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BEFORE THE ARIZONA CORPORATION COMMISSION

MIKE GLEASON
Chairman
WILLIAM A. MUNDELL
Commissioner
JEFF HATCH-MILLER
Commissioner
KRISTEN K. MAYES
Commissioner
GARY PIERCE
Commissioner

Arizona Corporation Commission

DOCKETED

JUN 13 2008

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IN THE MATTER OF THE APPLICATION)
OF UNS ELECTRIC , INC. FOR)
APPROVAL OF ITS RESIDENTIAL HVAC)
RETROFIT DEMAND-SIDE)
MANAGEMENT PROGRAM)

DOCKET NO. E-04204A-07-0365

DECISION NO. 70377

ORDER

Open Meeting
June 3 and 4, 2008
Phoenix, Arizona

BY THE COMMISSION:

FINDINGS OF FACT

1. UNS Electric, Inc., ("UNS Electric") is engaged in providing electric power within portions of Arizona, pursuant to authority granted by the Arizona Corporation Commission.

2. On June 13, 2007, UNS Electric filed an application for approval of its proposed Demand-Side Management ("DSM") Program Portfolio. On November 14, 2007, UNS Electric filed a revised Portfolio Plan, modifying the delivery mechanism and the measurement/evaluation plans, for some programs.

3. The UNS Electric DSM Portfolio consists of seven proposed programs. The UNS Electric Residential HVAC Retrofit program (one of the seven proposed programs) being reviewed herein is summarized below.

4. Residential HVAC Retrofit

The UNS Electric Residential HVAC Retrofit ("Residential HVAC") program would promote the installation of high-efficiency air conditioning and heat pump systems in existing

1 UNS Electric-area homes. The program would be newly-implemented, and would provide
2 incentives directly to homeowners.

3 5. Program Description

4 6. Goals. The primary objective of the program is to promote the purchase of high-
5 efficiency heating, ventilation and air conditioning ("HVAC") equipment exceeding the SEER 13
6 federal minimum within the UNS Electric service area.

7 7. Eligibility. The program is available to UNS Electric residential customers with
8 central air conditioning and heat pump systems. To be eligible, UNS Electric customers must be
9 homeowners and replace their existing air conditioning equipment with equipment that is 14 SEER
10 or above.

11 8. Incentives. Incentives to homeowners under the Residential HVAC Retrofit
12 program are listed in the table below.

Measure/Qualifying Criteria	Proposed Air Conditioner/Heat Pump Incentive	Incremental cost per ton (AC units)	Incentives as % of Incremental Cost (AC units)	Incremental cost per ton (Heat Pump units)	Incentives as % of Incremental Cost (Heat Pumps)
14 SEER	\$50/ton	\$67	75%	\$88	51%
15 SEER	\$75/ton	\$135	55%	\$195	38%
16 SEER and above	\$100/ton	\$202 (for 16 SEER) \$269 (for 17 SEER) \$337 (for 18 SEER)	50% 37% 30%	\$293(for 16 SEER) \$391(for 17 SEER) \$483(for 18 SEER)	34% 26% 20%

19
20 9. In addition to incentives to homeowners, marketing costs include \$25 per unit
21 payments to contractors, to encourage program promotion and offset the cost of detailed reporting
22 requirements.

23 10. Proper installation of new air conditioners and heat pumps is important to realizing
24 energy savings from the more efficient equipment. An air conditioner that is not sized and
25 installed correctly can have its efficiency reduced by as much as 30 percent.¹ Staff has
26 recommended that rebate requirements include documentation verifying that a proper sizing
27

28 ¹ It is common to install oversized air conditioning, because oversized units cool space more rapidly. Oversized units consume more energy and run for shorter cycles, making them less energy efficient.

1 calculation has been done and that this documentation include the actual calculations. Staff has
2 also recommended that UNS Electric review the energy savings from the program in order to
3 determine whether a contractor qualification and incentive component, similar to that in place for
4 the Arizona Public Service (“APS”) Residential HVAC DSM program, would help to ensure cost-
5 effective energy savings.²

6 11. Staff has also recommended that incentives be capped at a maximum of \$250 per
7 unit for 14 and 15 SEER measures. This incentive structure ensures that incentives are equitably
8 distributed and available to more potential participants. Staff has also recommended that incentives
9 should be capped at 75 percent of the incremental cost. These caps are based on those set for the
10 APS Residential HVAC program.

11 12. Staff has also recommended that in calculating the incremental cost, any applicable
12 current federal tax credit for higher efficiency HVAC equipment should be taken into account. In
13 keeping with the APS program practice, the amount of any federal tax credit should be subtracted
14 from the incremental cost of the equipment.³

15 13. Delivery Strategy

16 14. UNS Electric would market the program. (See the Marketing section, below, for
17 more detail.)

