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BEFORE THE ARIZONA CORPORATION COMMISSION

KRISTIN K. MAYES
Chairman

GARY PIERCE
Commissioner

PAUL NEWMAN
Commissioner

SANDRA D. KENNEDY
Commissioner

BOB STUMP
Commissioner

Arizona Corporation Commission

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IN THE MATTER OF TUCSON ELECTRIC
POWER COMPANY'S APPLICATION FOR
APPROVAL OF ITS RESIDENTIAL
ENERGY ASSESSMENT PROGRAM

DOCKET NO. E-01933A-07-0401

DECISION NO. 72063

ORDER

Open Meeting
December 14 and 15, 2010
Phoenix, Arizona

BY THE COMMISSION:

FINDINGS OF FACT

1. Tucson Electric Power Company ("TEP" or "the Company") is certificated to provide electric service as a public service corporation in the State of Arizona.

2. On September 8, 2010, TEP filed its Application for Approval of Proposed Residential Energy Assessment Program ("REAP" or the "Program"). The REAP is designed to work in conjunction with TEP's Existing Homes Program (Docket No. E-01933A-07-0401). Staff considers this Program an element of TEP's Existing Homes Program and has reviewed this Program as a modification of the Existing Homes Program.

PROGRAM DESCRIPTION

3. The REAP, consistent with the Existing Homes Program, is being offered to single family, residential customers residing in existing 1-4 family owner-occupied homes currently serviced by TEP.

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1 4. The major components of the REAP include a home energy assessment; a general
2 appliance assessment; installation of up to ten compact fluorescent lamps ("CFLs") and one
3 Advanced Power Strip per home; and education regarding behavioral changes, other TEP
4 efficiency programs, rate options, and contact information to assist with questions after the
5 assessment.

6 5. A home energy assessment (also referred to as a home energy audit) is a
7 comprehensive home examination designed to assess how much energy the home is using and to
8 evaluate what measures can be taken to improve efficiency. The most common conditions found
9 are leaks in the heating, ventilation and air conditioning (HVAC) duct system; penetrations which
10 allow air exchange and connection between the attic and exterior of the home with the conditioned
11 space; insulation failures; and unsealed windows and doors.

12 6. Professional auditors use a variety of techniques and equipment to determine the
13 energy efficiency of a home. Thorough audits often use equipment such as blower doors, which
14 measure the extent of leaks in the building envelope, and Duct Blasters which test and document
15 the airtightness of forced air duct systems.

16 7. It is important to note that a home energy assessment, in and of itself, is not an
17 energy-saving measure. Additional measures must be implemented to correct existing conditions
18 within the home that are causing homeowners to waste energy and incur high electric bills.

19 8. According to TEP, the current market rate for a home energy assessment is
20 approximately \$330 per home. Through the REAP, participating customers will only pay \$99 for
21 the assessment with TEP paying the balance of the assessment cost.¹

22 9. Through the TEP REAP, the energy assessment will be conducted and explained by
23 an implementation contractor that has experience and expertise in energy assessments and energy
24 efficiency measures. At the conclusion of the home assessment, the contractor will provide a
25 detailed report of recommended efficiency measures prioritized by cost effectiveness. The report
26 will also contain an estimate of the actual energy and dollar savings possible through the

27
28 ¹ The assessment cost originally proposed in the application for this Program was \$450. Since the original application was filed, TEP has narrowed its options for an implementation contractor for the Program and has provided Staff with more recent assessment costs.

1 recommended upgrade measures. At this time, the recommended measures will be limited to
2 measures offered through the Existing Homes Program which include duct sealing, air sealing,
3 ceiling insulation, shade screens, and HVAC equipment replacement.

4 10. In addition to providing and explaining the assessment report, the contractor will
5 install up to ten CFLs and one Advanced Power Strip per home. TEP anticipates providing
6 Advanced Power Strips which use a Universal Serial Bus ("USB") interface and plugs into a
7 computer or television via a USB connection. When the computer is turned off, a signal from the
8 USB port shuts down the flow of power to peripherals (e.g. printers, scanners, modems, speakers,
9 and standby lights). This technology is applicable to commercial and home offices and
10 entertainment systems.

