. After the assessment is conducted, the auditor will refer the customer to a UNS Electric approved and certified BPI contractor. The BPI contractor will be responsible for conducting combustion safety testing, installation of recommended measures, and blower-door/duct testing at the completion of the efficiency upgrades. They will also be responsible for updating the energy assessment records with final test results and reporting.

The features of the home energy audit are as follows:

- assessment cost of \$99 per home as opposed to the current market cost of approximately \$450 - UNS Electric proposes to pay the balance up to \$350;
- blower door⁶ and a duct blaster⁷ tests;
- assessment report recommending efficiency upgrades prioritized by cost effectiveness;
- list of approved BPE contractors available to complete the recommended measures;
- promotion of the thermal envelope measures included in the Existing Homes Program, including duct sealing, air sealing, attic insulation, window shade screens, and replacement of inefficient heating, cooling, and water heating equipment;
- installation of up to ten CFLs and one Advanced Power Strip per home; and
- education regarding behavioral changes, other UNS Electric efficiency programs, rate options, and contact information to assist with after assessment questions.

Where UNS Electric and UNS Gas have overlapping services territories, the companies will jointly offer the program requiring only one assessment.

Incentive Design and Administration

The incentives for this Program include: (1) the significantly subsidized assessment costs; and (2) installation of up to ten CFLs and one Advanced Power Strip. UNS Electric intends for consumers to pay the \$99 assessment cost directly to the auditor. UNS Electric will pay the remaining amount, up to \$350, directly to the implementation contractor. UNS Electric anticipates monthly invoicing on behalf of the contractor, and will provide payment within 30 days of completion of the home assessment. Payment to the contractor is contingent upon the contractor providing UNS Electric with all project documentation; all applications for payment will be thoroughly reviewed for completeness, accuracy, and consistency of data.

⁵ Including scheduling customer assessments, screening applicants, referring certified contractors, installation of direct-install components, data storage, and reporting; the contractor will also participate in Program promotions and marketing.

⁶ A blower door test is a diagnostic test to determine the air tightness of the home.

⁷ A duct blaster test is a diagnostic test to measure leakage in the home's duct system.

Marketing and Communications

The marketing and communications strategy for the REAP is consistent with the broader Existing Homes Program, which includes:

- promotions on UNS Electric's website;
 - advertising in major newspapers and other print media in the service region;
 - brochures and other collateral pieces such as bill inserts;
 - high bill inquiries;
 - trade ally marketing efforts; and
 - contractor enrollment and training.
-

Program Implementation Schedule

Assuming Commission approval by the end of October 2010, UNS Electric anticipates Program implementation on or about January 1, 2011. UNS Electric's goal for the first year of the Program is 400 audits by the end of 2011.

Monitoring and Evaluation Plan

UNS Electric's Measurement, Evaluation, and Research contractor, Navigant Consulting, will be conducting Program measurement, verification, and quality assurance. UNS Electric also anticipates mailing homeowner surveys to all Program participants who receive an audit.

Program Costs

The annual budget is based on 400 home assessments in 2011, and is provided in Table 2.

UNS Electric, Inc. Energy Assessment Program

Table 2. 2011 Program Budget

UNS Electric Energy Assessment Program (2011)			
Incentives per Measure	Maximum Incentive / Measure	Units	TOTAL
Screw in CFL - Direct Install	\$12.50	400	\$5,000
Advanced Power Strips - Direct Install	\$20	400	\$8,000
Behavioral changes	\$350	400	\$140,000
Total Financial Incentives			\$153,000
Program Delivery - Energy Assessment			
Program Delivery			\$19,500
Energy Audit Software Set-Up Fee			\$11,419
Energy Assessment License Fee (Est. \$20/audit)	\$20	400	\$8,000
Total Program Delivery			\$38,919
Program Marketing			
			\$19,192
Program Administration			
			\$6,500
Measurement, Evaluation and Research			
			\$4,352
Total Program Costs - Incentive			\$153,000
Total Program Costs - Non-Incentive			\$68,963
TOTAL PROGRAM COSTS			\$221,963
Incentives as % of Total Budget			
			69%

