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BEFORE THE ARIZONA CORPORATION COMMISSION

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Arizona Corporation Commission

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**COMMISSIONERS**

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2009 SEP 30 P 3:43  
ARIZONA CORPORATION COMMISSION  
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IN THE MATTER OF THE APPLICATION ) DOCKET NO. E-01933A-07-0401  
OF TUCSON ELECTRIC POWER )  
COMPANY'S REQUEST FOR APPROVAL ) **NOTICE OF FILING COMPLIANCE**  
OF ITS DEMAND-SIDE MANAGEMENT )  
NON-RESIDENTIAL EXISTING )  
FACILITIES PROGRAM )

Tucson Electric Power Company ("TEP" or the "Company"), through undersigned counsel, hereby respectfully requests Arizona Corporation Commission ("Commission") approval for continuance of the high-efficiency HVAC rebates through 2012.

**I. INTRODUCTION.**

In Decision No. 70403 (July 3, 2008), the Commission approved the TEP Non-Residential Existing Facilities Program as part of the Company's Demand-Side Management ("DSM") Portfolio for 2008 through 2012 (the "DSM Portfolio"). The Decision stated:

*IT IS FURTHER ORDERED that Tucson Electric Power Company pursue the HVAC portion of the Program on a pilot basis and provide up-to-date local price, size and efficiency information by September 30, 2009. Staff will complete it's review by November 30, 2009.*

A summary of the updated local price, size and efficiency information is in electronic format and are being filed directly with Commission Staff.

1 **II. HISTORY.**

2 In the original program filing, TEP provided cost data for HVAC systems from 5.4 tons  
3 through 16 tons; however, some of the data used was several years old and cost data was not  
4 collected from local sources. Therefore, Commission Staff found it difficult to calculate benefit-  
5 cost ratios for the HVAC equipment. Since there were some inconsistencies with the date, Staff  
6 recommended that TEP pursue the HVAC portion of the program on a pilot basis and provide  
7 updated local price, size and efficiency information to allow them to complete a new analysis on  
8 the HVAC equipment.

9  
10 **III. NEW INFORMATION.**

11 A total of four (4) major distributors were contacted by TEP. The four (4) distributors  
12 include Carrier, Lennox, Trane and York. Only data provided by Lennox, Trane and York are in  
13 the cost update. The data provided by Carrier is for units that use R-22 refrigerant, and as such,  
14 contain dissimilar components than R-410A units. Distributors in the Tucson and Phoenix area  
15 were asked to provide information on the most common types of units being sold, as well as the  
16 more common size and EER ranges.

- 17 • The distribution of types and sizes of units varied by manufacturer, as did the EER  
18 ratings.
- 19 • The industry is in the process of phasing out R-22 refrigerant to be replaced with R-  
20 410A units.
- 21 • Due to the phasing out of the R-22 units, some distributors have new product lines  
22 being introduced in the near future. These units will encompass the higher EER  
23 range. Pricing has yet to be established for these newer units, and therefore is not  
24 included in this study.
- 25 • One distributor indicated that the cost difference between an R-22 and R-410A would  
26 be approximately a 10% increase for the R-410A, but to make the R-410A

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competitive on the market, it was assumed that the difference in cost between the two refrigerant types is negligible.

In the data provided, all pricing reflects R-410A refrigerant and 3-phase units, all costs are from the distributors standpoint and are the cost to the dealer (no markup applied yet), and all costs estimates from the distributors were reported in \$/ton capacity.

Further, distributors reported that the cost difference between packaged AC and HP's is negligible. Variables that may affect pricing, and are not included in this study are:

- Quantity of units purchased (some customers purchase upwards of 40 units);
- Accessories/add-ons; and
- Labor.

**IV. ORIGINAL COST DATA.**

Table 1a below shows the original cost-data used for EER rated air conditioners in each size-category and Table 1b below shows the original cost-data used for EER rated heat pumps in each size category. TEP did not evaluate equipment less than 5.4 tons, but has since determined that smaller equipment should be included in the Company's program design.

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**Table 1a: Original AC Cost-Data:**

NonRes Split and Packaged AC EER-rated				
Unit Type	Unit Size (Tons)	Min. Qual. EER	Energy Efficient EER	Incr. Cost Per Unit (\$)
5.4 - 11.25 tons	6	11.00	11.39	962
	7.5	11.00	11.37	1089
	8.5	11.00	11.35	1407
	10	11.00	11.33	1231
Weighted Average				1173
11.5 - 20 tons	12.5	10.80	11.29	2570
	15	10.80	11.26	2328
	17.5	10.80	11.22	2399
	20	10.80	11.18	2916
Weighted Average				2553
Above 20 tons	25	10.00	11.11	3988
	30	10.00	11.04	5200
	35	10.00	10.96	5915
	40	10.00	10.89	6622
	50	10.00	10.75	6726
Weighted Average				5690
Market Weighted Average			11.27	2177