11 11. The contractor will also educate the homeowner about applicable TEP rebates and
12 simple behavioral modifications to increase efficiency. Such behavior modifications can include,
13 for example, reducing phantom loads, adjusting thermostat settings, resetting timers on pool
14 equipment, doing laundry in cold water, and using the air-dry option on the dishwasher.
15 Educational materials will be provided to the homeowner, including information about available
16 rate plans that promote conservation.

17 12. Although the REAP is designed to be utilized with TEP's Existing Homes Program,
18 participation in one program does not require participation in the other. As part of the energy
19 assessment, customers will be provided with rebate information and a list of Building Performance
20 Institute ("BPI") contractors available to complete the recommended measures associated with the
21 Existing Homes Program. Once a customer contacts an approved BPI-certified contractor, a firm
22 cost for recommended improvements will be given to the customer. The contractor will then be
23 able to access a secure website containing the details of the customer's energy assessment. Upon
24 completion of all work, the actual savings provided by each measure will be known.

25 **DELIVERY STRATEGY AND ADMINISTRATION**

26 13. TEP will serve as the program administrator for the REAP, providing marketing,
27 planning, technical support, and evaluation. TEP will use an implementation contractor to conduct
28 the energy assessments, to deliver and explain the resulting reports to the homeowner, and to

1 complete all remaining customer education and assistance, including scheduling customer
2 assessments, screening applicants, referring certified contractors, installation of direct-install
3 components, data storage, and reporting.

4 14. TEP issued a request for proposals ("RFP") on August 5, 2010, to select an
5 implementation contractor capable of supplying trained energy auditors to conduct the on-site
6 energy assessments. TEP expects the contractor will use the Real Home Analyzer or second
7 version E-net Green software to conduct the audits.

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

15 **MARKETING**

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

- 18 • promotions on TEP's website;
- 19 • advertising in major newspapers and other print media in the service region;
- 20 • brochures and other collateral pieces such as bill inserts;
- 21 • high bill inquiries;
- 22 • trade ally marketing efforts; and
- 23 • contractor enrollment and training.

24 **PROGRAM INCENTIVES**

25 17. The incentive for this Program includes installation of up to ten CFLs (with a cost
26 of \$16.20 for ten CFLs) and one Advanced Power Strip (with a cost of \$20). TEP estimates that
27 the cost of an energy assessment is approximately \$330. TEP intends for consumers to pay \$99 of
28 the assessment cost and for the Company to pay the remaining amount of approximately \$230,
with both payments made directly to the implementation contractor. While TEP originally

1 proposed this \$230 as an incentive, Staff considers the cost of the energy assessment to be part of
 2 Program Delivery rather than an actual incentive to the customer or contractor because the
 3 assessment facilitates not only the benefits of the Advanced Power Strip, CFL installation and
 4 energy efficiency education but also the potential benefits associated with the TEP Existing Homes
 5 Program. TEP anticipates monthly invoicing on behalf of the contractor, and will provide payment
 6 within 30 days of completion of the home assessment. Payment to the contractor is contingent
 7 upon the contractor providing TEP with all project documentation.

8 **PROGRAM BUDGET**

9 18. TEP intends to include the REAP costs in its upcoming annual DSM charge
 10 adjustment. Based on updated budget information provided by TEP subsequent to the filing of the
 11 application for approval of this Program, Staff estimates that the REAP will result in a \$0.000046
 12 per kWh increase to the DSM charge, which would be an increase in the average residential bill of
 13 \$0.49 per year.

14 19. However, we believe the Budget should be as shown in Table 1.