18 15. UNS Electric would also work with an Implementation Contractor (“IC”) on
19 systems for collecting the data needed for program management and evaluation. The IC would
20 also be responsible for the following duties:

- 21 • reviewing applications from customers to ensure that program criteria are met;
- 22 • issuing approvals, or letters indicating that an application has been declined, or that
23 corrective action is required;
- 24 • conducting installation inspections;

25 _____
26 ² The APS Residential HVAC program provides a \$100 incentive to homeowners for installations performed by APS
Qualified Contractors and which meet Energy Star Quality standards.

27 ³ As an example, if a standard unit costs \$4,000 and a high-efficiency unit costs \$4,500, then the incremental cost
28 equals \$500; a \$300 federal tax credit would be subtracted from the \$500 incremental cost, leaving a \$200 incremental
cost. Based on a \$200 incremental cost, the Residential HVAC incentive could be no more than \$150 per unit.

- 1 • updating the tracking system; and
- 2 • issuing payment once installations are deemed acceptable.

3
4 16. The evaluation, monitoring and verification (“EM&V”) of program measures would
5 be done by a third party contractor. The EM&V contractor would both confirm energy savings
6 and perform on-site inspections, in addition to those performed by the IC.

7 17. As part of the delivery process, Staff has recommended that either UNS Electric or
8 its IC track the availability of federal tax credits for residential air conditioners and heat pumps,
9 and that the program provide assistance to participants, to make them aware of applicable tax
10 credits and to assist them with the process of applying for federal tax credits.

11 18. Marketing

12 The advertising campaign would stress that high-efficiency HVAC systems would reduce
13 customer energy bills, provide equal or better comfort and benefit the environment. The program
14 would be marketed through the following ways:

- 15 • UNS Electric promotional events;
- 16 • bill stuffers targeted to UNS Electric residential customers;
- 17 • the UNS Electric website, which would promote the benefits of purchasing high-
18 efficiency HVAC equipment;
- 19 • advertising the program in major newspapers and other print media;
- 20 • contractors and contractor incentives (see the Incentives section, above);
- 21 • educational brochures and program promotional materials; and
- 22 • UNS Electric customer care centers.

23
24 19. Projected Participation

25 UNS Electric projects participation of 746 units during the first year of the program. Of
26 that number, the Company projects installation of 521 air conditioners and 225 heat pumps.

27 ...

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Year	2008	2009	2010	2011	2012
Projected installations	746	768	791	815	840

20. Monitoring and Evaluation

Monitoring and evaluation of the program would be done primarily by the IC and would include the following activities:

- Database management – managing the tracking database and providing information for the semi-annual DSM reports to be filed with the Arizona Corporation Commission.
- Integrated implementation data collection – collecting data necessary to calculate values and yield more accurate evaluations through, for example, customer applications, field verifications and contractor invoices. The type of data collected would include the quantity, capacity, efficiency, and operating parameters for pre-existing and installed measures.
- Field verification – verifying the installation of a sample of measures.
- Tracking of savings using deemed savings values – tracking savings from completed installations. Measurement of savings from retrofit measures would include pre- and post-project billing comparisons. Other means of evaluation would also be employed, including on-site inspection of equipment, data logging of equipment performance, and due diligence review of engineering calculations and documentation.

21. The third party EM&V contractor would use the database to evaluate energy savings arising from installed measures. The EM&V contractor's review of program design assumptions would begin soon after rollout and continue throughout the life of the program. This approach would provide UNS Electric with ongoing feedback on progress and enable management to adjust or correct the program to be more effective and more cost beneficial.

22. Staff has recommended that actual energy savings be determined for both measures at each SEER level. Following these determinations, Staff has recommended that UNS Electric modify those measures or SEER levels which do not provide sufficient energy savings to be cost-effective and eliminate those measures that cannot be modified in a manner that would produce cost-effective energy savings.

23. Program Budget

The proposed budget for the Residential HVAC Retrofit program is shown in the table below:

Residential HVAC Retrofit 2008 Budget

Managerial and Clerical	\$22,140
Travel and Direct Expenses	\$3,240
Overhead	\$1,620
Total Administrative Cost	\$27,000
Internal Marketing Expense	\$12,000
Subcontracted Marketing Expense	\$12,000
Total Marketing Cost	\$24,000
Support Activity Labor	\$45,600
Hardware and Materials	\$12,000
Rebate Processing and Inspection	\$9,600
Total Direct Implementation (minus incentives)	\$67,200
Financial Incentives	\$172,800
Total Incentives	\$172,800
EM&V/Research Activity	\$8,100
EM&V Overhead	\$900
Total EM&V	\$9,000
Total Program Budget	\$300,000