Estimated Energy Savings and Environmental Benefits

The Program's estimated energy savings by Program element are provided in Tables 3, 4, and 5. Table 6 provides estimated energy savings per home for the entire energy assessment Program and the associated environmental benefits are detailed in Table 7. Due to this Program's utilization of benefits associated with the Existing Homes Program, the particular mix of efficiency measures will differ for each home. The estimated energy savings for all efficiency measures in the Existing Homes Program are included in the Existing Homes filing. Even if customers do not make upgrades incented through the Existing Homes Program, the energy

assessment will estimate all savings from all modifications to the home. UNS Electric will use a before and after energy assessment to determine actual energy savings resulting from customer participation.

UNS Electric, Inc. Energy Assessment Program

Table 3. 2011 CFL Estimated Energy Savings per Home

CFLs	
Weighted Average Incandescent Wattage (W)	59
Weighted Average CFL Wattage (W)	14
Coincidence Factor	0.08
Average # CFLs installed per HH audit	10
Non-Coincident Demand Savings (kW)	0.61
Total Gross Annual Energy Savings (kWh)	384

Table 4. Advanced Power Strip Estimated Energy Savings per Home for 2011

Advanced Power Strip	
Total Gross Daily Energy Savings (kWh)	0.22
Coincident Savings (kW)	0.011
Coincidence Factor	.81
Non-Coincident Demand Savings (kW)	0.014
Total Gross Annual Energy Savings (kWh)	82

Table 5. Behavioral Change Estimated Energy Savings per Home for 2011

Behavioral Change Savings	
Total Residential Sales (UNS Electric 2008) (MWh)	813,796
Total Number of Customers	79,483
Number of Light Customers	1,036
Annual Average Residential Customer Consumption (kWh)	10,374
Assumed Behavioral Savings per year (% of Energy Sales)	2%
Annual Average Behavioral Savings (kWh)	207

Table 6. Total Program Expenditures and Forecasted Energy Savings for 2011

Participation inflation rate	0
Admin inflation rate	0
Total budget	\$221,963
Incentives	\$153,000
Admin/Implementation Costs	\$68,963
Incentives as % of budget	69%
Implementation to incentives	45%
Projected Participation	400
Coincident peak savings (kW)	34
Non-Coincident peak savings (kW)	260
Energy Savings (kWh)	269,338

Table 7. 2011 and Lifetime Program Environmental Benefits

Gas	Annual Metric Tons Reduced
CO2	120
NOx	1
SOx	1
Gas	Lifetime Metric Tons Reduced
CO2	897
NOx	.12
SOx	.004

Program Cost Effectiveness

The REAP meets measure level cost effectiveness for two of the three measures offered, and will meet program level cost effectiveness. In order to encourage homeowners to install energy saving measures, UNS Electric is proposing to incent the contractors for a significant portion of the cost of the assessment. Because UNS Electric is willing to incent a large portion of the cost to develop this market, the percentage of incentive to incremental cost falls outside of the normally acceptable range. UNS Electric is seeking Commission approval of this anomaly because the detailed energy assessment is a critical component of this Program and the Existing Homes Program.

The measure level cost effectiveness (without non-incentive Program costs) and the program level cost effectiveness (including non-incentive Program costs) were assessed using the Societal Cost test, as recognized by the Commission. Table 8 provides a summary of the benefit/cost analysis results for measures in this Program.

Table 8. Individual Measures' Benefit-Cost Analysis Results

Measure	Societal Benefit-Cost Ratio
Smart Strip –Direct Install	3.5
CFL- Direct Install	21.4
Behavioral Changes	0.2
Program Level	1.3

UNS Electric, Inc. Energy Assessment Program

In addition to estimating the savings from each measure, this analysis relies on a range of other assumptions and financial data provided in Table 9.