15 **Table 1. 2011 Program Budget**

	Measure Cost	2011 Units	Total Budget
Advanced Power Strip - Direct Install (1 unit)	\$20	1000	\$20,000
Screw in CFL - Direct Install (10 units)	\$16.20	1000	\$16,200
Energy Assessment	\$230	1000	\$230,000
Total Financial Incentives			\$266,200
Program Delivery			\$19,500
Energy Audit Software Set-Up			\$52,272
Energy Assessment Licenses*	\$20	1000	\$20,000
Total Program Delivery			\$91,772
Program Marketing			\$47,797
Program Administration			\$6,500
Measurement, Evaluation and Research			\$10,645
Total Program Costs - Incentive			\$266,200
Total Program Costs - Non-Incentive			\$156,714
Total Program Costs			\$422,914

27 * Estimated on a per unit basis.

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1 **PROGRAM PARTICIPATION**

2 19. TEP anticipates completing 1,000 energy assessments by the end of 2011. TEP
3 also has a goal of having 40% of customers that take advantage of the energy assessment program
4 follow up with measures from the Existing Homes Program.

5 **REAP ESTIMATED ENERGY SAVINGS AND ENVIRONMENTAL BENEFITS**

6 **Table 2. 2011 Estimated Energy Savings per Home**

Measure	Annual kW Savings	Annual kWh Savings
Screw in CFL (up to 10)	0.049	419
Advanced Power Strip (1 unit)	0.011	82
Behavioral Changes	0	214

11 **Table 3. Estimated Environmental Benefits**

Gas	Annual Metric Tons Reduced	Lifetime Metric Tons Reduced
CO ₂	634	3,292
NO _x	0.9	4.4
SO _x	0.7	3.9

16 **COST-EFFECTIVENESS**

17 20. The Commission's 1991 Resource Planning Decision established the Societal Cost
18 Test ("SCT") as the methodology to be used for determining the cost-effectiveness of a DSM
19 program. Under the SCT, in order to be cost-effective, the ratio of benefits to costs must be
20 greater than one. The societal costs for a DSM program include the cost of the measure and the
21 cost of implementing the program, excluding rebates. The societal benefits of a DSM program
22 include the avoided demand and energy costs as well as avoided environmental impacts, which are
23 quantified, but do not have to be monetized.

24 21. Staff does not view the REAP as an energy-efficiency program, in and of itself but,
25 rather, regards this Program as more of a delivery mechanism for the comprehensive, whole-house
26 efficiency measures offered through the TEP Existing Homes Program. Although the CFL and
27 Advanced Power Strips installed through the REAP, along with suggested behavioral
28 modifications, will result in energy savings, the purpose of the home energy audit is to identify

1 areas for energy savings and recommend cost-effective efficiency upgrades, for which additional
2 rebates are offered. Staff believes that the REAP is a critical element to the Existing Homes
3 Program. Staff has evaluated the REAP as an addition to the Existing Homes Program. Staff has
4 concluded that TEP's Existing Homes Program, modified to include the REAP, would be cost-
5 effective with an SCT benefit-cost ratio of 0.99.²

6 22. In its application, TEP included potential costs of complying with carbon dioxide
7 (CO₂) regulation in its benefit-cost calculations. TEP has estimated low, medium, and high carbon
8 values of approximately \$14, \$25, and \$43 per ton, respectively. Staff conducted its benefit-cost
9 analysis including and excluding the CO₂ values provided by TEP. With the inclusion of a low
10 CO₂ value, the Existing Homes Program with the inclusion of the REAP would be cost-effective
11 with an SCT benefit-cost ratio of 1.36.

12 **MONITORING AND EVALUATION**

13 23. TEP's Measurement, Evaluation, and Research contractor, Navigant Consulting,
14 will be conducting Program measurement, verification, and quality assurance. TEP also anticipates
15 mailing homeowner surveys to all Program participants who receive an energy assessment.

16 **RECOMMENDATIONS**

17 24. Staff has recommended that TEP's REAP be approved as an element of TEP's
18 Existing Homes Program, as discussed herein.