2008-2012 Program Budget

Year	2008	2009	2010	2011	2012
Total Budget	\$300,000	\$309,000	\$318,270	\$327,818	\$337,653
Incentives	\$172,800	\$177,984	\$183,324	\$188,823	\$194,488
Administrative Costs	\$127,200	\$131,016	\$134,946	\$138,995	\$143,165
Incentives as % of Budget	57.6%	57.6%	57.6%	57.6%	57.6%

24. Cost-Benefit Analysis

Staff's analysis indicates that the UNS Electric program has a cost-benefit ratio of 1.38 for the 14 and 15 SEER air conditioning and heat pump measures. Due to comparatively high incremental costs, the air conditioning and heat pump measures are not cost-effective at 16 and above SEER levels at this time. If incremental costs decrease sufficiently to make higher SEER levels cost-effective, the Company may file for Commission approval to add these SEER levels to the program.

25. Staff recommends that, at this time, incentives be provided for only 14 and 15 SEER level equipment.

26. Projected kWh Savings

The program's lifetime kWh savings are projected at 49,555,580 kWh, or 49,556 MWh. Given a \$300,000 budget, each dollar spent would save 165 kWh. Staff emphasizes that, for

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1 significant savings to be realized and for the program to remain cost-effective, residential HVAC
2 units must be right-sized and installed properly.

3 27. Projected Environmental Savings

4 Projected environmental savings for the UNS Electric Residential HVAC program are
5 listed below:

Projected Lifetime Environment Savings		
Type of Savings	Estimated Savings	Measured in:
CO2	80,577,373	Lbs.
SOx	38,654	Lbs.
NOx	124,881	Lbs.

9 28. Reporting Requirements

10 29. Pursuant to Decision No. 58984, UNS Electric has been filing semi-annual reports
11 on its existing DSM programs. Staff has recommended that, if approved, the Residential HVAC
12 program be included in this report.

13 30. Staff has recommended that, at a minimum, reporting for the Residential HVAC
14 program should include (i) the number of participants; (ii) the number and type of measures
15 installed; (iii) the average cost of the installed measures; (iv) descriptions of program marketing;
16 (v) copies of new or revised marketing materials; (vi) estimated cost savings to participants; (vii)
17 energy savings as determined by the monitoring and evaluation process; (viii) the total amount of
18 the program budget spent during the previous six months, the previous year and since the inception
19 of the program; (ix) any significant impacts on program cost-effectiveness; (x) environmental
20 savings, and (xi) descriptions of any problems and proposed solutions, including movements of
21 funding from one program to another.

22 31. Summary of Staff Recommendations

23 32. Staff has recommended that the UNS Electric Residential HVAC program be
24 approved.

25 33. As part of the delivery process, Staff has recommended that either UNS Electric or
26 its IC track the availability of federal tax credits for residential air conditioners and heat pumps,
27 and that the program provide assistance to participants, to make them aware of applicable tax
28 credits and to assist them with the process of applying for federal tax credits.

1 34. Staff has also recommended that incentives should be capped at 75 percent of the
2 incremental cost.

3 35. Staff has also recommended that in calculating the incremental cost, any applicable
4 current federal tax credit for higher efficiency HVAC equipment should be taken into account. In
5 keeping with the APS program practice, the amount of any federal tax credit should be subtracted
6 from the incremental cost of the equipment.

7 36. Staff has recommended that, at this time, incentives be provided for only 14 and 15
8 SEER level equipment.

9 37. Staff has also recommended that incentives be capped at a maximum of \$250 per
10 unit for 14 and 15 SEER measures.

11 38. We do not agree with the above SEER limitations, but believe the \$250 per unit cap
12 should be offered for 14 and 15 SEER units and above.

13 39. Staff has also recommended that UNS Electric review the energy savings from the
14 program in order to determine whether a contractor qualification and incentive component, similar
15 to that in place for the APS Residential HVAC DSM program, would help to ensure cost-effective
16 energy savings.

17 40. Staff has recommended that rebate requirements include documentation verifying
18 that a proper sizing calculation has been done, and that this documentation include the actual
19 calculations.

20 41. Staff has recommended that, if approved, the Residential HVAC program be
21 included in UNS Electric's semi-annual DSM reports filed with the Commission.

22 42. Once actual energy savings have been determined, Staff has recommended that
23 UNS Electric modify those measures which do not provide sufficient energy savings to be cost-
24 effective and eliminate those measures that cannot be modified in a manner that would produce
25 cost-effective energy savings.