**Table 1b: Original HP Cost-Data:**

NonRes Split and Paclaged HP EER-rated				
Unit Type	Unit Size (Tons)	Min. Qual. EER	EE EER	Incr. Cost Per Unit (\$)
5.4 - 11.25 tons	6	11.00	11.43	1280
	7.5	11.00	11.34	1448
	8.5	11.00	11.29	1872
	10	11.00	11.20	1638
Weighted Average			0.00	1559
11.25 - 20 tons	12.5	10.80	11.06	3418
	15	10.80	11.00	3097
	20	10.80	11.00	3647
Weighted Average			0.00	3387
Above 20 tons	25	10.00	11.11	5304
Weighted Average			11.11	5304
Market Weighted Average			11.21	2482

1 **V. NEW COST DATA.**

2 Tables 2a and 2b below show the new cost-data for EER rated air conditioners and heat  
 3 pumps in each size-category including equipment sizes less than 5.4 tons.

4 **Table 2a: New AC Cost-Data:**

NonRes Split and Paclaged AC EER-rated				
Unit Type	Unit Size (Tons)	Min. Qual. EER	EE EER	Incr. Cost Per Unit (\$)
<5.4 Tons	3	11.6	12.7	378
	4	11.6	12.5	503
	5	11.6	12.6	629
Weighted Average			12.6	503
5.4 - 11.25 tons	7.5	11	12.5	818
	10	11	12.0	1091
Weighted Average			12.25	954
11.25 - 20 tons	12.5	10.8	10.8	1364
	15	10.8	12.2	1636
	20	10.8	11.8	2515
Weighted Average			11.6	1839
>= 20 Tons	25	10	10.8	3789
Weighted Average			10.8	3789
Market Weighted Average			12.0	1414

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**Table 2b: New HP Cost-Data:**

NonRes Split and Paclaged HP EER-rated				
Unit Type	Unit Size (Tons)	Min. Qual. EER	EE EER	Incr. Cost Per Unit
<5.4 Tons	3	11.6	12.7	378
	4	11.6	12.5	503
	5	11.6	12.6	629
Weighted Average			12.6	503
5.4 - 11.25 tons	7.5	11	12.5	818
	10	11	12.0	1091
Weighted Average			12.25	954
11.25 - 20 tons	12.5	10.8	10.8	1364
	15	10.8	12.2	1636
	20	10.8	11.8	2515
Weighted Average			11.6	1839
>= 20 Tons	25	10	10.8	5304
	Weighted Average			10.8
			12.0	1565

**VI. DIFFERENCE IN OLD AND NEW COST DATA.**

Information in Tables 3a and 3b below provide the difference in the cost using 2009 cost data. In all cases except the >20 ton heat pump, the difference in 'weighted average' incremental cost from the four (4) manufacturer's is lower with the new cost data than it was with the original cost data. This is not surprising as the cost of the higher efficiency equipment will be reduced as the volume of purchases increase.

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**Table 3a**

NonRes Split and Packaged AC EER-rated				
Unit Type	Unit Size (Tons)	Old Incremental Cost Data	New Incremental Cost Data	Incremental Cost Data 2009 Difference
<5.4 Tons	3	0	(\$) 378	0
	4	0	503	0
	5	0	629	0
5.4 - 11.25 tons	7.5	1089	818	-271
	10	1231	1091	-141
11.25 - 20 tons	12.5	2570	1364	-1206
	15	2328	1636	-692
	20	2916	2515	-401
>= 20 Tons	25	3988	3789	-199

**Table 3b**

NonRes Split and Packaged HP EER-rated				
Unit Type	Unit Size (Tons)	Old Incremental Cost Data	New Incremental Cost Data	Incremental Cos Data 2009 Difference
<5.4 Tons	3	0	(\$) 378	0
	4	0	503	0
	5	0	629	0
5.4 - 11.25 tons	7.5	1448	818	-630
	10	1638	1091	-547
11.25 - 20 tons	12.5	3418	1364	-2054
	15	3097	1636	-1460
	20	3647	2515	-1132
>= 20 Tons	25	5304	5304	0

**VII. CONCLUSION.**

The new information regarding cost and energy efficiency provided by distributors in the Tucson and Phoenix areas provides updated information to assist Commission Staff in their evaluation of the HVAC products. The lower incremental costs as shown in the summary

1 information provided to Commission Staff should improve the cost-effectiveness calculation of  
2 each measure.

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RESPECTFULLY SUBMITTED this 30<sup>th</sup> day of September 2009.

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Tucson Electric Power Company

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By 

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Original and 13 copies of the foregoing  
filed this 30<sup>th</sup> day of September 2009 with:

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Docket Control  
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Copy of the foregoing hand-delivered/mailed  
this 30<sup>th</sup> day of September 2009 to:

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