19 25. Staff has recommended that TEP include, at a minimum, the following in its DSM
20 report: (i) the number of participants in this program; (ii) copies of marketing materials; (iii)
21 estimated cost savings to participants; (iv) gas and electric savings as determined by the
22 monitoring and evaluation process; (v) estimated environmental savings; (vi) the total amount of
23 the program budget spent during the previous year and since inception of the program; (vii) any
24 significant impacts on program cost-effectiveness; (viii) how many REAP participants
25 subsequently receive rebates from the Existing Homes Program; and (ix) descriptions of any
26 problems and proposed solutions including movements of funding from one program to another.

27 ² This benefit-cost ratio includes total whole house benefits which incorporate both estimated electric and natural gas
28 savings as discussed for the Existing Homes Program. If only electric savings from the Existing Homes Program were
included, the Existing Homes Program, modified to include the REAP, would have an SCT benefit-cost ratio of 0.91.

CONCLUSIONS OF LAW

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2 1. Tucson Electric Power Company is an Arizona public service corporation within
3 the meaning of Article XV, Section 2, of the Arizona Constitution.

4 2. The Commission has jurisdiction over TEP and over the subject matter of the
5 Application.

6 3. The Commission, having reviewed the application and Staff's Memorandum dated
7 December 2, 2010, concludes that it is in the public interest to approve the TEP REAP as an
8 element of the Existing Homes Program, as discussed herein.

ORDER

9
10 IT IS THEREFORE ORDERED that Tucson Electric Power Company's Existing Homes
11 Program be and hereby is approved, as discussed herein.

12 IT IS FURTHER ORDERED that Tucson Electric Power Company shall make all
13 reasonable efforts to provide residential energy assessments to at least 1,000 customers within 12
14 months of initial program implementation.

15 IT IS FURTHER ORDERED that Tucson Electric Power Company's DSM reports shall
16 include, at a minimum:

- 17 • the number of participants in this program;
- 18 • copies of marketing materials;
- 19 • estimated cost savings to participants;
- 20 • gas and electric savings as determined by the monitoring and evaluation process;
- 21 • estimated environmental savings;
- 22 • the total amount of the program budget spent during the previous year and since
23 inception of the program;
- 24 • any significant impacts on program cost-effectiveness;
- 25 • how many REAP participants subsequently receive rebates from the Existing
26 Homes Program; and

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- descriptions of any problems and proposed solutions including movements of funding from one program to another.

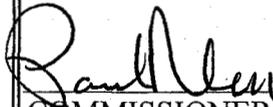
IT IS FURTHER ORDERED that this Order shall become effective immediately.

BY THE ORDER OF THE ARIZONA CORPORATION COMMISSION



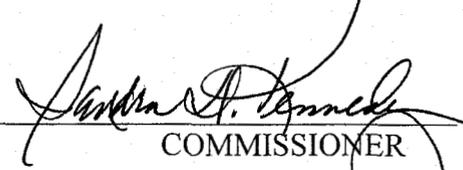
CHAIRMAN

COMMISSIONER



COMMISSIONER

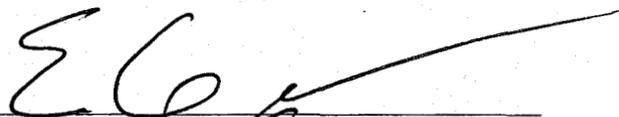
COMMISSIONER



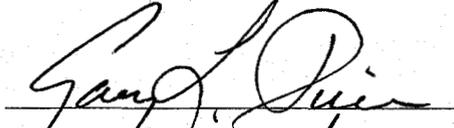
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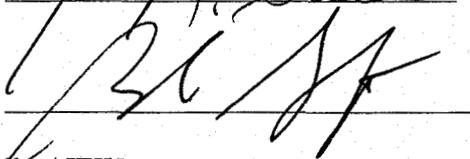
IN WITNESS WHEREOF, I, ERNEST G. JOHNSON, Executive Director of the Arizona Corporation Commission, have hereunto, set my hand and caused the official seal of this Commission to be affixed at the Capitol, in the City of Phoenix, this 6th day of JANUARY, 2010.

2011



ERNEST G. JOHNSON
EXECUTIVE DIRECTOR

DISSENT: 

DISSENT: 

SMO:LAF:hm/JFW

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