26 43. Staff has recommended that, at a minimum, reporting for the Residential HVAC
27 program should include (i) the number of participants; (ii) the number and type of measures
28 installed; (iii) the average cost of the installed measures; (iv) descriptions of program marketing;

1 (v) copies of new or revised marketing materials; (vi) estimated cost savings to participants; (vii)
2 energy savings as determined by the monitoring and evaluation process; (viii) the total amount of
3 the program budget spent during the previous six months, the previous year and since the inception
4 of the program; (ix) any significant impacts on program cost-effectiveness; (x) environmental
5 savings, and (xi) descriptions of any problems and proposed solutions, including movements of
6 funding from one program to another.

7 CONCLUSIONS OF LAW

8 1. UNS Electric is an Arizona public service corporation within the meaning of Article
9 XV, Section 2, of the Arizona Constitution.

10 2. The Commission has jurisdiction over UNS Electric and over the subject matter of
11 the application.

12 3. The Commission, having reviewed the application and Staff's Memorandum dated
13 May 20, 2008, concludes that it is in the public interest to approve the Residential HVAC Retrofit
14 program.

15 ORDER

16 IT IS THEREFORE ORDERED that the UNS Electric, Inc. Residential HVAC Retrofit
17 program be and hereby is approved, with the modifications listed below.

18 IT IS FURTHER ORDERED that either UNS Electric, Inc. or its IC track the availability
19 of federal tax credits for residential air conditioners and heat pumps, and that the program provide
20 assistance to participants, to make them aware of applicable tax credits and to assist them with the
21 process of applying for federal tax credits.

22 IT IS FURTHER ORDERED that incentives be capped at 75 percent of the incremental
23 cost.

24 IT IS FURTHER ORDERED that incentives be provided for 14 SEER and above level
25 equipment.

26 IT IS FURTHER ORDERED that incentives be capped at a maximum of \$250 per unit for
27 14 SEER and above measures.

28 . . .

1 IT IS FURTHER ORDERED that by September 30, 2009, UNS Electric, Inc. shall submit
2 data to Docket Control demonstrating the cost effectiveness of the 16 SEER and above units and
3 Staff shall review and report on this data by November 15, 2009.

4 IT IS FURTHER ORDERED that in calculating the incremental cost, any applicable
5 current federal tax credit for higher efficiency HVAC equipment be taken into account by reducing
6 the incremental cost by the amount of any federal tax credit.

7 IT IS FURTHER ORDERED that UNS Electric, Inc. review the energy savings from the
8 program in order to determine whether a contractor qualification and incentive component, similar
9 to that in place for the APS Residential HVAC DSM program, would help to ensure cost-effective
10 energy savings.

11 IT IS FURTHER ORDERED that rebate requirements include documentation verifying
12 that a proper sizing calculation has been done, and that this documentation include the actual
13 calculations.

14 IT IS FURTHER ORDERED that the Residential HVAC program be included in UNS
15 Electric's semi-annual DSM reports filed with the Commission.

16 IT IS FURTHER ORDERED that UNS Electric, Inc. modify those measures which do not
17 provide sufficient energy savings to be cost-effective and eliminate those measures that cannot be
18 modified in a manner that would produce cost-effective energy savings.

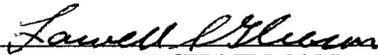
19 IT IS FURTHER ORDERED that, at a minimum, reporting for the Residential HVAC
20 program shall include (i) the number of participants; (ii) the number and type of measures
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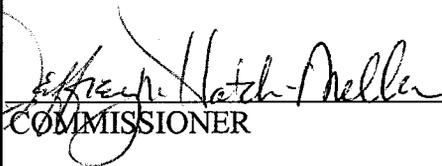
1 the program budget spent during the previous six months, the previous year and since the inception
 2 of the program; (ix) any significant impacts on program cost-effectiveness; (x) environmental
 3 savings, and (xi) descriptions of any problems and proposed solutions, including movements of
 4 funding from one program to another.

5 IT IS FURTHER ORDERED that this Decision shall become effective immediately.

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 7 **BY THE ORDER OF THE ARIZONA CORPORATION COMMISSION**

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 11 CHAIRMAN

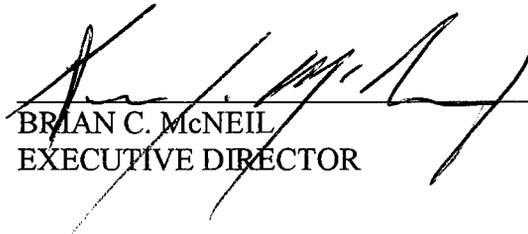
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24 IN WITNESS WHEREOF, I, BRIAN C. McNEIL, Executive
 25 Director of the Arizona Corporation Commission, have
 26 hereunto, set my hand and caused the official seal of this
 27 Commission to be affixed at the Capitol, in the City of
 28 Phoenix, this 13th day of June, 2008.


 BRIAN C. McNEIL
 EXECUTIVE DIRECTOR

DISSENT: _____

DISSENT: _____

EGJ:JMK:ihm\KT

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