Table 9. Other Financial Assumptions

Other Financial Assumptions	
Measure Life CFL and Power Strip (yrs)	10 and 12
Program Life (yrs)	5
Non-Incentive Costs/unit	\$172
TRC Discount Rate	9.02%
Social Discount Rate	4.00%
NTG Ratio	100%

UNS Electric, Inc. Energy Assessment Program

Existing Homes Program - Home Audit Component

Incentive Calculations Residential Energy Assessment (Home Audit)

PROGRAM DATA	RATE DATA		OPERATING DATA		OTHER FACTORS				
	Measure Life (yrs)	Rate (\$/kWh, On-Peak; \$/kWh, Off-Peak)	On-Pk Op. Ratio ¹	Off-Pk Op. Ratio ²	Line Loss Factor - Demand	Line Loss Factor - Energy	Capacity Reserve Margin	Application	Cost Basis
CFL Measure Life (yrs):	10		60%		9.5%				
Smart Strip Measure Life (yrs)	12		40%		9.5%				
Behavioral Change Measure Life	1	0.00			0%				
Program Life (yrs):	5	\$0.11							Retrofit
CFL Demand AC (\$/kV):	\$64.51	\$0.11							Full Install
CFL Summer On-pk Energy AC (\$/kWh):	\$0.08								
CFL Summer Off-pk Energy AC (\$/kWh):	\$0.06								
CFL Winter On-pk Energy AC (\$/kWh):	\$0.07								
CFL Winter Off-pk Energy AC (\$/kWh):	\$0.06								
Smart Strip Demand AC (\$/kV):	\$68.44								
Smart Strip Summer On-pk Energy AC (\$/kWh):	\$0.08								
Smart Strip Summer Off-pk Energy AC (\$/kWh):	\$0.06								
Smart Strip Winter On-pk Energy AC (\$/kWh):	\$0.08								
Smart Strip Winter Off-pk Energy AC (\$/kWh):	\$0.07								
Behavioral Change Demand AC (\$/kV):	\$49.44								
Behavioral Change Summer On-pk Energy AC (\$/kWh):	\$0.06								
Behavioral Change Summer Off-pk Energy AC (\$/kWh):	\$0.04								
Behavioral Change Winter On-pk Energy AC (\$/kWh):	\$0.06								
Behavioral Change Winter Off-pk Energy AC (\$/kWh):	\$0.04								
Administrative Cost (\$/audit)	0								
Discount Rate:	9.02%								
Societal Discount Rate:	4.00%								
NTG Ratio:	100%								

DEMAND/ENERGY SAVINGS	INCENTIVE CALCULATIONS				CUSTOMER COST/SAVINGS				WGT.	% Incent	Societal					
	Annual Energy Savings (kWh)	On-pk Energy Savings (kWh)	Off-pk Energy Savings (kWh)	IRP Societal PV Benefit (\$)	Recommended Incentive (\$)	% PV	Program Cost (\$)	NPV (\$)				Incr. Cost Savings (\$)	Cost Savings w/Incent. (yrs)	Payback w/Incent. (yrs)	Weighting Factors for Program Cost	BC Ratio
Smart Strip (1 unit)	82	0.011	49	53	70	20	100%	20	33	20	9	2.2	0.00	12%	N/A	3.5
CFL (10 units)	384	0.049	231	211	267	13	100%	13	199	13	42	0.3	0.00	57%	N/A	21.4
Behavioral Changes	207	0.024	104	11	12	350	100%	67	-55	67	23	2.9	-12.47	31%	N/A	0.2
Total (Audit & DJ)	674	0.084	384	276	349	383	100%	99	177	99	74	1.3	-3.84	100%	N/A	3.5

* Weighted average value. Source: UNSE CFL MAS sheet.
 ** The ratios are our best engineering assumptions, pending detailed MIER work.
 *** Total row calculates incremental cost of the whole audit while the other values in this column are incremental costs of each individual measure derived from total incremental cost of audit. This division of incremental cost is on the basis of measure savings.